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CASE OF KALA-AZAR TREATED WITH TARTAR EMETIC (H. W. Bell, p. 13).
A STUDY OF THE BLOOD CHANGES IN KALA-AZAR
AFTER SPLENECTOMY (WITH INCIDENTAL REFERENCE TO THE THERAPEUTIC VALUE OF THIS
OPERATION).

ERNEST MARSHALL JOHNSTONE, M.D., Peking.

PART II.

The purpose of this article is to report the changes which occur in the blood of kala-azar patients after removal of the spleen, as such changes may furnish an indication of the value of this method of surgical treatment. In the first part (China Medical Journal, 1918, p. 505), the clinical histories of two Chinese suffering from kala-azar who had undergone the operation of splenectomy are given, with charts showing the condition of the blood both before and after the operation.

MAIN OBSERVATIONS AND DISCUSSION.

I. Condition of Blood before Splenectomy.

The blood of a kala-azar patient before splenectomy has the following characteristics:

1. Leucopenia:—This may be even less than 2,000.

2. Anemia:—Hemoglobin may be as low as 25%.

3. Polymorphonuclears, low percentage:—May be as low as 20%.

4. Large mononuclears, numerous:—The percentage may go as high as 20% to 25%.

5. Lymphocytes, numerous:—The percentage of these may reach 60% at times.

6. Viscosity, low:—The blood is usually "watery." Mere inspection notes that the blood is very thin. After finger stab the blood runs out into a thin film and it is difficult to get a drop to form.
II. Observations after Splenectomy.

1. Leucocytosis:—Immediately after removal of the spleen there is a change from a low leucopenia to a high leucocytosis. In the patient named Hsu there was a rise from less than 2,000 leucocytes per c.mm. to over 32,000 within three hours after operation.

A leucocytosis is the usual observation after splenectomy for other diseases. It is, however, not invariable. Giffin 10 reported no leucocytosis after splenectomy in one case of hemolytic jaundice and Wylie of Paotingfu has recently informed me of a similar result after splenectomy for kala-azar. A leucocytosis also follows ligation of the splenic vein 25.

Not only is an early leucocytosis the usual rule but the leucocytosis persists a long time. Humphrey, Deightou, and Hare 7 report a leucocytosis of 41,000 three months after splenectomy (for splenic anemia). Peck 9, reporting on splenectomy for hemolytic jaundice observed a leucocytosis of 11,000 four months after the operation, and 13,000 three years and five months after the operation. In one case of kala-azar (Hsu) here reported, there persisted a leucocytosis of 12,000 one year and a half after splenectomy.

2. Differential Blood Count:—Immediately after operation nearly all the leucocytes are polymorphonuclears. Then, day by day, the polymorphonuclears decrease as simultaneously the mononuclears increase. The following diagram illustrates the change in the blood picture produced by splenectomy.
Blood Changes in Kala-azar after Splenectomy.

The line b-b divides the percentages of polymorphs (below) and large mononuclears (above). The line c-c divides the large mononuclears (below) and the lymphocytes (above). An examination of the charts shows this change in detail. In the case of Yie, a wound infection on February 1st, caused a temporary increase of polymorphs. But after this infection subsided the blood changes resumed the above described course. The lines “b” and “c” first converge and then diverge after splenectomy.

3. Nucleated Erythrocytes:—Although particular search was made for them, very few nucleated red cells were seen. This is not always the case after splenectomy. Some observers report many normoblasts. Not long ago, Dr. Wylie permitted me to see a blood smear from a patient recently splenectomized for kala-azar by Drs. Lewis and Wylie at Paotingfu (China) and the field was crowded by numerous normoblasts. The normoblasts considerably outnumbered the leucocytes. Dr. Wylie kindly allowed me to mention his finding in this connection. We look forward with much interest to a report of the work recently done on kala-azar at the Paotingfu hospital.

4. Erythrocytes:—These improved both in quality and quantity after operation. Before operation the red cells stained poorly and poikilocytosis was marked. After operation the erythrocytes stained a good pink color (same technique and same stain) and were quite uniform in size and shape.

5. Myelocytes:—These cells were very rare. However, we interpret the enormous numbers of “horse-shoe nucleus” polymorphs, already described, as an intermediate stage between myelocytes and mature finely granular neutrophilic polymorphonuclear leucocytes. Davenport reported many myelocytes after removal of a large malarial spleen.

6. Eosinophiles:—These were few in number. The highest percentage seen at any time was 5%, which could easily be accounted for by ascariasis which was concurrent.

Some observers, Wolferth, Krumbhaar, Musser, Peet, Pearce and Pepper report a large increase of eosinophiles after splenectomy for other diseases—the eosinophilia usually being late.

7. Anemia:—This condition usually follows splenectomy. Later the hemoglobin and erythrocytes show an improvement over the pre-operative condition. This change seems to be the rule after splenectomy for any disease, as noted by Wolferth, Pearce and Pepper, Orr, and other observers.
Tabulated Record of Blood Condition Before and After Splenectomy for Kala-Azar. Patient Named Yie.

<table>
<thead>
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<th>Date</th>
<th>Temperature</th>
<th>Hemoglobin Test</th>
<th>Erythrocyte Count</th>
<th>Leucocyte Count</th>
<th>Differential Blood Count</th>
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Explanation of Differential Count Table.
Black Column Indicates Percentage of Polymorphonuclear Leucocytes.
White " " " " " Large Mononuclear Leucocytes.
Shaded " " " " " Lymphocytes (Including Small Mononuclear Leucocytes).
Blood Changes in Kala-azar after Splenectomy.

**Tabulated Record of Blood Condition Before and After Splenectomy for Kala-azar Patient Named Hsu.**

<table>
<thead>
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<th>DATE</th>
<th>TEMPERATURE</th>
<th><strong>H EGLOBIN TEST</strong></th>
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<th>Leucocyte Count</th>
<th>Differential Blood Count</th>
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<td>1,000,000</td>
<td>12,900</td>
<td>4%</td>
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</table>

**Explanation of Differential Count Table.**

Black column indicates percentage of polymorphonuclear leucocytes. White indicates large mononuclear leucocytes. Shaded indicates lymphocytes (including small mononuclear leucocytes).
8. Platelets:—Enormous numbers of platelets were observed soon after operation. These, occurring in large clusters, were so markedly increased that, although not actually counted, the increase was unquestionable. Lee, Minot, and Vincent report a large increase of platelets 3-7 days after splenectomy for pernicious anemia and argue that this indicates unusual activity of the marrow. The main consideration is the influence of increased platelets upon thrombus formation, because this has a direct bearing upon the cause of sudden death after splenectomy which is discussed elsewhere in this article.

9. Viscosity of the Blood:—Some improvement was seen by way of increased viscosity of the blood after splenectomy. This is probably explained by the increase in platelets and erythrocytes as reported by Huebner and Josué and Parturier.

10. Weight:—One patient, named Yie, lost considerable weight which he never recovered after operation. The other patient, named Hsu, although he represents a good result for this operation, has increased only three pounds in a year and a half after operation. He is, however, considerably taller. His lack of growth is not due to undernourishment because he belongs to a "well-to-do" family and has had plenty of food since he left the hospital.

11. Lymphatics:—A hyperplasia of lymph nodes was carefully looked for from time to time after splenectomy. No hyperplasia was noticeable in the boy named Yie during the three months he lived after splenectomy. But in the patient named Hsu, a year and a half after operation some large lumps, apparently \( \frac{3}{4} \) inch in diameter, were felt in the region of the mesenteric lymph nodes. An unusually flaccid abdominal wall allowed distinct palpation of these. The cervical, axillary, and inguinal glands were not enlarged and the mediastinum remained resonant. Silvestrini reported enlargement of lymphatics along the portal system and then inside the liver lobes. Adami and McCrae, discussing regeneration of lymphoid tissue, state that new nodes may be formed in the subperitoneal tissue where such had not been previously recognizable. This undoubtedly is a hyperplasia to compensate for loss of the spleen.

12. Size of Spleen:—The spleen of Yie, a young boy weighing 54 lbs., weighed 2 lbs. 7 1/2 oz. (1,118 gms). That of Hsu, a 17 year old boy, weighed approximately 1,000 gms. The average weight of a normal spleen is 195 gm. Mayo and Piersol. Thus the spleen, in Yie, was 5.6 times the normal size of an adult's spleen.
Blood Changes in Kala-azar after Splenectomy.

13. Liver:—In one case the liver was large before operation and constantly remained large. In the other patient, Hsu, the liver was never enlarged and after operation seemed to become even smaller. Cochran reported shrinkage of the liver after splenectomy. A liver puncture, eighteen months after operation, failed to reveal parasites in the patient named Hsu. Careful search of the blood also failed to show Leishmania-donovani.

14. General Condition:—The patient named Yie (severe infection) was seen to improve temporarily and then day by day he slipped back to the miserable pre-operative condition and died three months after operation.

The other patient, Hsu, (mild infection) has gradually improved and now 1 ½ years after operation is fairly alert and well, weighs 3 lbs. more than before operation, a liver puncture shows no parasites, and his blood is as follows:—hemoglobin, 70%; erythrocytes, 3 ½ millions; leucocytosis, 12,000, and the differential count is nearly normal.

15. Tartar Emetic:—Both these cases were included in a previous report by Korn, Yie’s case being No. 6 and Hsu’s case being No. 8. Both were given a trial of antimony treatment. The patient Hsu showed some improvement after antimony ointment inunctions and therefore some part of his present improved condition should be credited to the medical treatment.

16. Transfusion:—The patient Yie, who died, was given two transfusions of his father’s blood. No changes could be observed in the blood as a result of this stimulation. Apparently his blood-forming organs did not react well to the stimulus. This is in keeping with Lee, Minot, and Vincent’s statement that if response to transfusion is slight the prognosis of splenectomy is poor.

17. Cause of Death after Splenectomy.—Whether death occurs soon or late after splenectomy its cause is a very interesting subject for consideration.

In our patient, named Yie, death occurred suddenly three months after splenectomy. He appeared to be as usual until suddenly he complained of gastro-intestinal discomfort and died, according to the father’s statement, in about one half hour after the seizure. Evidently death was not due to internal hemorrhage because there were no symptoms such as restlessness, pallor, thirst, etc. Also there were no symptoms pointing to cerebral hemorrhage, thrombosis, or embolism.
Gastro-intestinal distress, not a severe colic, was the outstanding symptom.

Lee, Minot, and Vincent report several cases of thrombosis after splenectomy. One case was noted five days after operation, another case three weeks after operation, and one so late as nine months after operation.

They also mention gastrointestinal disturbance as the leading symptom. One case died of extensive thrombosis. These authors suggest thrombosis of the mesenteric veins as the cause of death. They also observed a concurrent increase in platelets. Their observations and the report of Minot, Denny, and Davis point to the increase of platelets as the indirect cause of death by inducing thrombosis. Besides increase of platelets an obscure latent infection in the region of the portal system may have been a factor in causing thrombosis. It has already been stated that this patient had an infection of his laparotomy wound. This infection appeared to be only superficial but at one time there was the suspicion of a small deep sinus leading toward where the tail of the pancreas was ligated. Thus the possibility of a sluggish latent infection deep in the abdomen must be considered. Very unfortunately an autopsy was impossible in this case and we were unable to get conclusive evidence of thrombosis.

In kala-azar cases one of the most distressing symptoms is nose-bleed. It may recur every few days and exhaust the patient. Sometimes it is exceedingly difficult to stop the hemorrhage. In the patient named Yie, who had frequent nose-bleeds before operation, we had to pack the nose with gauze strips dusted with tannin to stop the bleeding. After splenectomy, epistaxis ceased for a few weeks and then recurred. Evidently the increase of platelets did not suffice to permanently stop epistaxis although it may be argued that an increased tendency to thrombosis caused his death.
Blood Changes in Kala-azar after Splenectomy.

Special observation of "horse-shoe nucleus" polymorphonuclears.

1. The most spectacular change in the blood was seen immediately after splenectomy. This consisted in the immediate appearance of immense numbers of "horse-shoe nucleus" neutrophilic fine granular leucocytes.

In the illustration on the preceding page of the types of cells after splenectomy, is a drawing of one of these "horse-shoe nucleus" cells. As stained by Wright's stain the main characteristics were:

1. Large size, i.e., as much as three times the diameter of an erythrocyte and twice the diameter of an ordinary polymorphonuclear leucocyte (see illustration of relative sizes). Average diameter was about 21 μ.

2. Nucleus:—horse-shoe shape, stained lightly, had slight indentations but no marked constrictions forming distinct lobulations as in ordinary polymorphonuclear leucocytes.

