A STUDY OF THE BLOOD CHANGES IN KALA-AZAR AFTER SPLENECTOMY (WITH INCIDENTAL REFERENCE TO THE THERAPEUTIC VALUE OF THIS OPERATION).

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INTRODUCTION AND HISTORY.

The main purpose of this paper is to report the changes which occur in the blood of a kala-azar patient after removal of the spleen. Incidentally, it is hoped to furnish definite evidence regarding the value of this method of treatment.

How to treat kala-azar is still a debated question. Rogers refers to the intravenous injection of tartar emetic as a specific against Leishmania-donovani. On the other hand we have the experience of some clinicians who reported discouraging results after a careful use of this drug.

The value of splenectomy as a treatment for kala-azar is also questionable, except for unusually mild cases, as the following observations will indicate.

Leishmaniasis being essentially a blood disease, a study of the blood was considered to be of primary importance. Therefore we determined to study, in as much detail as possible, the blood changes which resulted from removal of the spleens of two kala-azar patients operated upon by Dr. Dilley and myself in the Union Medical College Hospital, Peking. Incidentally, observations were also made, from time to time after splenectomy, as to the patients' general condition, and the influence of splenectomy upon the main symptoms of kala-azar as headache, anorexia, epistaxis, ascites, progressive anemia, loss of weight and strength, and especially the frequently recurring attacks of fever, chills, and night sweats.
Splenectomy in Kala-azar: Chinese patient (Hsü) as he appeared eighteen months after operation.
An Improved Germicidal Catgut to Supersede Iodized Sutures.

The first (light colored) specimen is a cross section of a strand of plain Kalmerid catgut, highly magnified.

The second (dark colored) specimen is a cross section of the same strand, reacted upon by ammonium sulfid to precipitate the mercuric element.

The uniform color throughout the section shows the thorough permeation by the Kalmerid (potassium mercuric iodid). Such an equal distribution of the Kalmerid therefore assures a supply of this germicidal substance in the tissues until the suture is entirely absorbed.

Literature in English, French, German, and Italian.

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So far as we have been able to discover by reviewing the literature on this subject, there is very little referring to the changes in the blood after splenectomy for kala-azar. Cochran reported some fine work but he did not give special attention to blood changes by differentiating the types of cells before and after splenectomy. Removal of the spleen for kala-azar has not been extensively tried out and the literature refers only to general results. But, although we can find little about kala-azar, there is a great amount in the literature regarding the blood changes which result from splenectomy for other diseases. Some reports include series of blood observations that give a good idea of the changes. Pepper and Austin and Lee, Minot, and Vincent reported blood changes after splenectomy for pernicious anemia; Wolferth has given a very complete and careful report of the blood conditions after removal of both the normal spleen and diseased spleen of albino rats. Krumbhaar, Musser, and in efforts to study a condition similar to splenectomy, reported the blood condition: after ligation of the splenic vein in dogs, and similar work has been done on rabbits; Pearce and Pepper, Humphrey, Deighton, and Hare and Lockwood, reported the general blood condition after removal of the spleen for splenic anemia; Peck and Giffin have made similar observations following splenectomy for hemolytic jaundice, and McCracken reported a very interesting series of blood examinations after removal of a large malarial spleen which had ruptured due to a slight trauma. Further reference will be made to these and other similar studies in the discussion which follows.

OUTLINE OF WORK.

Although we had only a limited number of cases to study we were fortunate in having two very representative patients. One case illustrated a severe infection and the other a mild infection. The patient, named Yi, was ill 3 years, had an immense liver (see illustration) as well as a large spleen, was in poor physical condition, and presented a typical case of severe infection with Leishmania-donovani. The other patient, named Hsiu, was, on the other hand, in quite good condition, had a large spleen but his liver was small and apparently unaffected. He thus illustrated an unusually mild
infection although his mother reported that his spleen was enlarged since early childhood. It is interesting to note there are many cases of leishmaniasis in this patient's home village. (About Peking there are several villages where this disease is very prevalent and seems to be endemic.) It seems possible that a relative immunity to leishmaniasis may be developed in these centers of infection.

The blood was studied before splenectomy in order to get a line on the pre-operative condition. Dr. Smyly has kindly allowed me to include two counts made by him when these patients were on the medical service. After operation daily examinations were made for a short time, then an observation every few days and gradually longer and longer intervals were allowed to pass between examinations. In one case an examination was made three hours after operation and showed remarkable blood changes even in that short period.

The charts, tables, and illustrations with notes give most of the observations in concise form. In the differential count the oil immersion lens was used and the usual rule was to count 200 cells. In testing hemoglobin the Sahli method was used. In recording the number of lobes to a polymorphonuclear leucocyte only one lobe was counted if any significant isthmus connected what appeared to be two lobes. Some observers disregard a small isthmus connecting two lobulations of the nucleus, and it is probable that the results reported here show more "deviation to the left" than might be generally allowed.

In the chart of the patient named Yie there appears a sudden increase of polymorphs on February 1st. This was due to a superficial infection of his wound due to displacement of the bandage. The infection soon healed and the blood picture resumed its typical course.

In both cases (Yie and Hsii) the "horse-shoe" type cell, Fig. 1, monopolized the blood stream for about three days. Then on the second or third day cells were seen, as in Fig. 2, in which the nucleus was divided. Later on cells were seen with continued subdivision of the "horse-shoe" nucleus as illustrated in Fig. 3. In both cases these large horse-shoe type cells practically all disappeared about seven days after splenectomy and large deeply staining mononuclears and lymphocytes began to appear in greater and greater numbers. In the patient named Hsii, on the 12th
### Chart referring to Patient named Yie

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<th>R. R. C. Million</th>
<th>Hb. %</th>
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<th>LYMPHOCYTES</th>
<th>Polymorphs</th>
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<tr>
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**Notes:**
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- Note 20
- Note 21
- Note 22

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day after splenectomy the "horse-shoe" type cell was rarely seen but the nucleus became irregular and had marked constrictions in places making the cell (Fig. 4.) look more like the usual polymorphonuclear as seen before operation (Fig. 5).

The questions arise: (1) What are these cells? (2) Where do they come from?

We interpret these large granular cells of "horse-shoe" nucleus type to be an advanced stage of myelocyte. They represent an intermediate stage between the ancestral mononuclear finely granular neutrophile (myelocyte) of the bone marrow and the adult finished polymorphonuclear neutrophile of the circulating blood. Due to a great demand for new leucocytes by a stimulus such as follows transfusion of whole blood and especially splenectomy these incompletely developed cells were prematurely thrown into the circulation. They cannot be classified as "transitional" cells because of their granularity. The transitional cells are essentially non-granular, although Delafield and Prudden state that occasionally fine neutrophilic granules appear in the cytoplasm of transitionals. But these cells under discussion were markedly granular and it seems clear that they should not be classified as ordinary transitionals. These cells also much resemble the endothelial leucocytes as described by Mallory, page 23. They are alike in size, shape of nucleus, and staining qualities. But endothelial cells also are non-granular and this difference is too great to allow them to be classified together. Therefore we classify them as advanced myelocytes in which the nucleus shows signs of lobulation which indicates development towards mature polymorphonuclear neutrophilic leucocytes.

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**Notes to Chart of Patient Named Yie.** (p. 508)

N. 1. Coagulation time, 3 min.

N. 2. Spleen puncture showed Leishmania-donovani. This examination and bloodcount were done by Dr. Smyly.

N. 3. This count followed severe epistaxis.

N. 4. Transfusion of 156 mils of father's blood to patient. No demonstrable change in blood after transfusion.

N. 5. Date of splenectomy. Excised spleen weighed 1118 grams.

N. 6. Blood was taken in operating room just before operation.

N. 7. January 17th. In this blood smear, taken three hours after splenectomy, at first glance one was impressed by the immense number of a new type of blood cell—as described in detail elsewhere.

N. 8. Transfusion of 176 mils of father's blood to patient. No change in blood was observed due to transfusion.

N. 9. First myelocyte seen to date.
X. xo. In this smear, taken the day after splenectomy, the new type polymorph, already described, still predominated. Also the large mononuclears were quite different from those seen before operation in that they were very large and the nucleus stained a deeper blue with Wright's stain. In this blood there was a conspicuously large number of platelets which occurred in great masses (platelets were not counted but the increase was so great that it was unmistakable).

N. 11. January 24th. Three days after operation a distinct change of the erythrocytes was evident. Before operation they were irregular in size and shape and stained poorly. In this smear the cells were an even shape and size and took a good pink stain (the same staining material and same technique were used in staining all the slides in the series).

Only one eosinophile seen and no myelocytes. Polymorphs the same as described above.

N. 12. January 22nd. Occasionally a large mononuclear was seen with the nucleus indented so that it resembled one of the "horse-shoe" polymorphs described above, except that the cytoplasm was not granular. The cell was more advanced than a transitional.

N. 13. January 24th. Great masses of platelets seen. The "horse-shoe" polymorphs have almost disappeared. Great numbers of large mononuclears and lymphocytes, taking a deep stain, predominated in the blood.

N. 14. January 26th. There was marked increase of lymphocytes which stained very deeply. These were small—about the size of an erythrocyte and were quite new (they appeared about three days earlier and increased rapidly).

N. 15. January 19th. Immediately after operation patient had a mucous rattle in his throat and bronchi, temperature went up to 103.6 F. and pulse was as high as 180 per minute. But these severe symptoms rapidly subsided and temperature and pulse were normal in less than 48 hours. There were no signs of pneumonia at any time—only a very sudden and severe bronchitis.

N. 16. January 26th. Epistaxis recurred the first time since operation.

N. 17. February 25th. On studying the types of cells and their relative number one was impressed with the fact that the blood picture had returned to the condition seen before splenectomy. The polymorphs had decreased in number and the large mononuclears had increased to the kala-azar percentage. Also the types of cells had returned to the pre-operative types.

N. 18. March 5th. Four myelocytes (neutrophilic) seen while counting 250 leucocytes.

N. 19. March 19th. Patient again had nose bleeds, also a little fever and he was listless. Blood was very thin; it ran like water and it was difficult to get a drop sufficiently large to use the pipette.

Wound perfectly clean.

In blood, particularly noted the large number of small mononuclears.

N. 20. March 26th. On January 4th, before operation, patient weighed 54 lbs (without clothes). The spleen, when weighed full of blood, immediately after operation, weighed 2 lbs 7 ¼ oz. On February 3rd, he weighed 43½ lbs; on March 8th he weighed 43¾ and on April 2nd he also weighed 43¾. In addition to this loss of weight there was a return of epistaxis, night sweats, and loss of strength. Patient appeared more and more listless. Wound was clean, no cough, and lungs were negative. Had a large liver. There was no palpable or visible hyperplasia of glands. Mediastinum resouant.
Blood Changes in Kala-azar after Splenectomy.

N. 21. February 1st. The sudden rise of temperature and increase of polymorphs were due to a superficial infection of the wound due to bandage becoming displaced. The wound healed promptly in about three days.

N. 22. April 13th. Father stated that three days before the patient suddenly died. There were no special symptoms during the morning and the patient appeared as usual as he played in the yard. He complained of nothing until about noon when he came into the house and said he felt uncomfortable in the abdomen. He lay down on the bed and died in a few minutes. Father did not notice any particular pallor, nor did the patient complain of thirst or show restlessness as if he had a hemorrhage. There were no signs of paralysis that the father noticed. We asked particularly about the symptoms in order to get some idea as to the cause of death.

Elsewhere in this article there is a discussion of the cause of sudden death soon or long after splenectomy.

Notes to Chart of Patient named Hsu. (p. 512)

N. 1. Count made by Dr. Smyly.
N. 2. Count by Dr. Smyly.
N. 3. Blood was taken just before splenectomy.
N. 4. Splenectomy done November 9th.
N. 5. Polymorphs of "horse-shoe nucleus" type (described in detail elsewhere) so monopolize the blood stream that it was difficult to find any other kind of cell. Following the operation the patient had an acute bronchitis, high fever, fast pulse and respirations, incessant "loose throat cough"; but by evening of the same day the temperature which had reached 102° F. dropped to 98° F., and the respirations which were 40 per minute dropped to 26 and the bronchitis rapidly cleared up. Both cases showed the same severe bronchitis which suddenly developed after splenectomy and rapidly cleared up. There were no signs of pneumonia.

N. 6. There was a distinct increase in the number of lobes of polymorphs. The tendency seemed to be a division of the "horse-shoe nucleus" into halves (see Figs. 1 and 2).

N. 7. Multilobulars increased. Many of them were of the type illustrated in Fig. 2. The erythrocytes stained better and there was less poikilocytosis.

N. 8. Day by day one noted the distinct increase in multilobular polymorphs and the increase of large monos and lymphocytes. A very few cells (Fig. 3) were observed which appeared to be a still more advanced stage of division of the nucleus as in Fig. 3.

N. 9. The erythrocytes stained a good pink stain and were even in size and regular in shape.

N. 10. The "horse-shoe" type was rapidly disappearing. The increase of large mononuclears was striking. These latter were of unusually large size and stained deeply with the basic stain.

N. 11. There was a distinct increase of small deep blue staining lymphocytes. The "horse-shoe" type polymorph had almost disappeared. The polymorphs now had the irregular deeply constricted or entirely divided nucleus as in Fig. 4. Previously it had been difficult to distinguish cells but now distinctions were much clearer, the cells having resumed the typical pre-operative types.

N. 12. During count of 200 cells, 21 amorphous bodies with deep basic stain were seen, there being no differentiation into nucleus and cytoplasm visible. These appeared to be damaged large mononuclears. Two mast cells seen in this
Chart referring to Patient named Hsu.

<table>
<thead>
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<th>Date</th>
<th>R. B. C.</th>
<th>Hb. %</th>
<th>One lobe</th>
<th>Two lobes</th>
<th>Three or more lobes</th>
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<th>Large Monos</th>
<th>Lymphocytes</th>
<th>Retic. Bas.</th>
<th>Miscellaneous</th>
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Blood Changes in Kala-azar after Spleenectomy.

Count. Erythrocytes stained well and had regular size and shape. There were enormous numbers of platelets in dense clusters taking basic stain.

The blood was so thin and watery that after needle prick of the finger the blood immediately spread out and it was difficult to get a drop to form sufficiently large to use the pipette.

N. 13. This count made by Dr. An.

N. 14. This was the first examination of blood for 1 year and 5 months. Patient weighed 77½ lbs. April 21, 1918. October 26, 1916, he weighed 74½ lbs. (both times wearing the same garment, i.e., one pair of hospital pants). Thus in 1½ years he has gained only three lbs. in weight, but he was now about three inches taller than before; color good; no enlargement of cervical, axillary, or inguinal glands; mediastinum resonant; patient had a thin flaccid abdominal wall and deep palpation was usually satisfactory; large nodules apparently ½ inches in diameter could be palpated in front of the spine in a position corresponding to mesenteric lymph glands; the liver was small and palpated only with difficulty; patient said he felt well and strong; he had noticed no fever (temperature now normal) and has had no recurrence of nose-bleeds. A picture of patient as he appeared at this time accompanies this article. Patient’s high percentage (6.2) of eosinophiles (Ref. 22) is explained by ascariasis (eggs found in stools). Four mast cells were seen, no nucleated erythrocytes, and 110 myelocytes were observed. A liver puncture revealed no Leishmania-donovani and careful search of blood failed to discover any parasites. The polymorphonuclears were of the usual type (Fig. 4) and none of the “horse-shoe” nucleus type were seen.

N. 15. One transitional seen and one mast cell.

N. 16. One neutrophilic myelocyte and four transitional cells seen. High eosinophile percentage due to ascariasis.

N. 17. Three transitional cells seen.

(To be continued.)

Blood Reactions in Kala-azar.—In his Fourth Report on the Treatment of Kala-azar, Indian Medical Gazette, September 1917, Vol. 52, No. 9, pp. 319-322, U. N. Brahmachari states that the following blood reactions occur in this disease:

1. The relative haemoglobin value of the resistant erythrocytes during haemolysis.—It is found that this factor is markedly diminished.

2. The complement deviation reaction.—Fleming’s modification of the Wassermann test was used in a series of eight cases with six positive results. Using the original Wassermann method, one case out of four proved to be positive.

3. Hæmalkalinity.—The average basic reactivity was found to be .092 normal as compared with .178 normal in a series of healthy students.

4. Hæmsalinity.—The average was found to be .653% per cent, as compared with .6654 per cent in a series of healthy students.

5. A precipitate of the nature of a globulin is often obtained when the whole blood of a kala-azar patient is mixed with excess of distilled water and also when the serum alone is so treated. A similar precipitate has been found to be obtainable in other diseases. A solution of the precipitate in normal saline inhibits the action of complement in a hæmolytic system.
SYMPTOMS AND TREATMENT OF SPRUE.

J. B. Patterson, M.D., Kunsan, Korea.

Sprue is one of the newer diseases, having been first described about fifty years ago, and it is said to be on the increase among foreigners in tropical and sub-tropical countries. It is one of the most insidious of diseases and if untreated is one of the most deadly. It affects the whole of the alimentary canal and also affects the liver and pancreas. The writer takes a particular interest in the disease as he has himself been a sufferer from it.

Its early stages are characterized by a peculiar popping of gas in the abdomen as though bubbles were bursting in unending succession. During the early stages of the disease the stools are copious and blackish, and may either be constipated or loose and frothy. In the second stage, the stools are light gray, putty like, and tend to be frothy and loose, which is especially noted in the morning. Loss of weight and nervousness are pronounced. The third stage, which may be several years removed from the original infection, is one of white frothy stools, toxemia, and extreme exhaustion.

The disease is so insidious as to be years in declaring itself after the first infection. Many people probably never become sick though they harbor the infection. One of my cases left America in August 1915, with a sore tongue which persisted for months. No other symptom developed. When this sore tongue again appeared in December, 1916, and persisted for two months leading to ulceration and swelling, I advised sprue treatment which gave relief in a short time.

As to the incidence of the disease, sprue is said to be rarely seen in persons under 35 years of age, and that it usually occurs after forty. This view, I believe, must be changed, for I think we find it in children, though presenting a somewhat different clinical picture. Many children have prolonged sickness, of which no definite diagnosis can be made; but if we knew more about the condition it might prove to be sprue. Several such suspects have come to my notice. In one, distention, pain in the abdomen and indigestion were complained of for a long time. Physical weakness, with undigested food in the stool, was observed in another. These symptoms have continued for over six months. These patients are at times apparently well but are never strong like other children. In the stools of one of these children I once found the white speck which I have seen in the stools of six adults who had sprue. To throw more suspicion on this case she has been
free from distention and pain when on a diet of milk with some rice and occasionally meat.

In Korea all the patients come to the doctor for advice after cold weather begins. They all date their trouble back for several months, in one case even for years. Although sprue sometimes begins by symptoms so acute that it may be mistaken for dysentery or cholera, it is more often that the patient reports many months of discomfort and indigestion before even seeing a doctor. Cold weather, as stated above, aggravates the symptoms. Exertion and fatigue are to be avoided.

SYMPTOMS IN DETAIL.

1. Sore mouth and tongue. This is by no means an early symptom nor always present. The soreness is seen in many forms and degrees. Whitish blisters appear on the inside of the lip or on the tongue. The tongue appears deeply fissured, swollen, and thick, but in all cases I believe it is apt to show a red, angry, tender tip and this condition may extend around the sides. Ulceration is also seen. The gums are often sore so that sprue patients almost always have trouble eating some kinds of food and are very likely to complain of hot food. In some patients there is a sickening taste in the mouth most of the time. Foul breath is common. Nearly all patients complain of mucus in the throat.

2. Distention. As already indicated, sprue is a gas-forming disease. The abdomen is distended, thus decidedly marking it off from dysentery. There is discomfort, especially early in the morning. The patients nearly always wake with an uncomfortable sensation in the abdomen. Others complain of pain so severe as to be unrelieved by the hypodermic injection of morphine. I have once or twice removed the appendix, having been misled by the pain and other symptoms. In both cases a consultant agreed as to the advisability of an operation and in both a pinkish serum was found in the abdominal cavity.

3. Popping of Gas. The symptom most diagnostic of sprue is the unending popping of gas in the abdomen.

4. Loss of Weight. The disease often continues for months without loss of weight, but I believe the loss is pronounced once the second stage is reached and the gray or white diarrhoea is present.

5. Stools. The two or three most characteristic things about the stools are that they contain mucus, are copious, and are voided early in the morning. Diarrhoea is not to be expected until the disease has made considerable headway. I believe most mistakes are made by...
expecting a light colored stool, whereas this also never comes until the
disease has been well established. The stools, when frothy, may often
be seen to continue to form bubbles of gas after being passed. Bloody
stools are to be expected when there is constipation. The mucous
membrane is so friable that fissures and hemorrhoids quickly come to
further annoy a weakened and nervous patient.

6. *Weakness.* Great exhaustion is felt in nearly all cases of sprue
from an early stage. Though the progress of the disease is by no
means constant, each new onset is more severe and prolonged than the
preceding and, unless successful treatment intervenes, death is the
usual end.

7. *Nausea, vomiting, and regurgitation.* Nausea and vomiting,
with regurgitation of parts of a meal eaten hours before, were seen in
two out of twelve cases.

8. *Sleeplessness.* Dr. Carnegie Brown says this is not a common
symptom and in my own case it has not been constant or annoying;
but in two other cases it has been quite marked and troublesome.

9. *The Liver.* This organ is contracted, due to the shrinking in
substance and not to the destruction of tissue. It is said that the liver
is at first congested, but this I have not seen.

10. *Ulcers.* From case No. 5 it may be seen that this may be a
very grave symptom.

11. *Jaundice.* This was a very pronounced symptom in one case
in our mission, and it continued for months.

**ETIOLOGY.**

There are two or three suspected causes of sprue. I believe Dr.
Ashford has described the real cause in the *Clinical Medical Journal,
March, 1916.* He identifies it as a yeast. It is to be found in
scrapings from the tongue and in the stools of sprue patients. Entamebæ
have also been suspected as the cause of sprue, but sprue cases do not
develop the liver abscesses which are common in entamebic troubles.

Whatever the cause, I believe we know enough to connect it with
bread-eating in countries where the climate is hot and humid, and
where flour or other wheat products are long stored and become
mouldy. It is the custom of many missionaries here and elsewhere in
the Orient, to get flour from America in large quantities. This is
stored for months and during the rainy season it often becomes musty.
It has been learned that many of the patients I have seen have eaten
this kind of flour. In Japan this is not the custom and sprue is not
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seen there. In the Eastern tropics the native coolie develops beri-beri, while his foreign overseer is attacked with sprue. Same climate and other conditions, but different food.

TREATMENT.

The treatment of sprue has been greatly improved by the use of salvarsan, neosalvarsan, or their substitutes, in addition to emetin. This method, I think, was first used by Dr. Lunn, of Manila, who reports 24 cases with uniformly good results. Sodium cacodylate is evidently equally as good as salvarsan.

The arsenical preparations are very effective in checking the diarrhoea, and for a time they change the color of the stool. There is no doubt as to the good of 606 or the cacodylate. Emetin is useful to reduce the mucus in the throat and stools. Should there be pyorrhoea alveolaris, which is seen in many cases, there is all the more reason for its use. Dr. Lunn recommends the following:—Sodium cacodylate, grains 6, every other day until eight doses are taken hypodermically; and emetin, grain $\frac{1}{2}$, every day until ten doses are given. He recommends milk or buttermilk until the diarrhoea stops; then rice and eggs. This more liberal diet recommends itself because it is neither prolonged nor very rigid. Moreover, I believe it would prevent the great loss of strength which is experienced on the 24 days milk diet.

Diet. Probably a suitable diet is more necessary than medicine, but the choice is very limited. Milk only, or milk and fruit, is quite the best diet for some patients. A close second is meat only, which for some seems to be preferable.

a. Milk Diet. For a patient whose normal weight is 150 pounds, Dr. Carnegie Brown recommends the following:—

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<th>Days 1-4</th>
<th>Days 5-8</th>
<th>Days 9-12</th>
<th>Days 13-16</th>
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After 80 oz. are reached, fresh fruits are recommended. Among all the fruits, strawberries are considered by far the best. Apples, pears, grapes, and bananas have all given good results. For the
first few days the weight is likely to continue to fall off on this diet, but thereafter a steady gain is to be expected. During the milk diet the patient must be confined to bed in a warm room. On this treatment the pain, distension of abdomen, and distress soon subside.

b. Meat Diet. The milk diet is followed by four days of meat alone. During the milk diet the stools are a light yellow, but once the meat has been begun the stools turn to a dark brown. The amount of the stool is less and not so constipated as on the milk diet. Two pounds of beef are required a day. This should be divided into six portions, and boiled or fried in butter at eating time.

c. Modified Meat Diet. On this diet, one or two eggs slightly boiled are allowed for the first morning meal. Fruit is again added. My patients and myself have followed Dr. Brown's diet, "C" and "D"; from this point Dr. Lunn recommends eggs and rice. I have found this very acceptable.

A word of caution from experience should here be set down. This is that eggs and milk, and milk and meat, are incompatible. In this regard I again agree with Dr. Brown and have verified it by my own experience and that of five other patients. Later in the treatment, eggs may again be entered on the diet list but only after the milk has been stopped.

As soon as the diagnosis is made the treatment should be begun. A mistake that I have twice made is to send a sprue patient on a sea-voyage in cold weather. This is sure to lessen the chance of recovery owing to the cold and because of the exertion necessary on a trip. The acute symptoms should be dealt with when found, and no move should be made until warm days come and the acute symptoms have passed.

Signs of Improvement. There are three things that every sprue patient desires: (1) a comfortable feeling in the abdomen after eating and a clean tasting mouth; (2) gain in weight; (3) a dark colored stool. These all come in the order mentioned on this diet.

Milk should be the sole food for six weeks from the time the stools become solid and the mouth symptoms disappear.

Report of Cases.

Case No. 1. Dr. F. Aged 35. About seven years residence in Korea. This patient I saw but for a short time. He had then been sick for two years. He took to his bed and was put on a milk diet by Dr. Wilson. He improved enough to be taken home and after six years is said to be better, though at times he was not expected to live. Sore tongue, popping of gas in bowel, and large white copious stools were his main symptoms.

Case No. 2. Miss B. Aged 44. Three years residence in Korea. Had been suffering from indigestion for months. After an attack of pneumonia she was
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slow in regaining her strength. Her mouth became tender so that drinking hot coffee became very painful. Her abdomen was distended and tender. Stools were light gray. I regret to say that I made the mistake of urging her to go home before the weather became warm. She died after four years' sickness.

Case No. 3. Dr. T. Aged 38. Four years residence in Korea. His trouble began early in 1914, and probably dated from the summer of 1913. Jaundice was an early symptom; it lasted for several months. In the spring of 1916 he consulted me. A definite diagnosis was not made but he was urged to follow a special diet. This he did, eating much strawberries and milk. He supposed he had been entirely cured, but when the cold weather of 1916 came on he again began to suffer. Sore tongue, eructation of gas, regurgitation of food, vomiting, popping, distention and tenderness of abdomen, were pronounced. No special treatment was followed as his condition seemed to warrant his going to U. S. A. at once. In the mucus from the stool bacteria resembling the Shiga bacillus in shape and size were found. This patient was extremely nervous. Dysentery serum was given, with no improvement in symptoms. This is contrary to the general rule of dysenteric infections.

Case No. 4. Miss M. Aged 32. Six years residence in Korea. She suffered from indigestion, distention and tenderness of abdomen, vomiting and regurgitation of food. Her disease was diagnosed as appendicitis and operation was performed, as it was evident that something was wrong that needed attention. A slight amount of pinkish fluid was found in the abdominal cavity. She was much better after the operation. When she began work she again had the old trouble. This case was not diagnosed at the time and the diagnosis cannot even now be said to be definitely established. She went to America on furlough and has not yet recovered.