3. Cytoplasm:—the granules were so coarse that it was difficult to decide whether to classify as a coarse or fine granular cell. But side by side comparison with a coarse granular eosinophile showed that the cell really belonged to the finely granular class. The stain of the granules was unusually pink so the cells looked very much like eosinophiles until they were directly compared to true eosinophiles in the same field.

4. Occurrence:—This type appeared very early and then soon disappeared. Before splenectomy the "horse-shoe nucleus" cell was not seen, but three hours after operation the blood was crowded with them.

The fact that these embryonic type cells disappear in about a week, and a leucocytosis still appears but of the usual polymorphonuclear type, warrants the assumption that there may be a transition from one to the other type. The observation of cells where the "horse-shoe nucleus" had apparently divided and redivided, also adds credence to the theory of such transformation.

It is difficult to fix the origin of the cells. Because granular leucocytes, in the normal adult, come from the bone marrow, we would naturally conclude that such was their origin in this case. But Pearce and Pepper in experiments on dogs found no early changes in the marrow after splenectomy (they found a late transformation) and their work makes it seem doubtful if the enormous number of leucocytes which crowded the blood stream within three hours of splenectomy could all come by generation of leucocytes in the marrow. Probably
they were stored immature cells suddenly released, due to a stimulus associated with splenectomy 24.

As Brinchmann 23 says, there is certainly considerable evidence that the spleen in some way regulates the blood-producing organs and steadies the normal production (and destruction) of blood elements. Splenectomy apparently removes this regulation and balance of function, allowing the marrow (and other blood-forming tissues) to run wild in throwing immature cells into the circulation.

It is also possible that new leucocytes come not only from the marrow but also from the liver and lymphoid tissues elsewhere in the body. It is widely admitted that, under certain morbid conditions, the spleen and liver may revert to the fetal function of generating uncolored cells (Mayo 14, Adami and McCrae 28, and Lee 24). Piersol 12 quotes Ebner as demonstrating the presence of polymorphonuclears before the advent of the earliest bone marrow, showing that granular cells can originate outside the marrow.

A third possibility is that some at least of those cells came from the spleen itself, i.e., they were cells stored in the spleen and expelled into the circulation by the squeezing and manipulation of the spleen while delivering it outside the wound during operation.

One who has observed the immense amount of blood that flows out of the spleen after it is excised, is impressed with the fact that considerable congested blood must also have been expressed into the general circulation during operative manipulation of that organ.

Conclusions.

We are not justified in forming conclusions on two cases however carefully observed. It is our hope that the data of these cases together with future reports will converge opinion to well-founded conclusions regarding the results of splenectomy for kala-azar.

Résumé of Main Observations.

1. Immediately after splenectomy there may be an enormous increase of leucocytes.

These leucocytes, during the first few days after operation, were a new type of cell which we call the "horse-shoe nucleus" polymorphonuclear neutrophilic leucocyte. We interpret these cells to be an intermediate form between a myelocyte and a mature neutrophilic polymorphonuclear leucocyte. At the end of about seven days after operation they gradually disappear and a leucocytosis of the usual type of irregular lobed polymorphonuclear leucocyte persists. We observed cells which at least
Blood Changes in Kala-azar after Splenectomy.

furnish presumptive evidence of transformation of the embryonic "horse-shoe nucleus" cell into the mature form while in the circulating blood. These cells are probably "stored cells," i.e., embryonic granular cells in bone marrow and other blood forming tissues which are prematurely thrown into the blood stream because of a profound stimulus associated with splenectomy.

2. It is probable, judging from the symptoms and reports of other similar cases, that the cause of sudden death three months after splenectomy was thrombosis of large veins of the portal system.

Discussion of the Value of Splenectomy for Kala-azar.

In case of a mild infection where the liver is not enlarged and the patient is in fair condition the effect of splenectomy is undoubtedly good. A year and a half after operation our patient, illustrating this condition, appears to be free of Leishmania-donovani and almost free of all symptoms.

But in case of a severe infection where the liver, as well as the spleen, is enlarged, if also the patient is in poor condition, and if the reaction to transfusion of whole blood is slight, the prognosis for splenectomy is poor. Our case strongly suggests this conclusion. The boy Yie showed only a temporary improvement and then gradually returned to his miserable pre-operative condition. The blood changes after operation corresponded exactly to the progressive recurrence of his kala-azar symptoms.

Splenectomy may be considered in a two-fold light. First, removal of the spleen is a powerful stimulus to the other blood-forming tissues, especially the bone marrow. Secondly, by splenectomy we accomplish the removal of the main stronghold and "safe retreat" of Leishmania-donovani. Just as malarial and syphilitic parasites take refuge in the depths of the spleen to escape quinine, mercury, potassium iodide, and even the arsenic compounds (Mayo 14), so, too, Leishmania-donovani may escape antimony preparations by lurking, in immense numbers, in the spleen.

If outside the spleen the parasites not only throng the blood stream but have also massed great numbers in the liver and lymph nodes, we can hardly hope for much good by splenectomy. This is especially evident if the patient's resistance is low, due to poor general condition, and if response of the blood-forming tissues is slight (or absent) after transfusion of whole blood. In such circumstances we can only hope for a temporary improvement associated with removal of a majority of the parasites and more or less stimulus of the marrow by splenectomy.
Thereafter the blood stream is reinfected by parasites from the liver, lymph nodes, etc., and the disease continues practically unchecked.

Accordingly, we offer the following as a logical method of treating kala-azar:

1. First, use injections of tartar emetic, give transfusions of blood, use general hygienic and supportive measures until the patient is improved. If he fails to respond to these he will probably also fail to respond to and benefit by splenectomy.

2. Later, splenectomy may be done if the above measures indicate a good prognosis, and if it is apparent that parasites in the spleen are not reached by the drug. If the liver is enlarged, if the patient is in poor condition, and if response to blood transfusions is slight or absent, splenectomy is contra-indicated.

3. Follow splenectomy by continued injections of tartar emetic or antimony ointment inunctions to destroy the parasites still present in the blood stream and lymph glands and other tissues. Also continue transfusions of blood, if necessary, and give continued attention, to good nourishment, fresh air, and general supportive and hygienic measures.

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18. Orr; Jour. of Laboratory and Clinical Medicine, St. Louis, Sept. 11. No. 12,
19. Evans; Arch. of Int. Med. 1916, p. 705.
A CASE OF KALA-AZAR, TREATED WITH TARTAR EMETIC.

HUGH W. BELL, M.B., Ch.B., Weihaiwei.

On May 28th, 1917, a Chinese boy, aged 20 years, was admitted to the Government Civil Hospital, Liu Kung Tao, Weihaiwei. His relations had previously informed me that he had been ill for a long time and that they now despaired of his living; however, they brought him to the hospital on my suggestion. On admission the patient stated that he had been ill for two years, that the first thing he noticed was that he was getting thinner and weaker, so that now he was hardly able to leave his bed, and that a lump had appeared in his left side, which was gradually becoming larger. He also stated that he frequently had attacks of bleeding at the nose and occasionally fever with rigors.

On examination he was found to be intensely emaciated with a very prominent abdomen. He had slight ulceration about the lips and forehead. His spleen was enormously enlarged, reaching about two inches across the middle line at the umbilicus, and extending downwards for about four inches below the same point. The liver was slightly enlarged, extending one inch below the costal margin. Two attempts were made to find Leishman-Donovan Bodies in the blood from spleen puncture, but the results were negative, and it was not considered advisable to make any further attempts as the patient was so prone to haemorrhage.

Until tartar emetic could be procured, the patient was given calcium chloride, as bleeding from the nose was his most troublesome symptom; it responded quite well to this treatment.

The tartar emetic treatment was carried out by means of injections of a 2% solution into the veins of the arm and was begun on August 7th, 1917. Very often the injections caused an immediate attack of coughing with watery expectoration, which passed off in a few minutes. No other unpleasant effects were produced, except on one occasion in April, 1918, when the patient became collapsed just after the injection had been given. He quickly recovered, and felt no after effects. I was unable to account for this attack in any way.

The course of the treatment, with notes, is indicated below. August 7th, 1917, 0.2 mil 2% sol. tartar emetic was injected. The patient then went home to settle his affairs, so as to be able to undergo the full treatment in the hospital.
After his return, on August 28th, 1917, he was given an injection of 0.5 mil 2% sol. of tartar emetic; on the 30th, 0.75 mil; on September 3rd, 1.5 mils; on the 5th, 3 mils. His girth was now 85 cm. and his weight, 84½ lbs.

On September 7th, the patient was given 4 mils of the same solution; on the 11th, 5 mils; on the 16th, 6 mils. On the 19th he had severe coryza and the temperature was 104.6°F. On the 23rd, he was given 7 mils; on the 27th, 8 mils. His girth was now 85 cm. and his weight 86 lbs. On October 2nd, 9 mils were given, and on the 9th, 10 mils. Thereafter 10 mils were given at intervals of four days up to December 1st, 1917.

On October 23rd, his girth was 84 cm. and weight, 91 lbs. On November 27th, his girth was 82 cm. and weight, 96 lbs. On December 5th, there was swelling of the parotid accompanied by headache, fever and rigor (epidemic parotitis?). On December 24th, 10 mils of the solution were given, and 10 mils were given at weekly intervals up to April 1st, 1918, except for a short interval at Chinese New Year when the patient went home.

Towards the end of the treatment the patient was doing light work and is now employed as a water coolie in a European household. He assures me that he can do any of the work that is required of him and that he does not feel at all tired when the day's work is done. Though the diagnosis of this case was not confirmed by spleen puncture, yet I think that it may be looked upon as a case fully illustrating the great value of tartar emetic in the treatment of cases diagnosed as kala-azar. The frontispiece shows condition before and after treatment.

I wish to acknowledge with thanks the great help that Sick-berth Steward Pessell, of Weihaiwei Naval Hospital, gave me with the case.

CHRONIC SUBTERTIAN MALARIA

Case with high Eosinophilia; Notes on various Methods of Treatment

John H. Korns, M.D., Peking.

History.—A male, European, aged 29, a planter who had been living near Singapore for more than a year, entered the Union Medical College Hospital, April 12, 1917. One year ago he began having chills and fever. He took 1.3 gm. quinine daily for eight months, this being enough to control the fever and keep him in fair health. Last December, however, his health began to fail. He gradually developed a sickly complexion and became weak. His physician told him to come north to recuperate.
During the trip north, lasting some three weeks, he took 2 grams of quinine a day. This drug had also been administered intramuscularly.

Past and family history negative.

Examination showed a tired-looking, slim adult, with a somewhat pale, muddy complexion. Further physical examination was negative. Neither spleen nor liver was palpable (though patient said the spleen had been enlarged until a few weeks before). Urine and feces, negative. Temperature, subnormal. The blood, much to my surprise, showed a leukocytosis and a 60% eosinophilia (see chart). The patient was not under constant observation, having left the hospital the day after entrance, but up to June 10th six blood examinations were made, the findings being as recorded in the chart. The eosinophilia, as will be noted, decreased rapidly during the first month, but at the last two counts was somewhat higher. By May 22nd, the leukocytosis had disappeared. Crescent forms of Latin craniae malaria were found in every specimen except that of May 1st, there being more macrogametocytes than microgametocytes.

At the request of the patient's former physician, galyl was given intravenously (see chart), and with beneficial results. The examination 12 hours after the first injection showed definite destruction of crescents. By May 8th, patient had gained ten pounds in weight and was feeling like a well man. Examination at this time showed a normal temperature, no enlargement of the spleen, and a marked improvement in appearance. But, as the blood still contained crescents, it was decided to try tartar emetic intravenously. Examination of the blood 24 hours after these injections showed no appreciable decrease in the number of crescents present.

*Eosinophilia.*—Meanwhile further examinations were made to exclude the more common diseases which cause eosinophilia. The feces were examined three times, using Bass's method, for ankylostoma ova, with negative results. Once an unfertilized ascaris ovum was seen, otherwise the stools were negative. The blood was examined for trichina embryos, using the method advocated by Simon, with negative results. Asthma and skin diseases were easily excluded. The only drug that had been taken in any considerable amount was quinine. My conclusion, therefore, was that the eosinophilia was due either to the malaria itself or to the ingestion of quinine. Roth has shown experimentally that in dogs quinine causes a secondary leukocytosis, in which the polymorphonuclears are increased, the lymphocytes remaining low. I have not access to the original article, but infer from the
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<tr>
<td>April 13, 1917, 12 hours after galyl .3 gm.</td>
<td>6,000,000</td>
<td>88</td>
<td>16,000</td>
<td>18.1</td>
<td>6.4</td>
<td>11.6</td>
<td>60</td>
<td>0</td>
<td>.3</td>
<td>342</td>
<td></td>
<td>A few normal crescents seen. Many disintegrating and shriveled ones. Much pigment.</td>
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<td>April 24, 1917, at the time of the 2nd injection of galyl .3 gm.</td>
<td>10,000</td>
<td>23.8</td>
<td>14.4</td>
<td>25.3</td>
<td>29.9</td>
<td>2.1</td>
<td>.2</td>
<td>.2</td>
<td>4.2</td>
<td>471</td>
<td></td>
<td>Long search showed one crescent present.</td>
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<td>May 1, 1917, at the time of the third injection of galyl .3 gm.</td>
<td>18,000</td>
<td>39.3</td>
<td>14.3</td>
<td>19.6</td>
<td>17.6</td>
<td>0</td>
<td>8.6</td>
<td>.5</td>
<td>2.1</td>
<td>244</td>
<td></td>
<td>Slide lost after this count was made. No careful search for crescents made. None seen in this count.</td>
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<td>May 8, 1917, 1 week after 3rd injection of galyl.</td>
<td>10,500</td>
<td>43.5</td>
<td>12.5</td>
<td>25.7</td>
<td>13.5</td>
<td>0</td>
<td>1</td>
<td>2.5</td>
<td>200</td>
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<td>A few crescents seen.</td>
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<tr>
<td>May 22, 1917, 3 weeks after 3rd injection of galyl.</td>
<td>7,950</td>
<td>35.3</td>
<td>7.3</td>
<td>28.</td>
<td>23.7</td>
<td>2.2</td>
<td>.2</td>
<td>.8</td>
<td>480</td>
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<td>Crescents more numerous than on May 8th.</td>
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<td>June 8th, 24 hours after tartar emetic .1 intravenously.</td>
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<td>Crescents approximately as numerous as on May 22nd.</td>
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<tr>
<td>June 10th, 24 hours after tartar emetic .14 intravenously.</td>
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<td></td>
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<td>Same as on June 8th.</td>
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BLOOD CHART IN LATENT SUBTERTIAN MALARIA, SHOWING HIGH EOSINOPHILIA.
Chronic Subtertian Malaria.

extract of it available that the eosinophiles were not increased. Could the malaria have caused this eosinophilia? According to Sahli, after the disappearance of the fever in malaria there may be an eosinophilia. In the absence of other causes I would attribute this condition of the blood, therefore, to the malaria itself.

Treatment.—Because the patient had taken so much quinine, and over so long a period, it was thought best not to continue the use of this drug, although if the patient were to be under my care longer I would consider the use of it again. Salvarsan and allied preparations have been used by a number of observers, and have been shown to have a parasiticidal effect on the malarial organism. Stein shows how salvarsan causes disorganization of the protoplasm in the parasite and renders it indistinct and indifferent to stains. In this case galyl was deleterious to the parasite, and the patient improved greatly; one must remember, however, that he had just come north from a tropical climate, and that this in itself probably contributed, not a little, to the improvement. As for the benefit derived from the use of tartar emetic, it was not appreciable. In contrast with this result Rogers finds a complete disappearance of the crescents from the blood after tartar emetic intravenous injections. Rogers’ technic and my own were identical.

Conclusions.—1. A high eosinophilia can occur in latent subtertian malaria that has recently become afebrile.

2. In this case galyl destroyed some of the crescents, and patient improved markedly.

3. Tartar emetic in this case had no apparent beneficial effect.

REFERENCES.

Intravenous Use of Tartar Emetic in Treatment of Malaria.—In treating ten cases of subtertian infection with tartar emetic, Levy and Wall (Interstate Med. Journ., 1918) used a fresh 2% sol, sterilized by boiling just before use, and beginning with doses of one or two mils gradually increased the dose to six mils. Injections were made twice a week. The effect upon symptoms was practically negligible, and the effect upon parasites uniformly negative. The results in all ten cases were disappointing, and the authors agree with many other investigators that tartar emetic is not as efficient as quinine in the treatment of septivo-autumnal malaria.
FOREIGN BODY IN PAROTID REGION; EXTRACTION; CERVICO-THORACIC GASEOUS PHLEGMON AND HEMORRHAGE; LIGATION OF COMMON CAROTID.

L. Casabianca, M.D., Canton.

The history of injuries to the tissues of the human body caused by the penetration of foreign substances is fertile in interesting observations, and the following case deserves to be ranged among the most peculiar and the most instructive, not only on account of the oddness of the accident but also because of the gravity of secondary complications.

History:—A Chinese peasant, Yiou Kam, 49 years of age, while running after a strayed buffalo on December 11th, 1916, fell forward on his face. On getting up he perceived that the mouth-piece of the tobacco pipe which he had been holding in his mouth at the moment he fell down had disappeared. A few minutes afterwards, he began to spit saliva mixed with blood, but he felt no discomfort or pain. Fifteen minutes later, on passing his hand by chance over his face, he discovered a hard, bulging body behind his right ear in the mastoid region, which gave him terrible pain when it was pressed upon.

The patient consulted a peasant of the same village, who offered to force out the object by pressing it back the way it had entered. The offer was accepted, and executed, with the result only of forcing the foreign body into the lower region of the neck. According to the statement made by the patient, this operation lasted over half an hour. Three days passed without any other symptoms than slight difficulty in swallowing, and slight pain in the parotid region.

On the 14th of December the pain increased so greatly as to compel the patient to enter the "Hospital François." We saw him on the same day at about 10 a.m., and we noticed that the parotid region showed a tumefaction which spread down to the middle of the neck, covering over one-third of the sterno-mastoid apophysis, and reaching laterally over the sterno-mastoid muscle in one direction and the sub-hyoid region in the other.

The temperature was 37.4° C.; the pulse was regular and distinct. An examination of the pharynx showed, on the level of the posterior wall and behind the posterior right pillar, an orifice of very small dimensions from which blood was dripping.

I operated immediately because of the danger of the complicating infection and the threatening of secondary hemorrhage. Under chloroform an oblique incision 8 cm. in length was made along the anterior
edge of the sterno-mastoid muscle, starting from below the tip of the mastoid process. This incision could have been eventually extended in case the ligation of the common carotid was found necessary during the operation.

The infiltrated tissues were incised layer by layer. While a blunt instrument was pressed against the structures of the parotid region, the right forefinger of the operator was introduced deeply into the wound, and a hard body was soon felt lying against the internal carotid. This body was movable and I took it at first to be the foreign body, but it was finally discovered to be the styloid process fractured at its base. This fragment was extracted with care after separating the tendons covering it. Introducing the forefinger a second time into the wound the real foreign body was discovered lying against the posterior side of the sterno-mastoid. The extraction was very easy. The base of the styloid showed a very sharp ridge which was trimmed; the wound was then plugged with iodoform gauze, and a subcutaneous injection of anti-tetanic serum was given.

The foreign body extracted, 37 mm. long and 12 mm. in diameter, was found to be the perforated shell of a Mauser cartridge, which the patient had used as the mouth-piece of a tobacco pipe. A bamboo tube in the anterior part of the shell connected it with the bowl of the pipe. At the time of the fall the bamboo tube was broken off where it joined the shell.

During the three days following, in order to avoid secondary hemorrhage the dressings were not removed. A certain degree of right facial paresia was noted, which was probably due to contusion of the right facial nerve by the styloid process while it was being extracted. The temperature on the 15th in the morning was 37.3° C.; in the afternoon, 37.3° C. On the 16th, it was 37.6° C. in the morning, and 37.1° C. in the afternoon. On the 17th the temperature was 37.1° C. in the morning, and 37.4° C. in the afternoon.

On the morning of the 18th, the temperature was 37.7° C., the pulse was rapid and weak, and the patient was very depressed. There was a large tumefaction over the pre-sternal region stretching down to the bi-mammary apex, with distinct crackling, and the colour of the skin covering the tumefaction was very livid. On removing the dressing, pus mixed with gas came abundantly from the wound, also from the ulcerated auditory canal inwardly owing to the neighbouring infection. After producing local anesthesia with chlorehyl I immediately made four deep incisions into the pre-sternal tumefaction. The incisions were in paralleled groups of two, over and through the
pectoral aponeurosis. In spite of the brevity of the operation, which lasted only a minute, the patient fell into a state of syncope, and death seemed imminent. Injections of ether and strychnine were given. After washing the wound with oxygenated water and permanganate of potash, two large drainage tubes were inserted and the wound was covered with a dressing soaked in mercury bichloride solution. During the day four injections of camphorated oil, of 4 mils each, were given, also an injection of 20 mils of anti-tetanic serum. In the afternoon the temperature was 37 1° C. Microscopical examination of the pus showed a non-motile Gram-positive bacillus associated with abundant chains of streptococci. We had no time to cultivate and isolate these germs, but we think that the bacillus was \textit{B. perfringens}.

For the next few days the patient was in a state of extreme prostration. Fetid pus flowed in great quantity from the mouth and nose. His pulse was quick and weak. Injections of camphorated oil (16 mils daily), and of collargol (10 mils) were administered. Every morning the dressing was removed, the wounds freely cleansed with oxygenated water and permanganate of potash and covered again with a dressing moistened with warm carbolic acid. With each irrigation there escaped quantities of fetid pus mixed with gas and shreds of gangrenous tissue. When the dressings were applied the syncope was sometimes so alarming as to necessitate subcutaneous injections of ether. Temperature on the 19th, a.m. 37° C., p.m. 38° C.; on the 20th, a.m. 36.9° C., p.m. 37.2° C.; on the 21st, a.m. 36.8° C., p.m. 36.9° C.; on the 22nd, a.m. 36.4° C., p.m. 37.3° C.

From December 23rd, 1916, to January 1, 1917, the general condition of the patient and the condition of his wounds were improving. The temperature was normal except on December 25th, when there was a slight increase (38.5° C.) caused by constipation for which an oily enema was given.

On January 1st, 1917, blood soaked through the bandage. A Chinese doctor on duty removed the dressing and plugged the parotid wound. On the night of January 1st-2nd the doctor on duty, on being sent for to see the patient at about midnight, noticed that the bandage applied the day before was soaked with blood, and that the patient was in a dangerous state.

He removed the dressing immediately and jets of blood, 5mm. in diameter, came from the depth of the wound. Direct compression with the fingers and the application of tampons of iodoform gauze checked the hemorrhage. Artificial serum and camphorated oil injections were given.
Next morning, the patient was in a desperate state, exsanguined, pale, and with a feeble, uncountable pulse. His clothes and even his feet showed marks of hemorrhage. Injections of artificial serum, (1,000 mils) and of camphorated oil (4 mils) which were given, strengthened his pulse noticeably. Then I decided to tie the common carotid. After giving some drops of chloroform, without touching the tampon, an incision was made 6 cm. from and below the large cornu of the hyoid bone, along the anterior edge of the sterno-mastoid. Division was made, layer by layer, of the skin, platysma, cellular tissue, and aponeurosis. At once I found the distended internal jugular vein; this was moved aside very carefully with the adjacent muscles. The left forefinger was then introduced into the wound and felt against the larynx the beating of the artery. The vessel was followed up to the omohyoid muscle and there denuded and doubly tied with catgut No. 3. The wound was closed with Florence sutures without drainage. No special incident. The operation lasted ten minutes.

The dressings were not removed for two days in order to secure absolute immobility. Tonic injections were continually administered. On the 4th of January a new dressing was applied to the pre-sternal and parotid wounds without disturbing that of the previous operation. Improvement was steady. In order to facilitate the drainage of the parotid wound, a small drainage tube was passed through the fistulous orifice of the external auditory canal to the parotid wound and the tampon was removed.

On January 9th a new dressing was placed over the carotid ligature. The sutures were removed, the wound having healed per primam. On the following days the patient sensibly improved, taking nourishment well. On the 15th, the pre-sternal incisions were completely healed, and the parotid wound was almost closed. On the 23rd a small cutaneous abscess formed at the level of the cicatrix of the last operation, which was incised on the same date.

At present, the patient is in excellent condition. The parotid wound and fistulous orifice of the auditory canal are closed. He is thin and the slight right facial paresis is gradually improving.

COMMENT.

1. Anatomically speaking, it is really extraordinary that the bulky foreign body described could accomplish its passage without injuring in its way any of the important structures comprised within the small space of the parotid region; it might very easily have opened the
jugular vein or the internal carotid and thus have caused a fatal hemorrhage.