Case No. 5. Miss S. Aged 37. Six years in Korea. Symptoms of more or less severity for three years. In March, 1915, had grip, and after that suffered with indigestion, vomiting, distention, and popping of gas in abdomen. Pain was one of her most annoying symptoms. This became so terrible that nothing could give relief. After consultation an appendectomy was decided upon. The abdomen contained considerable bloody serum and parts of the intestines were red and angry. A low fever had persisted for several days. No definite lesion was discovered. A later consultation established diagnosis of duodenal ulcer. After large doses of sodium bicarbonate the pain was controlled. Bismuth and salol were always badly received. Finally, in the fall of 1916, a definite diagnosis was reached. No improvement was seen until neoarsaminol and emetin were given. A milk diet further improved her condition so much that her stool was entirely free from mucus for the first time in many months and the color of the stool became yellow. Later there was constipation and this led to hemorrhoids and alarming hemorrhages. She is now free from pain and distress and can eat a meat modified diet. Her condition is so favorable that she refused to go home. In the summer of 1916 she had a return of diarrhoea; the stools contained much mucus, in which the large bacillus with round or oval ends was found. Her case was diagnosed as dysentery and the appropriate serum was given. Relief was slow. Pain was very marked. Following a second dose of dysentery serum she had an attack of urticaria which lasted four days; the eruption covered the whole body and the distress was almost unendurable. After this the stools became lighter and finally white.

Case No. 6. Miss D. Aged 28. Six years residence in Korea. Sixteen months ago had attack, sore tongue, distress and soreness over liver and to the same degree over spleen area. Was treated for stomatitis in Mokpo with diet of milk and eggs and was much improved. Had no diarrhoea, but felt worse in mornings. Last summer again had same trouble which improved by dieting. At that time took hot salt water early in the morning. This summer spent vacation at Sorai Beach
The China Medical Journal.

from which she returned feeling well, and weighing more than she ever had. On going to the country on an itinerating trip, she noted that riding made her very uncomfortable and the old trouble returned. Began to have loose, black, frothy stools. Her loss of weight was very pronounced, but she never had more than one movement a day. The sore tongue was complained of all the summer, and was worse when the soreness in abdomen was worse and when the stools were bad. Sore tongue worse at about 5 a.m., when the rumbling of gas in abdomen was most noticeable. About six weeks before coming here stools became gray, then white; when lying down she was troubled by sore teeth and tongue. Four doses of neosalvarsan were given. Emetin relieved the mouth symptoms and was continued for three weeks. Milk diet was followed by meat diet and by modified meat diet, which gave great relief. Now she is back at work apparently well. It may be added that she recently had an attack of appendicitis; the appendix was removed and she now seems quite well. Drs. Heiser and Wilson acted with me in the treatment of this case.

CASE No 7. Miss D. Aged 37. Six years residence in Korea. Has complained more or less for two years, but when winter weather came she commenced to grow worse. Her most prominent symptom has been mucus in throat and chronic rhinitis which has lasted for several years. Distress and pain in abdomen, early morning waking and sleeplessness, and gray stools were enough to establish diagnosis. This patient, after beginning a milk diet, wasted her energy in exercise and thereby lost considerable ground. She had the neosalvarsan treatment and emetin with rigid milk diet 24 days, followed by modified diet of meat and milk. She is now improving and suffers only from constipation and bleeding hemorrhoids.

CASE No 8. Dr. P. Aged 40. Seven years residence in Korea. This is my own case and I cannot remember precisely when I began to have symptoms, but it was some time during the spring of 1916 or the preceding winter. Distress followed eating and my abdomen was so tender that a baby a year old kicking my abdomen gave considerable pain. The popping of gas was almost continuous. There was never any diarrhoea for more than one or two days. At this time I supposed I had bacillary dysentery as we were having a great many cases of that disease. An organism similar to dysentery bacillus was found. The stool was typical of dysentery, and tenesmus was marked which is not usual in sprue. Dysentery serum and a day in bed gave relief. But the popping of gas continued. Gas was not expelled per rectum. Very little uncooked food or bulky vegetables could be taken because of distress and a tendency to looseness of bowels. I ate strawberries freely without bad results. In fact I think I was improved for a while. In the fall I began to avoid articles of food that I felt were difficult to digest. In November a diagnosis was made. Clay-colored stools had been passed for months, but as I had little or no sore mouth and no diarrhoea and was able to do full work I doubted if I were seriously ill. Late in December I took cold and, like Cases No 2 and 5, then began to suffer much more. I became so sick that I was forced to go to bed. I experienced much improvement after neosalvarsan and emetin, but this gain was more than lost after my severe cold. Following the milk diet, meat diet, and modified meat diet with several doses of sodium cacodylate and emetin were taken. At present I am a little stronger and perfectly comfortable, but have not gained the weight which I lost after going to bed. Constipation and bloody stools were marked toward the end of the milk diet, which I think now should have been relieved by a laxative.

CASE No 9. Mr. S. Aged 40. Six years residence in Korea. For several months distress in abdomen and distention—especially marked in the lower part—were noted. Mucus in throat and bad taste in mouth were marked symptoms. During the preceding two weeks he had lost 15 pounds. Stools were dark, almost black in parts with a small amount of mucus, later they became gray and bloody and there was constipation.
Soon after treatment began he became more comfortable. The emetin did away with the mucus in throat. Up to date only one dose of neoarsaminol has been given. This patient is now gaining in weight and eating the meat modified diet without any discomfort and is doing practically full work.

Case No 10. Mrs. T. Aged 52. Has resided about 20 years in Korea. Her first symptoms were sore tongue and distress in abdomen. When I was consulted early in January, 1917, her stools were constipated, dark brown, with a slight amount of amber-colored mucus. On the inside of her lips were whitish blisters. The tongue was tender and slightly red at the tip. Ten days later she took cold and at once a light-colored characteristic stool followed. She is still under treatment by Dr. Robertson.

Case No 11. Miss D. Aged 45. Has resided in Korea ten years. She went to U. S. A. on furlough in March, 1914, feeling perfectly well. She came back in July, 1915. On arriving at San Francisco she was annoyed by sore tongue, which continued all the fall and winter, but never so severe as to oblige her to seek medical advice. Late in December, 1916, this soreness began again and after two months she consulted me. All that could be seen was a bright red spot on the center of the tongue. The tongue was slightly swollen. The spot was quite tender. Beyond this no other symptoms presented themselves. A mouth wash was given and silver nitrate used. The sore spot gradually increased in size to that of a thumb-nail. At this time she contracted a severe cold which made the tongue worse and from which she recovered very slowly. Then the sprue treatment was begun. The soreness of the tongue disappeared in five days, though the spot remained red for some time but disappeared entirely in about two weeks. She is now quite well.

From the foregoing cases we have abundant evidence (1) that sprue is a serious and not uncommon disease in Korea; (2) that it can be treated on the field; and (3) that an early diagnosis should be attempted. I want to record my thanks for the help I received from the report of Dr. Lunn's cases and for his letter on the subject. I also want to urge all who study sprue to read the description of the disease by Dr. Carnegie Brown.

CASE OF DEMENTIA PRÆCOX.

G. GLASS DAVITT, M.D., Yachow, Sze.

This is the report of a case of dementia praecox, catatonic form, the patient being a Chinese male of 48 years, who for 20 years has been an opium and alcohol habitué, and who recovered symptomatically and completely in 30 days and has remained so now for 12 months while under treatment for his opium and alcoholic habits.

At first, due to his habits and history as told by his family, we were inclined to relegate his case to the dump heap of "intoxication psychoses," ascribing the symptoms to chronic intoxication by opium and alcohol; but, after a careful study of the patient's behavior in the
hospital, we were forced to the conclusion that we were dealing with a case of dementia praecox.

Patient had been carried for many days from place to place, from native doctor to native doctor, bound up with strips of cloth like an Egyptian mummy and tied to a plank with ropes. Then friends induced his family to apply to us for help. When we called at the inn to see him a more pitiable sight one could not imagine. For twenty days he had had nothing to eat but the frightful doses forced into him by his friends, and nature had been left to care for herself. They explained they did not care or dare to take off the ropes to care for him. We received him at the hospital where his many attendants had a good surprise when they saw us begin to take off his impedimenta. All fled, except his son whom we compelled to remain to help care for the patient. While in the act of unbinding him he declared we were preparing to sacrifice him to our foreign god. (Delusion.) Once relieved of his traps he began to enliven things up, and especially desired to have it out with his son who, he asserted, wanted to ruin him. Forcibly compelling the patient to swallow a chloral mixture we sat him in a chair while we cleaned him from head to foot, then placed him in a tub of water kept hot by adding boiling water from time to time. While in the tub a blanket was held around his neck, the bottom of the blanket falling over the sides of the tub. By the time we were through this cleaning and sweating process, he was as limp as a rag and emotionally confidential, overnice, and very accommodating. These latter symptoms, somewhat characteristic of chronic intoxication by opium, had been observed quite often by his family previously. Two hours later he fell into a profound sleep from which he did not awaken until eight hours had passed. During the interval we made a preliminary physical examination which will be noted below in connection with an examination made two days later.

Owing to our language limitations, and to the contradictory statements of the son and other relatives, we received a history which is interesting if not very complete and valuable. Among other things we obtained the facts that the patient was 48 years of age; was a man with the degree of a Chinese scholar, who followed teaching and painting; lived under fair conditions; was married; had one son alive and well; father and mother both dead of stomach trouble (?); had used opium for 20 years, and alcohol (native wine) for 10 years; was sometimes irritable and dejected and complained of many diseases in his body,—mostly of burning heart, pricking in his lungs, and wind.
Case of Dementia Praecox.

blowing through his head—at which time he would neglect his person and would do anything to obtain opium to the neglect of home, friends, and studies. At times his character would seem to change and he would suddenly become interested in life, dress well, invite friends to tea, and would lecture in the tea shops against the evils of opium. They said he slept a lot in the day time, but would not sleep at night, nor would he let others sleep because of his desire to keep all of them busy at something or other. They noticed he was getting thin, had no appetite, and that he was “dead” to opium longer at a time, and that these long periods were followed by periods in which he would be irritable and would race through the house chasing all before him, looking for devils. Later, after a fall in which he struck his head and was unconscious for two hours, he became so violent that they tied him to the plank on which they carried him to us. This is an abbreviation of the many things we were told, but I have neglected to note the admission that his parents before him, as well as his wife and son, all used opium more or less, but that none had ever had any mental trouble like this case. Disclaims any other diseases except small-pox and dysentery some 15 years ago.

Physical Examination showed a male Chinese, 4 feet 2 inches in height, weighing 90 English pounds; skin light in color, drawn tight over the body and leathery to touch, body poorly developed and poorly nourished. Odd shaped head with one scar. Lungs negative. Heart abnormally fast and sounds weak. Systolic blood pressure 190 mm. of mercury. Abdomen negative except for greatly distended colon. Slight ataxia; suggestion of Babinski reflex; patellar reflexes increased on both sides; slight tremor of tongue and fingers; hyperaesthesia of lower extremities. Rectal temperature 104° F., upon admission; down to 97° F. on the fourth day, and remained so as long as patient was with us. Abdomen scaphoid and no masses were felt except the hard, distended colon. Patient stated that he could feel a big snake crawling up, across, and down his belly. In showing the course the monster took he outlined the colon.

Laboratory findings: Movement of bowels occurred after an enema when hard, dark colored masses like black walnuts were passed, very offensive and surrounded with a coat of gelatinus mucus. Heavily infected with ascaris lumbricoides and oxyuris vermicularis. Cultures not made. Urine scanty, high colored and giving a microscopic picture of chronic interstitial nephritis. Blood that of a well marked secondary anæmia; no malarial parasites.
MENTAL DISTURBANCES NOTED WHILE IN HOSPITAL.—Disturbances in the process of perception, such as well marked illusions. Hearing a man on the street talking he ran to the window claiming Yuan Shih-kai was calling him to come and take his place as president; pointing to a Gospel scroll on the wall he insisted there were a lot of dirty-faced children behind it making faces at him; had us put his tea-cup out of the room because it was singing so loud as to keep him awake; insisted upon having his head shaved because his enemies were pulling his hair while he slept. On one occasion I happened to come just in time to see him strike at a dog, as he supposed, which was trying to eat off his feet. His hallucinations, while not as marked nor as persistent as his illusions, were rather interesting. Music, loud talking, and fighting on the top floor of the building, kept him from sleeping at night—so he said. He insisted that somebody was preaching the Gospel to him all the time, and that throughout the night he could hear the cries of the patients we were torturing in the dispensary below.

Slight blunting of consciousness was noted, especially during periods of depression.

DISTURBANCES OF MENTAL ELABORATION. On the whole his orientation was good except that at times he was at a loss to know who all the people were that he saw coming into the hospital building. He once made the remark that he was surprised not to find trains in America—indicating that he thought he was in the latter place. Thought was slightly desultory and reasoning except on very simple matters was difficult. Memory for remote affairs appeared good, but poor for recent events. He could tell about his parents and family, his school days, and his scholars, but could not remember events which happened within the month previous to his coming to us. Had little capacity for mental work. He could read the Gospel scrolls hanging on the walls of his room if urged, but would stop in the middle of a sentence if no one showed interest.

DISTURBANCES OF THE EMOTIONS. His delusions were incoherent and not always the same. Running through them all was a religious strain. On one particular night he wanted us to stay with him, because there was a Buddhist priest outside who wanted to persecute him because he would not give money to the temple. He blamed himself for the supposed death of his whole family; he wanted his feet bound up because he said his enemies had turned them into pig’s feet and that he could not bear the sight of them. On the fifth day in the
hospital all anxiety and desire to complain and to leave us disappeared and he became contented and could talk to us by the hour about his delusions with no more feeling than an ordinary Chinese displays when indulging in small talk. At the end of the second week he was cheerful and happy by day, but somewhat dejected at night because, so he declared, of his insomnia. He always said he was tired out working (?) and that he was always hungry because what we gave him to eat made him sick. This emotional attitude, if I remember correctly, is somewhat atypical at such an early period in catatonia.

Disturbances of Volition and Action. In this field there was but a suggestion of stupor, and two or three times marked muscular tension was noted, at which times he would close his eyes tightly and fold his arms on his chest and stiffen out his whole body so that he looked like a corpse. Catatonic excitement was very marked at times. Patient would impulsively jump up from the bed, walk the floor shouting and chanting unintelligible words while at the same time rhythmically nodding his head. He would beat the foreign mattress on his bed as though he were pounding somebody to death; would spit on the furniture, and void urine against the foot of the bed. Pressure of activity and business often very marked.

Diagnosis. Aside from his evident heart lesion, his kidney and blood condition, and his arterio-sclerosis, we made the tentative diagnosis of his mental trouble when he first came to us—mostly because of his history—as being a case of intoxication psychosis due to chronic opium poisoning, or perhaps a combination of this and alcohol. Later, after study of the case in the hospital, we felt sure that we were dealing with a case of dementia praecox of the catatonic form.

Treatment. After the first day the patient was given the freedom of a large private room with his son as an attendant during the night and a friend and ourselves looking after him during the day. Only one night was it necessary to resort to ropes. The treatment generally consisted of (1) thorough and continued purging; (2) hypodermic injections of morphine daily for 15 days; (3) sodium bromide and potassium iodid for 20 days, and continuation of the latter for 90 days; (4) from the end of first week till his dismissal and for 30 days thereafter he was given a mixture of iron, arsenic, and gentian. This was given between meals, and thrice daily at meal times ten mils of cod-liver oil and linseed oil, equal parts; (5) daily movements of bowels.

The results were good. After 20 days, no mental symptoms; slept well, ate three meals per day and did a lot of reading and
writing, and picture drawing. Friends claimed he was better than he had been for 15 years (?). He absolutely denied any desire for opium or alcohol, and gained ten pounds in weight. The heart, kidneys, and blood markedly improved. Now, after twelve months, patient remains well and happy, and is teaching school.

After a lapse of a year report has it that he has never enjoyed better health and despises opium and alcohol so completely that his wife and son have to leave the house when they want to take them since he cannot endure the odor of these drugs.

The following questions may be asked: (1) Is this a frank case of dementia præcox with a cerebral lesion obscured at first by opium symptoms, or (2) is it an atypical intoxication psychosis with symptoms suggesting dementia præcox; or (3) did the treatment change his symptoms from those of intoxication psychosis to dementia præcox? Of one thing we are sure: if we had seen this case at home in a person not addicted to opium we would not have hesitated to make a diagnosis of dementia præcox—catatonic form.

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REPORT OF CASE OF ILEAL INTUSSUSCEPTION.

LEE M. MEIRS, M.D., Tchchow, Shantung.

An adult male patient, aged thirty-six years, a farm laborer, presented himself at the hospital for treatment on the evening of May 21, 1918. He gave the following history:

For two years he had suffered from distress in the upper abdomen. This distress had at times been acute and was distinctly painful in character. At other times there was only marked discomfort. The condition was marked by periods of remission when the patient was quite comfortable and able to work. At the times of exacerbation the patient vomited and gained relief. For the greater part of the duration of the condition he was able to work, suffering only a week or two at a time and then intervals of a month or more occurring before another attack. Distress was lessened by eating soft food.

Two weeks before coming to the hospital he had had a very severe attack which had not diminished in severity and he was unable to work because of the pain.

At no time had he been jaundiced, and he had not noticed blood in the vomitus. For the most part vomitus was thin and watery, and contained food in large amounts. He had been constipated for nearly
the whole two years; at time of admission to hospital he had not had a bowel movement for four days.

Physical examination showed a fairly well nourished body, though patient claimed to have lost considerable weight. Upon examining the abdomen there was visible an enlargement and bulging of the epigastric region to the right of the mid-line. This mass upon palpation was made out to be about four to five inches in length by about two in breadth. During the course of palpation the consistency of the tumor distinctly changed and a marked peristaltic wave was made out. This peristalsis was from left to right, and during the passage of the wave the mass rose up and at the same time became more tense. The mass when palpated caused the patient pain.

Laboratory findings: The blood examination showed a leucocytosis of 17,150; red blood corpuscles, 4,750,000; hemoglobin (Sahli), 58%. Gastric analysis gave the following results—Free HCl, none; total acidity, 13°; lactic acid, none; blood (phenolphthalein), present; bile, present; sarcinæ and other bacteria, none. Stool analysis: stool soft (magnesium sulphate), brown color, blood present. Hook-worm ova also present.

A tentative diagnosis was made of stenosis of pylorus with probably also an acute peptic ulcer. The absence of free HCl in stomach might be against ulcer, but in a number of examinations of the gastric contents of the Chinese I have not yet found a normal amount of acid, and in most of the contents analyzed in this hospital free HCl has been absent. Delay was advised but in view of the leucocytosis and also a slight increase in temperature (maximum 102°F.) we decided upon early operation.

Operation: On May 25, a laparotomy was performed; the abdomen was opened in the mid-line for about four inches above the umbilicus. Upon exposing the contents of the abdomen we found that the mass was not connected with the stomach, but consisted of the first coils of the ileum. We discovered that the mass was caused by intussusception, and the ileum was dilated and nearly gangrenous for about 12 inches distal to the intussusception. Traction would not free the intussusceptum, and the condition of the gut did not warrant trying a typical operation to relieve the condition. So twenty inches of the ileum were resected and the ends joined by a side-to-side anastomosis. The abdomen was closed in the usual manner leaving one drainage tube near the site of the resected portion of the gut.

The result of the operation was good. The patient had a desire for food, and from the third day had normal bowel movements. The
The China Medical Journal.

only untoward effect was that the skin sutures did not hold and his
recovery has been delayed on that account. The patient is gaining
weight rapidly, probably as a side result of freeing him from hook-
worms about two weeks after operation.

Examination of the resected gut showed the presence of a pedun-
culated tumor mass one inch in diameter (long axis), by about three
quarters of an inch in its short axis. The pedicle was two and a half
inches in length. The intussusceptum, excluding the tumor, was six
inches in length. Sections were made of the tumor mass; it was
found to consist of normal intestinal mucosa and submucosa, beneath
which was a simple lipoma. Keen's Surgery reports only seventeen
cases of intussusception caused by tumors, showing the rarity of the
condition.

Further interesting findings: On the fifth day after the operation
we were examining a specimen bowel movement and found the stool
fairly teeming with small parasites, Cercomonas hominis, which were
moving very freely. Micrometric measurement of the organisms made
them out to be 6 to 9μ broad by 8 to 10μ in length. They moved by
means of a single flagellum. Stained smears showed that the organism
assumed a round shape on drying.

REPORT OF CASE OF ORIENTAL SORE

E. S. Tyau, M.D., D. P. H., Shanghai.

Since the Skin Clinic of St. Luke's Hospital, Shanghai, has
become widely known among the Chinese, a number of exceedingly
interesting and rare cases of cutaneous affections have come under
observation. During the year we have seen cases of sporotrichosis,
blastomycosis, frambeæsia, molluscum, tuberculides, and a host of other
more commonplace skin diseases that were referred to us either for
diagnosis or treatment.

Some seven weeks ago a very interesting case of Oriental sore or
cutaneous leishmaniasis was admitted to our dispensary. The patient
was born in the Lahore Valley, Punjab, India, and was 24 years of age.
He came to Shanghai eleven months ago and ever since has been employed
as a watchman on a wharf godown. Difference of language prevented
us from probing into the details of his past and family history. His
chief complaint, however, was disfigurement due to the presence of a
frambeæsiform growth below his left eye. This began nine months ago,
that is about three months after his arrival in Shanghai. It started as
a papule, about an inch below his left eye, without any subjective symptoms of pain or itching. In two months the papule enlarged to the size of a cherry and became covered with scales. Soon after, the growth commenced to ulcerate, discharging a yellowish material which dried into a hard, adherent scab. Underneath this scab the ulceration continued to spread but there was still no pain. When the patient was first seen the growth was about the size of a pigeon's egg. The surface was rough and hardened with a darkish crust. On palpation, no pain was elicited but a slight fluctuation was present. The surrounding tissue was somewhat red and indurated. In fact, in its general appearance the growth looked very much like a chronic abscess. Physical examination revealed nothing of special importance except anemia. There was no sign of ulceration in the mucous membrane of

The lungs, heart, and abdominal viscera were normal. Liver and spleen not enlarged. Urine and feces showed no abnormality. Reflexes normal. Temperature normal. Finding thus far no certain clue to the diagnosis of the case, permission was at once obtained to examine microscopically the contents of the growth.

With a sterile hypodermic needle a puncture was made and a reddish fluid withdrawn. In the smears of both fresh and stained specimens were seen a number of Leishman bodies (Leishmania tropica), mostly in the large mononuclears. To all appearance they looked
exactly like the kala-azar bodies as seen in a smear of the enlarged spleen of a patient with this disease.

These bodies were oval or round in shape, and about the size of blood platelets 2 to 4 μ in diameter, with faintly stained protoplasm, and two deeply stained chromatin masses of different sizes. The larger mass is the macronucleus and is oval or round in shape; the smaller one is the micronucleus, and is generally rod-shaped, more deeply stained, and set at a tangent to the other.

Culture was made with Roger's citrated solution and blood agar, but no growth was observed. Failure here might be due to lack of using optimum temperature in lieu of the incubator temperature. But we succeeded in producing in a rabbit, by subcutaneous inoculation, a local swelling with induration around and at the base. This subsequently sloughed, leaving an indurated patch. As the incubation period is known to be very long, extending over several months, the lesion has not been excised and the animal is still kept under observation.

The histopathology of Oriental sore is interesting as seen in the sections that were prepared therefrom. Stained specimens showed extensive infiltrations of the corium and papillae by lymphoid and large mononuclear-cells, the latter being probably the proliferated endothelial cells. This cellular infiltration was particularly marked around the blood vessels, lymphatics, and sweat glands. In the protoplasm of the large cells were seen *L. tropica* in large numbers. They were most numerous just below the rete mucosum in the ulcerated area, and became less numerous on reaching the subcutaneous tissue, where indeed hardly any were observed. The best method in our hands of staining the parasites in smears as well as in sections is as follows: fix the specimen in Wright's stain for one or more hours; after a minute's washing with water, stain next with diluted Giemsa's solution for 24 hours or more.

In regard to diagnosis, it is now held that leishmaniasis manifests itself clinically in man in the following forms: (1) *Leishmania donovania*, visceral leishmaniasis, or kala-azar; (2) *L. tropica*, cutaneous leishmaniasis, or Oriental sore; (3) American leishmaniasis, known in different parts of Central and South America as espuudia, uta, bubas, etc., which somewhat resembles Oriental sore but is associated with ulcerating granulomatous lesions of nasal and buccal mucosae; this form may be a variety of *L. tropica*. It should also be mentioned that dogs suffer from a form of leishmaniasis which is probably identical with human kala-azar and may well play a rôle in the propagation of this infection. In China, *L. donovani* is common, as it is in other tropical and subtropical countries, and occurs in subjects of all ages. As to infantile
kala-azar, the supposed differences between *L. donovani* and *L. tropica* having disappeared one by one with the accumulation of experimental evidence, the designation *L. infantum* must be abandoned. The dermal manifestations of leishmaniasis are rarely seen in China. Probably the case now described is the first reported from Shanghai. But in view of the increasing influx of people from India to China it may be worth while to place this case on record, and to differentiate Oriental sore from other cutaneous conditions which it more or less resembles.

Oriental sore may be confused with the ulcers of tuberculosis, syphilis, and framboesia. But if we remember the endemic area of the disease, its lesions, and its course starting as a papule which slowly enlarges in the course of several months into an indurated nodule followed by ulceration without affecting the neighboring lymphatics, there will be no difficulty in making a differential diagnosis. Of course the microscopical examination of the scraping disclosing the presence of the parasites is the most reliable measure.

As to treatment, Castellani says in his "Manual on Tropical Medicine" that the treatment of Oriental sore is very unsatisfactory. Believing that the result of medication of any kind is slow, we recommended to the patient a complete excision of the whole sore. To this he agreed. The operation was successfully performed by Dr. J. C. McCracken and was followed by an uneventful recovery. The last time the patient was seen at the dispensary, about six weeks after the operation, there was still no sign of recurrence of the disease. In fact, the general appearance of the patient was already improved, as evidenced by the better blood picture which was taken for comparison. Before operation the blood showed distinct mononucleosis, leucopenia, and eosinophilia.

**BLOOD PICTURE.**

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<tbody>
<tr>
<td><strong>Before operation</strong></td>
<td>75%</td>
<td>9,022</td>
<td>5,636,000</td>
<td>40%</td>
<td>43%</td>
<td>6%</td>
<td>10%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>A month after operation</strong></td>
<td>80%</td>
<td>8,750</td>
<td>6,580,000</td>
<td>55%</td>
<td>21%</td>
<td>12%</td>
<td>11%</td>
<td>1%</td>
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</table>

**ACCIDENTAL INOCULATION OF CONJUNCTIVA WITH L. tropica.**—In *Bull. Soc. Path. Exot.*, January, 1917, M. Bouilliez relates that in manipulating a syringe containing material from a mouse infected with *L. Tropica* a droplet of the fluid was accidentally introduced into his eye. No ill-effect was experienced for about four months when a swelling was noticed on the conjunctival surface of the lower lid, which gradually attained the size of an almond and proved to contain numerous leishmania. The skin over the lesion was red but not adherent. The conjunctival surface was covered with soft, easily bleeding granulations. Treatment by lavage with arsenobenzol was found to be ineffectual.
A CASE OF POLYDACTYLISM.