At the moment of the fall the patient was holding the pipe with his teeth on the left side of the mouth, the pipe being deviated still further to the left. The cartridge shell went through the parotid region obliquely upwards, backwards, and then forwards, avoiding the bundle of nerves and blood-vessels, grazing the parotid cavity and its contents, breaking the styloid process, and finally passing under the skin of the mastoid region without injuring the facial nerve. The manœuvre of pressing back the object by forcing it brutally and blindly backward the way it entered did not produce any important injury. Had it not been for the complications caused by the serious infection due to the septicity of the foreign body and the communication of the wound with the bucco-pharyngeal cavity, the traumatism would have been of a very slight nature.

2. The examination of the phlegmon pus, though incomplete, was sufficient to show that the septic organism was not the only cause of the infectious accidents. This fact confirms our many observations that the septic vibrio is far from being the only one which determines the gangreno-gaseous development, though its absence offers a less dangerous prognostic.

The well noted prevalence of the streptococcus in the microbionic association which we noticed, would force us to accept the opinion that, in the above case, the special nature of the septic complications ought to be attributed to it, as it is known that the streptococcus has the capacity to live either in aerobic or in anaerobic conditions.

3. Another fact is to be noted. In a region rich in large vessels which becomes the seat of a virulent suppuration, all danger has not been escaped when the serious consequences of the infection itself have been warded off by an early operation. Vascular ulceration may develop independently while the infection may diminish. In the above case the hemorrhage appeared eighteen days after the opening of the parotid tumefaction, and fifteen days after the incision of the gaseous phlegmon, when the septic complications were almost cured.

4. The ligature of the common carotid gave no trouble. The comparative harmlessness of this operation is far from being a novelty; we mention it as a hint to our colleagues to do it every time it is necessary without apprehension, as it is an operation apparently difficult, but easy to perform if it is done with sang-froid.

5. Our patient never had any considerable elevation of temperature. It is a fact, which we have observed many times, that the
Chinese possess the aptitude to develop pus with complete or relative absence of fever. In this case the apyrexia may be attributed to the gangrenous nature of the morbid development.

Finally, the extraordinary resistance of Chinese peasants to infection and traumatism should be noted, a resistance well known to all doctors practising in China, and illustrated once more by the history of this patient who was forty-nine years of age. It is due to their model sobriety, to their naturally hardy constitution, to the benefit of life in the open air, and also, it may be said, to the possession of a strong degree of general immunity acquired from their childhood by frequent exposure to various pathological conditions. The law of natural selection acts here with all its force, and an adult peasant in China can usually pass safely through more than one morbid attack.

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ON THE IMPORTANCE OF SOME MINOR EYE OPERATIONS.*

JAMES N. MACPHERSON, M.D., Mission Hospital, Bamidah.

The importance of operations for cataract and glaucoma is generally recognised, but it seems desirable to emphasize the fact that a great deal of good may be accomplished in this country by eye operations of a very simple and easy nature. For several reasons it is advisable for the surgeon in India to give special attention to eye surgery. For one thing, the need in India, as in all Eastern lands, for the prompt relief of eye disease is very great. Every day cases may be seen of hopeless blindness which might have been prevented had suitable remedies been available at an early stage. For minor eye surgery, and indeed for major as well, a very slender surgical equipment is necessary. The surgeon can carry about the instruments that are really necessary for most eye operations in his pocket; as a rule the operations can be performed without an assistant; and it is a great relief not to have the administration of a general anaesthetic to consider. Then there are few places where there are not abundant opportunities for eye work; patients suffering from eye diseases will travel long distances to a doctor “whose name they have heard,” and a very common way they have of showing their appreciation of the benefit

*An address at the Bengal Branch of the Medical Missionary Association of India, Kalna, 18th February, 1918. Reprinted from the Indian Medical Gazette, June, 1918.
they have received is by sending more cases requiring the same treatment. Those, again, who are suffering from the more chronic forms of eye disease choose a time for operation that is convenient for themselves and their relatives. In the villages the agricultural operations are the main things to be considered, and the time chosen for going to hospital is, if possible, between the rice-planting and the harvest or, again, between the harvest and the ploughing. In this way it is possible to know beforehand when to expect a rush of patients and to make plans accordingly. At Bamdah, the favourite months for eye operations are Kartik and Phagoon, corresponding roughly to November and February; an additional reason why these months are popular being that the weather then is neither very cold nor very hot and convenient for travelling.

Perhaps the simplest of all eye operations is that of tattooing the cornea for leucomata. This is often to be recommended for other than cosmetic reasons. Light being reflected from a white surface, the retina receives less illumination than it does when that surface has been blackened. Then, when the nebula occupies only part of the cornea which is in front of the pupil, much disturbance of vision is caused by the dispersion of light as it passes through the nebula. It is better to render the nebula opaque by tattooing and so to compel the light to find its way through the clear part of the cornea. In the same way an improvement is often effected by tattooing a nebula that occupies the whole of the pupillary area and making an iridectomy at a suitable place where the cornea is clear. But even if cosmetic grounds are the only ones on which this operation is indicated, these are by no means to be despised. The first case I tattooed was that of a young Hindu wife, who told me her husband had turned her away on account of the white spots on her eyes, and whom a successful operation restored to her home. I once tattooed a small leucoma on the eye of a boy about ten years old. His father, a well-to-do bania, carefully examined the result of the operation, and then said to me—"That saves me eight hundred rupees. We were arranging the boy's marriage, and they were putting eight hundred rupees extra on the price of the bride on account of that white spot on my son's eye." I suggested that part at least of the sum saved should be given to me. "Oh no," the father said, "your merit (pu) would then be less." Boys and girls are so often brought to have white spots tattooed as a preliminary to matrimony that I once remarked to a young man, whose eye was being tattooed, "I suppose you are thinking of getting married." "No," he replied, "I am married already." "And how did you
manage to get a wife when you had an eye like this?” “I exchanged sisters with another man who had an eye like mine.”

There are various ways of doing the operation. One is by means of a grooved needle specially made for the purpose; an instrument of a different pattern consists of several needles in a socket; but any needle or an old cataract knife will serve the purpose. Some surgeons prefer to prick the white surface first and then to rub in the ink. One advantage of this plan is that it is easier to confine the tattooing to the white surface and not to trespass on to the clear cornea. In opacities that are the result of recent ulcers, the central part is often very thin and may very easily be punctured if sufficient care is not taken; but if proper antiseptic precautions have been taken, the puncturing of the thin scar may do good by relieving tension and preventing the formation of a staphyloma. A great many cases of corneal scars which we see in India are due to small-pox, and in many of these cases Hindus refuse to have them tattooed. They are the hand-mark of the goddess of small-pox—Mataji—and are therefore sacred.

It has just been said that the puncturing of a thin corneal scar may do good, and it may be added that this is practically the operation of paracentesis corneæ, which is another simple operation that often has a good result. The condition in which it is most clearly indicated is in corneal ulcer, for we know that a clean incision often prevents a rupture of the cornea, with prolapse of the iris and other disastrous consequences. There is the condition which Fuchs calls keratocele, where the substance of the cornea has ulcerated away, but Descemet’s membrane, still intact, protrudes like a hernia, distended with aqueous fluid. When this is the case, a timely paracentesis, followed by a well-fitting bandage, may often save the eye. Even when there is no localised ulcer but an abraded corneal surface and a distended anterior chamber, with pain, lacrimation and photophobia, a paracentesis often gives much relief. It may also be performed when the cornea is healthy, but where iritis is causing distension which is both painful and dangerous. Of course if there is hypopyon, paracentesis is all the more clearly indicated. Someone has suggested that apart from the relief of tension, paracentesis promotes healing of the diseased condition by promoting the flow towards the eye of a fresh blood supply with antibodies along with it.

I have had little experience of the actual cautery for corneal ulcers. In one or two cases in which I practised it, it was followed by sloughing of the cornea. This may not have been due to the cautery, but in India we have often to deal with a cornea of very low vitality,
and it is possible that the actual cautery may do harm. But there can be no doubt about the good that is often done by pure carlolic acid when applied to a bad corneal ulcer of the serpiginous type. Fluoresceine may be used to map out the ulcer beforehand, but this is seldom necessary. One of the best means of applying the acid is by a burned match, slightly sharpened.

Trachoma is a disease that usually calls for operative in addition to medicinal treatment. The effect of expression is to change a chronic condition into an acute one, which is more amenable to treatment. As a rule, I use Grady’s expression forceps instead of Kuapp’s roller forceps. The former are said to cause less injury to the healthy tissues. After expressing the granules, I apply a one per cent solution of corrosive sublimate to the raw surface. This is the method advocated by Treacher Collins, who says the corrosive sublimate excites an exudation of polynuclear phagocytes, and this promotes absorption.* At home, chloroform is usually considered to be necessary for this operation, but I find it is quite sufficient to inject a few minims of a two per cent solution of eucaine or cocaine into the retro-tarsal fold. After the operation the eyes are kept bandaged for two days to lessen the pain, and after that a two per cent solution of silver nitrate is applied daily, replaced sometimes by copper sulphate if there is much thickening of the lids.

There is no disease that is more destructive to the eye than entropion, usually the result of the cicatrization caused by trachoma, and there is no condition where operative treatment, if not too long delayed, gives more immediate relief. The operation I perform is a modification of Artl’s, as described a good many years ago in Medical Missions in India by Dr. Arthur Neve of Kashmir. It is much simpler than many of the other methods which are in use, but out of more than 800 cases in which I have performed it, I have not seen more than a dozen in which there was recurrence, and this is a disease in which you may expect recurrence if the process of cicatrization is still going on. The operation is to make an incision along the inter-marginal space, between the insertion of the cilia and the openings of the Meibomian glands, and then to dissect off a wedge of skin from the eyelid, of varying width, according to the degree of entropion that has to be overcome, but always leaving sufficient breadth of skin along the margin to hold the stitches by which the opening is closed. One is apt to take too little skin away rather than too much. In one or two cases in which it seemed to me at first that I had removed too

*British Medical Journal, 2nd October, 1909.
much, causing a condition of lagophthalmos or inability to close the eyelids, the lids adjusted themselves to the situation within a few days. The relief which is afforded is all the more immediate, because we do not apply a bandage or any dressing. The wound is simply painted with tincture of iodine. In nearly every case of entropion the cornea is in an unhealthy condition, and bandaging may aggravate this. If a little suppuration occurs in the wound, it rather improves the result by causing a greater degree of contraction. In my experience, operation for entropion is much more often necessary in the upper than in the lower lid. In the latter it is often the result of the entropion of the upper lid and, when that has been rectified, it disappears of itself, or it may be overcome by passing a stitch vertically through the lower lid and tying the ends over a small roll of lint. In more severe cases it is usually sufficient to dissect out a wedge of skin without making the incision in the margin. Occasionally a condition of spastic entropion of the lower lid is found in elderly people as the result of the bandaging after cataract or other operations, and if it does not disappear speedily after the bandage has been removed, it may be advisable to insert a stitch or to overcome the condition by means of a small strip of sticking plaster.

Pterygium is another disease that is always a disfigurement, and which sometimes seriously interferes with vision. I had a case a few days ago in which the patient was practically blind as the result of double pterygium in both eyes. It is a condition much more common and more severe in India than at home. Very often it is advisable to remove a pterygium as a preliminary to a cataract extraction, otherwise it interferes with the operation; and some authorities say that by exercising traction on the cornea it delays or may even prevent the healing of the wound. In the same way it is sometimes the cause of astigmatism. Some surgeons find it sufficient simply to snip off the growth with a pair of scissors, and for this they have the authority of the late Dr. Hall, of Allahabad, whose little book on Blindness, Its Treatment and Cure, written nearly forty years ago, may still be read with profit. But I take Fuchs' word for it that a pterygium treated in this way recurs, and adopt his method of removal, which is very simple. It will be found that at the limbus, where cornea and sclerotic meet, the attachment of the growth is very loose. At this point the pterygium, grasped by a pair of fixation forceps, almost comes away of itself, and very little dissection is needed to separate its apex from the cornea. It is then cut off with a pair of scissors. This leaves a V-shaped wound in the conjunctiva, and the edges of this
wound are brought together and united by one or two stitches of fine
silk. It is as well to bandage the eye for a day or two to lessen
irritation and prevent infection. The stitches may then be removed, or,
if left alone, they will usually come away of themselves after a few days.

Chalazion is a condition that calls for no special remark and is
easily treated by evacuation and curettement from the conjunctival
surface. Foreign bodies in the cornea are not so often met with in India
as in industrial centres at home, but we do see them occasionally. If a
piece of metal is deeply embedded in the cornea and projecting into
the anterior chamber, attempts to remove it may drive it further in,
and it is often the best plan to pass a keratome through the cornea
and prise out the foreign body from within. Among a village popu­
lation the worst cases of foreign bodies in the eye that I have met
with have been due to fragments of bombs that have exploded during
marriage processions.