L. Nelson Bell, M.D., Tsingkiangpu.

The occurrence of supernumerary fingers or toes in human beings is very common and in the West excites little comment; in the East, however, the peculiarity is regarded with more interest. In the Bible it is mentioned that Jonathan, son of Shimeah, the brother of David, slew at Gath a man of great stature "that had on every hand six fingers and on every foot six toes, four and twenty in number." (II Samuel xxiv 20, 21). In China an extra digit is regarded as an additional qualification for the art of fortune telling. Polydactylism is often hereditary; in one family it was known to have recurred through nine generations. It is not reversionary or atavistic, but is due to the strong tendency, which exists throughout the animal and vegetable kingdoms, for parts ending in free extremities to bifurcate or dichotomize.

A Chinese patient recently presented himself who desired to have a peculiarity of this kind corrected.

His condition was good and all the usual examinations were negative. The feet were normally formed but with the addition of a normally formed great toe on each foot protruding at a right angle. This caused considerable embarrassment on walking and he could not wear shoes. The supernumerary toes were removed under a general anesthetic and the feet healed quickly. On dismissal from hospital he walked very well.
CHINESE SUPERSTITIONS RELATING TO CHILD-BIRTH.

Miss Queenie Tsay, Hangchow Hospital Maternity School.

There are a great many superstitions in connection with maternity work. I will just mention some, mostly nothing more than old native mid-wives' foolish imaginations, which are common among the Chinese in Hangchow.

SUPERSTITIONS CONCERNING PREGNANCY.

1. Pregnant women are advised not to go out in the evening as they may bring back with them evil spirits who may cause some abnormality in the foetus, either the limbs, head, or other part of the body being under- or over-developed.

2. In taking the evening meal, a small rice-bowl should be used as this will prevent the foetal head from being too large.

3. So that the membranes may not be too thick, dried sheets of bean-curd should be eaten.

4. Before marriage a woman should not carry salt through the door, so that there will not be a shoulder and hand presentation at child-birth.

5. Before marriage do not put flowers in vases as this may cause delay in the first stage of labor.

6. If a foot-bandage is soaked in water during the night a cord presentation will be the result.

7. Foetal movements in boys take place in the fifth month, that of girls in the third; the earlier the "quickening" the cleverer will the child be.

8. Do not raise the hand as it takes the blood from the foetal mouth and causes a miscarriage.

9. Before marriage do not tread on flowers as this may cause a foot presentation in labour.

10. To bear a pretty child it is advisable to see nice faces and pretty pictures.

SUPERSTITIONS CONCERNING PARTURITION.

1. When labour sets in the fewer the people who know the better, as the adding of one person to the company will cause an hour's delay.

2. When the midwife enters the house, she should go through the kitchen first, and then touch the chopsticks; the first precaution
will insure the kitchen god keeping off the evil spirit which comes with the midwife, and the second will cause a quick delivery.

3. The midwife on entering the room makes an examination. If she feels the foetal head, she will say the baby will soon be born; if not, she will say it is not time as the baby's head is not yet turned, because Chinese midwives think the baby's head is always up and if it is time for the birth the baby is turned on making the examination. They use vegetable oil for their hands, and smooth their finger-nails on stone to prevent hurting the patients. Nothing is sterilised but the water.

4. Patient is put in the sitting position.

5. Chinese midwives do not cut the cord until the third stage is over, and then it is cut three inches from the placenta.*

6. Alum is used for putting over the baby's body and the cord.

7. Every baby is supposed to have a clot of blood in the mouth as soon as it is born, and the midwife tries to get it out as soon as possible, as if this is not done quickly it is feared that a great deal of illness will result.

8. If a boy is born with the cord around the neck it is said that he must have been a priest in a former life; if a girl, that she has been a nun.

9. If a baby is born before the membranes are ruptured—which in the West is called "born with a caul" and is considered lucky—it is called 珠球生 (jewelled embroidery birth) and is also lucky according to Hangchow superstitions. There is a story connected with this. Once a baby was born with a caul and he was named "Na-tsa." When he grew up people thought he was a holy saint and not an

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*The following interesting note on the custom in another district is furnished by Dr. Ellen C. Fullerton, of St. Elizabeth's Hospital, Shanghai.

In Shanghai and surrounding district the Chinese midwives cut the cord at the placental insertion and do not tie it at all, but simply wind it flat on the abdomen and cover it with ashes prepared by burning some of the common coarse yellow paper, which is known as (黃紙) wang šu. Sometimes they use ashes from burned rice, but the paper ash is preferred. As far as I can remember a child has never been brought in with an infected cord. I think that the length of the cord left on must be a great protection. I have seen one or two cases of infantile tetanus, and occasionally abscess formation in various parts of the body, which may have been due to an infection through the cord, but it is hard to prove absolutely. There are many cases of umbilical hernia among Chinese babies, but this condition is common also in the home lands and I do not believe the proportion of cases is greater here. We have had a fair number of umbilical hernia in adult women at the hospital for operation.
ordinary man. He died in an uncommon manner and was made a Buddha in one of the temples, which is called Na-tsa temple.

10. If a baby is born with a white covering it is held to indicate mourning and is unlucky.

11. If a baby does not cry soon after birth it is believed that its soul has not yet been given it from the god in the previous world.

12. The placenta is not thrown away but kept in a jar with lime from the time the first baby is born in the family to the last, and the placenta is then buried. This insures good health and prevents sickness. But if the children die, the placenta is thrown away, and a new jar is obtained for the placenta of this next child that is born.

13. When labour sets in, during the first stage the patient is given “dried lungans tea” (桂圆汤) to strengthen her, and “ginseng tea” (参汤) for the second stage.

SUPERSTITIONS RELATING TO THE PUERPERIUM.

When the child is born the mother is not allowed to sleep for 24 hours, but is made to sit up, supported by pillows, and then she is given a certain medicine to prevent after-pains, called 生花汤, which contains Aralia cdulis, Conioselium univitatum, gingiber, carthamus, fructus persicus. Her food is generally sweet for the first three days and consists of vermicelli ( noodles) and dark brown sugar. On the third day the patient is allowed to sit up for a short time to have her hair combed and washed, and a flower is worn to prevent her appearing old. For one month she must stay iu-doors and be protected from the wind which is supposed to cause puerperal fever. Unboiled water is not allowed even for washing purposes. The baby is given a bath after its birth and 黃連 or 西黃, instead of castor oil, 24 hours after, before it is fed.

SUPERSTITIONS CONCERNING ABNORMAL CASES.

For prolonged labours most midwives do nothing but wait, under the impression that the child is waiting for the lucky time to be born, and they often wait till its death takes place. Some midwives have an instrument in the shape of a hook for drawing down the head. If it is a shoulder and hand presentation, they call it 肘臂 (begging salt birth), so the midwife puts salt in the child's hand which is supposed to cause the hand to replace itself; but as a rule the arm is pulled about so much that it is severed from the body and the death of the child occurs. A few of them also use either scissors or a knife
for dismembering. At the present time if the case is very difficult the patient is often taken to a foreign hospital, or foreign-trained midwives are called in; if this is not done, unless the case is quite exceptional, as there is usually only an ignorant old woman in attendance death is almost certain. There is a saying that during labour, "one foot is in the coffin and the other outside."

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A STUDY OF THE DIFFERENT KINDS OF MILK PRODUCED IN KWANGTUNG.


The analyses and the study of the milk of different classes of cows carried out in this report were made under the auspices of the Agricultural Department of the Canton Christian College. The formulas for modification for the use of infants were supplied by Dr. Cadbury, the College Physician. Acknowledgement should also be made to Mr. Y. T. Chiu, M.A., of the Department of Chemistry for assistance in the chemical analyses, and to Mr. I. S. Kwok, agricultural student in the College for making some of the fat analyses.

A study of the milk produced in Southern China, particularly in the region of Canton, was begun in 1916 by the Agricultural Department of the Canton Christian College.

The study has included the analyses of milk for fat from 30 water buffalos and 12 European* cows kept in the college dairy. The milk from each cow, taken directly from the barn, was analyzed separately, twice a month for a period of 18 months. Mixed milk containing European, buffalo, and native cow's milk from a number of different dairies in Canton, and the milk from one pure native cow was analyzed for butter fat. Several samples of milk from the Hongkong Dairy Farm, representing milk from a large number of European cows, have been analyzed for fat. In addition to the fat analyses, complete analysis including that of total solids, proteids, sugar and ash, have been made of the milk of the water buffalo and the European cow's milk.

The analyses of the milk from the dairies in Canton were made with the assistance of Mr. I. S. Kwok, an agricultural student in the

* The modern breeds of cattle or their offspring, imported from Australia, England, or America, will be referred to as European cattle. The native cattle, which are of the humped Asiatic type, will be referred to as the native or yellow cow.
The milk from this cow averaged 15.5% fat over a period of seven months. The amount of milk given was small, being about 4 lbs. at the beginning and 1.5 lbs. at the end of the period during which her milk was studied.
The milk from this cow contained 8% fat in the fifth month of lactation, when she was giving 16 lbs. of milk daily.
College. The determinations of protein and sugar were made with the assistance of Mr. Y. T. Chiu, of the Chemistry Department.

The analyses for fat were made with a Babcock fat-testing apparatus. The total solids (made up of the fat, proteins, sugar, and ash) were found by evaporating a weighed sample of milk in a steam bath until the weight became constant. The ash was determined by heating in a crucible over a gas flame until the weight became constant. The proteids were determined by the Kjeldal method as described by Hawk in his "Practical Physiological Chemistry," pages 438 and 401. The sugar was determined by subtracting the sum of the ash, proteids, and fat from the weight of the milk analyzed. The percentages were found in each case by dividing the weight of the final product by the weight of the sample of milk analyzed.

Table I. Showing analysis of Canton Buffalo milk and European cow's milk produced in southern China, and in America:

<table>
<thead>
<tr>
<th></th>
<th>Canton Buffalo milk</th>
<th>European cow's milk in Canton</th>
<th>European cow's milk in America</th>
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</thead>
<tbody>
<tr>
<td>Fat per cent.</td>
<td>12.60</td>
<td>3.80</td>
<td>3.59</td>
</tr>
<tr>
<td>Proteids per cent.</td>
<td>6.04</td>
<td>3.23</td>
<td>3.53</td>
</tr>
<tr>
<td>Sugar per cent.</td>
<td>3.70</td>
<td>5.96</td>
<td>4.88</td>
</tr>
<tr>
<td>Ash per cent.</td>
<td>.86</td>
<td>.81</td>
<td>.73</td>
</tr>
<tr>
<td>Total solids (including the fat, ash, proteids, and sugar)</td>
<td>23.20</td>
<td>13.80</td>
<td>12.83</td>
</tr>
<tr>
<td>Water per cent.</td>
<td>76.80</td>
<td>86.20</td>
<td>87.17</td>
</tr>
</tbody>
</table>

The samples for analyses of buffalo and European cow's milk represented in the table were taken directly from the cows in the barn, and not from the bottled milk on sale in Canton, which is frequently diluted with water. European cow's milk, mixed with native, and buffalo cow's milk sold by a number of dairies in Canton, was found to vary from 5 to 6.5% fat in samples of bottled milk sold to the public. Six samples of milk from the Hongkong Dairy Farm, taken from as many different bottles secured on different days, contained from 3 to 3.5% fat, averaging 3.2%. The milk from the 12 European cows in the College herd contained from 2.80 to 5.00%, averaging 3.78% fat. Several analyses of the milk from one pure native yellow cow showed it to contain 8.00% fat. The analyses show that European cow's milk in Southern China is about the same in composition as when produced in the countries from which the cows have come. With more analyses the slight difference in the amount of some of the constituents will probably prove to be still less.

As shown by Table No. I, the fat content of Canton buffalo milk is unusually high, the average for the 18 months during which time 30
different cows had been in the herd, being 12.60%. The lowest average for any individual cow was 11.50%, the highest was 15.60% fat.

Table No. II. Canton Buffalo milk compared with mother's milk.

<table>
<thead>
<tr>
<th></th>
<th>Mother's milk (Holt)</th>
<th>Canton Buffalo milk</th>
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<tbody>
<tr>
<td>Fats ...</td>
<td>4.00</td>
<td>12.60</td>
</tr>
<tr>
<td>Sugar</td>
<td>7.00</td>
<td>3.70</td>
</tr>
<tr>
<td>Proteids</td>
<td>1.50</td>
<td>6.04</td>
</tr>
<tr>
<td>Ash</td>
<td>.20</td>
<td>.86</td>
</tr>
<tr>
<td>Water</td>
<td>87.30</td>
<td>76.80</td>
</tr>
</tbody>
</table>

As is seen by Table No. II. Canton buffalo milk contains a great deal more of all constituents except sugar and water than does mother's milk. Fat being about three times as much, and proteids and ash about four times as much as in mother's milk.

Chart 1. Mother's milk compared with Canton buffalo milk. (The same chart system as used by Dr. Iyogan2).

Chart 2. Mother's milk compared with Canton buffalo milk modified by the addition of water and sugar. For every 100 grams milk 18 grams sugar, and enough water should be added to make 300 grams:

Simpler measures to use would be ten ounces undiluted buffalo milk, 1½ ounces of sugar, and enough water to make 30 ounces.

Under the heading "Modifying Fresh Milk, Holt's method" Dr. Logan makes the following statement: "This is one of the simplest methods yet introduced. If milk is used that contains less fat than the formula calls for, it must be allowed to stand until the cream has risen somewhat, and then the top half or two-thirds is used." As Dr. Logan says, this is the "simplest" method, provided we are sure of how much fat the milk contains and provided that the physical nature of all milk is the same. On the other hand, especially in China where
there are so many different kinds of milk containing a great range in percentage of fat this is a most unreliable and unsatisfactory method. Milk "that contains less than the formula calls for," if "allowed to stand until the cream has risen somewhat," may contain anywhere from practically no fat, as in the case of skim milk, to fifteen or more per cent fat in the case of buffalo milk. Even supposing we have two bottles of milk containing the same percentage of fat and allow them to stand the same length of time and at the same temperature, "the upper half or two-thirds," may vary by several per cent fat in the two samples. Cream from different classes and breeds of milk animals rises at different rates. In Jersey and Guernsey milk the cream rises a great deal more rapidly than in Ayrshire or Holstein milk. In water buffalo milk the cream rises very slowly. Fat in milk is in the form of extremely small globules, varying in size from $\frac{1}{7000}$ to $\frac{1}{3000}$ of an inch in diameter. These fat globules have a lighter specific gravity than the milk serum and gradually rise to the surface when milk is allowed to stand quietly for a time. If these globules are comparatively large, as in the case of Jersey and Guernsey milk, the cream will rise quite rapidly. On the other hand, if the globules are comparatively small, as in the Holstein and Ayrshire, and probably in the buffalo milk, the cream will rise more slowly. The rate at which cream rises is also partly dependent on the viscosity of the milk, which varies with the amount of albumen in the milk. The more albumen in the milk the more viscous will it be. The amount of albumen in milk varies with different breeds and the period in lactation.

The statement is made by Dr. Logan that the cream (meaning fat) varies with the season and the food the cow gets. According to Government Agricultural Experiment Station Reports, season and feed do not affect the per cent of fat in milk. Experiments by the U. S. Department of Agriculture and the various State Experiment Stations have proven conclusively that the kind of feed has no effect on the per cent of the fat in cow's milk. Cows fed on rich succulent feed will give milk with practically the same per cent of fat as when fed on dry, unpalatable hay. The total amount of fat is increased as the total amount of milk is increased with nutritious feeds, but the per cent of fat is not affected. The character of the fat, however, is affected by the kind of feed. For instance, linseed meal makes a soft oily fat, while cottonseed and cocoanut meal make a harder fat.

It has also been shown that in the case of foreign cows the per cent of fat is lower in the early part, following the first three or four weeks
of the lactation period, than it is after the cow has been giving milk for several months. This has also been found true with the buffalo cows in the College herd. At the beginning of the lactation period the fat is usually between 10 and 12%, while after the cow has been milking eight to ten months it runs between 13 and 16%. However, in modifying the milk from a herd of several cows this fact need not be taken into account as cows freshen at different times, and the total amount of milk will not vary—as does the milk from one individual—from the beginning of the lactation period to the end. The length of time between milkings also affects the fat content. The shorter the period between milkings the higher will be the fat content. Thus if there is a shorter time from the morning to the evening milking than from the evening to the morning milking, as is usually the case, the morning milk will not be as rich in fat as the afternoon milk. The amount of difference will depend on the difference in the length of time between milking. At the College, where the cows are milked at four o'clock in the morning and two o'clock in the afternoon, the morning milk averages about 11.00% fat, while the afternoon milk averages about 13.50% fat.

There is a great deal of difference in the fat content of the first and the last milk drawn. According to Wing the per cent of fat may vary from 1% in the first milk to 10% in the last milk drawn from the udder.

Of the constituents of milk, the ash and sugar are the least variable, while casein usually bears a nearly constant ratio with the fat.

Many dairies in Canton add water to the buffalo milk before selling, in every case admitting that from one-fourth to one-third is added water. This compares favorably with analyses for fat we have made of such watered milk which in every case contained from 7.50 to 8.50% fat.

Standardization of milk for fat content and reliable inspection of milk are greatly needed in Canton, and other cities in China, the same as in Western countries. In the United States the various States and cities have laws fixing the minimum fat and total solids in milk. For fat these standards vary from 2.25 to 3.75%, and for total solids from 11.50 to 13.00%. The minimum for buffalo milk in Canton might be: fat 11.00%, and total solids 22.00%. For foreign cow's milk: fat 3.00% and total solids 13.00%. Our analyses show that these figures would be a fair minimum, as the average of all milk analyzed is somewhat higher. Enforced sanitation in dairies should be adopted. Such laws
would insure the public against watered milk. The milk sold to the public should be analysed by a competent person for fat and cleanliness at frequent intervals. Persistent offenders against the law should have their right to sell milk cancelled.

Until such laws are passed individuals must protect themselves from contaminated milk. The word of the average dairyman that he is producing sanitary milk should not be taken for granted. His standard of sanitation may not be very high. The dairy from which the milk comes should be visited in person at frequent intervals, especially during the milking hours. If there is doubt as to the purity of the milk it should be pasteurized, especially for infants, by holding the milk at a temperature of from 150 to 160 degrees F. for 15 minutes. This will kill all germs of ferments, and most of the germs of specific diseases, including the tubercle bacillus. If the milk is cooled quickly after pasteurizing, it will not develop a boiled flavor.

Heating the milk to boiling point is safest, but if it is thus heated the digestibility of the protein is lowered, and it will have a characteristic boiled flavor.

Dr. Logan's suggestion that every doctor should own a Babcock milk testing outfit is good. Certainly milk for infants should be tested and formulas made out according to the fat content. These fat tests should be made frequently if the herd is a small one of from one to three cows, for as already pointed out, if they have freshened at nearly the same time the per cent of fat will vary from month to month. The possibility of this variation is greatly lessened in larger herds.

Few pure native yellow cows are kept for milking purposes. This is due to the small amount of milk these cows usually give. In several herds cows with some native blood were found, but only one pure native yellow cow was found in all the dairies of Canton. Strange to say she was giving as much as 16 pounds of milk a day in the fifth month of the lactation period, and her milk, when analyzed for fat as indicated above, proved to contain 8.00%. No further analysis of the yellow cow milk has been made.

Buffalo milk is wholesome and palatable when produced under sanitary conditions. Like most kinds of milk when pure, buffalo milk has little or no odor. The strong, objectionable odor often found associated with buffalo milk is due largely to dead scales and hair from the body of the cow that have fallen into the milk during milking. One small flake of skin or one hair may taint a gallon of milk so that the flavor will be unpleasant. When milk is produced under sanitary conditions it may still have an odor when first drawn. This
odor is due to gases in the milk which leave it after the milk has stood for a short while in a clean, well-ventilated room.

Foreigners and Chinese at the College prefer buffalo to foreign cow’s milk. For children, foreign cow’s milk is preferred as its use requires no modification as does buffalo milk. For infants requiring milk modification the buffalo milk is to be preferred, because of the ease with which it can be modified. Top milk or cream is not required.

Before the cow is milked she should be carefully brushed with a stiff brush, especially in the region of the hind quarters, flank and leg on the side from which the milk is drawn. The flank, udder, and leg of the cow should then be washed and fairly dried. No manure should be allowed to collect in the barn. It will attract flies and add objectionable odors to the milk. Before milking the workmen should first wash their hands in hot water and soap, using a stiff brush to clean their finger nails. The hands should then be washed in an antiseptic solution. Mercuric chloride, one part in 5,000 parts of water, makes a good antiseptic for this purpose. It is odorless and effective. The hands should then be rinsed in pure water. All the vessels and bottles which have contained milk should first be washed in warm water. (Hot water at first will cause the casein in the milk to coagulate and stick to the utensils.) Then they should be washed in hot water to which a cleaning solution has been added. Washing soda is best for this purpose. One tablespoonful to two gallons of water should be used. Last of all they should be rinsed in scalding water, or steamed for three minutes in scalding steam. They should then be stacked, bottom up, on shelves or racks to dry and remain until the next milking where the flies cannot get at them.

One fault of the Chinese milker, which is extremely difficult to overcome, is that of wetting the teats when milking. This is not surprising for it is not many years ago that in western countries most milkers moistened teats in milking. If only a little boiled or pure water is used, and the hands of the milkers and the teats are as clean as they can be made, clean milk may be produced in this way. However, the milker should never be allowed to use so much milk that it drops from his hands and into the milk, for the milk will then be sure to have an odor from the body of the cow. In no case should the milker be allowed to moisten the teats by dipping his fingers into the milk.

It may be of interest to state here that Dr. C. M. Heanley of the Vaccine and Bacteriological Laboratory, Hongkong, writes that among native cattle in southern China tuberculosis is practically unknown,
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only occurring in one case among 250,000, unless the cows are closely stabled with foreign cows which have tuberculosis.

SUMMARY.

1. The average per cent fat from the analysis of milk from thirty buffalo cows in and near Canton is 12.60. This can be taken as the average for buffalo milk produced in the region of Canton. Ten different analyses show the milk to contain 23.30% total solids, 6.04 proteids, 3.70 sugar, and .86% ash.

2. Buffalo milk can be readily modified for infants by using 10 oz. milk, 1\(\frac{1}{2}\) oz. sugar, and enough water to make 30 oz.

3. Milk from individual cows varies considerably in fat content.

4. While individual cows may vary in fat content, the average in a herd from day to day, and month to month, is quite constant.

5. Time since freshening may affect the fat content. The longer the cow gives milk after freshening, as a rule the higher will be the fat content. This difference may be from 0 per cent to as high as 1.50% fat in European cow's milk, and as much as 4% in buffalo milk.

6. The character of the feed has no permanent effect on the fat content of milk.

7. The Holt method of modifying milk that is too low in fat, by allowing it to stand until the cream rises, is unreliable as the amount of cream and the rate at which it rises depend on too many factors. The only practical way to change the fat content of milk is by modifying the per cent of fat as shown with the Babcock tester.

8. The pure native "yellow cow" is seldom used for milking purposes in Canton. One pure yellow cow gave milk with 8.00% fat.

9. Milk should be standardized, and sanitation rules for dairies be made and enforced.

10. Where milk is bought from dealers whose methods of producing milk are unsanitary the milk should be boiled, or if possible pasteurized.

11. Buffalo milk is wholesome and palatable when produced under sanitary conditions.

CONCLUSION.

The study of buffalo and native yellow cow's milk by the College has just begun and further investigations will continue.

Co-operation in this important study will be greatly appreciated. Especially shall we be glad to analyze for fat, buffalo and native yellow
cow's milk from cities and districts other than in the vicinity of Canton. If milk is sent to us the following rules must be carefully followed:—

1. In securing a sample of milk from individual cows, all the milk should be first drawn from the cow. The milk should then be thoroughly mixed by pouring from one vessel to another three or four times. The sample should then be immediately poured into the bottle in which it is to be sent. The milk drawn last has from two to ten times as high a fat content as the milk drawn first. If the milk is allowed to stand only a few minutes, the upper part will contain more fat than the lower, hence the above precautions are necessary in order to get a representative sample.

2. A reliable person should secure the milk, directly from the barn, so that the above rule will be strictly followed. Unless this is done no accurate test will result. Do not send milk secured from the man who delivers milk. Such milk may not be representative, and it may be watered.

3. Samples of milk representing a number of cows should be secured in the same way. That is, the milk from all the cows should be thoroughly mixed by pouring from one vessel to another, and the sample quickly taken before the cream has time to rise.

4. If the milk is from one cow, state how much milk the cow gives daily.

5. About three ounces of milk is sufficient. Add two or three drops of formalin to keep from souring, seal, and send by parcel post.

6. Address samples to the Agricultural Department of the Canton Christian College.

BIBLIOGRAPHY.

Editorial.

Considering the world-wide upheaval caused by the war, medical work in China has suffered very little comparatively, and our conferences have hitherto been held with regularity. But the strain is beginning to be felt more severely and with regret we have to announce that the conference arranged to take place in Peking early in 1919, has been postponed for one year.

Some months ago in consequence of the publicly expressed opinion that during the remainder of the war there should be no further conferences, a questionnaire was sent by the Executive Committee to all medical missionaries in the field asking for an expression of opinion on this point. Altogether, 210 replies were received. Of these, 166 were in favor of postponement; 44 were against it. About 62 members promised to attend the conference in Peking should there be no change.

As the figures were not overwhelmingly decisive the Executive Committee was not inclined to assume the responsibility of postponing the Conference, especially as it would be exercising unusual authority and a careful scrutiny of the Constitution and By-laws showed that if these were strictly construed, regardless of all emergencies, neither the Committee nor the Association itself had power to alter the arrangements already made.

During the last month or two, however, the number of possible delegates to the conference has been still further reduced by those physicians and surgeons who have gone to Siberia in response to
the Red Cross Appeal. Hence it is by no means certain that the necessary conference quorum of fifty can be obtained. As it would lower the prestige of the Association and cause an exasperating loss of time and money if all arrangements were completed and members went to Peking and yet a conference could not be held simply for want of a quorum, the full Executive Committee, after long and careful deliberation and with the utmost reluctance, decided at its last meeting to postpone the conference for a year. By that time it is hoped that law, order, and good government will be established in China, that the great war will be over, that the conference can then be held with a far larger attendance than is possible at present, and that the men from the seat of war will bring to the meetings fresh ideas and visions of mission needs and their fulfilment.

Of course the postponement means slower progress for a while of the work of the Association. A conference, owing to the Chinese attention which it attracts and the wide publication of its papers and debates, is one of the most powerful means of furthering the missionary cause and of influencing Chinese opinion in all matters pertaining to the physical and moral health of the people. Not to hold one as arranged is an indication that we are marking time, to say the least. But much can be done to remedy this by increased activity in other directions. Local and provincial or sectional meetings can be held more frequently to which all qualified Chinese practitioners should be cordially invited; a greater share can be taken in public health campaigns; more original papers, clinical reports, etc., relating to the diseases of China, should be written and sent to the Journal for publication, and the Journal should be used much more than heretofore as a medium for the exchange of opinions on all matters of interest to the medical missionary in China. Lastly, with the greater time at our disposal the preparations for the next conference can be more extensive and thorough, so that we can look forward to it with more certainty of its success.

The postponement of the conference necessarily involves the postponement of the election of officers and members of councils and committees appointed for two years only. It is assumed that in the circumstances members of the Association will desire that
the present holders shall retain their offices until their successors are elected at the next conference.

It can be taken for granted that medical missionaries in China and elsewhere are most anxious to render whatever patriotic service is in their power during the present great world struggle. Nearly all have offered for war service by registering at the consulates, and are ready to go when officially notified. As to the claims of their own country they have therefore no further choice or responsibility. But an urgent appeal now comes from the Red Cross in Siberia for medical men, and being addressed to those living in China has a special force as they only are able to respond quickly. Each must decide for himself whether to go or not, and, as a letter in our "Correspondence" columns shows, some are finding it difficult to decide, as if they leave it may mean the closing down of the medical work of the station, so that not only numerous Chinese, but also many foreigners including women and children, may be left without medical care. What is the duty of medical missionaries in the circumstances?