My experience may be exceptional, but I see comparatively very
few cases of dacrocystitis. I think the disease must often be of tuber­
cular origin, and is rare in our district because tubercle is rare. In a
total of 1,937 eye operations performed last year at Bamdah, there were
only two for extirpation of the lachrymal sac.

Iridectomy is an operation that lies on the border line between
major and minor. It is sometimes a very difficult operation when the
iris has become adherent, but in uncomplicated cases it is very easy
and very safe. There are so many cases in which an iridectomy is
likely to do good that one of my working rules is, "When in doubt,
do an iridectomy." It is, I think, the operation for acute glaucoma,
and I am inclined to doubt if a glaucoma that is not benefited by an
iridectomy will benefit by any other operation. My experience is that
any operation in chronic glaucoma is unsatisfactory, for although by
means of it the surgeon may accomplish all he hoped for in reduction
of tension and the saving of the slight degree of vision that remains,
the patient is nearly always disappointed with the result. Then we
meet with an immense number of cases where iridectomy is indicated for
opacities of the cornea. Many of these are quite hopeless, but I think
the greatest achievements in eye surgery are to be won in this field.
Nil desperandum should be our motto, and if the surgeon pays no
regard to his reputation, but resolves that if the chance of restoring
sight is only one in a hundred the patient should get the benefit
of it, he will from time to time be rewarded in getting a satisfactory
result in what at first looked like a hopeless case. A few days ago,
in trying to do an iridectomy in an almost hopeless case of corneal
opacity, I accidentally evacuated a soft cataract, with the result that there was a distinct improvement in sight, although the iridectomy, as an iridectomy, had failed. My own experience confirms what Fuchs says, that the success of an iridectomy depends neither upon its size nor its shape, but upon its position. However small the clear space of cornea may be, if it is accessible to light, it is worth while trying to make a pupil behind it. Remember, too, that a very little sight is better than none. It is a great relief to a blind person, who was unable to move about, to have enough vision restored to enable him to find his way to the door. I operated on a blind *punkawala* some time ago. The operation seemed to be very unsatisfactory as far as one could judge from inspection; but the patient was by no means ungrateful; he said he could now find his way from the front of the bungalow to the back without any one to lead him and without falling over obstacles on the way. Then it is often a good plan to do an iridectomy in a case of central corneal ulcer. This promotes healing by relieving tension, and it makes provision against the inevitable opacity if the ulcer is at all deep. The same operation is sometimes indicated in cases of recurrent iritis. Partial staphyloma is another condition where an iridectomy may do good in two ways—by providing a new pupil, and by helping the unsightly protuberance to subside. The operation may also be performed as a preliminary to cataract extraction. As a cataract operator I belong to the old order of capsulotomists, and while I fully recognise all that is said in favour of extracting immature cataracts in the capsule, and do the operation occasionally, yet what I prefer to do with an immature cataract is to perform an iridectomy. This causes a temporary improvement in vision, and it simplifies the subsequent extraction of the cataract. When patients come to have a ripe cataract removed from one eye, I always advise them to have a preliminary iridectomy on the other eye, and occasionally in critical cases, where the patient, for example, has only one eye, and especially if the other eye was lost as the result of operation, and if the patient is very nervous or exceptionally dirty, I revert to the plan that was very much in vogue when I was a medical student thirty years ago of doing the extraction in two stages. As has been said already, it is a very simple operation extracting a cataract from an eye in which a preliminary iridectomy has been done. If you dispense with the use of the cystitome and rupture the capsule with the point of the knife—and why should you not do so?—you do not require to introduce any instrument except the knife into the interior of the eye. Then a man who has had an iridectomy is less
likely to suffer from glaucoma—an important consideration in this land where glaucoma is so common. Still another condition in which iridectomy is called for is in some cases of capsular cataract subsequent to extraction. If, as is often the case, the pupil has been displaced upwards and is covered by the upper lid, it may be the best plan to leave it alone and do an iridectomy at a spot where a better optical result may be expected.

A CASE OF CAESARIAN SECTION PRESENTING UNUSUAL DIFFICULTIES.

By E. C. Peak, M.D. (Edin.), Tientsin.

The classical operation of Caesarian section, spectacular as it is, is not difficult of performance. It is an operation to delight the heart of any surgeon. A woman, in her hopeless predicament and anguish, having been wafted into the land of oblivion, is quickly delivered by a skilful and purely surgical procedure, and awakes to find that her unspeakable suffering is over, that not only her own but her infant's life also has been saved, and that she has only to lie in bed and await the healing of a clean abdominal wound. Unexpected difficulties, however, do occasionally arise, and it is to illustrate this point that I append the following notes.

In the case under consideration the patient was in her third day of labour and already exhausted before I was sent for. Examination showed that the head was high and had not even engaged the pelvic brim. The pelvis was considerably contracted, but I thought it might be possible to deliver per vias naturales by powerful traction with forceps. These were accordingly applied and traction exerted with all the force of which I was capable. The instruments slipped and had to be re-adjusted several times. As, after severe exertion, the head was only brought down to a slight extent, it was felt that further effort at that time and place was useless and the patient was removed to hospital as quickly as possible.

On reaching the operating room I found the patient in an extremely critical condition. She had almost entirely lost consciousness. There was haemorrhage going on per vaginam. Her pallor was extreme. The pulse was very weak and rapid, about 160 per minute.

Under the circumstances it seemed to me that craniotomy would be too severe and prolonged an operation, and the risk of infection considerable, so I decided on Cesarian section. Saline infusion was commenced at once. The patient was given a hypodermic injection of
Cæsarian Section Presenting Unusual Difficulties.

morphia (gr. $\frac{1}{4}$), and hyoscine (gr. $\frac{1}{100}$), after which very little chloroform was necessary to keep her well under. The incision was made in the mid-line, as usual, commencing a little above the umbilicus and extending to within 2½ inches of the symphysis pubis. On opening the peritoneum the bowels presented and were difficult of control until the uterus had been delivered through the abdominal wound, when they readily fell back into the cavity. The uterus was then opened in the median line with scissors, and the placenta was found to be directly beneath. This was detached, and passing the hand through the membranes into the uterine cavity the legs of the child were seized and pulled up with the object of delivering, but the head was held fast and would not follow. Passing my hand down to the maternal pelvis I found that the foetal head was firmly wedged therein, and it took quite an appreciable time (possibly three or four minutes) before I succeeded in forcing my fingers between the head and the pelvic brim and, as it were, shelling it out. This was an unexpected difficulty, and was due of course to my own efforts at delivery with forceps earlier in the afternoon. The cord having been clamped and severed, the infant was removed by the nurses in a moribund condition to a side room, where attempts at resuscitation were immediately commenced and proved ultimately successful. Bleeding from the incised uterine wall was fairly free, but it was controlled without much difficulty by digital pressure, hot towels, etc. Pituitary extract was then injected directly into the uterine muscle, on each side of the line of incision, and this had a very rapid and powerful effect in promoting uterine contraction and arresting hæmorrhage. The uterus was then sutured, a couple of quarts of hot saline poured into the peritoneal cavity, and the abdominal wall repaired. The pulse at the end of the operation was very much better (slower and stronger) than at the beginning.

This case has seemed to me worth recording as illustrating some of the difficulties which one may encounter in the performance of Cæsarian section. These difficulties, in this instance, may be summed up as follows: (1) Extremely critical general condition of the patient; (2) intestines under pressure immediately below peritoneal incision and protruding in an unruly and aggressive manner; (3) placenta directly under uterine incision; (4) foetal head wedged tightly into maternal pelvis, the result of forceps traction; (5) free hæmorrhage from wound in lax and inert uterine walls; (6) critical condition of the infant, due to prolonged and very severe compression of the brain, and the fact that the placenta was detached several minutes before the child could be extricated. Having regard to these points the infant's vitality seems hardly less remarkable than that of the mother. Both made rapid and complete recovery.
CASE OF SUPRAPUBIC LITHOTOMY: NEW METHOD OF DRAINAGE.

C. Heman Barlow, M.D., Shaohsing.

The patient, Mr. W., aged 43 years, a Chinese farmer, came to the out-patient department of the Hospital in Shaohsing where his complaint was diagnosed as retention of urine due to a calculus. Attempts to pass a sound were a failure. He was admitted to the hospital for operation, which was performed suprapubically.

On cutting through the muscles no distinct bladder-wall could be made out, and difficulty was met in opening the bladder even though it was distended with fluid. The walls were extremely friable, and gravel was encountered lying in the tissues under the mucosa of the bladder even before it was opened. In the bladder the stone was found occupying its lower segment and so firmly adherent to the mucous membrane that it was loosened with difficulty. After being freed from the body of the bladder it was still impossible to remove the stone until it had been completely rotated, thus loosening it from the prostatic portion of the urethra where it was firmly held. This done and the stone removed, the bladder was thoroughly washed and explored for more stones. No large ones were found, but a considerable quantity of gravel and coarse sand was embedded in the mucous membrane of the walls of the bladder, in some places extending entirely through the mucosa. On irrigation the water which came away was loaded with sand and gravel.

The large stone clung tenaciously to the bladder walls. Inspection showed the reason. Shreds of friable mucosa, badly nourished and pathologically changed, adhered to the porous surface of the stone and in some places were encrusted with calcareous deposit.

The stone had a constriction at its lower end where it was gripped by the sphincter vesicæ, leaving the smaller end protruding into the prostatic portion of the urethra. A shallow channel had been eroded by the escape of urine between the stone and the wall of the bladder and urethra, indicating that the stone had been fairly immobile for some time.

One of the most interesting features of the case, and the one which presented the most marked difficulties to the operator, was the extreme friability of the bladder walls. When it came to putting in closure sutures they would not hold, so it was decided to suspend the bladder and allow it to heal by granulation. Even this part of the operation was difficult to accomplish although a goodly amount of tissue was included in the suspension sutures.
Case of Suprapubic Lithotomy

It was hopeless attempting to make a sutured union light enough to prevent the angles of the wound from becoming infiltrated with urine and it was with grave misgivings that we put the patient to bed after the operation. He passed a most uncomfortable night and I doubt not he would have lasted but a short time had it not been for the originality of Dr. Chang, my colleague. Under the caption, "A New Method of Drainage in Suprapubic Operation on the Bladder," a paper appeared in the China Medical Journal, July, 1918, containing his description of what he did. The photograph accompanying this paper shows the general arrangement of the apparatus as well as the size and shape of the stone, and the diagrammatic drawings show the modus operandi of the apparatus. It would seem as if the permanent urethral catheter might be dispensed with as it is not needed except for irrigation. The advantage of the method is its simplicity and the fact that it worked, shortening the stay of the patient in the hospital by many days and adding to his comfort. The patient was not unduly disturbed, because the catheter connections hung outside the bedding and the nurse could withdraw the urine while the patient was asleep. The shortness of the interval between each withdrawal of urine obviated the overflow of urine into the angles of the wound so that at no time was there any infiltration or infection of the wound, notwithstanding the degree of cystitis which existed at the time of operation.

The patient made an uneventful recovery and as the wound gradually healed the intervals of withdrawal of urine were lengthened until they were finally discontinued. He left the hospital with the power to functionate properly.
THE COMPARATIVE VALUE OF THYMOL AND CHENOPODIUM IN THE TREATMENT OF UNCINARIASIS.

NATHANIEL BERCOVITZ, B.S., M.D., Kachek, Hainan.

Out of a total of 141 pupils in the two mission schools in Kachek, Hainan, 126, or 89.4%, were found infected with hookworm.

For many years thymol was accepted as the standard remedy for uncinariasis. Within the last three years, however, different investigators have reported unusually good results with oil of chenopodium and urge that it possesses many advantages over thymol.

Inasmuch as the conditions for observation in Hainan are ideal, the present study was begun in December, 1917, to determine which drug is more efficient in expelling the worms; and, in addition, to compare the action of each drug in order to determine which would be the drug of choice in a general anti-hookworm campaign, with special reference to conditions as they exist in China.

As the pharmacology and therapeutics of thymol are well understood, it will not be necessary to dwell at any length upon this drug except to note that in the presence of fats or oils it is easily absorbed into the system, and when taken in the large doses necessary to completely rid the alimentary tract of the hookworm may thus easily become toxic, with serious and even fatal results. In China the universal use of pork, and of lard in the cooking of vegetables and cakes, makes this a serious consideration; because, notwithstanding the most elaborate precautions, the risk of the patient stealing away to indulge in forbidden comestibles is great, and any complications, or one fatality due to the treatment, would instantly cause great prejudice against further work in the locality.