Premising that no decisive step should be taken without consulting those responsible for the whole work of the station, we think it can be safely said that medical missionaries who have colleagues able and willing to do their work while they are away, should not hesitate to volunteer if so inclined; also those not quite so fortunately placed who yet are told by their mission authorities or others qualified to advise, that in the emergency their services can be temporarily spared to the Red Cross. Those who are elderly, not in robust health, or who are weighted with unusual responsibilities, should remain at their posts. Where the arguments for and against are fairly balanced, full weight should be given to mission needs and these should be allowed to turn the scale. There should be no regret in the minds of those obliged to remain, as it is recognised that everyone who is gaining the goodwill and confidence of the Chinese by his medical work in the present crisis is certainly "doing his bit."

We are fortunate in being able to refer to President Wilson's publicly stated judgment on the whole question of the claims of
missions in war times. A missionary wrote to him asking the question, "Do you agree with me that if missions have justified their existence, this is a time when they should not only be maintained in spite of the war, but urged on because of the war?"

The President replied: "I entirely agree with you in regard to the missionary work. I think it would be a real misfortune, a misfortune of lasting consequence, if the missionary programme for the world should be interrupted. There are many calls for money, of course, and I quite understand that it may become more difficult than ever to obtain money for missionary enterprises, . . . but that the work undertaken should be continued, and continued as far as possible at its full force, seems to me of capital necessity, and I for one hope that there may be no slackening or recession of any sort. I wish I had time to write you as fully as this great subject demands, but I have put my whole thought into these few sentences, and I hope you will feel at liberty to use this expression of opinion in any way that you think best."

If in any case there should still be doubt, consultation with a few trusty, level-headed friends who know all the circumstances should remove all difficulties and indicate the proper course to pursue.

A secular magazine published in Shanghai is offering prizes for the best essays on the subject, "What will be the effect of the war upon the work of the missionary in China?"

As a reason for engaging in this enterprise it states that while the missionary's chief work in China is that of religious teaching and education, nevertheless it is a well-established fact that trade follows the missionary, and thus the merchant and missionary have a common interest in the development of China in every field of endeavor.

Apart from purely commercial considerations the subject is naturally one which is engaging the thoughtful consideration of all who are concerned in the welfare and extension of missions to the Chinese and other peoples of the far East. As the secretary of a large and influential missionary society has observed: "It is clear that we are entering the birth-pangs of a new world order that must shortly come into being, and in which the enforced
readjustment of pressing natural and economic standards must of necessity affect the whole conduct of the missionary activity of the Christian Church." The question raised may be put a little more plainly. Will one result of the war be a deeper and more widespread interest in Christian missions leading to a great increase in the number of foreign missionaries sent to the field and a steady development in all branches of work, including the medical? Or will the readjustment in the home lands of political, social, and other conditions which the war has revealed to be necessary, be so vital and absorbing as to cause interest to wane in foreign missions? To confine ourselves to one particular part of this question, what will be the effect of the war upon medical missions?

There is at present a great dearth of missionary physicians in China, which is partly owing to the number who have patriotically volunteered for military service. But even before the war, most of the mission boards were finding it more and more difficult, in proportion to the actual and possible extension of missionary operations, to meet the demands from the field for well qualified physicians. This comparative decline may be accounted for in a variety of ways. (1) Change in theological thought, especially the modification of those stern eschatological beliefs which a generation or two ago impelled men to the mission field, in the hope that at any rate they might be able to save a few brands from the burning. (2) The opening of China to the world and the great advance she has made in her knowledge of Western civilization may not be without its influence upon those who think that the chief value of medical missions is that they are pioneering agencies and their work is done when native churches are formed. (3) The extraordinary development of medicine in all its branches, which makes it extremely difficult, if not impossible, for the best work to be done without a full staff and complete equipment, may prevent recently graduated physicians from offering for the mission field unless assured of positions in institutions of the highest standard. (4) The opinion may be not uncommon that nations, like the Japanese, which have proved themselves very competent to take care
of themselves in all worldly affairs, are equally competent in these days of widely diffused Christian literature, common educational standards and close international intercourse, of looking after their own spiritual interests without further help from the outside, especially as there are now almost everywhere branches of native Christian churches. (5) The war itself has brought to the minds of many the disheartening conviction that, somehow or other, Christianity has not really permeated Western civilization and that we need to set ourselves and our own affairs in order before attempting to put others right. There are doubtless other deterring influences but enough have been mentioned to furnish ground for believing that if there is no fresh inspiration or motive there may be no great change for the better in the strength and number of medical missions.

Yet the vast mass of the people of China are without proper medical care and little has been done in the way of promoting public hygiene and sanitation. Hence on broad philanthropic grounds, or regarded simply as pioneering agencies for religious, educational, commercial, and other movements, medical missions are still among the greatest needs of the country. In the province of Shensi, with an area of 75,290 square miles and a population of 8,800,000, there are five missionary physicians and four of these are at one station. In Manchuria, with a population of 14,917,000, there are thirty-three missionary physicians, the number of centres at which they are stationed in an area of 363,700 square miles being eighteen. There are no missionary physicians and only three mission centres in Mongolia which has an area of 1,367,953 square miles and a population of 2,580,000. Shansi with an area of over 80,000 square miles and a population of 10,000,000, has nine missionary physicians. Other properly qualified physicians are very few.

In all the provinces of China the number of scientifically trained physicians is extremely small in proportion to the population. Mongolia, Manchuria, Shensi, and Shansi are particularly mentioned because of the epidemics of pneumonic plague which occur there. It was a Chinese government official, not a missionary, who recently
complained that "the difficulties encountered by the Chinese Plague Preventive Service in battling with plague epidemics were mainly owing to the ignorance on the part of the people of modern medical methods, due primarily to the complete absence of missionary and other medical institutions in the districts affected by the epidemic." This ignorance "was the almost insurmountable obstacle encountered by the plague doctors and was one of the most important factors, if not the most important, in extending the duration of the epidemic." This is surely a striking testimony to the value of medical missions from just one point of view, that of public health education.

**It cannot be said that the comparatively inadequate support of medical missions is traceable to the greater prevalence in these days of the spirit of crass, selfish materialism. It may be admitted that the deplorable weaknesses and evils of our Western civilization have been exposed to our perplexity and shame; but has there ever been a greater, a more intelligent and whole-hearted response to great ideals on the part of whole nations than during the present war?**

These ideals include the blessings of freedom, justice, peace, and happiness for all peoples, to be made secure for posterity as well as for those now living. Will the hosts of young men inspired by these ideals, among them many well-trained physicians and surgeons, be content hereafter, when peace is declared, to travel on the old beaten paths of life in the home lands? Will not the same spirit of noble adventure which carried them to the front continue to inspire them and lead to distant fields where their services are sorely needed if ever their ideals are to be realized the whole world over? Why should not these men be brought into the service of Christian missions? For the only way to abolish war with all its horrors, and the evils which directly or indirectly lead to war, is not by education, commerce, international intercourse, a common language, political or social leagues—these influences constraining to peace may one and all snap under any unusual strain—but by binding all men into a great spiritual brotherhood. And the
hope of the world is in the Christian religion; for in this religion alone, rightly understood and followed, is there the adequate foundation for universal spiritual brotherhood. Not to pluck this or that brand from the burning, though the salvation of the individual must ever be of the deepest concern to the missionary, but to mould the whole life of nations is ultimately the great object of the Christian Church.

As an illustration of what can be done as part of this world movement, take the Red Cross. On one side are nations who wish to introduce some other method of settling international disputes than by war; but as long as war lasts are trying to alleviate its horrors as much as possible, hence the Red Cross and Genevan Conventions. On the other side stands a nation which bombs hospitals, sinks hospital ships, inflicts extreme bodily suffering by means of liquid fire and poisonous gases, slaughters women and children and other non-combatants, and its medical men and nurses neglect and ill-treat sick prisoners of war, all in violation of Red Cross rules and regulations. Which side is going to prevail? It depends partly on other nations, such as the Chinese, who are plastic, ready to be moulded by those who work to mould them. Medical missionaries can do a great deal to give a high moral and chivalrous tone to the medical profession in China now rapidly forming, and to influence the people generally to support the Red Cross. The necessity of abolishing the worst features of modern warfare should constitute a powerful appeal on behalf of the nations who are in need of spiritual help.

Laying emphases on the point that Christian missions embrace the ideals for which millions of men are now struggling and suffering, we ought to expect after the war a greater interest in foreign missions and more numerous offers of service, especially from those in the medical profession.

But if young physicians fresh from military service are to be enlisted for the mission field energetic and wisely directed effort will be required. Among other expedients it should be the business of one or more of
the secretaries of each mission board to get into touch with medical men returning from the war and to make an earnest personal appeal for their services, to give them some idea of the life and work of a medical missionary, to overcome all hesitancies and difficulties, in short, to make their path to the mission field plainly discernible and as easy as possible. Later, as part of the same movement, these candidate secretaries should visit all the medical schools, and employ such other recruiting expedients as time and experience may suggest. The results should fully justify the expectation that after the war medical missions in the Far East will be greatly strengthened.

We are hearing a great deal in these days, in connection with the war, of the value of standardization; ships, guns, ammunition, the different parts of aeroplanes, and many other things are all standardized, thus ensuring accuracy of workmanship, more rapid production, and greater economy. In China, where hospital supplies must often be obtained from distant lands with provoking loss of time and money, and not infrequently much uncertainty concerning the form and quality of the supplies ordered, it would be a great advantage, especially to small hospitals in the interior, if all hospital requisites could be standardized. Everyone would then know exactly what he was ordering and could be certain that it would give satisfaction. A beginning in this direction has been made by Dr. George Hadden, of Yunchowfu, Honan, at present engaged in Red Cross work in Siberia, who has devised a standard clinical chart. A full description of it will be found on a later page. A special feature is the space for laboratory findings which will be an inducement to very busy men to find time, somehow or other, to fill in the details which are so necessary for the complete record of cases. It is suggested that all members of the China Medical Missionary Association should use this chart, as it cannot be produced very cheaply unless the orders amount collectively to a very large quantity. As Dr. Hadden very kindly promises, he will devise other charts should there be a demand for them.
MEETING OF EXECUTIVE COMMITTEE.

A meeting of the full Executive Committee of the C. M. M. A. was held on October 10, 1918.

The following members were present: Drs. Davenport, Beebe, Christie, Cochran, Gillison, Merrins, and Morris.

MEDICAL EDUCATION.—Dr. Balme, of Tsinanfu, who was present by invitation, read a report of the meeting of the Council on Medical Education, which had just been held in Shanghai. The report was received and ordered to be printed in the China Medical Journal. It was also decided to publish a résumé of this report in the Educational Review.

POSTPONEMENT OF CONFERENCE.—After long and earnest deliberation, as the responsibility of deciding whether the Conference should be postponed or not was felt to be very grave either way, the following resolution was carried:

Resolved: That in view of the disturbed political state of China, the unusual number of members of the Association who are absent from the field owing to the war, the response to the questionnaire sent out by the committee which showed that a large majority of the members of the C. M. M. A. in the field (166 against 44) were in favor of postponing the Biennial Conference, and the doubt as to whether a quorum for the Conference could be obtained if the present arrangement was adhered to, the Executive Committee decides that the interests of the Association will be best served by postponing the Conference from January, 1919, the time appointed, for one year.

The Secretary was instructed to notify the Peking Branch, and the National Medical Association of China.

A vote of thanks to the members of the Peking Branch for the energy they had shown, and the large amount of work they had already accomplished in preparation for the Conference, with regret that it was not to be continued, was then carried.

TUBERCULOSIS SANATORIA. The following resolution was proposed and carried:

In view of the fact that enormous numbers of Chinese are suffering from tuberculosis, and that large numbers of our most promising students succumb to this disease, and that many of the most valued members of the staffs of the different missions are taken from their services for the Church at the time of their greatest usefulness:
Be it therefore resolved:—That the Executive Committee of the C. M. M. A. earnestly calls the attention of the Missions to the need of sanatoria for the treatment of Chinese suffering from tuberculosis and urges the establishment of these institutions as a part of the medical missionary enterprise, and suggests that where they cannot be supported by individual missions, several should unite in suitable centres for this purpose.

**Revival of Opium Traffic.**—The following resolution deploring the revival of the opium trade was passed unanimously, and sent to the Ministers of Great Britain and the United States at Peking to be presented to the Chinese Government:

*Whereas,* The China Medical Missionary Association at its Biennial Conference has already recorded its deep appreciation of the strong and honourable action taken in the past by the Chinese Government regarding the opium traffic, action which promised to result in its almost complete extinction;

*And whereas,* The General Executive of the China Medical Missionary Association views with concern the renewed cultivation of the poppy in certain provinces and has now learned there is danger of negotiations being concluded with certain merchants forming the Opium Combine for the purchase of a large stock of the drug, which China cannot possibly wholly utilize in the manufacture of pharmaceutical preparations intended for strictly medical purposes only;

*And whereas,* We believe that these negotiations, if concluded, will again fasten upon the country one of the greatest evils which can afflict a nation;

*Be it resolved:* That the General Executive of the China Medical Missionary Association, as the representatives of several hundred missionary physicians whose professional experience in China enables them to bear testimony to the ruinous effects of indulgence in opium upon the physical and moral welfare of the people, hereby express their profound disappointment that such a retrograde step should be contemplated, and their sincere hope that the Government of China will not follow a course so directly in opposition to the highest interests of the country.

The President and Executive Secretary were authorised to represent the C. M. M. A. on any joint committees formed to forward efforts to suppress the opium traffic, or to appoint representatives on such committees.
COUNCIL ON MEDICAL EDUCATION.

The Council on Medical Education held an important session in Shanghai on October 8th and 9th, attended by Dr. E. H. Hume (Chairman), Dr. H. Balme, Dr. R C. Beebe, Dr. D. Christie, Dr. S. Cochran, and Dr. Margaret Polk, the last-named taking the place of Dr. Hattie Love, now on furlough.

A chief feature of the gathering was the consideration of pre-medical instruction, and on the afternoon of October 8th a special conference was held between members of the Council and teachers of the pre-medical sciences in various educational centres. Amongst those present at this Conference and the subsequent meeting of the Council were:

Dr. W. H. Adolph, Ph. D., Professor of Chemistry and Director of Pre-medical Studies in the Shantung Christian University.

Prof. N. Gist Gee, M.A., Professor of Biology, and Dr. E. V. Jones, Ph. D., Professor of Chemistry, both of Soochow University.

Mr. A. W. March, Ph. B., Professor of Biology, Hangchow Christian College.

Dr. W. W. Stifler, Ph. D., Professor of Physics and Dean of the Pre-medical Department, Peking Union Medical College.

Mr. W. E. Taylor, B.S., Professor of Chemistry, St. John's University.

Mr. J. C. Thomson, M.S., Professor of Chemistry in Nanking University.

The first matter taken up by the Council was a report presented by Dr. Polk of the meetings which had been taking place in America during the last twelve months, of representatives of the various Women's Boards, to consider the question of Medical Education for Women in China, and of their proposal to attempt to maintain high-grade Women's Medical Colleges in Peking, Shanghai, and Canton respectively. The following action was taken by the Council:

Whereas reports from a conference in America of supporters of Medical Education for Women in China, in which it is proposed to maintain three colleges of high grade in China, have been laid before the Council; be it resolved

That the Council refer the question to the next Biennial Conference of the C. M. M. A. for consideration and recommendation, and that we ask the Executive Committee to have the matter included in the program of proceedings.

Considerable time and thought were given to the minimum requirements of the pre-medical course, and the advisability of
Preparing syllabuses shewing in outline the work that should be covered, and the following recommendations were subsequently passed by the Council:

**Pre-medical Sciences—Length of Instruction.**

That the Council agrees with the unanimous finding of the Conference that the amount of Chemistry, Physics, and Biology necessary for the medical course cannot be satisfactorily taught in less than two years; and that in order to give this instruction efficiently in that time, it is also necessary that some science should be taught by laboratory methods in the Middle Schools.

**Instruction in Biology.**

That the teaching of Biological Science should extend over not less than one and a half years of laboratory work, the greater emphasis being placed upon teaching in Zoology; and that where possible a further half year should be added, for instruction in Comparative Anatomy.

**Instruction in Chemistry.**

That the teaching of Chemistry should extend over not less than two years, and should include laboratory courses in General Inorganic Chemistry, Qualitative, Quantitative, and Organic Chemistry.

**Instruction in Physics.**

That the teaching of Physics should include at least one and a half years of laboratory work.

(Note. In each of the above resolutions a year is understood to include approximately 36 weeks’ instruction).

**Humanistic Studies.**

That in order to counteract the tendency of medical students to confine themselves specifically to the pre-medical course, thus narrowing their educational outlook, College Faculties should be urged to do all in their power to induce intending students of medicine to take a wider and longer course of collegiate study than the pre-medical curriculum requires, and, wherever possible, to complete a full Arts course.

**Preparation of Pre-medical Syllabus.**

That in order to dispel the doubt which exists amongst Middle Schools and Junior Colleges as to the actual requirements of Medical Schools in regard to the pre-medical sciences, a committee be appointed to draw up a suitable syllabus in each of the subjects, for submission
to the next meeting of the Council, and that the following teachers be asked to form this committee:

Prof. Gee, of Soochow University, and Mr. J. W. Williams, of Yale Medical College, to prepare the Biology Syllabus;
Dr. W. H. Adolph, of Shantung Christian University, and Dr. E. Y. Jones, of Nanking University, to prepare the Chemistry Syllabus;
Dr. W. W. Stifler, of Peking Union Medical College, and Mr. Witt, of the Moukden Union Arts College, to prepare the Physics Syllabus.

Dr. W. H. Adolph to act as convener of the committee.

Students' Records.
That the Committee on the Pre-medical Syllabus, as constituted above, be asked to take into their consideration the need of providing students with uniform and adequate records of their work and grades, and to make recommendations upon the same to the next meeting of the Council.

Vote of Thanks.
That a hearty vote of thanks be extended to the pre-medical teachers for their attendance and assistance at the Conference, and to their respective Faculties who have made it possible for them to be present.

Survey of Field of Medical Education.
That Dr. Hume be asked to prepare a report upon the present status of medical education in China, in continuation of the Report of February 1917, for presentation at the next Biennial Conference of the C. M. M. A.

Medical Curriculum.
That a committee, consisting of Dr. Hume of the Yale Medical College, Dr. Ellerbek of the Moukden Union Medical College, and Dr. Balme of Shantung Christian University, be asked to draw up recommendations as to a suitable apportionment of the various subjects included in the medical curriculum.

Degrees for Medical Graduates.
That the Committee on Medical Curriculum, as constituted above, be asked to consider the question of suitable degrees for medical graduates, and to make recommendations accordingly.

Co-operation with the Chinese Educational Authorities.
That the recommendations of the Council be forwarded to Dr. C. Vouping Yui and Mr. H. S. Woo, with the request that they would
notify the Kiangsu Educational Association and the National Medical Association of China regarding the same.

Medical Education of Women in China. When the Council learned that the Biennial Conference arranged to be held in Peking early in 1919, had been postponed, the following resolution was passed unanimously:

Whereas, it has been brought to the attention of the Council that a conference of supporters of medical education for women in China has been held in America during the past year, and that it is proposed to attempt to maintain high grade women's medical colleges in Peking, Shanghai, Canton respectively; the Council feels it necessary to re-emphasize the Resolution of the C. M. M. A. conference of January 1917, as follows:

''That this Council endorses the movement to secure medical education for women under Christian control. It asks the three colleges now teaching women to consider whether further co-operation and concentration are not possible; and commends this question to the consideration of the incoming Council in consultation with those engaged in the medical education of women.''

In accordance with this opinion, which the history of the past two years has strengthened, the Council views with apprehension any attempt to maintain three high grade colleges for women until fuller data have been obtained as to the possibility of securing an adequate staff, and the necessary financial support.

REPORT OF THE SHANSI PLAGUE PREVENTION BUREAU, 1918.

After the hurly-burly's done the tendency is to take a rest and leave others to pick up the scattered threads; so that Dr. C. W. Young deserves the special thanks of workers in preventive medicine for this useful report. The report covers Shansi only; and a Shansi from which the heavily plague-infected Chahar and Suiyuan districts have been cut off and put into Inner Mongolia. The northern boundary of Shansi, if one goes by the usual maps, appears to be in "a fluid state." A pious hope is, however, expressed that a "more comprehensive report of the whole epidemic is contemplated by the Board of the Interior." This adjustment of the boundary of Shansi Province has the advantage that the blame, if any, for the leakage in the Northern
quarantine, which subjected Peking and the Tientsin-Pukow Railway to such imminent danger, is laid on the Inner Mongolian authorities rather than on Shansi.

Full use is made of the Mukden Conference Report and some of the many gaps are filled; notably by the very useful account of the methods used in the field, which were so conspicuously wanting in the Mukden Report. The Shansi epidemic, however, appears to have confirmed most of the conclusions arrived at in Mukden in 1911.

That easily remembered name of Patsebolong is again given as the place where pneumonic plague was first reported prevalent, December 6, 1917, being the date. The infection was spread by the wool-carters (several hundreds a day) from Mongolia to the railhead at Fengchun, and by the merchants (several scores a day) from the Suiyuan district who were returning for the Chinese New Year to their homes further South. There was no traffic down the Yellow River on account of ice. These numbers were "very much smaller" than the thousands of Shantung coolies who were moving East and South at the time of the Manchurian outbreak. The early closing of the Peking-Suiyuan Railway "undoubtedly prevented the early infection of Kalgan, Peking, Tientsin, and cities further east and south." "The measures taken by the Governor of Shansi saved Taiyuanfu" and its railway connections. "Several of the large cities escaped the disease through early closing of the gates to outsiders."

It appears that as early as January 4, 1917, it was evident to the "Legation Health Board" in Peking that a military cordon should be established at the passes on the inner arm of the Great Wall in Shansi to prevent infection reaching the Shansi plain and the railway from Taiyuanfu to the Peking-Hankow Railway; and the Governor of Shansi soon established this cordon. Having cut off infection from the North by such means as were available, measures were taken by a sanitary force, which never included more than ten foreign doctors at any one time, to stamp out plague in the villages already infected. The greatest danger was in the possibility of plague reaching the Shansi plain and Chihli by roads running south and by the Taiyuanfu railway. By March 16th Shansi was reported free from plague.

The salient features of the field work were that the district magistrate was responsible for plague prevention in his own district, the foreign physician, who was empowered by a commission from the governor of the province, when present directing the measures taken. Medical assistants and nurses were given a commission by the Shansi Plague Prevention Bureau. Each district had several "wei-yuans"
sent by the Plague Prevention Bureau to assist the magistrate and the field staff, and primarily responsible to the head of the district field staff, i.e., usually the foreign physician. Some of these men were of the greatest value in inspecting, tracing returned travelers, superintending burials, seeing that courts were actually isolated, and remaining in infected villages until declared free from plague. The extensive system of military telephones proved of great value in expediting preventive work.

The fundamental preventive measure was isolation of infected persons and communities. Gates of all walled cities were closed and intercourse carefully limited, special measures being adopted to permit the supply of the essentials of life. As a result there were few infections in the walled cities. As there was a constant leakage of travelers over the Great Wall and as there were not enough soldiers or police to establish a cordon round infected villages, travel on the roads was interdicted and persons found were placed in the quarantine stations at each district city. In the districts where the magistrates were sufficiently alive to the danger, heads of villages were made responsible for reporting sickness or death. As a rule plague cases were allowed to remain in their own courts in villages, because they resented separation from their family; and in most cases there was a secure wall around such dwellings and the gate could be locked and sealed, necessary supplies being passed in. This somewhat resembles the method adopted in dealing with the Great Plague of Loudon in the 17th century when infected houses with their occupants were sealed up and marked with a red cross. But in Shansi it was found possible in many cases to isolate the sick in one room and to have one person only, wearing a mask, to care for the infected sick, which greatly minimised the danger of spread.

The railway from Taiyuanfu to the Peking-Hankow Railway, called the Cheng-tai Railway, brought passengers in eight hours who, in carts, would take eight days. On January 21 all the stations in Shansi except four big stations stopped issuing tickets and at these four medical inspection was done by a Chinese physician appointed by the Shansi Plague Prevention Bureau. Intending passengers were questioned as the place whence they had come but there was no quarantine. The Bureau were of opinion that, as travel along the roads could be less well controlled than by the railways, and having regard to the fact that all infected places within four or five days' travel of the railway were known and guarded, to permit travel by railway was the "best solution of a difficult problem." And, as a fact, results showed that no cases of plague did travel on this railway.
Absolute reliance was placed in the mask as a preventive of infection and plague vaccination was not practised because it was calculated to give a false sense of security which might have led to careless use of the mask. As a proof no member of the field force, nor any "wei-yuan" contracted plague. No autopsies were made. The pneumonic plague cases did not give rise to any bubonic cases, even though many opportunities occurred for rats and dogs to eat plague bodies.

Among the resolutions passed at a Conference of the Shansi plague workers reference was made to a quarantine period for pneumonic plague of five days; the advisability of wearing not only a mask but also a complete overall and goggles for those in close proximity to living cases; and the need for concerted action between the railways of Manchuria and North China so as to bring about a uniform system of sanitary defence, through the agency of a joint railway medical board for quarantine and sanitary purposes, with a central office.

ARTHUR STANLEY.

PEKING UNION MEDICAL COLLEGE.

Two important appointments have recently been made to the staff of the Peking Union Medical College:

The Rev. Philip Allen Swartz has been appointed Director of Religious Work. Mr. Swartz graduated from Lafayette College in 1910, and was for four years travelling secretary for the Student Volunteer Movement. Later he was in charge of Y. M. C. A. work in Petrograd. He then entered Union Theological Seminary, New York, and while studying there served for a time as assistant to Dr. Wilton Merle-Smith, pastor of the Central Presbyterian Church, New York, and afterwards had charge of a union church at Forest Hills, Long Island. He graduated from the Seminary this year. It is expected that Mr. Swartz will arrive in Peking soon after the opening of the College year.

Dr. Davidson Black, Assistant Professor of Anatomy at Western Reserve University, Cleveland, has been appointed Professor of Embryology and Neurology. Dr. Black graduated in 1906 from the medical department of the University of Toronto, from which institution he also holds the degree of bachelor of arts, and later had special training under Professor Herrick in Chicago, Professor Elliott Smith in Man-
chester, and Professor Kappers in Amsterdam. He served one year as assistant in histology at Toronto, and in 1909 was appointed Instructor in Histology and Embryology at Western Reserve University, where he later became first Associate and later Assistant Professor. He is now with the Canadian forces as captain in the medical corps, and will probably be unable to come to China until the close of the war.

Upon recommendation of Professor B. E. Read of the Department of Physiological Chemistry, Mr. S. Y. Wong, a graduate of the University of Chicago (S.B. 1916, S.M. 1917) has been appointed Assistant in Chemistry.

Dr. Charles Packard, instructor in biology, has just arrived in Peking, thus completing the staff for the pre-medical school.

Extensive alterations and improvements have been made in Lockhart Hall, the old building of the college, and it will hereafter be given up to the pre-medical school, with its laboratories of physics, chemistry, and biology. The Oliver Jones Memorial dormitory has also been remodelled and equipped with modern plumbing. It contains quarters for three unmarried members of the staff, and 42 rooms for students, besides dining room and reading room.

At the spring and autumn examinations 13 students in all were admitted to the pre-medical school, some of whom were allowed advanced standing. The registration is now as follows: Third year (seniors), 4; second year, 6; third year, 9; total, 19.