Oil of chenopodium, on the other hand, has only recently been studied in connection with the treatment of hookworm. Cushny mentions the oil as an anthelmintic and gives as the dosage two to three drops. Stitt does not mention it in connection with hookworm. The report of the International Health Commission for 1916 mentions experiments with it in cases of hookworm, but the results were rather inconclusive. In a more recent report, however, Darling and other members of the International Health Commission report their findings in several series of cases where the action of thymol is compared with the action of oil of chenopodium in various doses. They base their inferences on the actual number of worms expelled by the treatment, and what the percentage of that number is compared with the whole
The Treatment of Uncinariasis.

number of worms in the patient, the feces being examined after each treatment until negative for ova. Their results are generally in favor of the newer remedy.

In the present series of cases thymol was given in hard gelatin capsules, thirty grains each of thymol and sodium bicarbonate being administered in two doses one hour apart, followed by an ounce of magnesium sulphate one hour after the last dose. Chenopodium was given in hot coffee, or simple syrup; doses of twenty to thirty-six drops, according to the weight of the patient, were administered in two doses one hour apart, followed by an ounce of magnesium sulphate one hour after the last dose.

In order to make the conditions uniform in every respect the diet of the pupils of both schools was restricted to rice and vegetables on the day preceding treatment. The evening before the treatment each pupil was given an ounce of magnesium sulphate. On the morning of the treatment no food was taken until two hours after the dose of salts. For several days preceding the administration of the anthelmintic the pupils received tonic treatment, either Bland pills, or iron and arsenic pills. This was continued for a period of ten days or two weeks after the hookworm treatment.

It has been noted by different observers that oil of chenopodium inhibits the egg-laying functions of the hookworm for a period of about ten or twelve days. Hence the re-examination of the pupils was not made in less than two weeks after the treatment.

The pupils of the Girls' School were treated first. The dose of chenopodium for them was smaller than was subsequently used for the boys of corresponding weight because it was a new remedy, and its action not being fully known caution was observed. However, as no unpleasant effects were observed, the dose was increased up to a maximum of thirty-six to forty drops for the treatment of a boy weighing 105 to 110 pounds, again with no unpleasant results.

Of the 126 pupils positive for hookworm, eight did not receive treatment for one reason or another, chiefly scruples against taking the medicine.

The following table shows the results of the treatment of the girls.

<table>
<thead>
<tr>
<th>Girls</th>
<th>Number of patients</th>
<th>Cured 1st. treat.</th>
<th>Percentage cured</th>
<th>Cured 2nd. treat.</th>
<th>Total percentage cured, 2 treatments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil Cheno. (Dose 20-30 m.)</td>
<td>25</td>
<td>20</td>
<td>80</td>
<td>3</td>
<td>92</td>
</tr>
<tr>
<td>Thymol (Dose 20-30 gr.)</td>
<td>10</td>
<td>3</td>
<td>30</td>
<td>2</td>
<td>50</td>
</tr>
</tbody>
</table>
The treatment of the boys followed that of the girls. As a number of the boys left the school at the time of a political disturbance in Kachek, the second re-examination of the faeces was not made in fourteen of the cases.

### Table II

<table>
<thead>
<tr>
<th>Boys, Number of patients</th>
<th>Cured 1st. treat.</th>
<th>Percentage cured.</th>
<th>Cured 2nd. treat.</th>
<th>Total percentage cured, 2 treatments.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ol. Chenop. (Dose 24-36 m.) 43</td>
<td>29</td>
<td>67.2</td>
<td>7</td>
<td>(36 out of 36) 100%</td>
</tr>
<tr>
<td>Thymol (Dose 25-35 gr.) 40</td>
<td>18</td>
<td>45.0</td>
<td>9</td>
<td>(27 out of 33) 81.8%</td>
</tr>
</tbody>
</table>

### Table III

<table>
<thead>
<tr>
<th>Total No. treat. 2 Schools, Number of patients</th>
<th>Cured 1st. treat.</th>
<th>Percentage cured.</th>
<th>Cured 2nd. treat.</th>
<th>Total percentage cured, 2 treatments.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ol. Chenop. 68</td>
<td>49</td>
<td>72</td>
<td>10</td>
<td>(59 out of 61) 98.3%</td>
</tr>
<tr>
<td>Thymol 50</td>
<td>21</td>
<td>42</td>
<td>11</td>
<td>(32 out of 43) 72.0%</td>
</tr>
</tbody>
</table>

It is unfortunate that the statistics are not complete. However, as an equal number (seven) each of chenopodium cases and thymol cases were missing, the record is more nearly correct than would otherwise be the case.

A glance at these tables shows at once the superiority of chenopodium as far as effectiveness is concerned. There is over 40% difference between the two drugs in favor of chenopodium in the case of the girls; and about 20% difference in favor of chenopodium in the case of the boys, with a difference of over 25% in favor of chenopodium if all cases are grouped together.

Better results would be obtained, no doubt, with massive doses of thymol. In strictly hospital practice this could be done, and doses of 90 to 120 grains would give cures in practically 100% of the cases. Darling3 reports such a result with massive doses. For general field work, however, and especially in extensive work in China, where the conditions cannot be controlled with any degree of certainty, a safer drug must be sought.

The experience with oil of chenopodium in Kachek has been very favorable. For the second treatment no dietary regulations were observed except the omission of breakfast on the morning of the treatment. In no case was any ill effect noted. The pupils even refused to lie down after treatment. The maximum dose used was thirty-six minims, but this could easily be raised to forty-five minims with safety.

The ease with which oil of chenopodium is administered is a strong point in its favor. Not only is time consumed in the preparation of thymol capsules but the patients do not enjoy swallowing...
several large (gr. v.) capsules. It has been the experience in Kachek that oil of chenopodium in simple syrup was preferred by all who took the chenopodium, and was asked for by a number who were taking the thymol. In an extensive campaign this must be taken into consideration.

Not least important is the fact that chenopodium is an energetic agent for expelling not only hookworm but also round-worms. Experiments have not been undertaken as yet to determine which of the two drugs, santonin or oil of chenopodium, is the more effective against the ascaris, but it is believed that little if any difference can be noted between the two. Hence, in view of the almost universal infection with *Ascaris lumbricoides*, and the attendant discomfort and abdominal pain which so frequently accompany their presence in the intestines, the oil of chenopodium performs a very useful function in addition to its anti-hookworm properties.

Thymol has served long and well as the specific for hookworm. There are four weighty reasons, however, why the newer drug must take its place:

1. It is more effective in the treatment of hookworm than thymol, a difference of more than 25% being noted in its favor.

2. It is a safer drug than thymol, a fact of the greatest importance in dealing with conditions in China.

3. It is easy of administration, being economical in time, as well as more pleasant to the patient.

4. In addition, oil of chenopodium is effective as a vermifuge for *Ascaris lumbricoides*, and thus two infections are cured by one remedy.

In conclusion, one point must be noted against chenopodium. At least ten days or two weeks should elapse before a re-examination of the faeces is made. It would seem, however, that in an extended and thorough campaign the work would naturally be rather slow, especially if accompanied by an educational campaign in sanitation, and so this factor would not be so very important.

**References.**

1. Cushny.

2. Stitt: Diagnostics and Treatment of Tropical Diseases, 1914.


**Note.**—See also the article by Hall and Hamilton entitled, "Investigations on the Composition of Oil of Chenopodium and the Anthelmintic Value of Some of Its Components," in *Journal of Pharm. and Exp. Therapeutics*, April, 1918.
Medical Notes from Kansu.

George E. King, M.B., Ch.B., Lanchowfu.

The province of Kansu, immediately south of the Mongolian plateau, has an area of 125,483 square miles. It may be defined as the land watered by the upper reaches of the Yellow River and its tributaries, together with its watershed mountains, and the other sides of these mountains to the north and south of the main valley. Thus it consists of three tracts: one with a northern aspect, where the streams run sooner or later into the desert sands of Mongolia; the central or Yellow River tract; the southern or Yangtse tract, containing the head-waters of several important Yangtse tributaries.

Estimates of the total population of Kansu vary from 5,000,000 to 10,386,000; probably it has the lowest density of any of the provinces of China except Kwangsi. In this very large district the only hospital is that of the China Inland Mission at Lanchowfu, the capital of the province. We often wish for professional assistance, especially in the diagnosis of rare diseases; nevertheless, in presenting these medical notes, as they are, it is hoped they will be both informative and interesting.

With the Yangtse section of the province I have no acquaintance. It probably belongs, from the standpoint of nosogeography, to the province of Szechwan. The incidence of disease in the central part is influenced to some extent by the presence of Thibetans, and in the northern part by Mongols. These strangers may help to account for the prevalence of certain diseases which, so far, do not seem to have penetrated to other parts of China.

In Lanchowfu various infectious diseases are common. Besides smallpox, there are epidemics occasionally of diphtheria, measles, mumps, and scarlet fever. As to scarlet fever it is surprising that it should be regarded as a disease newly imported to China. I have seen it both in Chinese and foreigners in far inland provinces. Sometimes we seem to have it in very malignant forms. As to malaria we are free from it in this district, though probably it exists in the southern zone and it is certainly prevalent in the Wei valley.

Some parts of the province are very goitrous. It is interesting to note the native explanation of the causation of goitre and their methods of treating the disease. It is held to be due to the drinking of spring water, or the water of mountain streams in which the roots of willows and other trees are exposed. The opinion prevails that hai ts'ai (海菜,
sea-weed) is curative. No doubt the large iodine content of sea-weed explains its remedial properties.

While on the subject of native opinions of disease, a few words should be said about leprosy. In the greater part of Kansu I believe the disease is very rare; but on the Tibetan border, in the centres of Taochow, Hochow, and Sining, it is known and feared. Yet in many cases the lepers are free to live at home, though in Taochow they are ostracised, as of old in Europe and other parts of the world. There are certain endemic foci. One of these to the west of Hochow is well known. The Chinese say that the leper's sputum contains the bacilli and that when the lepers spit on the ground the fowls swallow it, and then the infection is conveyed to the eggs. For this reason many of the natives will not eat eggs from the country west of Hochow. It is to me a novel idea, and may be worth consideration by those interested in all questions relating to the transmission of infectious diseases from the lower animals to man, and the transmission of disease from one generation to the next. There is the analogy of the sputum of human beings conveying tuberculosis to fowls as it seems to be proved that fowls in some instances have become infected from human sources; but, "despite the similarity of the bacilli of the human and avian types of tubercle bacilli it does not seem that the latter can produce tuberculosis in man. In the few cases in which avian bacilli have been isolated from human lesions, the simultaneous presence of human bacilli was not satisfactorily excluded." This conjecture of the natives as to the transmission of leprosy, though it has no foundation, is interesting.

The most common form of carcinoma here is an epithelioma over the great trochanter induced by irritation from sleeping on the hot k'ang (炕). It is almost possible to tell Kansu people from the pigmented patch over each trochanter which so often develops into an epitheliomatous ulcer.

Of tropical diseases we have few. There are cases that seem to be kala-azar, and I have seen three cases of elephantiasis of the lower limb. All the patients were Hochow Moslems. One wonders if the constant journeys to and from Lhasa by traders may not be the means by which such diseases are spread. At any rate, leprosy and elephantiasis seem to be common in Hochow and not present in Laichow.

As I have said, of rare diseases we have some that we wish we could have further advice about. To one of this type I shall now refer. May I label it "progressive congenital angioma"? The patient is twenty-five years old. There was first noticed over the scapula a nodule the size of a bean, of a dark blue colour and hard. It grew
slowly and painlessly till now it is the size of a pear. Gradually other masses were observed, on the left arm, and in the left suprascapular region. The disease has progressed steadily with exacerbations annually in the spring and autumn. There is now intense varicosity of the vessels of the left arm and scapular region. The bones are atrophic, with small bony spicules which may be felt at various places in the arm. The muscles are atrophied but the grip is fair. The palm is also a mass of various vessels. The photograph shows the condition of the arm, but without an X-ray apparatus it is impossible to give an idea of the state of the bones. I have seen a somewhat similar condition in the gluteal region of an older man.

LEPROSY IN CHINA.—The statement that leprosy is absent from North China is incorrect. Everywhere lepers are to be met with. It is, however, true that, with the exception of Manchuria, Shantung, and possibly the Tibetan border of Kansu, leprosy is less common in the north than in the south, where it is terribly rife. On the other hand, in the south the disease, though mutilating cases are not rare, is on the whole milder than in Central and North China. The regard paid by the Chinese to leprosy differs widely. In places the leper is a shunned outcast; in others, he lives in the house and often cooks the family meals.—MAXWELL, Journ. Trop. Med. and Hyg., October, 1916.
Editorial.