The hospital staff has been strengthened by the arrival of Miss Ruth Ingram, who has been appointed Graduate Nurse, and has been assigned for the present to the surgical ward. Ten of the last graduating class have been retained as internes, as compared with six in the preceding year, and one in the year 1916-1917. The increasing realization on the part of the students of the importance of the internship is very gratifying.

The progress of the new buildings has been somewhat delayed on account of the difficulty of getting certain materials under war conditions. Two of the buildings of the southern group, the laboratories of anatomy and physiology, have been roofed over and the glazed tiles will soon be laid. In most of the hospital buildings also the shell has been completed through the second storey. Fifteen new residences are now under way and will be finished during the present academic year.
Japanese Medical Literature.

Review of Current Periodicals by the Staff of the Research Department, Severance Union Medical College, Seoul, Korea.

RALPH G. MILLS, M.D., Director.

Chosen Igakukai Zasshi.
(Korea Medical Society Journal.)


Under appointment of a society for the study of race hygiene and eugenics, the author undertook the systematic study of a unit village which was sufficiently removed from outside disturbing influences and yet was considered to be typical of the life conditions of the country. The report is based upon a house to house canvas, supplemented by examination of the public records of births, deaths, epidemics, reportable diseases, etc. The general death rate was found to be three times greater than that of England, France, or Germany, and it was also found that tuberculosis as a cause of death was definitely on the increase, as contrasted with a decrease in these other countries. Infantile mortality in Japan 20 years ago was placed at 110 per 1,000 per 1,000, but now it is 160 or more. The corresponding figure for England is quoted as 95.

Japanese houses are much the same wherever found, and are about equally crowded in a small as in a large village. Hence the general features are about the same, though particular villages may be a little influenced by the relation to streams or rice fields. Each house has about the same amount of sunshine, fresh air, and drainage, and any special differences to be observed can be reasonably attributed to the personal habits of the inmates.

The disturbing influence of local epidemics was eliminated by recording the mortality over a period of 10 years and estimating the health by the proportion of households which had not been visited during that period. In a series of 25 villages the proportion of households without deaths in that time ran as follows: e.g., 75%, 68%, 64%, 54%, 57%, etc. Villages with this variation were in many cases closely related and this suggests that unseen influences were at work. However, the number of houses investigated in each village was so small that an accidental variation would be easily possible. Furthermore, this region is heavily infected with Schistosoma japonicum and this is known to be very irregular in its distribution.

In houses in which deaths from tuberculosis had occurred and there was the possibility of the infection of the living occupants, the advice was given to take particular care about spreading the disease by expectoration. The use of numerous handkerchiefs was advocated and these when soiled were to be collected, boiled, dried, and used again. This was thought better than trusting to the customary way of expectorating into tissue paper carried in the sleeve in lieu of handkerchiefs, and then discarded anywhere after use. Even this method would perhaps be better than promiscuous expectoration, especially around the home.

The prevalence of intestinal parasites was determined by personal examination of a considerable number of individuals. Ascaris and Trichuris affected nearly everyone, and hookworm was present in perhaps 75% of the population. Strongylus and Schistosoma infected perhaps 25-35%. Anything like a satisfactory solution of this parasite problem must affect each person as constant reinfection is inevitable.
Japanese Medical Literature.

MORTALITY TABLE FOR JAPAN.

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<tr>
<th>Age</th>
<th>Male All</th>
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<th>Male Unit Village</th>
<th>Female All</th>
<th>Female Yamanashi Province</th>
<th>Female Unit Village</th>
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<td>2.48</td>
<td>3.03</td>
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<td>2.83</td>
<td>3.30</td>
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<tr>
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<td>4.56</td>
<td>6.44</td>
<td>6.67</td>
<td>6.68</td>
<td>7.69</td>
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<tr>
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<td>8.17</td>
<td>9.16</td>
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<td>31-50</td>
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<td>11.75</td>
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<tr>
<td>Extremes</td>
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<td>47.35</td>
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<td>49.08</td>
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</table>

(424) LIVER OF DUCK, COMPLETE EXCISION OF. Pp. 57-8. G. SATO.

Following the technic of Minowski the author excised the liver completely without the use of an anesthetic and paying special attention to hemostasis. After the operation there was loss of equilibrium, mentality in fair condition, regurgitation after drinking. Death occurred in seven hours on the average, following complete loss of locomotion, dyspnea, and slight spasms.

(425) CERCARIAE IN RIVER SNAILS OF KOREA. Pp. 57-60. H. KOBAYASHI.

This is an advance report of a full article that is to appear later and mentions the fact that the author has found 12 species of river snails, including Melania libertina, of which 7 are common to Japan. A general description is given of the cercaria stage of Paragonimus westermanii.

(426) Paragonimus westermanii, a Crayfish as one of the intermediate Hosts. Pp. 69-65. H. KOBAYASHI.

The substance of this article is to appear later in full in English and so will be merely noted here. Two species of crayfish have been distinguished and in them the cercariae are more or less abundant; the percentage of infection differs greatly in different localities. The number of cysts in any one crustacean may be as high as 1,000, depending on the age (i.e., length of exposure to the infective agent), but it is seemingly independent of sex or season.

(427) Paragonimus westermanii, Details of Structure in the encapsulated and adult Stages. Pp. 66-70. H. KOBAYASHI.

This article also will appear in full in English. It takes issue with Ward and Hirsh in distinguishing between P. ringeri, P. westermanii, and P. kellicotti and insists that there is sufficient variation in the limits of the original species to nullify the new specific delimitation.


On examination of 326 Koreans, all were found to harbor parasites except 3. The varieties of parasites and the percentage of cases in which they were found are as follows:

- Trichuris, 92.8%; Strongyloides, 39.1%; Tapeworm, 9.5%; Clonorchis sinensis, 3.7%; Bed bug larvae, one case; Oxyuris, one case; Ascaris, 69.6%; Hookworm, 39%; Paragonimus westermanii, 5.3%; Metagonimus, 2 cases; Unknown eggs, 3.1%.

Both varieties of hook worm were reported but Ankylostoma duodenale, the old world form, is supposed to be more common in Korea in spite of the greater prevalence of the Necator americanus in Japan.

(429) BERI-BERI IN KOREA, ASSOCIATED WITH MENTAL DISORDERS. Pp. 79-86. H. S. SHIM.

During five years there were admitted to the wards of the Government Hospital in Seoul 253 patients with mental disorders. Of this number, 70 suffered also from beri-beri and 28 died (40%). The mortality was greater among the Koreans than
Japanese, 75% as compared with 25%. The physical condition of the Koreans was probably worse on admission than that of the Japanese owing to the Korean custom of neglecting those who are mentally unbalanced; but the fact that practically all those who developed beri-beri, did so after entering the hospital is worthy of note. The symptoms appeared within a month in 7 cases, within 6 months in 38, under 2½ years in 7, and a longer time still in 18 cases. Every month of the year was represented by the development of symptoms but the cases were most frequent in June, and next in May and July. The greatest death rate was one month later after each outbreak. The explanation of the outbreak is ascribed to the inability of the patients to take their food properly and their disinclination to take the medicines offered. Dementia affected 40% of the 70 patients; epilepsy, 12; paralytic dementia, 8; iodism, 2; and the rest were scattered maladies. The majority of the patients were between the ages of 20 and 30.


The figures here reproduced were secured by police offices in various parts of the country and refer to a total of 3,719 persons. The average height was 163.93 cm. which is slightly below the world average of 165 cm. The average weight from 3,489 examinations was 56.257 kg. The figures are rather too small to enable much deduction to be made as between provinces, but the data are presented for what they are worth. The order in which the provinces are listed is from the north proceeding southward, but this does not exactly represent the influence of China, especially during preceding centuries. It is the general impression that the men of the north are larger and more aggressive than those of the south, but some of the figures are possibly a little at variance with this idea. The order is: 1 Kankyo hokudo, 2 Kankyo nando, 3 Heian hokudo, 4 Heian nando, 5 Kwokai nando, 6 Keiki nando, 7 Kogen nando, 8 Chusei hokudo, 9 Chusei nando, 10 Keisho hokudo, 11 Keisho nando, 12 Zenza hokudo, 13 Zenza nando.

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<td>335</td>
<td>55.867</td>
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The deep layer of muscles of the back are more highly developed in Koreans, both men and women, than the superficial. This is ascribed to the common custom of carrying things on the back and head. The few bodies examined were entirely from the lower classes and so include a large number of those engaged in such work. There is no indication that the same observations would hold true for the higher classes.

Superficial layer, right side, 386.5 gm., [left 384.5 gm.], both together, 771. gm.

Deep layer, right side, 461.2 gm., [left 446.6 gm.], Total 1678.8 gm.
Japanese Medical Literature.

Total, right side, 847.7 gm.; total, left side, 831.1 gm. Total, 1678.8 gm.
Some former determinations are here given for comparison.

<table>
<thead>
<tr>
<th>Medical Literature</th>
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<th>1 male Korean</th>
<th>10 males</th>
<th>3 females</th>
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<tbody>
<tr>
<td>Total weight, dorsal muscles</td>
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<td>1979.5</td>
<td>2547.2</td>
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<td>1041.5</td>
<td>1067.6</td>
<td>771.</td>
</tr>
<tr>
<td>Percentage of total</td>
<td>64.4%</td>
<td>52.5%</td>
<td>47.5%</td>
<td>45.93%</td>
</tr>
<tr>
<td>Deep layer...</td>
<td>794.</td>
<td>938.</td>
<td>1179.6</td>
<td>907.6</td>
</tr>
<tr>
<td>Percentage of total</td>
<td>35.51%</td>
<td>47.35%</td>
<td>52.49%</td>
<td>54.97%</td>
</tr>
</tbody>
</table>

The straightness of the spine in Koreans has been often noticed and the infrequency with which the aged resort to canes for support in walking. This remark does not apply to travelers, who often carry sticks, but to those unable to get about without help.

The muscles of the upper portion of the Korean head are relatively less than those of the lower half. The muscles of mastication, the circular muscle of the mouth, and the compressor of the nose, are all better developed. The general good condition of the teeth in Kbreans has been often commented upon, but of course teeth decay rapidly when proper physical conditions are undermined and dental aid is not available.


<table>
<thead>
<tr>
<th>Muscles of cranium</th>
<th>68. gm.</th>
<th>68.</th>
<th>68.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>ear...</td>
<td>2.4</td>
<td>3.1</td>
<td>2.8</td>
</tr>
<tr>
<td>face...</td>
<td>67.6</td>
<td>67.5</td>
<td>66.3</td>
</tr>
<tr>
<td>lower jaw...</td>
<td>152.</td>
<td>177.5</td>
<td>165.3</td>
</tr>
<tr>
<td>Total weight...</td>
<td>290</td>
<td>313.1</td>
<td>295.</td>
</tr>
</tbody>
</table>

The frontalis and occipitalis are not so well developed in the Koreans.

The circular muscle of the eye is poorly developed, which gives a thin appearance to the lids. The corrugator of the forehead is not well formed. The buccinator and temporal muscles are well developed and strong, but the small muscles of expression are undersized.

Oriental features generally have been noted for their lack of mobile expressiveness, and this lack of muscular development may be at the bottom of it. Perhaps this may be considered an atrophy of disuse. The precepts of Confucius have doubtless contributed to a considerable extent in producing this condition as they teach that dignity consists in the ability to conceal one's emotions, whether of joy or sorrow. The Oriental stage illustrates this further in that the expression of sorrow and pain is not conveyed by special anguish of features but by a loud wail from the mouth. The author insists that the Koreans are more lacking in this form of musculature than the Japanese.

Jikwa Zasshi

(Journal of Pediatrics)

No. 207. August 20, 1917.


Artificial feeding with milk in its various artificially altered forms is becoming more and more common in Japan. Much of it is condensed and highly sweetened, or sterilized by long boiling with or without the addition of preservatives. It is not surprising therefore that scurvy and rickets in mild forms are occasionally found, and it is for the purpose of calling the attention of the profession to this danger that the present article was written. It is a general discussion of the subject as found in the medical literature of other countries with
The China Medical Journal.

The chief findings and emphasis upon the value of the X-ray in the early diagnosis of the hemorrhage which causes the swelling and pain. Thus far nine cases have been reported in Japanese literature and to this list the author adds two more. Both were acute, uncomplicated cases which ended fatally. There was a full autopsy and the diagnosis is beyond doubt. The rhachitic rosary was prominent in both, and the X-ray pictures and dissection disclosed the periosteal separation, hemorrhage, crushing layer, and epiphyseal loosening. The medulla of the long bones was of a fibrous nature with atrophy of the lymphoid tissues.

The profession is urged to submit to X-ray examination all cases of swollen and painful joints in artificially fed children whenever there is a suspicion of a hemorrhagic tendency, and for their guidance there is reproduced a series of 12 photographs, skiagrams, and drawings.


In two years there were 6,520 patients in the pediatric clinic, in which simple anemia was diagnosed in 84 cases and pernicious anemia in only four. There was nothing special about these four, of which two were called acute leukemia; one was possibly chloronemia; and in the other the symptoms were part of a hemorrhagic diathesis.

Jikwa Zasshi

(Journal of Pediatrics)

No. 208. September 20, 1917.


All cases were excluded that had previously suffered from either one of these diseases. About 10% of the remainder gave positive tests even in dilutions as high as 1-1000. The strength of the test had no evident relation to the severity of the T. B. infection.

Gunidan Zasshi

(Journal of the Military Surgeons of Japan)

No. 70. July 20, 1917.


In the expedition to subjugate the aborigines of the hill country there were 375 wounded, of whom 35.2% died immediately, and 6.9% after a varying interval, making the total mortality 42.1%. One-third of the wounds became infected, 10% resulting fatally. The number of soldiers incapacitated was 19.5% and the healed were 38.4%. Most of the injuries were in the chest and abdomen, due to the fact that the natives hid in the underbrush and shot only at close range. The weapons were primitive, shooting an unjacketed ball, round or cylindrical, of fair size and propelled by a small amount of black powder. Extraction of the bullet was the chief operation performed, followed by plastic work in 13.8%, as contrasted with a frequency of 0.27% for this sort of work in the expedition of 1904-5.


In a series of routine examinations of 10,327 Japanese there was found 7.75% of penile deformities of the mildest grade; 1.7% of the 2nd grade, and 0.37% of the 3rd, making a total of 9.75%. Thus practically 10% of ordinary Japanese have some form of penile deformity.
In a series of soldiers, comprising 1,574 men, the corresponding figures were 6.16%, 1.01%, and 0.19%, giving a total of 7.36%. Thus the percentage of such deformities is lower among men whose average physical development is higher.

Abstract No. 241 is much the same article by the same author but the material is presented in slightly different manner.


In a regiment of engineers, consisting of 482 men, 88 cases of dengue occurred or an incidence of 18.2%. They lost a total of 1,006 days from service, an average of 11 days per case, with extremes of 2 and 31. This was during January and February when no mosquitoes were about, but there was an "epidemic cold" in the village.

The percentage of the various symptoms has been carefully tabulated and is here partially reproduced. Headache occurred in 95.8% of the cases; congestion of the pharyngeal mucosa in 87.5%; chilliness in 85.4%; exanthem in 85.4%; Diazo reaction in 81.2%; arthralgia in 72.9%; faintness and malaise in 54.2%; anorexia in 54.2%; abdominal pain in 20.8%; sore throat in 22.9%; giddiness in 12.5%; nausea in 10.4%; vomiting in 10.4%; gastralgia in 14.5%; diarrhea in 10.4%; albumen in the urine in 5.3%, etc. Different joints were attacked by arthralgia: knee, 37.3% of the whole; temporomaxillary, 17.9%; foot, 10.4%; sacro-iliac, 7.5%; elbow, 6%; arm, 7.5%; generalized, 4.5%, etc.

The Diazo reaction was closely connected with the appearance of the exanthem, reached its acme at the same time, and disappeared when it faded.

\[
\begin{array}{cccc}
\text{At. Tem.} & \text{C.} & \text{Exanthem.} & \text{Arthralgia} & \text{Diazo reaction.} \\
\text{a.m.} & \text{p.m.} & \text{a.m.} & \text{p.m.} & \text{a.m.} \\
1\text{st day}, & 39.3 & 38.8 & 2.1\% & 29.1\% & 2.1\% \\
2\text{nd day}, & 38.3 & 38.8 & 14.5\% & 48.7\% & 22.5\% \\
3\text{rd day}, & 37.8 & 37.8 & 43.7\% & 47.9\% & 52.1\% \\
4\text{th day}, & 37.4 & 37.4 & 60.4\% & 37.5\% & 58.3\% \\
5\text{th day}, & 37.1 & 37.1 & 50.0\% & 22.9\% & 56.2\% \\
6\text{th day}, & 36.7 & 37.0 & 37.5\% & 18.7\% & 35.4\% \\
7\text{th day}, & 36.6 & 36.9 & 23.1\% & 17.9\% & 12.8\% \\
8\text{th day}, & 36.6 & 37.0 & 3.5\% & 7.2\% & 3.4\% \\
9\text{th day}, & 36.7 & 37.0 & 4.0\% & 4.0\% & 8.7\% \\
10\text{th day}, & 37.0 & 37.0 & 4.0\% & 0 & 5.0\% \\
\end{array}
\]

Chugai Iji Shimpo

(Home and Foreign Medical News)

No. 900, September 20, 1917.


Noma is considered to be a rare disease in Japan and is usually associated with measles. Konoe has reported a case involving the vagina. The case here described was undoubtedly one of typhoid fever and occurred in a girl 8 years old. Adults are said not to be affected under any conditions.


One half gm. of starch from the taro was suspended in saline and injected into the ear veins of several rabbits. The animals were killed at various intervals after injection, and the organs searched for starch emboli and tested for glycogenic change. The molecules were practically all caught in the lung, either lodged in the capillaries or picked up by phagocytes. A few were in newly-formed giant cells. Only after the lapse of 35 days did all the grains show evidence of diastatic
action. The red color was not uniform through the whole grain but affected only the surface. In another series the suspension was injected into the portal vein and the liver examined in the same manner. All molecules which were picked up by the Kupffer cells showed this color change in a few days but those lodged in the periphery of the lobules did not manifest it so soon. The author concludes that the phagocytic cells can exert a diastatic action upon the particles within their influence.

Taiwan Igakukai Zasshi
(Journal of the Formosa Medical Society)
No. 179. September 28, 1917.


In the Orient where fruit is exposed for sale under most unsanitary conditions after having been handled by any number of hands, probably none too clean, and often eaten raw on the street corner or just as purchased, a study like this is very timely.

Most fruit juices which are acid have a bactericidal action upon any typhoid bacilli that might gain entrance through the broken skin but naturally would not be able to overcome any outside contamination. Half-ripe fruit is usually more powerful in its sterilizing power than that which is fully ripe, the substitution of acid for sugar being the important change. Tannic acid is the strongest of the vegetable acids, followed by citric and tartaric and finally by malic. Sugars and starches have no antiseptic action no matter how strong, rather encouraging than interfering with the vitality of the organism.

Solutions of acids for drinking purposes have considerable sterilizing power, the efficacy of these "lemonades" varying from that containing HCl, which is the strongest, through tartaric and sulphuric acid to citric acid which is the weakest.

The list of fruits the juices of which do not kill the typhoid bacillus includes: Nephelium longana (longan fruit), Citrus nobilis (navel orange), Eryobotrya japonica (Biwa), Mangifera indica (mango), Citrullus vulgaris (watermelon), Ebeïn Caria, Prunus sinensis (pear), etc.

Those fruits the juices of which do not favor the viability of the typhoid bacillus are Ananas sativus, Psidium guajava, Eugenia javanica, Diospyros kaki (persimmon), Musa sapientum, Nephelium litchii (lychee nut), Vitis vinifera, (grape), Prunus persica (peach), Prunus communis, Citrus decumana, Myrica rubra, Averrhoa carambola.

Shimpo
(Daily News)
February 13, 1918.

It was reported in this paper, and copied in the Seoul Press of the next day, that a woman 65 years of age, had given birth to a daughter and that both mother and child were well and healthy. The mother, it is said, had never before been pregnant in spite of the fact that she is now living with her 12th husband. The general impression is that the early marriage of Korean women causes an early cessation of the child-bearing function.
(441) **Indican in the Urine, Demonstration by a New Method.** Pp. 1-36, K. Takeuchi.

The author reported in 1908 on the use of nickel sulphate in the determination of indican in the urine, but found later that the amount was considerably influenced by the nitrates produced in the urine during decomposition. During the course of the subsequent study of the various methods proposed he has found that the yield of the coloring matter is much greater when the usual order of the addition of the reagents is reversed, i.e., first the oxidizing agent, then the acid, and finally the chloroform. Calcium chloride was found to be the best oxidizing medium but was more difficult to use in routine work. The value of iodine in this connection was accidentally discovered, and has led to the production of a reagent for which much is claimed. This is composed of potassium iodide, 8.3 gms.; iodine, 8. gms.; potassium bromide, 6. gms., and water to 100 mils. The bromide is added to increase the oxidizing power of the mixture.

About 5 mils of urine treated with lead acetate are mixed with a few drops of acetic acid, 2-3 mils of chloroform, and 1-3 drops of the reagent, and after a few shakes 5-6 mils of strong fuming HCl are added and the mixture again shaken. The chloroform is withdrawn from the bottom and washed with water to remove any traces of the acid, and it is then treated with a couple of drops of sodium thiosulphate solution in order to reduce the iodine present. Alkaline urine must be acidified with acetic acid in order to prevent the alkali from decomposing the indigo in the presence of the iodine. Free indigo in a finely divided state colors the chloroform and can be made the basis of colorimetric tests.

The iodine is believed to be much better than other stronger substances like chlorine, bromine, chromic acid, and hydrogen peroxide, because it does not tend to over-oxidize the indigo, but converts all the indoxyl into indican only.

Ellinger has objected to Obermayer's reagent on the ground that it over-oxidized 14% into isatin, but Takeuchi finds that the results are much higher, 10-20%, if this reagent is combined with strong oxidizing agents, a finding that suggests that there is rather a deficiency in the oxidization. The addition of the salts of iron, sulphate or chloride, have a beneficial action on this reaction in that the reduction is all to the NO condition.

The delicacy of the method is indicated by the fact that he has demonstrated indican in the first urine of a new born child and in the liquor amnii in all of 5 cases examined.

This method is a modification of that proposed by A. Jolles but removes the objection to the latter, viz., its unreliability for quantitative work because of the formation of pigments other than indigo and the difficult solubility of the resultant compound in HCl.


The placental extracts of normal and eclamptic women appear to differ in no way from each other and in most respects the same is true of the sera. Normal serum exerts a detoxicating action upon placenta extract; this is markedly decreased in eclamptic women, but the property is usually rapidly regained within 2-3 days after delivery. The author is confident that this deficiency is a cause and not the result of the eclamptic seizures.
The effects produced upon animals experimentally injected with the placental extracts resemble more or less those found in eclamptics, the details varying with the dosage and the manner of introduction. Gradual introduction, covering perhaps 12 days, produced much more profound pathological changes than when a single large dose was given. These consisted of fatty changes in liver, kidneys, and heart, with increased coagulability of the blood, parenchymatous bleeding and thrombus formation in liver and lungs. There was also more or less evidence of profound intoxication, such as is found in eclampsia. The author is induced to conclude that eclampsia is a temporary lowering of the maternal serum in its power to detoxicate placental extracts.

Tokyo Igakukai Zasshi
(Mitteil. d. Med. Gesellsch. z. Tokio)
Vol. xxxi, No. 20. October 20, 1917.


The grain ration for a prisoner at full labor was 4.2 go (756 c.c.) of rice and 1.8 go (324 c.c.) of barley per day, costing 5.4 sen ($0.27). This was supplemented with vegetables in the form of soups and boiled mixtures, with sea weed, pumpkin, potatoes, bean curd, and fish occasionally.

No meat was given. The daily valuation of this diet is given as follows:

<table>
<thead>
<tr>
<th></th>
<th>N.</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staples</td>
<td></td>
<td>10.28</td>
<td>64.26</td>
<td>9.77</td>
<td>516.8</td>
</tr>
<tr>
<td>Side dishes</td>
<td></td>
<td>7.03</td>
<td>43.95</td>
<td>24.92</td>
<td>49.17</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>17.31</td>
<td>108.21</td>
<td>34.67</td>
<td>556.97</td>
</tr>
<tr>
<td>Utilized</td>
<td></td>
<td>12.59</td>
<td>78.59</td>
<td>28.50</td>
<td>552.05</td>
</tr>
</tbody>
</table>

To determine the exact diet that would maintain a prisoner under these conditions at uniform weight, a series of seven records were kept of an individual, the only variation being the amount of rice and barley which varied between 6 and 3 go (1,080 and 540 c.c.).

<table>
<thead>
<tr>
<th></th>
<th>N.</th>
<th>Protein</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. 6 go.</td>
<td></td>
<td>65.3</td>
<td>23</td>
<td>17.31</td>
<td>108.21</td>
</tr>
<tr>
<td>II. 5 go.</td>
<td></td>
<td>62.9</td>
<td>28</td>
<td>15.95</td>
<td>99.64</td>
</tr>
<tr>
<td>III. 5 go.</td>
<td></td>
<td>66.1</td>
<td>24</td>
<td>15.60</td>
<td>97.50</td>
</tr>
<tr>
<td>IV. 4 go.</td>
<td></td>
<td>59</td>
<td>26</td>
<td>13.86</td>
<td>86.79</td>
</tr>
<tr>
<td>V. 4 go.</td>
<td></td>
<td>60.4</td>
<td>28</td>
<td>13.86</td>
<td>86.79</td>
</tr>
<tr>
<td>VI. 3 go.</td>
<td></td>
<td>57.4</td>
<td>28</td>
<td>12.17</td>
<td>76.07</td>
</tr>
<tr>
<td>VII. 3 go.</td>
<td></td>
<td>57.3</td>
<td>26</td>
<td>12.17</td>
<td>76.07</td>
</tr>
</tbody>
</table>

The results of these give:

<table>
<thead>
<tr>
<th></th>
<th>Calories per Kg.</th>
<th>N. balance</th>
<th>Variation in body weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. 6 go.</td>
<td>43.7</td>
<td>1.75</td>
<td>1.3</td>
</tr>
<tr>
<td>II. 5 go.</td>
<td>40.4</td>
<td>1.32</td>
<td>0.4</td>
</tr>
<tr>
<td>III. 5 go.</td>
<td>37.8</td>
<td>0.07</td>
<td>0.3</td>
</tr>
<tr>
<td>IV. 4 go.</td>
<td>35.8</td>
<td>0.07</td>
<td>0.0</td>
</tr>
<tr>
<td>V. 4 go.</td>
<td>35.0</td>
<td>0.48</td>
<td>0.0</td>
</tr>
<tr>
<td>VI. 3 go.</td>
<td>29.3</td>
<td>1.40</td>
<td>0.6</td>
</tr>
<tr>
<td>VII. 3 go.</td>
<td>29.5</td>
<td>1.34</td>
<td>0.8</td>
</tr>
</tbody>
</table>
From this table it is evident that the body must suffer in certain particulars from the limitation in food. It is highly advisable to investigate this subject in relation to the requirements of the nation during war times as well as in times of peace.


The author has published elsewhere on this subject (Abstract No. 184 and in the Gunidan Zasshi, June 10, 1917, abstract not yet published or numbered). Nothing further is added but the material is presented more in detail than in either of the abstracts. The author's abstract in German would be useful for an investigator of this condition.


The author's notes in German give a brief synopsis of the cases and explain the four drawings reproduced.

Tokyo Igakukai Zasshi
(Mitteil. d. Med. Gesellsch. z, Tokio)


The authors find no essential difference between the actions of bufagin and the glycosides of digitalis, except that the former is stronger and more toxic. "There is first a stimulation of the atrio-ventricular node of a mammalian heart resulting in the heightening of the contraction rate of both the auricle and the ventricle. Stimulus production in the ventricular nodes then becomes dominant and the tonicity and rate of the ventricular contractions are evidently increased, while at the same time the auricles assume a normal rate. The ventricular contractions are not regular in rhythm, showing in most cases an extra-systolic type of arrhythmia. Only in the last stage does the sinus node become dominant; the auricular rate then becomes very rapid, while the ventricles contract weakly and slowly, and finally stop in systole. Slow auricular contractions persist for some time. A concentrated solution of the poison stimulates directly the third centres, with no previous stimulation of the atrioventricular node."

(447) Placenta antigen in its relation to serum of pregnant women. Pp. 1-18 in the appendix. German text. G. Fujimura and T. Hirose. The authors are convinced that there exists in the serum of pregnant women certain antibodies which have complement binding properties in relation to extracts made from placenta; these are rather closely specific for this condition and disappear in about three weeks from the time of delivery. They are distinct from the protective ferments of Abderhalden and are not found to have any relation to syphilis or any complicating disease.

Tokyo Igakukai Zasshi
(Mitteil. d. Med. Gesellsch. z, Tokio.)


The toxicity of immune serum was noted by Friedberger and Kraus when they injected guinea-pigs with anti-sheep dog serum and observed typical anaphylactic symptoms. The presence of antibodies and antigen traces were demonstrated, and the phenomenon was attributed to a kind of serum anaphylaxis. This theory of primary anaphylaxis has been disputed by many investigators, and it was for the purpose of elucidating the problem that the present work was undertaken.
In the present work anti-goat dog serum was used and a number of facts observed that bear more or less on the problem.

Goat cells heated to 120° C. retain the power of producing a serum that is toxic and hemolytic.

In contrast with serum anaphylaxis the intense symptoms follow immediately the intraperitoneal injection of the anti-goat serum. Large doses intravenously produce death in guinea-pigs from edema of the lungs.

The intraperitoneal injection of anti-goat serum produces 110 demonstrable intravital dissolution of the guinea-pig corpuscles.

No anaphylatoxin could be demonstrated in the blood of the guinea-pigs in the anaphylactoid condition; nor could any be demonstrated in a mixture of goat-blood dog immune serum, emulsion of guinea-pig organs, and complement.

The titre of hemolytic action is not parallel with the curve of temperature following the injection of the serum.

The toxicity is strongly influenced by the manner of withdrawal of the serum, by the length of time that elapses after its withdrawal, but is quite resistant toward acids and alkalies.

The albumin fraction is the toxic one, not the globulin.

Repeated peritoneal injection of sublethal doses will eventually produce immunity, and anaphylaxis is no longer possible.

The toxicity has certain relations to the local serum exanthemata.

Serum sickness is entirely unrelated to this immunization process.

Adrenalin injection into the peritoneal cavity has a certain inhibitory effect on the anaphylactoid reaction.

The final conclusion is that the phenomenon herein described is not a manifestation of true anaphylaxis.


Dogs fed for ten days on the residue of soy beans left over in the manufacture of "Tofu" or bean curd, were injected with 1.0 gm. of ferratin (Boeringer Co.) intravenously, and killed in 30 minutes. The organs were examined chemically by the Hall method and sections were made to demonstrate iron in the tissues. Nothing especially new was brought out except that this drug is a good one for experimental work because its dose of efficiency is far from toxic. Attention was again called to the fact previously demonstrated that the so-called "heart failure" cells are derived from the tissue spaces and are not alveolar endothelium. The details have been carefully worked out.

Tokyo Igakukai Zasshi
(Mitteil. d. med. Gesellsch. z. Tokio.)


The serum in dilution of 1-10,000 in a suspension of red cells was exposed to varying degrees of temperature and the time at which hemolysis occurred was compared with a control. Fresh serum was found to have an inhibiting action which was much weaker in the case of older samples. This inhibition was evident as high as 1-20,000 and reached its maximum at 1-50. There was no difference between homologous and heterologous series even though the species of animals were far apart. Inactivation of the serum for 30 minutes at 50° C. completely destroyed this inhibiting power.
The author has treated 17 patients in his practice and has made some interesting observations on them.

The pulse rate is directly proportionate to the severity of the disease, but a count of 100 or above is not necessarily an indication that abortion should be induced. The temperature reading, albumin or diazo reactions, are not of prognostic value, nor is there a necessary relation between the decrease of the urine volume and the severity of the disease. However, the volume should increase after a saline infusion intravenously, a failure to do so being of grave moment. A persistent low specific gravity under these conditions is also serious.

In serious cases there is usually acetone and aceto-acetic acid, which with an increase of the ammonia coefficient constitute a positive indication for abortion. If these conditions remain in spite of a good appetite then it is to be considered of serious moment.

The total nitrogen figure is generally decreased and the total amount much less. The proportion of total nitrogen to total sulphur is decreased, and is very noticeable in marked cases: the former is always less in amount than the latter. The decrease of the sulphur is in proportion to the severity of the disease and in case of recovery increases accordingly.

The total phosphorus is always small and the more severe the condition the less the proportion to the total nitrogen.

The inorganic sulphur is usually decreased, so that in severe cases it is less than half the amount of the total sulphur. The ethereal sulphates are not materially altered. While in a severe case there would likely be more or less alteration in the figure, yet in a lighter one, especially in the early stages, there would probably be an absolute or relative increase. The results of intestinal putrefaction, which have been alleged by some authors as the cause of the vomiting of pregnancy, have not been found to be causative.

The neutral sulphur is definitely increased. In fulminant cases there is not only an absolute increase, but it is also larger in comparison with the total figure. In severe cases it coincides more or less closely with that of the ethereal sulphates.

The phenol figure is not commonly altered, but just before death there is usually a sudden and marked rise.

These findings are not those of starvation, in which the intestinal putrefaction is in abeyance, but they signify rather a change in the process of oxidation in the body, and a disturbance in the function of the liver which in turn is doubtless the result of a toxic process.

Animals fed on "Kara"* had the ammonia fraction increased 10-20 times, and the coefficient was 1.5-2 times increased over the normal in spite of urea decrease and with unchanged total nitrogen excretion. Acetone and diacetic acid were excreted in considerable amounts.

When fed on egg white the amino portion was increased about six times, and the ammonia figure remained unchanged. The reaction for acetone and diacetic acid was very weak.

When fed on sugar the body temperature was raised somewhat and the amino and ammonia fractions were increased; during rest at room temperature the urea gradually returned to normal. Uric acid was increased three times above normal and the purin bases about eight times.

* Kara is the refuse of beans made into "Tofu" or bean curd.
A STANDARD CLINICAL CHART.

GEORGE HADDEN, M.B., Ch.B., YUNGCHOWFU, HUAN.

There has long been need for a standard clinical chart that would commend itself generally to physicians in China. At present almost every hospital orders its own, and when charts are made to order, the printer necessarily charges for the "plate," which in turn forces the buyer to take more charts than he needs, partly to spread the cost of the "plate" over a larger number of copies, and partly to avoid the delay and inconvenience of the further orders. The advantages of a standard chart are that it can be produced in quantity and sold from stock at a price calculated on tens of thousands, and purchasers can take as few or as many as they need and obtain them at any time by return of post. The charts can also be obtained in the 4-hourly as well as in the more common variety.

With these facts in mind and failing to interest practically other men better qualified for the task, the writer began some years ago to study the whole matter, and the chart enclosed with this issue of the JOURNAL is the result of considerable research. In broad outline it is based on the Yale (Changsha) edition of the Western Pennsylvania chart; and in line values on a chart produced by a London firm of publishers. The laboratory outline is designed for general routine work.

The graphic method of recording the pulse and respiration does away with a lot of slovenly figure working by Chinese nurses: and as the graphs are identical with the common temperature records, they offer no difficulties in use. This can be stated as a fact of experience, and none the less so because the chart may seem unusual at the first glance. Otherwise the graphic method speaks for itself and no one who has used it would willingly go back to the old, dumb, "written-in" style. As soon would he think of going back to the "written-in" temperature records of prehistoric times!

The laboratory outline solves a whole series of laboratory difficulties; notably the initial difficulty of finding a record-method at all; and later, the permanent difficulty of associating the records with the case history in the wards, and of filing them with the history afterwards. No other method is so straightforward, so simple, and so convenient. One could imagine that even the large hospitals might find it worth while, for the very convenience of it, to have their routine laboratory slips transcribed on to the charts in the wards.
The line values are such that the small details of the chart become invisible at the distance of the bedhead. A very clear effect is thus obtained and the graphic curves stand out with distinctness. The red norm lines are unusual and make an exceptionally pleasant looking chart.

The scales in the chart are given both in Fahrenheit and Centigrade; and charts may be obtained which show both the "M and E," and "4-hourly" temperatures. If required, the laboratory outline may be omitted, and at small cost the various headings can be specially added to, or altered to any extent short of interfering with the reticulum of the chart. Suggestions will be welcomed, for although it would be absurd to expect perfection at the outset, there is no reason why our China chart should not eventually become one of the best obtainable. Corresponding case sheets can be supplied, either printed or plain. Diet charts, nursing, laboratory, and other special charts will be produced if there is a demand for them.

Of chart-holders, none is so good as the modern spring-clip kind. An inexpensive variety may be made of 1" board, about 12½ x 9" in size, to which the chart is attached by a small (No. 2) Index Binder Clip which needs no other fixing to the board than its own grip, and itself serves as a hanger for the whole. The natural tendency for the upper corners of the chart to curl forwards is checked by a couple of small wire hooks each fastened to the board by its sharpened spike, and stitched in position by a few fine brass-wire stitches. The shank should be sunk in a small groove level with the surface.

Clips for Clinical Chart-holder.

In a number of hospitals, the common bulldog clip is used. This may be attached to the board by countersinking one-half of it in the wood, so that the handle and jaw of one side are level with the surface, and it is then easily wire-stitched into position. The smaller sizes are adequate, cheaper, and more easy to handle.

* May be obtained from the Office Appliances Co., 4 Canton Road, Shanghai, at the price of $1.00 per dozen.
Another excellent variety is used by Dr. Davenport in the London Mission Hospital, Shanghai. The chart-head is impaled on three fine iron spikes projecting about ¼" from the face of the board, on to which it is pressed, and held down by a narrow strip of wood hinged along the top of the board, and having fine holes corresponding to the spicules. This arrangement works well.

Any one of the three, but especially the first and last, is better than anything else I have come across. Incidentally they allow the back of the chart to be used for case notes, by folding it round on to the back of the board,—an expedient much to be recommended both for convenience and economy.

This sketch would be incomplete without acknowledging the debt owed by the chart and all it stands for to Rev. G. A. Clayton of the Central China Tract Society. But for his keen personal interest and patient work it would have been impossible to make it what it is. It is also through his kindness that the sample copies are available to illustrate these notes. The chart is published by the Central China Religious Tract Society, Hankow, at the war price of $1 per hundred.

CHEAP EFFICIENT SUBSTITUTE FOR KHOTAL KEROSENE STERILIZER HEATER.

WALLACE CRAWFORD, M.D., C.M., Tzeliulsing, Sze.

About the time that Dr. Logan of Chaungteh presented his substitute for the Khotal stove for sterilizers, we were experimenting with other substitutes. Our first attempt was with a brick oven for burning coal. This was so dirty, and so little less expensive, that we gave it up.

Our next attempt was modelled after Dr. Logan’s suggestion, but we later found a better system.

Our sterilizers are these of Bramhall, Dean Company, Nos. 801 and 802, and we found that the same system would work for both. At first we made a galvanized iron form to surround the base of the sterilizer, running a dirt pipe into a nearby chimney and an air pipe from the bellows to the galvanized iron stoves which fitted under the water jackets. We found that this worked very satisfactorily.

The next attempt was to dispense with the galvanized iron covering the base of the instruments, and use only the two galvanized iron stoves. We also dispensed with the bellows, as we found the draft
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from the bottom or ash door in the stove gave sufficient draft for the burning of the charcoal.

With the Khotal stoves we were never able to get the record to show any pressure, but with the charcoal stoves we have been able to get ten pounds pressure easily. For the dressing sterilizer we find it very easy to get fifteen pounds pressure and maintain it until sterilization is complete. Our galvanized iron stoves have been running daily for seven or eight months and given every satisfaction, and they are in good condition yet. The only defect is that the top doors have fallen off, but native tinsmiths, who originally made the stoves can easily repair the doors. Like Dr. Logan we found the weakness, and I may say so far, the only weakness, to be in the dirt from the charcoal. But this is so little that we did not think it necessary to utilize the dirt pipe from the stoves to the nearby chimney. But the new arrangement is such an economy over the Khotal stoves that we feel it worth recommending to the members of the Association.

We tender our thanks to Dr. Logan for putting us on the track of this money-saving device, and join him in his "sterilizing millenium."
The stove itself is made of ordinary galvanized iron with a groove into which the water jacket of the sterilizer fits. The inside of the stove is plastered with a combination of clay and lime, on which is set a grate, about half way down the stove; this latter serves to lay the charcoal on. The bottom door serves as a flue for the draft for the charcoal. The plaster may be replaced, but ours has not needed replacing in seven months daily use. The top door of the stove is closed when in use, to insure draft.

Hospital and other Reports.

Annual Report of Peking Union Medical College and Hospital, 1916-17.


Lecturer:—W. W. Peter, M.D., Public Health.


The College Report has a special interest as it records the events of the closing period of the Peking Union Medical College as originally organized. In 1915, the China Medical Board assumed the full support of the College and re-organization followed. The junior classes were sent to Tsinan, and the members of the two classes left in Peking have probably by this time finished their medical course. A Pre-medical School has now been opened, and in September, 1919, the re-organized Medical School will begin its work.

In the Hospital Report a description is given of the many improvements and advances made possible by the great resources of the China Medical Board, which has taken over this institution also. The hospital pathologist reports that the number of autopsies during 1916-1917 was six times as many as during the previous year.

In the Nurses' Training School, the report of which follows next, the number of probationers has increased from 15 to 21. They are
required to take the examinations of the Nurses' Association of China, but it is observed that the standard is high for Chinese nurses and it is doubtful if all nurses will have the perseverance and determination to complete the course. They are satisfied with lower standards, and as some who have been dismissed or who left the hospital after one or two years' experience have been able to get good positions in other hospitals or elsewhere as "doctors," it is a temptation to others to give up after a year or two and do the same, instead of persevering with their work and studies to reach the highest standard.

The medical and surgical reports are very instructive and well tabulated. Some of the accompanying notes appear in our "Hospital Notes." Incidentally it may be remarked that if the whole report and similar well compiled hospital reports from other Chinese cities were carefully studied by writers on the diseases of China, it would conduce greatly towards a correct knowledge of the distribution of disease in this country, a remark not wholly unnecessary to judge by one or two recent medical publications.

Report of Danforth Hospital, Kukiang, 1917-1918.

Physician in Charge.—Dr. Mary Stone. This is not so much a formal report as a deeply interesting account of the devoted efforts of a Chinese lady physician to help her country-women, both physically and spiritually. No less than 600 of the patients have become Christians. The new visits to dispensary were 8,818, and the number of in-patients, 1,142.

Annual Report of the University Hospital, of the University of Nanking, 1917.

Staff:—Dr. Philip S. Evans, Jr.; Dr. Sidney L. Lasell; Dr. Walter G. Hiltner; Dr. T. Dwight Sloan; Dr. Allen C. Hutcheson; Dr. Edward C. Perkins, and five Chinese physicians.

The University Hospital is organized as a part of the University of Nanking, having a common Board of Trustees and control. Four of the co-operating Missions each furnish a member of the Hospital Staff, namely, the Presbyterian Board, North; Presbyterian, South; Methodist Board, North; and the Disciples. These four Boards, together with the Northern Baptist Board, each furnish gold $600 annually, from January 1917, toward the running expenses of the Hospital. The Methodist Board, South, furnishes $1,000 for the support of the Superintendent of Nurses. The China Medical Board has made an annual grant, beginning January 1, 1917, of the sum of gold $9,250.
for five years. This sum is to cover the salaries of three nurses and one doctor, and to provide gold $3,000 a year for maintenance. The China Medical Board has made a further conditional grant of gold $25,000 provided the co-operating Missions shall raise a like amount towards a total of gold $50,000 to be used in the construction of a new out-patient department, a doctor's residence, and equipment for the present plant. Additional sources of income are the contract and private practice of the members of the Visiting Staff, and special gifts and fees from patients.

In spite of the war and adverse exchange it has been found possible to continue to improve the appearance as well as the efficiency of the hospital buildings.

The closing of the University Medical School has necessitated some changes and adjustments in the Staff of the Hospital. Dr. P. S. Evans resigned in order to continue teaching work at Tsinan. Dr. S. L. Lasell also resigned and has accepted a call to work in Hangchow. To compensate for these losses, Dr. Allen C. Hutcheson and Dr. E. C. Perkins have joined the staff. Dr. Walter G. Hiltner was away on furlough until October, and resigned his position in November, to take up work in Hangchow.

The war situation has prevented the sending out of the doctor and three foreign nurses whose support has been provided by an appropriation from the China Medical Board.

The hospital staff has continued as formerly to look after the health of the foreign community of more than four hundred persons, and of the students of many of the mission schools in the city. Special contracts have been made with the Chinese Maritime Customs, Post Office, and British Consulate, whereby the staff of the hospital assume the responsibility of looking after the health of all those employed by these institutions.

The Report contains statistical tables which tabulate the work of each department.

Report of the Swatow Mission Hospital in connection with the Presbyterian Church of England, for 1917.

Hospital Staff:—A. Lyall, M.B., C.M., (on Furlough); G. Duncan Whyte, M.D.; Malcolm S. Ross, M.B., and 3 Chinese physicians.

The report is not quite as full as usual, as the illness and death of Mrs. Lyall and then the disastrous earthquake with the consequent very great number of surgical cases which needed attention, not only
in Swatow but also in other districts, left little time to the members of the staff to prepare an adequate résumé of the work done during the year. There was a slight falling off in the attendance as compared with that of the previous year, accounted for by the unusually dry weather which prevailed during August, September, and October, making it difficult for the Chinese with minor complaints to leave their occupations. The hospital work brings the staff into touch with all classes of the community the highest and the lowest, the rich and the poor, the reputable and the disreputable. "But the background to a hospital report is a mass of ordinary humanity, suffering from 'all manner of sickness and all manner of disease,' with the accompanying sorrow and misery, pain and poverty which ever cluster round disease; and the faint outlines, at least, of the picture may easily be filled in by anyone. In reality as one looks at a crowd of 200 or 300, and sometimes as many as 400, of these poor people assembled in the Hospital chapel, a very sad impression of their helplessness and wretchedness is left on one's mind. We have done our best to cure or relieve their diseases, and the Gospel of Jesus Christ, the love of God to men, has been day by day preached to them by word and, we trust, by deed also."

The usual tables are given of surgical operations with the details of hospital administration.

Report of the Soochow Hospital, Soochow, China, 1917.


This is a very good and frank report. In the hope that physicians elsewhere in China may have the same searchings of heart and be stimulated to better work, confession is made of the old slip-shod ways in which certain things were done in the hospital due to lack of organization and assistance. The first step taken toward improvement was to make a careful study of the case records; these were found to be poor, inaccurate, incomplete, and kept in an indefinite manner. New forms were therefore devised that would ensure taking a complete record of the history and physical examination, and a standard classification of diseases was adopted so that the diagnosis should be clear and definite. A complete and accurate record is now kept of every case in such a manner as to make it well worth while to index and file it. This means a good deal of work, but it is well repaid in results. It is certainly to be desired that in every hospital the
records should be well kept. As the writer of the report observes, "there is any amount of good work going on in many of our hospitals that is not being reported, and in some not even a record is being kept of cases of great scientific interest."

The next step, which also proved very helpful, was careful consideration of the causes of the 49 deaths which occurred in the hospital during the year. At first it was intended to publish in the report records of these, but as this would have made the report too large, tables are given to which are appended brief but instructive notes on the cause of death in each case.

"It is often the case that the Chinese desire to go home to die and the relatives will want to take cases home when they are in a very critical condition. If this were allowed it would often cause a death that could be avoided if kept in the hospital. For years we have encouraged them to remain in the hospital. Our report shows that only three were taken away in this dying condition. More care and attention would have avoided some of the deaths, a better judgment would have saved others. It will also be noted that malaria, especially as a complication, has been no small factor in producing deaths. It is our most serious complication."

"We have also put into service considerable equipment. Cystoscopic examinations have been made whenever needed and they are coming to be a rather common procedure. Our report shows the extent to which the microtome has been used. During the year we installed a much needed X-ray plant. These things have all proved invaluable in making possible more definite and accurate work. They have also made it necessary for the doctor to put in much longer hours and speed up in every way possible."

The various tables and the reports of the different departments are well compiled. The whole forms a most interesting report.

**Nurses' Association of China. Report of Biennial Conference held in Foochow, 1918.**

The conference was evidently very successful in strengthening the spirit of co-operation and camaraderie between the nurses, and several interesting papers were read and discussed. Among those reported is a paper by Miss Howard, entitled "Are we ready for Women Nurses in Men's Hospitals." It is hoped to reprint this in the China Medical Journal. Other papers were on the "Impressions and Difficulties of the Newcomer," by Miss Howe; "The Need of Ethics, a
Mission Hospital Notes.

Strong Subject in our Curricula," by Miss Dexter; and on "Provision for the Spiritual and Social Life of the Nurse," by Miss Gaylord. There was manifest at the Conference far more than a merely professional interest in the Chinese female nurses; all that concerned their welfare from every point of view was a matter of deep, sisterly solicitude which promises extremely well for the ability and tone of the Chinese nursing profession now being formed. The report also contains examination questions, a register of the members of the Association and a list of the schools for training Chinese nurses.

Mission Hospital Notes.

MOST COMMON SURGICAL DISEASES AMONG CHINESE.

The ten most common groups of surgical diseases admitted to the hospital during 1916-1917 were as follows.

- Tuberculosis, 18.20%; Cellulitis, 12.83%; Fistula in ano, 8.66%; Injuries, 8.06%; Malignant tumors, 6.26%; Abscesses, 5.07%; Carcuncles, 3.73%; Hemorrhoids, 3.43%; Benign tumors, 3.28%; Hernia, 2.38%. The total number of surgical cases treated was 670.—Report of Hospital of Union Medical College, Peking.

SPLENECTOMY IN KALA-azar.

The two cases upon which splenectomy was performed furnish little evidence for or against this treatment of kala-azar. One case was in excellent condition before operation; he evidently had a mild infection. He was much improved by treatment and left the hospital looking well. The other boy was not in a robust condition and although after the operation he seemed to be doing well, he slowly slipped back to his former condition and died in three months. The history does not indicate that he died of any affection other than some complication of his leishmaniasis.—Ibid.

GANGRENE IN CHINESE PATIENTS: CAUSE?

During the year 1916-1917 there were fourteen cases of gangrene. Many were due to freezing during the severe cold last December. A few cases gave a history very suggestive of chronic ergotism. The patients said they customarily ate bread made from musty maize. One patient said that in his neighborhood, where this food is eaten, there were several people with gangrene similar to his. In these patients we were unable to find any other etiology such as freezing, arterio-sclerosis, diabetes, or nervous disorders.—Ibid.

LEAD POISONING IN CHINESE CITIES.

One case of chronic lead poisoning was very severe, the source being lead-lined cooking utensils. Contrary to reports from southern cities (C. M. J. pp. 399-400) lead poisoning has been conspicuous for its absence. Chinese painters use foreign white lead paints and in their work immerse their hands in it, yet no painters have come to the out-patient clinic and no cases have been diagnosed in other patients. A case in a foreigner was traced to the lining of the "galvanized" hot water pipes. Analysis showed this to contain about twenty-five per cent lead.—Ibid.

COMPARISON OF HOSPITAL STATISTICS.

Because of the lack of a general understanding of the definition of the terms, "Well," "Improved," etc., in the various types of diseases, it is questionable...
whether the result-statistics of various hospitals can be compared. It might be that by aiming at less exactness we would arrive at greater accuracy. A simple "helped" or "improved" would mean what it says, whereas "well" rarely does. Further, we are not treating the malady, but the man. The main question is whether the patient goes out better or less able to do his work. If a patient goes home to die, it is of little moment how many of his major or minor ills have been cured.—Ibid.

**Return Visits.**

One difficulty in treating the Chinese sick is that they give the doctor only two or three chances in which to work a cure. More than 60% of the medical patients never return after the first visit. The average number of return visits for the six months was 1.38. Curiously enough, this is the exact number of return visits for the medical patients at the Red Cross Dispensary in Shanghai this year. Does this small preponderance of old patients over new point to the wonder working power of our medicines, or to the early exhaustion of the patient's confidence in our methods, or is it merely that we have made little impression on the Chinese belief that a sure cure must be an immediate cure?—Ibid.

**All Need Educating as to Value of Return Visits.**

Contrary to what one might expect, investigation shows little difference in the number of return visits made by different classes of patients. The soldier, student, writer, and man of no work share first honors. But their best is only seven-tenths of a visit more than the worst of the industrial worker, whose boss, presumably, will not let him off for any but an urgent reason. It would appear that the official is no more alive to the methods of western medicine than his servant, nor the toiler on the streets than the toiler in the fields. If any conclusion can be drawn from such small figures, it is that any educational leaven which is used needs to be put into the whole lump of the out-patient population.—Ibid.

**Three Meals a Day for Chinese Patients.**

A radical change from the old custom of two meals a day to three meals, has been of great advantage in the care and comfort of the patients and at the same time a means of saving valuable time for the doctors. Under the new plan the nurses' morning work is finished, breakfast is over, and the religious service concluded by half-past eight o'clock, when the doctors in charge can make ward rounds with their respective staffs. Rounds are usually over by half-past nine o'clock. Operations then begin in the hospital and at the special out-patient surgical clinic. At the same time medical ward work is carried on in the hospital and special clinics at the out-patient department.—Ibid.

**Religious Work Under China Medical Board.**

Religious instruction in the hospital was formerly directed by the London Mission. As soon as the China Medical Board assumed the financial support of the college, the missions participating in the college began to plan for the continuation and enlargement of this work. The American Board Mission, the London Mission, the Methodist Episcopal Mission, North, and the American Presbyterian Mission, North, have co-operated in the support of the three Chinese evangelists. A committee representing these missions, as well as the college, has directed the work during the year. The scheme included a director of religious work especially qualified to direct the religious and social service activities in the hospital and college. Such a man has been found in Mr. C. D. Baker who was appointed director of religious work, July, 1918. The China Medical Board has assumed his support.—Ibid.
INSTRUCTION OF MALE CHINESE STUDENTS IN GYNECOLOGY.

It is especially to be noted that this was the first year of an arrangement by which men students were instructed in obstetrics and gynecology in a women's hospital in China. The success of the experiment is noteworthy on account of the opinion of many that such instruction is altogether impracticable. Still more noteworthy is the fact that twenty-six private patients were willing to be used as clinical material for the instruction of these men students.—Ibid.

APPENDICITIS IN CHINA.

These eleven patients operated upon for appendicitis, only one of whom was a foreigner, are additional evidence that appendicitis is not an uncommon disease in China. As with nearly all other cases seen in our hospital, they came late. Many had abscesses and some even had peritonitis when they entered the hospital.—Ibid.

OUTSIDE TESTIMONY TO VALUE OF MISSION HOSPITAL.