At last, after more than four years of terrible war—

The End of fare, a New Year finds the nations of the world outwardly at peace. Victory has been won by those who fought for truth, justice, and freedom. As missionaries we heartily join in all the eloquent and just tributes paid to the memory of the brave dead, and to the living who have been through the struggle and have nobly responded to every call for service and sacrifice. It will be long before cruel wrongs and sufferings can be forgiven and forgotten, but memories will be softened by time and eventually we may hope there will come an era of genuine peace and goodwill between all peoples. Meanwhile, in the words of Lowell, let us welcome victory,

Not in anger, not in pride,
Pure from passion’s mixture rude
Ever to base earth allied,
But with far-heard gratitude,
Still with heart and voice renewed,
To heroes living and dear martyrs dead,
The strain should close that consecrates our brave.
Lift the heart and lift the head!
Lofty be the mood and grave!

To medical missionaries from China, who are still “somewhere” in Europe or in Siberia, we extend cordial New Year’s greetings with the hope that soon they will be able to return to us and to their work in China.
The war has revealed much of the weakness and evil of our Western civilization and it is certain that we must enter upon the path of reform and reconstruction if we are to remove all sources of national trouble and unrest. It will be comparatively easy to define the boundaries of nations and persuade them to adopt political constitutions which theoretically will ensure ordered freedom and progress. It is the physical and mental under-development, the poverty, ignorance, and social misery of vast masses of people which constitute the hardest problem for statesmen to solve. The time has passed for passive, hopeless submission. Democracy, which the war has made dominant, is demanding a better social order. Somehow or other, means must be found so that the submerged may be rescued, and all who are willing to work may be able to maintain themselves and their families in a reasonable degree of comfort and security, and find opportunity to develop the best that is in them. If only a tithe of the national energy and money spent in organizing for war were devoted to this purpose, marvellous results would be speedily accomplished.

In China also, it is hardly necessary to say, there must be construction and reconstruction. From the standpoint of public health alone, a matter which directly concerns us as medical missionaries, there is an immense amount of work to be done, not only in the interest of the Chinese themselves, but in that of other nations also which are constantly being menaced by the prevalence of epidemics in China.

The country needs an adequate and scientifically trained medical profession; a Central Service in China. Medical Council, or better, a Ministry of Health, to have charge of the health of the nation as a whole; and in all the provinces, under its supervision, there should be Health Departments with full and competent staffs, institutions, equipment, and all necessary powers for the prevention and eradication of disease. In every city and town there should be an abundant and pure water supply; sanitary dwellings and schools with no overcrowding; a proper system for the disposal of drainage and refuse, and whatever else is required to secure the
health of the community. There should also be bureaus of vital statistics, and the registration of all births and deaths, and, if possible, of all marriages, should be obligatory.

Largely owing to the influence of foreign physicians in China, the results and practical teaching of their hospitals and dispensaries, and the standing object lessons furnished by the foreign settlements and concessions, a few public improvements have been made in several large cities by the Chinese themselves, and the fear of pneumonic plague has led to the formation of the Plague Prevention Service in Manchuria. This is encouraging as it serves to show that the good seed sown is beginning to bear fruit. It is hoped that in the near future progress will be more rapid and general.

There can be no genuine, permanent progress, however, unless the immense population of China is educated so that it can co-operate, intelligently and willingly, in the enforcement of the health laws and regulations made for their benefit. As long as people believe that disease is due to supernatural causes and that it can be banished by means of charms and incantations, there will be a return to the old ways as soon as outward pressure is removed. Even among the rather more enlightened it is held that a doctor should be able to cure the disease of his patient in one or two visits; if he does not, a change is made. This is very discouraging to young, competent Chinese doctors who commence their professional career as general practitioners; it is not surprising that comparatively few are found who adhere to this form of practice.

The China Medical Missionary Association, the National Medical Association of China, and the Central Committee of the Y. M. C. A., are doing all they can, through Dr. W. W. Peter, Dr. S. M. Woo, and other workers, to educate the people generally in all matters pertaining to public health by means of health exhibitions, lectures, and the distribution of suitable literature. But laborers are few, the field to be covered is immense, and funds are insufficient. An appeal is therefore being made to the missionary societies to come to the aid of this work which is so closely linked with our medical missions. Indeed, it may be said to be the culmination of
medical missionary effort, so far as the physical body is concerned, for when the Chinese are able to take care of their own health our distinctive mission, apart from its spiritual side, will have been accomplished.

It is not as if medical missionaries were pushing into new fields merely with the desire for expansion; nor yet with the expectation that spiritual results will necessarily accrue from practical instruction in hygiene and sanitation, though there is the encouraging proverb that cleanliness is next to godliness. The force of circumstance leaves us little choice. When China is threatened by pneumonic plague, appeals for help are made to medical missionaries and they cannot but respond. The few progressive government officials consult them when they wish to make a city or town more habitable, and we have heard of manufacturers doing so when they wish to improve the conditions in which their employees live. More and more, as shown in the various public health campaigns, is the advice of the medical missionary sought and followed. And it is all for the good of China.

There is another and very powerful reason why public health education should be carried on vigorously. Before very long, now that the war is over, the demand from all parts of the world for the products of China will be very great and insistent. In all parts of the country great industries will be established and vast numbers of people, men, women, and children, will be working in mines and factories. This will be no blessing to them but a curse unless their remuneration and the conditions in which they live and work are such as will enable them to preserve their health. It will arouse the pity and indignation of Christian people if millions of Chinese toilers are made to pass through the wretched experiences which were common in Europe at the beginning of the last century, and are not unknown in other parts of the world to-day. Measures should be taken as soon as possible to prevent the cruel exploitation of the poor by employers and capitalists from whom little mercy can be expected if they are non-Christian.

We hope that our missionary societies, notwithstanding the hard times which are probably ahead, will do all in their power to
assist this scheme of public health education, and that missionaries and others who have influence with wealthy Chinese will induce them to assist it also.

It has long been held that continued irritation of the tissues by heat may lead to cancer. In his article, "Medical Notes from Kansu," which appears in this number of the Journal, Dr. King furnishes confirmatory evidence on this point. In Kansu and other parts of northern China, it is the custom of the natives during the very severe cold of the winter months, to sleep on a k'ang [크] with very little beneath them except a straw mat. The k'ang is a raised brick structure through which runs a system of flues heated by a furnace or oven at one end, with additional fires if the k'ang is long. In time the skin over the trochanters of these sleepers becomes pigmented and the pigmented patches often become the seat of cancerous growths.

Is it possible that cancer of the stomach may be indirectly caused by constantly taking food and drink while it is very hot? Dr. W. J. Mayo, of Rochester, Minn., the famous surgeon, is inclined to answer in the affirmative. In an article recently reprinted in the "Collected Papers of the Mayo Clinic," after stating that more than thirty per cent of all cancers in civilised man are in the stomach, the question is asked, why should there be such an enormous percentage of cancers in the stomach? As malignant disease of the stomach is very infrequent in animals and primitive man who take their food and drink cold, Dr. Mayo thinks that in civilised man gastric cancer is probably the result of taking hot food and drinks, as these cause chronic irritation of the gastric mucosa.

Then there is the further question, why should cancer of the stomach be more frequent in the male (38 per cent) than in the female (22 per cent)? Dr. Mayo says that "a possible answer to this question is furnished in the frequency of cancer of the posterior wall of the pharynx and upper gullet in Chinese men, who are served first while the rice is hot; the women eat at the second table, when the rice is cold, and rarely have cancer in
this region. It is the social custom of modern civilisation for the lady of the house to serve the beverages—herself last."

So far as the Chinese are concerned the evidence on which Dr. Mayo relies to establish this point is fairly open to question.

In the first place, among cancers generally, is the percentage of cancer of the pharynx, oesophagus, or stomach, very high among the Chinese? In a paper by Dr. Hedblom (CHINA MEDICAL JOURNAL, 1917, pp. 271-283) on disease incidence in China, based on hospital reports, the percentage mortality in China of cancer of the buccal cavity is 3.8; in Hongkong, 6.0; of stomach and liver, in China, 5.7; in Hongkong, 30.0. He comes to the conclusion that practically nothing is known as to the actual incidence of malignant disease among the Chinese. In the report of the Union Medical College Hospital, Peking, 1916-1917, thirty-two cases of carcinoma are recorded. Among these were one of the pharynx, two of the tonsil, none of the oesophagus, two of the stomach. Of seven malignant tumors not classified, two were of the tonsil. So that in 39 cases there were five growths in the pharyngeal region (13 per cent); including the two gastric cancers, the percentage is 18.0; taking the gastric cancers only, the percentage is 5.1. Turning to Burmah, where the diet and customs of the people are not very different from those of the Chinese, in the Indian Medical Gazette, February, 1916, Drs. Barry and Crump, of the General Hospital, Rangoon, state that out of 4,164 consecutive post-mortem examinations, there were found only four cases of cancer of the stomach and one of the oesophagus. Out of 1,782 laparotomies, cancer of the stomach was met with fourteen times.

On the whole, we think that the statistics available concerning the Chinese are not sufficient to answer the question one way or the other.

Secondly, is cancer of the pharynx, oesophagus, or stomach, more common in Chinese males than in females? This question is even more difficult to answer than the first. In America the number of Chinese males is very great, but the Chinese women there are very few. In China itself the hospitals for men largely outnumber those for women, and Chinese women, in any case, are
more reluctant to come to the hospitals for surgical treatment than men. Because of the close connection between ulcer and cancer of the stomach, reference may be made to the paper by Dr. C. C. Elliott (China Medical Journal, 1918, pp. 413-420) in which he reports successful operation upon forty Chinese patients for peptic ulcer. Only two of these patients were women. Apparently, there was nothing in the appearance of the ulcers to raise the suspicion of cancer. Once more it must be confessed that the statistics available are not conclusive.

Thirdly, admitting for the sake of argument that in China gastric and pharyngeal cancers are more common in males, is the preponderancy traceable to the sexes eating apart and the males having the hotter food?

China is a very large country and customs and manners vary considerably, so that almost any statement concerning its people may be challenged or contradicted. Nevertheless, from our own observation and after careful inquiry, we venture to assert that on all ordinary occasions the sexes do not eat apart. In the large establishments kept by wealthy officials, in ordinary households on feast days, or when relatives are visiting the family, it is true that the sexes dine separately, but the food of the women is just the same as that of the men. The latter, no doubt, drink hot wine much more freely, but to induce cancer of the stomach, if it can be so induced, the wine-drinking must be habitual. Dr. Elliott, of Paoning, Szechwan, in reporting forty cases of peptic ulcer upon which he had successfully operated, (China Medical Journal, 1918, pp. 413-420) states that most of the patients were farmers accustomed to hard drinking; but "the alcohol was taken cold or hot, diluted or neat, according to taste." Of none of his forty cases does he report that the ulcer had a cancerous appearance.

As the causation of malignant disease is one of the most baffling medical problems of our time and is engaging the attention of medical men in all parts of the world, we shall be very glad if our readers will express their opinions on these several points, as it will be rendering some help if we can show the exact value of the evidence upon which certain opinions rest.
We are very glad to announce that the Union Medical College of Peking, having received the necessary apparatus, is willing to prepare microphotographs of important specimens and also to furnish reports of pathological reports sent to them for examination. This work in ordinary cases will be done as a courtesy, although if large numbers of plates are required, or any considerable amount of expensive material is involved, it is expected that the cost will be borne by those for whom the work is done.

The assurance that medical writers in China can now get papers properly illustrated here, should greatly encourage our members to contribute to the Journal. In response to the appeal in the last preceding number for original medical articles and notes to carry us forward until the next Conference, we have received one paper. We are cast down, but we do not yet despair.

THE CHINESE RECORDER.

For fifty years this well-known missionary journal has been publishing to the world the progress of Protestant Christian missions in China; serving as a medium for the discussion of the many problems, evangelistic, educational, and medical, which press upon the workers in the field and upon the Mission Boards at home; and in various other ways promoting the cause of Christianity in China.

In view of the great reconstructive changes which are bound to occur in every country affected by the war, and the deeper interest which it is reasonable to expect will be taken in Christian missions as part of the forces making for a better and more spiritual world order, those responsible for the Recorder desire to make its influence more widely felt and therefore wish to increase the journal in size and attractiveness. For this purpose additional funds are needed, as although the strictest economy is practised and the members of the editorial staff give their services free of charge, yet the subscription list is not sufficiently large to leave any surplus funds for development. An appeal is therefore being made for $10,000 Mex. to be known as "The Recorder Jubilee Fund," the interest of which will be used to strengthen the journal in
Awakening to the Value of Scientific Medical Training.