"Your hospital is a real oasis in the desert. It is a great pleasure to me to be greeted by the smiling faces of the doctors and nurses and to receive such courteous treatment from them. Without any flattery or exaggeration, I have never seen in China such a high degree of Christian character as is exhibited on the faces of your doctors and nurses at the Danforth Hospital. Whenever I hear any sneers at missionaries, as one does occasionally in the concession, my answer is, 'You would change your mind if you went to Dr. Stone's Hospital,'" Kukiang.—Dr. Tenney, Danforth Hospital Report.
The patient then left the port nearly well as far as the dysentery was concerned, but, as I learned from his later medical attendant, soon afterwards he was affected by a general paresis of the voluntary muscles, chiefly affecting the muscles of the neck, shoulder, and arm and the muscles of mastication. The sphincter ani was also involved. The condition improved slowly under strychnine injections.

Among the Chinese there have been no epidemics. Enteric fever was rather prevalent during the autumn and several cases of diphtheria occurred during the winter. Almost no visiting of Chinese sick in their homes has been done, so that it is impossible to form any sufficiently definite idea of the minor fevers from which they suffer, as such cases are rarely brought to the hospital.

During the year, 25,548 out-patients have been seen at the Blyth Hospital and 1,418 treated as in-patients. The number of operations under chloroform was 297. Abdominal operations are a new feature of the surgical work here. Previously it was impossible to get any patient to consent to an abdominal operation, but in the autumn of 1916 one woman was bold enough to have an ovarian (dermoid) tumour removed and since then we have performed 10 abdominal operations; 7 of these were for ovarian tumours, 6 of which were successfully removed, the remaining one being too adherent in the pelvis for safe removal; of the others, one was an omentopexy for cirrhosis of the liver (a very common complaint here) in a woman. She returned to the hospital about six months after the operation, still with fluid in the abdomen (perhaps about $\frac{1}{2}$ as much as when she came first), but the processes of exudation and absorption had apparently reached an equilibrium as the quantity of fluid had been stationary for three or four months. She was greatly improved in health and had put on flesh, but the original fascial opening had enlarged and allowed a hernial protrusion. It was decided to cut down and reduce the opening. The day after the operation she seemed to have stood it well, but on the third day she became restless and began to vomit. Unfortunately she got worse, became drowsy, then comatose, and died on the fifth day. Apparently it was a case of delayed chloroform poisoning, favoured by too little liver tissue. This was the only fatality of the series.

Leprosy is a rare phenomenon here, but occasional cases do occur and the majority come from the Jui-an district, half a day’s journey to the south. I have seen one case of the anaesthetic variety in a young man during the year. There were pale patches of anaesthetic skin on the back, chest, and arms. The ulnar and extreme popliteal nerves were perhaps slightly thickened.
THE LAW OF THE HEART.—The British Medical Journal of January 26, 1918, calls attention to Professor Starling's important Linacre Lecture on the "Law of the Heart," which discusses the mechanism by which the heart muscle adapts itself to the variations in the work imposed upon it by its alterations in blood-pressure. By means of an ingenious arrangement the isolated "heart-lung preparation" of a dog is provided with an artificial peripheral circulation in which all the mechanical conditions of the heart can be controlled. Two important conclusions are thus at once established: that, provided the inflow of blood remains constant, it is immaterial to the heart what blood-pressure within physiological limits (44 to 200 mm. Hg.) it has to contend with; and the more the blood-pressure rises, the greater the quantity of blood that passes through the coronary arteries—in other words, the more work the heart has to do, the better its blood supply. The heart has a wonderful power of adjusting not only its output of mechanical energy, but also its total chemical changes, to the work occasioned by the mechanical conditions of the circulation. When as the result of exercise the heart receives a larger quantity of blood and has a higher blood-pressure opposed to it, temporary dilatation with lengthening of the muscle fibers follows. The change in the muscle fibers brings more active surfaces into play, and this increase in the extent of active surface increases the energy of the heart muscle. At the same time more blood passes into the coronary arteries. The tone of the healthy heart is thus soon restored, and the organ returns to its normal volume, although it is doing more work. In a diseased or fatigued heart, on the other hand, the organ remains dilated during the whole period of increased work, and if the work is prolonged the dilatation may become permanent, and eventually cardiac failure may result.

The important deduction as to the connection between the length of the muscle fibers and the energy of the heart's contraction justifies the labors of past physiologists on muscle-nerve preparations, the practical application of which was entirely obscure at the time, and in the lecturer's closing words shows that this, like every advance achieved in the quest of pure knowledge, will sooner or later play its part in the service of man.

IMPORTANT PHASES OF THE ALIEN TREATMENT OF DIABETES.—Albert H. Rowe (Northwest Medicine, March, 1918) emphasizes the need of observing certain important matters in the conduct of this method of treatment if the best results are to be obtained. In the first place a complete physical examination should be made to discover all abnormalities associated with diabetes or which may influence the results of treatment. Thus all foci of infection should be eliminated before treatment is started, the Wassermann test should be performed to determine the presence or absence of syphilis, tuberculosis should be sought for, and the
The circulatory system should be examined carefully. In the second place it is absolutely necessary that the treatment be individualized for each patient. In severe cases residence in hospital with the care of a competent nurse is essential at the beginning. In less severe cases daily visits to the physician’s office are essential during the fasting period and the urine must be examined daily, a twenty-four hour specimen being used. In general, alcohol and soda should not be given, but sometimes one or the other may be helpful. Patients must be taught to approximate the caloric values of the foods which they eat and to know the approximate content of each in fat, protein, and carbohydrate. Continual use of the proper foods within the limits of tolerance is the most important of all factors. The weight of the patient should be kept below normal, but not more than fifteen per cent below. Excess of food of any form is harmful and a daily intake between 1,600 and 2,000 calories is usually sufficient. Frequent careful determinations of acidosis are essential. Physical exercise is extremely important to shorten the period of fasting and increase the patient’s strength and tolerance. Work should be limited to eight hours daily.

A Study of Diabetes of Fifteen or More Years’ Duration.
— Albert H. Hornor and Elliott P. Joslin (American Journal of the Medical Sciences, January, 1918) traced 1,156 out of a total number of 1,187 cases of diabetes, some of these patients being alive, some dead. Among these were sixty-two who lived fifteen or more years, and of these thirty-seven are living and twenty-five are dead. The following points were noted: Obesity was demonstrated in sixty out of the sixty-two cases. A diabetic heredity is one and a half times as frequent among the cases of fifteen or more years’ duration as among all diabetic patients. The average loss of weight when the patient first came for treatment was forty-one pounds. Gallstones were recognized in eight cases, being six times as frequent among these cases as in the entire series of 1,187 cases. The presence of acidosis was demonstrated twenty-one times, and eleven, or forty-four per cent of the fatal cases succumbed to it. Arteriosclerosis occurred in thirty-six and was a prominent factor in causing the death of ten patients. Diabetes is now a minor issue in fifty per cent of the living patients, and at the time of death was a minor issue in twenty-eight per cent of those who died. An extremely rigid diet is necessary for only four of the patients now living. Of the fatal cases twenty per cent outlived the normal expectation of life for their age at the onset of their diabetes, and this is already true for ten per cent of the living cases. Dietetic treatment was carried out to a considerable degree by fifty-seven cases; of the remaining five, three are among the dead.

Tuberculosis and Blastomycosis.—The lungs of tuberculous cattle constantly contain blastomyces and other fungi. Among the blastomyces are some species pathogenic for laboratory animals and fowls, and in shape and cultures not distinguishable from Saccharomyces neoformans. Associated with tubercle bacilli, animals inoculated died more rapidly than the controls inoculated with the tubercle bacilli alone, and the tissues show both diffuse tuberculosis and blastomycosis.—F. Sanfelice, Annali d’Igiene, Rome, 28, 41 (1918); Jour. Am. Med. Assn., 70, 1267 (1918).
Bacterial Examination of Wounds.—C. Levaditi (Presse Médicale, June 10, 1918) states there is no longer any doubt as to the importance of bacteriologic examination of war wounds as a guide to the indications and results of primary, primo-secondary, and secondary suturing. In the case of a primarily sutured wound the inoculations are made from a wick of silkworm gut strands placed in the centre of the wound before suture. In wounds that are to be left open, the cultures are taken fifteen to twenty hours after the surgical cleansing procedures by means of a tampon on a metallic rod, placed in a sterile test tube. From this tampon are inoculated in succession an agar slant; a tube of glucose agar (Veillon), and a tube containing two mils of bouillon and 0.2 mil of horse serum. With a fine pipette a second passage is made, beginning with the agar slant and glucose agar. Finally, a smear should always be made from a second tampon previously passed into all the wound recesses. This should be stained with Gram fuchsins. The results are recorded after twenty hours' incubation on a special chart with separate columns for the bacterial species detected and the results of quantitative microscopic study of the smear, the number of bacteria per field being noted. This quantitative examination carried out every two or three days until suture is deemed opportune, supplies data for a bacterial curve and shows the precise moment of critical depuration of the wound. In a separate column the indications for suture are noted by the bacteriologist for the surgeon's information. Wounds with streptococci, primarily sutured, must be watched and the sutures cut in the event of marked general and local reaction; if not yet sutured, they should be submitted to adequate treatment, preferably the Carrel procedure, and left open until the cocci disappear or are sufficiently attenuated to permit of healing by first intention or almost complete closure. In wounds showing other germs, suture is in order unless the infection is very abundant, in which event they should remain open until the bacterial curve indicates the moment of critical depuration.

Prognosis in Surgery of the Aged.—Frank C. Yeomans (American Journal of Surgery, February, 1918) states there are five cardinal rules for successful surgery of old people, namely:

1. A correct diagnosis made by thorough and, if necessary, repeated examinations before the operation.
2. A definite plan of operation, executed with the greatest celerity compatible with safety.
3. Rigid asepsis, for the powers of resistance to infection in the aged are limited.
4. Control of hemorrhage by the Esmarch bandage, posture, segregation, and by division of vessels between clamps, for blood lost is not quickly replenished in old people.
5. Careful handling of tissues. Trauma of tissues results in diminished resistance and favors infection. "Quickly in and quickly out" is imperative when invading the abdominal cavity and with the least possible evisceration. Furthermore, the body heat must be conserved by warm covering during the operation and protection thereafter, including the avoidance of drafts. Good nursing
and nourishment are essential to rapid convalescence, and early sitting up to prevent hypostatic pneumonia. The safeguards against shock are a definitely planned operation, short anaesthesia, deft technique, "bloodless surgery," and conservation of body heat.

**Bismuth Paste in Surgery.**

The importance of chronic suppuration in war wounds is shown by the reports that 50% of all fractures of the thigh still suppurate after ten months' treatment. It is imperative that these cases should be received and treated with the most efficient means possible; otherwise the economic waste will be enormous. In *Ann. Surg.*, 1918: LXVII: 392, Emil G. Beck recommends bismuth paste as a method of treatment. He mentions the technical errors usually committed:

1. The method is used indiscriminately, without control by radiograms.
2. The mixture when injected is not sufficiently liquefied to fill all the sinuses and suppurating cavities.
3. The bismuth is applied in cases where either a sequestrum or an infected foreign body is at the bottom of the trouble.
4. The injections are kept up after the wound is sterilized, and thus no chance is given to healing.
5. The instruments are often improvised and unsuitable.
6. The bismuth mixture is often spoiled by the admixture of a few drops of water.

The following technique should be followed as closely as possible.

1. Take a set of stereograms, so as not to overlook sequestra, etc.
2. Next make a bacteriological study of the exudate.
3. The wound is now ready for injection. Clean the skin, syringe with alcohol, and inject bismuth, closing with the fingers all other sinus openings just as soon as the bismuth appears. Thus all branches will be filled.
4. Take another stereogram, to get information as to the possible originating focus of infection.
5. A sterile bandage is applied and the patient put to bed for a few hours or days.
6. The first dressing is done the following day. If the discharge has changed to a serous consistency, it is to be regarded as favorable and an examination will usually prove it sterile. If so, the sinus need not be reinjected. Let the paste gradually exude of itself.
7. Should the discharge persist, the injections should be repeated every five or six days for as long as four to six weeks, and if after this time no appreciable improvement occurs one must search further for the cause. A sequestrum may be present, or a focus of suppuration may not be accessible to the paste, as, for instance, in the cancellous structure of long bone. In such cases the infected cancellous bone must be curetted, and the injections resumed. Seventy-five per cent of chronic suppurations should be cured by this method.

In cases where empyema has been properly drained but refuses to close, Beck has got 80% of cures in 110 cases. He uses here 10% bismuth in vaseline. It usually has been found that the cases that do not heal have a content of over 200 mls. In these cases Beck recommends that the ribs be removed over the cavity and that, without the use of sutures, skin flaps be led down into the base of the cavity and held there by gauze packing. The use of sliding skin flaps is also recommended in chronic osteomyelitis.
Mortality from Causes Incidental to Childbearing.—In this investigation there were recorded in all 10,056 deaths from the diseases and conditions incidental to childbirth in the age period 15 to 44 years. This covers the six-year period from 1911 to 1916, inclusive. These deaths, when related to the 14,694,260 women exposed, correspond to a death rate of 68.4 per hundred thousand women at these ages. Of the total deaths, 8,288 occurred among white females and 1,768 among colored females; the rates per hundred thousand for the two races, being 66.1 to 82.3 for the white and colored women, respectively. It is thus shown at the outset that colored females suffer much more seriously than do white women from the diseases and conditions incidental to childbearing.

The 10,056 deaths were due to a considerable number of diseases and conditions complicating or characteristic of the puerperal state. The most important of these is septicemia, which alone was responsible for 4,321 deaths, or 43 per cent of the total. This condition was followed in numerical order, by albuminuria and convulsions with 2,654 deaths, or 26.4 per cent of the total. Together, these two definite conditions account for 69.4 per cent of the puerperal cases, but it is realized that the actual proportion is even higher. Many deaths from septicemia and albuminuria are unfortunately still reported under the disguise of one or another title which results in their assignment to other of the puerperal conditions and in fact to other conditions not puerperal at all—L. L. Dublin, American Journal of Obstetrics, July, 1918.
midwives; this shows clearly that it is the unqualified midwife who is entirely to blame. It is carrying respect for ancient customs and prejudices too far when toleration kills over 800 babies a year. A Midwives' Board, Registration of Midwives, and absolute prohibition of unqualified practice ought to be brought into operation as soon as possible. The other important cause of death at this period is bronchitis (220 deaths out of 976). It is the principal cause of infantile mortality in Calcutta, and causes over 30 per cent of the total. Most of these deaths are due to sheer ignorance and carelessness, as the climate of Calcutta is by no means severe. The children of the poorer classes are mostly insufficiently clad, in many cases the hot weather costume of a film of oil and a piece of string being considered quite sufficient for the rains and cold weather.

A striking feature of the infantile mortality returns in Calcutta is the small proportion of deaths from diarrhoea and enteritis. This is due to the fact that very few infants are artificially fed.

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Tropical Diseases.


Oil of Chenopodium in Amoebic Dysentery.—In the Journal of the American Medical Association, August 3rd, 1918, Barnes and Cort, of Chiangmai, Siam, after stating that the treatment of amoebic dysentery has always been a matter of considerable difficulty, and that a careful perusal of medical literature shows that physicians working in tropical countries are apparently not satisfied with emetin, recommend the trial of oil of chenopodium, as during the campaign for the control and eradication of hookworm infection in Siam it was incidentally found that a number of patients with dysentery were cured of their disease. From the dysenteric case in which oil of chenopodium was purposely given and the effects carefully studied, as well as from others that could not be followed as carefully, they state it is evident that oil of chenopodium possesses marked power as an amebicide, and while some patients do not respond to it, many others are clinically cured by its administration. Cases complicated with a flagellate infection seem especially resistant to treatment. It is recognized that the absence of cysts from the stools is no proof that the patient has been permanently cured; but any drug that will cause such marked clinical improvement in dysentery patients as does the oil of chenopodium well merits further investigation. With emetin so difficult to obtain as it now is in oriental countries, oil of chenopodium may be used with great satisfaction in a large proportion of cases, emetin being reserved for the most severe types. For ambulant cases, oil of chenopodium is very convenient. It can be sent to a patient combined with castor oil, so that its administration requires no specially trained assistant, as would emetin, under the circumstances. So marked has been the improvement in the condition of the majority of the patients treated thus far, that as a routine measure all ambulant patients applying at the dispensary are treated as indicated, emetin being reserved for those patients who fail to respond promptly, or who show a tendency to relapse.
A point to be remembered is that on account of its irritating effects on the kidneys, oil of chenopodium should not be repeated in full doses at intervals of less than two or three weeks. The authors conclude as follows:

1. Oil of chenopodium relieves promptly the clinical symptoms in many patients with chronic and subacute amebic dysentery.

2. Oil of chenopodium administered by mouth or by rectum possesses marked power as an amebicide, as is shown by the rapid disappearance of amebae from the stools, following its administration.

3. There is a tendency to relapse in some cases, but in our series this is not greater than with the use of emetine.

4. The oil of chenopodium may be safely administered, when combined with castor oil in a single dose.

Epinephrin in Amebic Dysentery.—T. Bayma (Annales Paulista) in July, 1918, reported the systematic use of epinephrin in amebic dysentery, in amebic liver disease, and in appendicitis. Epinephrin has certain advantages over emetine for treatment of amebic dysentery, and experience indicates that the ameba is eradicated by it and does not pass into the encysted form. The epinephrin further has an important action on the suprarenalitis which has lately been demonstrated to be part of the clinical picture of amebic dysentery. Emetine and also the bismuth and emetine have a more or less depressing action in amebic dysentery, directly aggravating the depression, weak pulse, and tendency to syncope which reveal insufficiency on the part of the suprarenals. Epinephrin, on the other hand, suppresses the distressing colic and tenesmus, toning up the general system by its angiotonic and antitoxic action. The epinephrin can be given by the mouth up to 3 or 5 mg. a day without appreciably raising the blood-pressure. Patients treated with epinephrin over two years ago have remained in the best of health with nothing to indicate persisting infection with the ameba, and with nothing to suggest injury to the arteries or other organs from by-effects of the epinephrin. Only when the epinephrin is given by intravenous or intratracheal injection is there danger of by-effects.

Varying the Technic in Treatment of Malaria and Other Protozoan Diseases.—Pontano is instructor in pathology at the University of Rome, and for a year has been in charge of a hospital there to which are sent the soldiers returning with malaria from Macedonia. In about 11 per cent of the cases it proved impossible to cure the malaria by the usual method, that is, by giving 2 gm. of quinin by the mouth daily for three weeks, with intermissions of four or five days between the weeks. He explains the various reasons which interfered at times with the systematic preventive use of quinin when the troops were sent to Macedonia. The men were supposed to be taking 0.60 gm. of quinin daily between April and November, but many did not get this systematic prophylaxis all the time. One reason for the nontaking or the nonabsorption of the drug was the epidemic of dysentery which preceded, by a mouth, the outbreak of the malaria epidemic in each of the two years of the campaign. From this extensive experience Pontano writes that the malaria parasites and protozoa in general are liable to become resistant to the specific drug given constantly by one route. Even increasing the dose greatly gives
no better results. But by changing
the mode of administration, the
drug then is able to act on the
parasites with its pristine force.
It is possible that the molecular
composition of the drug becomes
altered as it enters the organism
by another route. A few small
doses by subcutaneous or intramuscu-
lar injection may speedily con-
quers the malaria when it had
proved refractory even to large
doses long continued by the mouth.
The same principle probably applies
to all protozoan diseases. They
may succumb to the same drug
when its molecular composition has
been modified by changing to an-
other method of introduction. Poly-
clinico, Rome, June 9, 1918.

Public Health Education in China.

PUBLIC HEALTH IN CHINA.—
The Joint Council on Public Health
Education is issuing a series of
Health Bulletins on the following
subjects:—(1) Tuberculosis; (2)
Mode of Infection and Prevention;
(3) Baby Hygiene; (4) Prevention
of Colds; (5) Home Sanitation;
(6) Cholera and Typhoid.

The first bulletin has been dis-
bursed and the others will follow
at intervals of every two months or
oftener. They are written by Dr.
S. M. Woo, A.B., M.D., C.P.H.,
a graduate from Johns Hopkins
and Harvard Universities, who is
acting as Secretary of the Joint
Council.

All of the bulletins are excellent
for distribution by mission hos-
pitals, and can be obtained at the
rate of $6 per 1,000, from the
Joint Council on Public Health
Education, No. 5 Quinsan Gardens,
Shanghai.

A special bulletin on Sex Hy-
giene is about to be issued at the
request of the Illinois Vigilance
Association. This will be issued
at the same price, but a limited
number will be sent to Boys' Schools free of charge.

THE VENEREAL DISEASE PRO-
BLEM.—In view of the wide extent
to which venereal diseases are prev-
alent in China, the measures taken
in the United States for the pre-
vention of infection and the treat-
ment of these diseases should be
of interest and value to all who
are striving to promote the physical
and moral welfare of the Chinese.

The United States Government,
through the United States
Public Health Service, numerous
State Departments of Health, and
City Departments of Health, and
private institutions and agencies
are acting individually and in close
co-operation in this important phase
of public health work. Special
attention is being given to it
in the extra-cantonment zones.
Venereal disease clinics have been
established, with free diagnosis and
treatment of these conditions, and
follow-up work instituted in several
cities. Legislation, in certain in-
stances, has been effective in the
suppression of suggestive advertise-
ments, and of quacks who black-
mail and often beggar people who
have been exposed to infection.
Legislation has succeeded in closing
houses of commercialized vice; in
certain instances, on complaint of
any citizen to the Court of Chancery,
these houses may be closed and no
one allowed to live in them for a
period of one year. Such action
was at first opposed by real estate
men, but realizing the value of
maintaining respectable premises,
they gave the abatement and injunction law their hearty support.

The public health activities in preventive medicine, as applied to venereal diseases, are already beginning to show results. Surgeon L. D. Fricks, of the United States Public Health Service, has stated that the average boy at Camp Taylor, under strict military discipline, is safer than if there was no war and he was running about the streets under normal conditions. According to figures made public on July 12 by the Army Medical Corps, venereal diseases among the troops is being controlled, both here and in France, with remarkable success. It is reported that in France, with 700,000 men mobilized, the rate on June 13 showed less than one new case per thousand men each week.

Although many mistakes will undoubtedly be made in carrying out the details of this new phase of public health activity, the ultimate results should be of inestimable value not only in conserving an efficient fighting force but in preventing the trail of misery after the war usually due to the effects of venereal diseases.

**Epidemic Influenza.**

An acute infectious disease (epidemic influenza) has prevailed in Europe this year similar in many respects to the disease which prevailed in pandemic form in the winter of 1889-90. It seems probable that in 1918, as in 1889-90, the earliest appearance was in eastern Europe. By April cases were occurring on the western front. In Spain, according to reports, 30 per cent of the population were attacked in May. The 1889 epidemic, starting in northern Europe, also fell heavily on Spain; the present ruler, then three years old, being one of the first attacked in Madrid. The King of Spain is said also to have been attacked in the present epidemic. The epidemic of 1918 was at its height in Germany in June and July. It has appeared in practically every section of Europe. In England the epidemic prevailed in May, June, and July.

Outbreaks have been reported from various sections of the United States, but the spread has been by no means so rapid as in 1889, when...
the disease occurred in America almost simultaneously with its appearance in western Europe.

In the absence of a clean-cut symptomatology, distinct from that of other diseases, and of any criterion, such as a proved causative organism, demonstrable in the tissues of the patient or his discharges, it is difficult to make diagnosis in individual cases apart from an intense prevalence of the disease. It is likewise impossible for us to assert or deny the unity of this epidemic with that of 1889-90. The marked difference in season is notable. In 1889 the first outbreak occurred in St. Petersburg during October; in Berlin and Paris, during November; in Brussels, Copenhagen, London, Vienna, Rome, Madrid, Boston, New York, and Philadelphia, during December, persisting in each place for one or two months. In 1918 the heavy incidence has been in summer, but the duration in any one focus, the general character of the disease, its tendency to spread along routes of travel, and the enormously high case incidence have been similar in the two pandemics.

The identity of the present outbreak with outbreaks in other years is even more uncertain. Hippocrates and Livius refer to an epidemic in 412 B.C., which is regarded by many to have been influenza. Since ancient times, epidemics somewhat similar to the present outbreak have been recorded in the twelfth and thirteenth centuries, 4 in the fourteenth, 5 in the fifteenth, 8 in the sixteenth, including the pandemics of 1510 and 1580, 8 in the seventeenth, 20 in the eighteenth, and 14 in the nineteenth century, including the pandemics of 1831, 1833, 1837, 1847-48, and 1889-90. After the pandemic of 1847-48, there appears to have been a considerable pause before the pandemic of 1889-90 appeared "like a thunder cloud from the east," as Beck puts it. Following this pandemic, high incidence of epidemic influenza was reported during the winters of 1891 to 1894, 1907-8, and 1915-16.

The symptoms in the present pandemic have been an acute onset, often very sudden, with bodily weakness and pains in the head, eyes, back, and elsewhere in the body. Vomiting may be a symptom of onset and dizziness is frequent. Chilly sensations are usual, and the temperature is from 100° to 104°, the pulse remaining comparatively low. Sweating is not infrequent. The appetite is lost, and prostration is marked. Constipation is the rule. Drowsiness and photophobia are common. The conjunctivae are reddened, and the mucous membrane of the nose, throat, and bronchi often give evidence of inflammation. The general symptoms, however, predominate over the local. Cervical and general lymphadenitis and nystagmus have been reported to be very frequent by certain observers. Characteristically, there is no leucocytosis during the height of the fever, so that a high white count during the first 60 hours is indicative of another disease or of complication. The fever usually lasts from three to five days; but relapses are not uncommon, and complications, particularly pulmonary, are to be feared. The death rate is usually given as extremely low; but in the latter periods of an outbreak an increased number of deaths, presumably due to complications, has been reported in Spain and in the United States. Besides bronchitis and pneumonia, inflammation of the middle ear and cardiac weakness may follow the disease.

Epidemic influenza may vary in type in different places; thus diarrhea was said to be frequent in
Epidemic Influenza.

Spain. It is to be supposed that in some places aberrant types may be found, but, in the absence of a definite criterion for diagnosis, it is impossible to affirm this with certainty.

In its onset, epidemic influenza may simulate almost any of the acute infectious diseases, but in the civil population it must be differentiated chiefly from an ordinary coryza or bronchitis, from cerebrospinal fever, and from such conditions as the glandular fever of children. In the usual coryza or bronchitis the general symptoms are by no means so severe or so sudden in appearance as in epidemic influenza, and the spread of these infections through a community is not so complete. Even in the absence of an outbreak of epidemic meningitis, the symptoms mentioned as typical of influenza, if combined with a stiff neck or Kernig's sign, would justify a lumbar puncture. A negative result with the lumbar puncture or the absence of a leucocytosis would indicate that meningitis was not present. Glandular fever is limited to children; other ephemeral fevers have not occurred in widespread fashion. The short course of the fever (always less than seven days) in uncomplicated influenza is thus an aid in diagnosis.

The incubation period is probably as a rule very short, though with such universal prevalence this is hard to verify. All ages are attacked, young active adults being especially susceptible. In Germany there has been such a preponderance of cases among the young that it is supposed that the 1889 epidemic conferred an immunity on most of those at present over thirty years of age. This has not been observed elsewhere.

All evidence points to human contact as being the means of spread, and from the local symp- toms it has been assumed that the nose and throat have been the points of egress of the virus and the points of inoculation. There is nothing to show that other animals have any part in carrying the disease.

Discussion as to the etiology of the disease has been chiefly concerned with the question whether the influenza bacillus of Pfeiffer (1892) is the specific causative factor. This organism offers difficulties in recognition, cultivation, and identification, and it may be that the failure to find it in the last pandemic, and the failure of many bacteriologists of standing to demonstrate it in the present epidemic are due to these difficulties. It is certainly found outside of epidemics, and we can not regard its absence at present as indicating that the disease is not epidemic influenza. For the present the diagnosis must be clinical rather than bacteriological. Streptococci and other diplococci, some similar to or identical with the micrococcus catarrhalis, have been reported as very frequent in the nose and throat of patients. Pneumococci and bacilli of the Friedländer group have been found in complicated cases. The mere predominance of a certain organism in the respiratory tract can not be accepted as proof that it causes the disease. It may be that the actual causative factor is a filterable virus.

The treatment is symptomatic. On account of cardiac weakness, rest in bed should be prolonged after defervescence in proportion to the severity of the case. Attention to cleanliness of the mouth, adequate ventilation, avoidance of exposure to cold, and isolation from those who may be carriers of virulent pneumococci and streptococci are measures advisable to prevent complications. Aspirin or similar remedies may be used to relieve
headache and general pains. Watch should be kept for complications, and cases should not be discharged too early.

Crowded offices, and particularly street cars, are potent factors in the spread of the disease. In Berlin the street car conductors showed an exceptionally high incidence. The avoidance of street cars and of crowds, where possible, is therefore to be urged during an epidemic, although the disease is too mild to make it advisable to stop all the activities of a city. To prevent the transportation of the influenzal virus to the well, and possible causes of complications to the sick, masks for sick-room attendants are advisable. The organism is probably short lived outside the body, and attention should be directed toward keeping people apart rather than toward the disinfection of things, aside from the precautions of general cleanliness. The spread of streptococcus pneumonia in military camps, and the fear that with the advent of cool weather severe pulmonary complications will follow influenzal attacks more frequently than during the past summer, indicate the urgent need for the adoption of more stringent precautions to prevent such complications than have been customarily taken hitherto.

The most dangerous form of human contact in the presence of epidemic influenza is, in all probability, that with coughers and sneezers. Coughing and sneezing, except behind a handkerchief, is as great a sanitary offense as promiscuous spitting, and should be equally condemned.—U. S. Public Health Service. Rupert Blue, Surgeon General.

Book Reviews.


To avoid forming conceptions of disease which are too narrow, a not uncommon danger in these days when the branches of medicine and surgery are so numerous and intricate, every physician should occasionally examine from various points of view the foundations of the knowledge on which his treatment of disease and injury is based. In this volume all pathological processes are considered from the standpoint of biological chemistry, a subject in which great and encouraging advances have been made within the past few years.

In an introductory chapter there is an epitome of the most recent views concerning the chemistry of the protein molecule, the composition of the animal cell, and of the principles of physical chemistry in so far as they apply to biological problems. The nature of enzymes and their actions are next considered, followed by chapters on the chemistry of bacteria, and their products, and on the chemistry of animal parasites; on phytoxins and zootoxins, and then there is a very full discussion of the chemistry of the immunity reactions and of the chemical means of defense against non-antigenic poisons. The remainder of the book deals with the chemistry of the pathological processes as ordinarily described in text-books on general pathology, new light being thrown upon almost every disease mentioned. Even when it is not possible to state that any great advance has been made, as in the investigation of the chemistry of tumors, the discussion itself is most interesting and instructive.
It is the author's opinion that a work of this kind should furnish collateral reading to the student who for the first time goes over the subject of general pathology, which his text-books usually consider from the morphological standpoint; it should exploit to the graduate in medicine the advances that are being made along lines that are of fundamental importance to clinical medicine; it should serve for the investigator in pathology or in biological chemistry as a source of information concerning the ground upon which the two subjects overlap; and it should furnish a guide to the sources of our knowledge of these subjects. These requirements are fully met, and that the work is now in its third edition is proof of the high estimation in which it is held by the medical profession.


Much is to be said for a complete work on surgery written wholly by one surgeon, as the duplication and overlapping of subjects is avoided, there is greater uniformity, and the work has a distinct individuality of its own. The author's object is to place in the hands of the surgeon the means for rendering help in every surgical condition. After dealing with the usual preliminary subjects, such as the general principles of surgical treatment, asepsis and antisepsis, anesthesia and anaesthetics, wound and operations, inflammations, surgical fevers and infections, etc., the blood and blood-vessels are considered from the surgical point of view, then diseases of the bones, fractures and dislocations, diseases of joints, operations on bones and joints, with chapters on the nerves, muscles and tendons, the skin and its appendages. To medical missionaries in China, many of whom are obliged to operate without adequate assistance and hospital equipment, this work should be of great service, as the author is aware that circumstances may surround both the surgeon and the patient which make the application of ideal surgical measures impossible or inexpedient. Hence, after describing ideal measures, he presents alternatives of treatment if the best possible cannot be employed. Also operative procedures are given which should be carried out only by the experienced surgeon, while at the same time methods are described which are adapted to the less experienced surgeon.

At present the whole work cannot be reviewed as only the first volume has been received. But to judge by the manner in which the subjects already presented embody the latest advances in surgical knowledge and practice the work should be a very valuable addition to the working library of the surgeon.


A full review was given of this work, in the China Medical Journal of January last (pp. 72, 73). The rapid exhaustion of the first edition has necessitated this second edition only about six months after the first was issued. More space is now given to shock, to the Carrel-Dakin and other methods of treatment, to fracture, tetanus, wounds of the head, chest, and joints, to the Bull-Pritchett antitoxin against gas gangrene, orthopedic surgery, etc., as rapid progress is still being made in nearly all departments of surgery through the clinical observation and active research work not only at the Front, but also at the base hospitals and laboratories in England, France, and the United States. There is also introduced a résumé of some of the more important surgical papers recently published, and short bibliographies. It is hardly necessary to say that every surgeon should possess a copy of this small but very instructive volume.


The papers contained in this volume are of the high order of merit we expect from workers connected with the Mayo Clinic, Rochester, Minn., or who are on
the Mayo Foundation for Clinical Research. Such is the variety of subjects, medical, surgical, physiological, and general, that a physician or surgeon who does not find something of particular interest to him must be very hard to please. The following is a partial list of the articles, not a few of which were written either by W. J. Mayo or C. H. Mayo.

Harelip and Cleft Palate; Peptic Ulcer and Gallstones in upper Abdominal Diagnosis; Cancer of the Stomach; Surgical Significance of Gastric Hemorrhage; Gastroduodenostomy, its indications and technic; Roentgen diagnosis of concurrent Gastric and Duodenal Ulcer; papers on Gastrojejunostomy, Enterostomy, Jejunostomy, Diverticulitis, and a Study of the Rectosigmoid. In genito-urinary surgery we have Recent Observations in Cystoscopic Technic; and papers on Tumors of the Urinary Bladder, Contusion and Rupture of the Kidney; Infections in Prostate Cases; Surgical conditions complicating Intra-uterine Pregnancy. Other articles are on Surgery of the Spleen and on the Relation of the Spleen to certain obscure clinical Phenomena; Operative risk in Cardiac Disease; Auricular Flutter; Pulmonary Fat Embolism a frequent cause of Post-operative Surgical Shock; Treatment of Elephantiasis by Kondoleon operation; Shock during Anesthesia.

Want of space forbids mentioning all the papers, not one of which is without its special value.


In a very interesting introduction, Dr. Matas narrates the rapid progress made in the scope and methods of local anesthesia which began with minor operations in the dispensary, but soon advanced to the more ambitious fields of major surgery. In 1900, fully 50%–60% of operations which a few years before would have required general narcotics had become amenable to local and regional anesthesia. Since then, the production of more ideal drugs than cocaine, the use of the local anesthetic with adrenaline, the extended method of nerve blocking, Crile's work on associ-association, and other discoveries and improvements, have brought almost the whole of operative surgery within its range. In this volume the author surveys the entire field and gives the essential elements in the successful application of local anesthesia to major surgery, as well as a systematic and detailed description of the methods of anesthesia suitable to operations in the different regions of the body. The work is well illustrated. While there is very seldom any trouble or mishap in giving a general anesthetic to Chinese, yet local anesthesia has its great advantages, and those surgeons who are inclined to employ the method more extensively will find in this volume all the help and guidance they need.


The author's varied experience in tropical countries for fourteen years as physician and surgeon, should certainly justify the publication of this work. As he remarks, tropical medicine and surgery are only medicine and surgery as they are found in the tropics; nevertheless, the conditions encountered in lands with a civilisation more or less different from our own, and peculiarities of custom and environment, make necessary the consideration of certain diseases from a particular standpoint. The author has made a judicious selection of these diseases and the accompanying illustrations are very good, especially those in the chapter on abscess of the liver.

The "Observations in China, Japan, and the Philippines," and the collected answers to a questionnaire of 53 inquiries sent in 1911 to practitioners in and about the tropic zones, present much that is interesting and valuable. The author gives a generous appreciation of the work of the medical missionary in China and reprints an article by Dr. Cadbury on medicine as practised by the Chinese.
Unfortunately, he seems to have received from China only three or four replies to his questionnaire, which do not furnish much beyond local information and even that requires revision. For example, so far from scarlet fever being an almost unknown disease, it is rampant at times over a great part of China and many cases are of the malignant variety (China Medical Journal, 1918, pp. 1-6). But the author cannot be blamed for the poor response made to his appeal. In an Appendix are some valuable papers from the Mayo Clinic on the surgery of the spleen and liver. The volume is recommended as a helpful supplement to other works on the diseases of warm climates, and much of the information it contains will be appreciated by students of nosogeography.

**DISEASES OF THE MALE URETHRA.** By Irvin S. Koll, M.D., Professor of Genito-Urinary Diseases, Post-Graduate Medical School and Hospital, Chicago, Octavo of 151 pages, with 123 illustrations, several in colors. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, 14s. net.

The author tells us in the preface that some of his views are reactionary and may not be shared by his colleagues. For instance, he follows Warden in holding that (1) the intracellular diplococci found in a gonorrheal smear and usually regarded as specific, are not gonococci at all, but belong to the staphylococcus group; (2) a diagnosis resting on such a smear is therefore unreliable; (3) true gonococci are demonstrable with difficulty or not at all in gonorrheal exudates; (4) the diagnosis should rest on cultural methods only. Nevertheless, in actual practice he advises, that "until some more reliable method of differentiating the Neisserian organism has been evolved we must still conclude, upon finding a Gram-negative intracellular diplococcus, that we are dealing with the gonococcus." So it is in theory rather than in practice that he is reactionary. Evidently based on a very large experience the work is an instructive guide to those called upon to treat diseases of the male urethra and such conditions as sexual impotence and sterility. The illustrations, many of them colored, are very good. By the way, it may be remarked that the reviewer cannot find the Biblical passage referred to by the author in the statement: "Again, the Second Book of Samuel tells us that the curse of God was visited upon the unrighteous Israelites by a pusy (sic) discharge." Perhaps some present reader may be more successful; even so, it is always well to give the chapter and verse of such quotations.


The scientific substratum upon which rests our knowledge of nutrition both in health and disease forms the subject of this work. After an interesting introductory, in the main historical, the part taken by each class of foodstuffs in the metabolism of the body is discussed at length in all its bearings, and the principles are stated on which a physiologically rational diet depends. Several standard dietaries are given but the author wisely lays down no rigid rules. As he observes, the individual standard will ever be controlled by climate, the amount and kind of mechanical effort, by appetite, purse, and dietetic prejudice. A side-light is thrown upon one of our sociological problems by the discovery that men sawing wood require 5,000-5,400 calories per diem. The author somewhat humorously observes that the proverbial reputation of sawing wood as a strenuous occupation has here its scientific verification and explains the disinclination of the hungry to engage in this useful occupation, as well as the unpopularity of the charitable wood yards in the United States.

In the latter part of the work the metabolism of the body in various abnormal conditions is considered, such as anemia, myxedema, goitre, diabetes, nephritis, cardiac disease, acidosis, fever, gout, etc., and the influence of certain drugs upon metabolism is described. Of special value is the chapter on diabetes, Joslin's method of applying the fasting treatment of Allen being given in full.

The present war, which has made it necessary for several nations to place civilians as well as soldiers upon compulsory rations, owing to the great depletion of the world's reserves of food, makes the appearance of this volume of timely interest and value.

This is a very useful little work. Intended for those who already possess a knowledge of symptomatic medicine, whether advanced medical students or post-graduates, its aim is to give the salient points in the differentiation of medical diseases. The plan is to start with the leading symptom or symptoms, as would be the procedure in the medical out-patient department of a hospital, and after arranging the diseases presenting these symptoms in groups, to differentiate the members of each group as clinical entities; the basis is therefore clinical, not pathological. The chapter on diseases of the nervous system is particularly good.

INDIAN MEDICAL MISSIONARY HANDBOOK. Fourth edition, 1918. Editor, James M. Macphail, A.M., M.D. Published by the Medical Association of India. Price, one rupee.

The immediate object of this handbook is to provide members of the Medical Missionary Association of India with a copy of the Constitution and Rules of that Association. But there is added much valuable information concerning the whole work of the medical missionary, medical and evangelistic. There are notes on compounding and dispensing for use in native India hospitals, with the typical pharmacopoeia of a mission hospital. Medical missionary schools, sanatoria for consumptives, and other institutions receive attention, and there are outline religious addresses for hospital patients. Also a general sketch of medical missions in India. The handbook is well worth possessing by all who take a wide interest in medical missions.

REPORT FOR APRIL-JUNE, 1918, on Work for the Eradication and Control of Uncinariasis in Siam. By M. E. Birnes, M.D., Representative of the International Health Board, The Rockefeller Foundation.

During the second quarter there have been examined 5,780 persons, of whom 4,672 were found infected, and 4,152 were treated for hookworm. In addition 543 were treated for other intestinal parasites, making a total of 4,695 persons treated. This record far exceeds that of any previous quarter.

The total number of persons examined thus far is 20,209, of whom 15,458 were found infected. Of these 11,581 received treatment for hookworm. An additional 1,501 persons were treated for other intestinal parasites, making a total of 13,082 first treatments administered. Several interesting case reports are given showing the wonderful physical and mental improvement which often follows the complete expulsion of hookworms from the system.

KALA-AZAR, ITS DIAGNOSIS AND TREATMENT. Sir Leonard Rogers, I.M.S., has written a foreword to the new work on Kala-azar, its Diagnosis and Treatment, by Dr. Ernest Muir of the Mission Hospital, Kala. The object of this book is to place within the reach of the medical practitioner in small towns and villages a guide to the diagnosis and treatment of this disease which in some parts of India is very prevalent. Now that treatment by intravenous injection of soluble antimony salts has been adopted, recovery may be expected in almost all cases where treatment is begun in time and carried out efficiently. There are at present two great difficulties in the way of getting such results, viz., the difficulty in diagnosing the disease in time, and the difficulty in carrying out the treatment. Therefore, the author has grouped all that he writes under these two headings. The price of this useful volume is Rs. 2 net. and it will be published by Messrs. Butterworth & Co. (India), Ltd., 6 Hastings Street, Calcutta.
Correspondence.

Correspondents are requested to write on one side of the paper only, and always to send their real names and addresses. The Journal does not hold itself responsible for the opinions or assertions of correspondents.

Botulism Among the Chinese.

To the Editor, C. M. J.,

DEAR SIR:—Under the above heading in the last issue of the Journal Dr. R. Chalmers of Swabue, Kwangtung, describes an often fatal form of poisoning caused by eating a fish which the Cantonese call "kuai-ho". This fish appears to be the same which is known as "wu-duing" in Shanghai and "fugn" in Japan.

Some fishes have poison glands attached to spines of the dorsal fin which act like the fangs of poisonous snakes, but the family to which the "wu-duing" belongs, the Tetradons, derive their danger from their genital glands, especially at the time of their maximum activity. These more or less globular fish (large-headed as Dr. Chalmers describes them) can be readily recognised by the absence of scales and the prevalence of small spines. They have four large dental plates like incisor teeth, two above and two below, the jaw resembling a beak. When removed from the water they swallow air and dilate a resonant air pouch, the expulsion of air from which occasions a loud noise. This family of fishes is common on the coast of China and Japan.

In Shanghai, where they have frequently caused deaths, their sale is forbidden in municipal markets; but they continue to be eaten as the roe is reputed to be "food for the gods"—which does indeed sometimes effect a remarkably rapid transfer of the soul of the consumer to the next world.

The effects would rather be classed under physiological fish poisoning than botulism, which is due to a definite microbe. However, botulism is by no means clearly worked out yet, as instanced in its curious prevalence of late in England. The knowledge of food and ptomaine poisoning may be described in military language as still in a somewhat fluid state.

In the case of Tetradon poisoning the active principle somewhat resembles curara and has been called fugin, but its exact chemical nature is undetermined. The symptoms produced are: dyspnoea, cyanosis, dilatation of the pupils, relaxation of the sphincters, paralysis of speech, dizziness, salivation, and vomiting. Death may result even in one or two hours.

A good rule would be not to eat fish which have no scales.

Yours sincerely,

ARTHUR STANLEY.

The Siberian Red Cross Appeal

To the Editor, C. M. J.

DEAR SIR:—We are all very anxious to "do our bit," in connection with the great war, but there may be circumstances which make it doubtful as to which has the stronger claim, the Red Cross with its appeal for workers to go to Siberia, or the Mission Hospital in our charge with its medical responsibilities to numerous Chinese and foreigners. Will you please write us an editorial on the relative merits of the two calls, Mission Hospital and Red Cross.

Yours sincerely,

PERPLEXED.

*** In accordance with our correspondent's request, the subject is considered generally in an editorial in this number of the Journal. Ed.

Venereal Disease in Colleges.

To the Editor, C. M. J.

DEAR SIR:—In reply to the letter which appeared in the September number of the C. M. J. on the subject of venereal disease in colleges, I may say that all our students are put through a medical examination at the beginning of each term, and whenever we find cases of venereal disease they are sent away at once.

It is a hard law, but a school is not a reformatory; we have got to weed out those whose influence would corrupt the innocent.

Yours sincerely,

COLLEGE PRESIDENT.

To the Editor, C. M. J.

DEAR SIR:—For a considerable time I had the professional care of a large number of students, and remember very well the difficulties we had in dealing
with the few cases of venereal disease, which sometimes occurred among them. Eventually, we found a method which I think is satisfactory both from the medical and the disciplinarian points of view. When a student was found to have venereal disease he was not immediately expelled, for there was the danger that on reaching home he might cause gonorrheal ophthalmia by the careless use of towels, or convey syphilitic infection by the common use of eating utensils, etc. No, the President of the College was quietly informed of the case and we adopted a "wait and see" policy, the patient being meanwhile treated for his disease and kept under rigorous observation. Usually a boy of this character, sooner or later, commits a serious offence of some other kind which can be dealt with more openly. When that occurred it was our opportunity; he was expelled without the least compunction, his offences being regarded as cumulative. This method has the merit of preventing the culprit from being a source of infection to others, either at the school or in his own home; it saves his "face" to some extent, as it need not be generally known that he is suffering from a shameful disease; it does not deter other culprits from coming to the physician, so that there are no concealed cases in the school; and it furnishes a proper victim for enforcing the discipline of the institution. Fortunately, these bold, bad boys are few and far between.

Yours sincerely,

DIPLOMACY.

A Correction.

To the Editor, C. M. J.,

DEAR SIR:—Through some mistake the article entitled "A New Method of Drainage in Suprapubic Operation on the Bladder," which appeared in the CHINA MEDICAL JOURNAL, June, 1918, was ascribed to C. H. Barlow, Shaohsing. The article was sent to the JOURNAL by C. H. Barlow but was written by C. B. Chang, M.D., Shaohsingfu, Chekiang, and the method of drainage suggested originated entirely with him. Please make this correction in your next issue of the JOURNAL.

Yours sincerely,

C. H. B.

Opening of New Hospital in Changchow, Ku.,

To the Editor, C. M. J.,

DEAR SIR:—For several years the Methodist Episcopal Mission South has had plans for opening a hospital in Changchow but the scheme had not materialized. In January, 1918, the gentry of the city came to the Mission with a proposition for co-operation. They wished to have a "Summer Cholera Hospital." Dr. Claude Lee of Wusih, was first asked to run it for them, but he turned the matter over to the Methodist Episcopal Mission South through Rev. John C. Hawk and a meeting for consideration of the proposition was held on January 31, 1918. At that meeting I was asked to speak. I told them we realized the great need for an efficient hospital in Changchow but that I was only interested in seeing a permanent hospital opened and had no special interest in the Cholera Hospital proposition. The gentry were pleased and at once offered $3,000 toward opening a general hospital and also offered the old Yang-Oo Yamen for the purpose, which contains wards and private rooms for about 50 patients. The hospital was formally opened early in July. We are enclosing a résumé of our report for our first month, which will give you some idea of the work. The Maternity Department is developing well although it is not mentioned in the report and we have a trained graduate maternity nurse in charge. A Nurses' Training School has been started with a class each of male and female nurse students. Our greatest need is a foreign head-nurse. We have graduate Chinese nurses but no foreign nurse as yet.

Yours sincerely,

W. B. RUSSELL, M.D.

The Health of Missionaries.

To the Editor, C. M. J.,

DEAR SIR:—In an effort to throw light on the problem of the health of missionaries and missionary children, I have sent out a questionnaire to all the missionary families in China, asking for detailed family history and for opinions regarding the problem of keeping healthy in this foreign land.

I am, of course, especially anxious for the opinions of the doctors, unmarried as well as married. I should be grateful for reports concerning the health of foreigners under their care, with special attention paid to the cases of preventable sicknesses. Although this is primarily a study of the health of children, a beginning can be made on the larger problem of the health of the whole missionary community.

WM. G. LEHNOX.
BIRTH.

THOMPSON.—At Kuling, Kiangsi, on August 14, 1918, to Dr. and Mrs. Lewis R. Thompson, a son (Harrison Rhodes).

BALNE.—On November 5th, 1918, at the School of Medicine, Shantung Christian University, Tsinan, to Dr. and Mrs. Harold Balne, a son (Harold Wykeham).

DEATHS.

ANDERSON.—John Todd Anderson, M.D., aged 31 years, of the Southern Baptist Mission, Yangehow, drowned while crossing the Yangtze River to Chinkiang on the night of November 12. Peking and Hankow papers please copy.

Dr. Anderson had been in China only two years, but owing to the absence of his colleague, Dr. Taylor, who is now in Siberia on Red Cross work, he was already doing two men's work with great efficiency and promise, and had moreover endeared himself in an unusual degree to all with whom he came in contact, both foreigners and Chinese. The many friends who loved him throughout China will join in sympathy toward Mrs. Anderson and his infant son, and to his parents and family in South Carolina.

EDWARDS.—On July 14, 1918, at a Field Ambulance in France, of wounds received the same day, Lieut. Robert A. Edwards, 1st Battn. West Yorkshire Regiment, dearly loved second son of Dr. E. H. Edwards, and the late Mrs. S. Florence Edwards, formerly of Taiyuanfu and brother of Dr. Geo. K. Edwards, of Taiyuanfu.

LEE.—On September 30, 1918, Mary Willoughby Lee, aged 10 years, daughter of Dr. and Mrs. Claude M. Lee, American Church Mission, Wushih.

Epidemics in Nanking.—In Nanking during 1917 there was a very severe epidemic of malignant malaria during the summer and fall, while diphtheria and scarlet fever were very prevalent in the spring and winter months. Pneumonia has been much more prevalent than in former years. Smallpox has been conspicuously less than usual.—University Hospital Report, Nanking.

Origin of the Red Cross.—We are all inclined to think that the symbol of the Red Cross was originated by the Geneva Convention. But "The Clubman," of the "Pall Mall Gazette," tells us that the symbol was given to Camillo de Lellis by Pope Sixtus V. as a badge of an Order he was forming for the care of the sick and wounded in battle. The Order of the Red Cross was founded a few years later by Gregory XIX, during his short pontificate.

De Lellis, himself a soldier, was the pioneer in organizing the care of the sick and wounded in hospitals as well as on the battlefield, and as such was canonized. Pope Leo XIII decreed that this soldier of the sixteenth century should be the patron saint of all nurses.—N.-C. Daily News.

Soochow and the Red Cross.—Soochow is making quite a contribution towards the Red Cross work. One of our two women's hospitals is closed, and the two foreign lady doctors, two foreign nurses, the Chinese foreign-trained doctors, and the senior medical class, all left for Siberia this morning. Our only foreign dentist has also gone to Siberia. Soochow feels quite keyed up patriotically.—N.-C. Daily News.

Medical Progress in Hangchow.—There was a very interesting ceremony on Saturday, October 21, 1918, at the Hangchow Hospital when twenty maternity nurses received their diplomas. The hall was well filled and prettily decorated and on the platform were representatives of the Civil Governor, Military Governor, Board of Education, Chief Magistrate, and the British Consul, all of whom gave addresses—longer or shorter. The Civil Governor had intended being present to present the diplomas but family affairs, at the last moment, prevented his coming. He, however, sent his address to the graduates which was delivered by his deputy, who also gave away the diplomas.

In the evening there was a medical association meeting when thirty Chinese doctors, most of whom are in the Army or practising in the city, met and discussed some important medical subjects, the chief being how to improve their medical journal.

Leprosy in the Philippine Islands.—Writing of his visit to the Philippines,
Dr. James W. McKeen, of the Siam Presbyterian Mission, tells of the successful fight that is being made in the islands for the extermination of that dread disease, leprosy: "The Culion Leper Colony (in connection with Manila station) has 4,444 lepers. It is the unique and outstanding example to the whole world of the most approved and most successful and most hopeful method of handling the leper problem. During the eleven years of its history, some 11,000 cases of leprosy have been cared for, and Dr. Long, director of health, estimates that there are probably less than 2,000 lepers remaining in the whole of the Philippine Archipelago. The hope is expressed that within a short time not a leper will be found at large. Before segregation it is estimated that there were from one thousand to twelve hundred new cases each year. The Protestant religious work of the asylum is carried on by Mr. Wright of the Presbyterian Mission."

OPENING OF NEW JAPANESE HOSPITAL, TSIMANFU.—The first part of the new Japanese Hospital was opened on October 28th, 1918. It is a long, narrow building with a large dome situated on the southwest side of the settlement. The entire block of buildings when completed is estimated to cost $1,000,000, and the building now opened with its lecture rooms, etc., and accommodation for 50 patients was put up at a cost of $200,000.

INFLUENZA (?) IN CHINA.—From nearly all parts of China reports are being sent to the newspapers of the occurrence of a severe epidemic of disease which seems to manifest itself in various forms. In Wusueh, where the disease is called "the five days' plague," the symptoms are said to be not unlike those of cholera, death in some cases ensuing in less than a day. In other cases it is complicated by severe and often fatal pneumonia. At Anking many cases have all the symptoms of typhoid fever, but the mortality is great and sudden. In one house four people died within a few hours of each other, and in another house eight persons out of eleven died. At Wuhu and other of the lower Yangtze ports it is said to resemble dengue fever and the mortality is so great that undertakers are finding it difficult to meet the demand for coffins. In Shansi, where the victims literally number thousands, the disease is regarded as influenza. In Peking fully 50% of the Chinese have been affected and the mortality has been heavy. Accurate reports from medical men in these cities would be very instructive.

MORE DOCTORS FOR SIBERIA REQUIRED.—Dr. R. C. Beebe, Executive Secretary of China Medical Missionary Association, Shanghai, has just received the following telegram: "Military and refugee needs in Siberia demand service of thirty American or British doctors. Of this number ten women doctors are desired for refugee work. Must be completely outfitted in China for cold weather as per list sent American Red Cross Central Committee. Outfit allowance two hundred fifty gold. Salary $1,800 to $2,400 gold plus living and traveling expenses. Mobilize at Vladivostok or Harbin. Teusler."

SHANGHAI MUSEUM.

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

ARTHUR STANLEY, Curator.