It's various departments. Whatever help our medical missionaries may give will be gladly welcomed. Subscriptions and donations may be sent to Editor, *Chinese Recorder*, 5 Quinsan Gardens, Shanghai, who will send leaflets explaining the whole scheme and whatever other information may be desired.

AWAKENING TO THE VALUE OF SCIENTIFIC MEDICAL TRAINING.

Mr. Hsu Ying has brought up a Bill of vital importance for discussion at the Kiangsu Provincial Assembly, in reference to the subject of qualifications of medical practitioners. In explanation of his Bill which, if passed, will require every physician to pass a rigorous examination by a Medical Board specially formed by the Civil Governor of this province, Mr. Hsu Ying says:

A murderer is punishable by death as our law ordains, while an ignorant doctor who kills a person is committing a crime not more pardonable. During recent years, although medical practitioners at our large commercial ports, where a cosmopolitan population lives, are all more or less qualified persons, one regrets to own that such is not the case in the interior; for while there may be physicians who have received an efficient training at the hands of some masters or who have graduated from a special medical school, there are others who, having obtained barely a superficial knowledge of the medical science or merely committed a number of prescriptions to memory, deserve to be called no better than quacks. Most of the latter are really ignorant of anything about medicine and doctoring, whether Chinese or foreign; and they are daily killing innumerable people by their quackery. If the practice of these heartless men is not strictly prohibited our people who have escaped death from flood and drought, soldiers and bandits, will ultimately die at the hands of these ignorant persons.

Mr. Hsu then declares that for the sake of humanity, if for no other consideration, the Provincial Assembly should take action at once for the protection of lives. He submits that the Civil Governor should be requested to form a Provincial Medical Examination Board composed of both Chinese and foreign doctors, who would grant certificates to all qualified medical practitioners before allowing them to put up their signboards and practise. The district prefects, Mr. Hsu con-
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continues, should be ordered by the Governor to discover and report any inefficient or unqualified doctor to the Board for examination, and, on failing to pass, the said doctor should be forbidden to practise, but compelled to enter some medical school to study and qualify himself. This Bill will be discussed at the next sitting of the Assembly.—N. C. Daily News.

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LIST OF MAJOR AND MINOR OPERATIONS.

Medical missionaries in India, in compiling their hospital reports, seem to have the same difficulty as their brethren in China in making the necessary distinction between major and minor operations. The following list was prepared by the late Dr. S. P. Barton, of the C. M. S. Hospital, Bannu, and carefully revised after being twice submitted to medical missionaries throughout India for their suggestions and criticism. It was published as a supplement to Medical Missions in India, April 1905.

Major. Minor. JOINTS.

<table>
<thead>
<tr>
<th>EYE.</th>
<th>Excision.</th>
<th>Forcible straightening.</th>
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</thead>
<tbody>
<tr>
<td>Cataract.</td>
<td>Arthroctomy</td>
<td>Straiyhening by traction.</td>
</tr>
<tr>
<td>Iridectomy.</td>
<td>Drainage of large joints.</td>
<td></td>
</tr>
<tr>
<td>Iridotomy.</td>
<td>Entropion and Trichiasis.</td>
<td></td>
</tr>
<tr>
<td>Excision.</td>
<td>Lachrymal obstruction.</td>
<td></td>
</tr>
<tr>
<td>Absecession.</td>
<td>Pterygium.</td>
<td></td>
</tr>
<tr>
<td>Evisceration.</td>
<td>Peritomy.</td>
<td></td>
</tr>
<tr>
<td>Ectropion (when extensive).</td>
<td>Corneal eauterisation.</td>
<td></td>
</tr>
<tr>
<td>Needling.</td>
<td>Cauterisation.</td>
<td></td>
</tr>
<tr>
<td>Removal of foreign bodies from within the globe.</td>
<td>Excision.</td>
<td></td>
</tr>
</tbody>
</table>

AMPUTATIONS.

<table>
<thead>
<tr>
<th>BAR.</th>
<th>Forceable straightening.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations on mastoid antrum.</td>
<td>F. bodies.</td>
</tr>
<tr>
<td>Removal of ossicles.</td>
<td>Polypus.</td>
</tr>
</tbody>
</table>

INJURIES.

<table>
<thead>
<tr>
<th>NOSE, THROAT, ETC.</th>
<th>Simple dislocation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracheotomy.</td>
<td>Compound dislocations.</td>
</tr>
<tr>
<td>Polypus.</td>
<td>Compound fractures.</td>
</tr>
<tr>
<td>Adenoids.</td>
<td>Wounds involving brain, viscera or serious cavities.</td>
</tr>
<tr>
<td>Those below the size of a walnut—minor: but if deeply set in groin or neck=m ajor. Also all tumours of throat, orbit or other vital structure=m ajor.</td>
<td></td>
</tr>
</tbody>
</table>

TUMOURS.

<table>
<thead>
<tr>
<th>BONES.</th>
<th>TAPPING.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incision for osteomyelitis.</td>
<td>Ascites.</td>
</tr>
<tr>
<td>Sequestrotomy.</td>
<td>Hydrocele.</td>
</tr>
<tr>
<td>Resection.</td>
<td>Euphyema.</td>
</tr>
<tr>
<td>Gouging.</td>
<td>Ovarian cyst, etc.</td>
</tr>
<tr>
<td>Removal of sequestrum.</td>
<td></td>
</tr>
</tbody>
</table>
Illicit Traffic in Opium.

Nephrolithotomy.
Litholapaxy.
Saphropylithotomy.
Perineal lithotomy.
Urethral calculus (requiring cutting).

Evacuation of calculus per catheter.
Cerebral calculus (with out cutting).

Calculation.
Gynaecological and
Obstetrical.

Orariotomy.
Oophorectomy.
Removal of Uterus and
appendages.
Removal of cyst in broad ligament.
Removal of Fallopian
tube and its contents
in extra-uterine gestation.
Removal of diseased
Fallopian tube.
Removal of fetus in ex-
tra-uterine gestation.
Hysterectomy.
Amputation of cervix.
Amputation of clitoris.
Curettage of uterus.
Tracheorrhaphy.
Removal of septum of
double vagina.
Repair of urinary or
fetal fistula.
Periurethral.
Colpo-perineorrhaphy.
Removal of coccyx.
Vegeta.
Forceps.
Craniotomy.
Cranioclasm.
Cephalotripsy.
Decapitation.
Spondylotomy:
Exsequestration.
Cesarian Section.
Porro’s operation.
Laparo-elytrotomy.
Symphysiotomy.
Application of crotchet
to head of child.
Induction of abortion.
Induction of premature
labour.
Turing.
Removal of placenta.

N.B.—Sounding, repeated catheterisation, lavage, hypodermic
injections, introduction of speculum, etc., are not to be recorded as
operations.

Vaccination and inoculation while being recognised as minor oper-
ations ought to be separately recorded.

ILLECIT TRAFFIC IN OPIUM,

In view of the revival of the cultivation of the poppy in China,
and the greater use of opium and its derivatives by the natives to
satisfy an unnatural craving, we publish the following report kindly
furnished by Dr. Main, of Hangchow, of the conviction and punishment
of the manager of a Chinese dispensary for selling “quinine pills”
which contained morphine.

During the trial the following facts were admitted. The defendant, Woo Tszen-
zung, was manager of a dispensary which on September 18, 1916, sold 18,000
tabloids, made up according to a prescription of the defendant himself as an anti-
opium remedy, over the counter to an unknown purchaser for cash. Defendant has no qualifications in the special sense of that term, but claims to have had 24 years' experience in dealing with medicines. The ingredients of the prescription were \( \frac{3}{2} \) oz. of morphia, \( \frac{1}{2} \) oz. of quinine, and \( \frac{1}{2} \) drs. of strychnine, massed with organic matter consisting chiefly of starch and sugar. A certificate from the Municipal Laboratory confirms this analysis in general terms. At the request of the purchaser, it is alleged, the two tins containing the tabloids were labelled "quinine pills." The tins, which were clearly marked with the name of defendant's dispensary, were found on September 18, 1916, by an officer of the Chinese Maritime Customs under the floor of the shroff's room on board a vessel known as an ark. They were not on the manifest. Medical evidence was adduced to the effect that one of the tabloids contained sufficient morphia to kill a child, ten an adult, while if taken in quantity sufficient to satisfy the opium craving, the amount of strychnine consumed would be highly deleterious. It was admitted, however, that morphia was a recognized means of treating the opium habit and that a person addicted to opium might take several grains without effect.

On behalf of defendant it was contended that the Regulations under which this prosecution was brought prohibited the sale of morphia in its simple state, but not that of morphia compounded with other drugs for medical purposes. To test the validity of this contention it was found desirable to ascertain, if possible, the intention of the legislative power as expressed in these regulations by reference to such measures as may previously have been taken in the same direction.

The source and origin of anti-morphia legislation in China would appear to be the Treaty between Great Britain and China respecting Commercial Relations, which was signed at Shanghai on September 5, 1902, and ratified at Peking in the following year. Article XI of that instrument provided for "the prohibition of the general importation of morphia into China, on condition that the Chinese Government will allow of its importation, on payment of the tariff import duty and under special permit, by duly qualified British medical practitioners and for the use of hospitals, or by British chemists and druggists who shall only be permitted to sell it in small quantities and on receipt of a requisition signed by a duly qualified foreign medical practitioner." The assent of all other Treaty Powers having been obtained to the stipulations of this Article (upon which only it became operative), the Article was made binding upon British subjects by the King's Regulations of December 1, 1903, and simultaneously the following Regulations, highly pertinent to this inquiry, were issued by the Chinese Maritime Customs: "On and after January 1, 1909, the manufacture in China by Chinese and foreigners of morphia is absolutely prohibited; and the importation of the same into China by Chinese and foreigners is likewise prohibited, except in the case of duly qualified foreign medical practitioners and foreign chemists and druggists," under certain stringent conditions, enforced by bond of the importer, by which the former are required to guarantee that the drug "will be employed for medicinal purposes only, either in their private practice or in some specified hospital," and the latter that it "will be used exclusively in the compounding of prescriptions or sold in small quantities only on the requisition of a duly qualified foreign medical practitioner."

The judgment of the court was as follows: "Prior, therefore, to the penal enactment which we are now asked to construe, we find that it was the intention of the Chinese Authorities, as expressed through the Maritime Customs, that morphia should not come into the hands of natives of this country save by the intervention of duly qualified foreign practitioners. From what source, then, did defendant obtain the supply of morphia from which these tabloids were manufactured admittedly in his dispensary? We have not been told, but manifestly it was from a source tainted in like degree with that from which flows the steady supply of opium, of which we have recently heard so much in these Courts. Now it was, I think, to remedy this very state of affairs and to check such practices
more effectually by the imposition of penal sanctions that the Regulations of 1914 were introduced. For if the Customs Regulations could be strictly enforced it would be impossible, as we have seen, for persons in the position of defendant to come into the possession of morphia at all; and to hold that the term 'morphia' in the later Regulations was not intended to cover the sale of morphia in every form would be not to further but to frustrate the declared purpose of the Customs prohibition. We are, therefore, of opinion that a conviction should be entered and we order defendant to pay a fine of $500."

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SMALLPOX IN CHINA.*

Dr. K. C. Wong (王吉民), Railway Medical Officer, Hangchow.

In Chinese medical literature there is no reference to the prevalence of smallpox in ancient times. Even the name of the disease is not found in the old standard dictionaries such as the "Sueh Wen" (天行) or the "Yu Pien." The "Introduction to Medicine" states that smallpox was present in China somewhere between the Chow and the Tsin dynasties (B.C.—3rd century). But most authorities are of the opinion that it was first introduced in A.D. 49. This is founded on a passage from the "Ancient History" which records that in the 25th year of the reign of Kien Wu, while he was at war with the barbarians, a large portion of his soldiers, including the general Ma Wu, succumbed to an epidemic disease. This was thought to be smallpox.

The first authentic description of it, however, is found in the "Prescriptions for Emergencies" (281—361 A.D.) which describes it under the name of "tien hang" (天行) periodic disease, in the following words: "Recently there are persons suffering from epidemic sores which attack the head, face, and trunk. In a short time they spread all over the body. The sores have the appearance of hot boils containing some white matter. While some of these pustules are drying up a fresh crop appears. Patients who recover are disfigured with purplish scars which do not fade until after a year. This is due to bad poisonous air. The people say that it was introduced in the reign of Kien Wu when that king was fighting the Huns at Nang Yang. The name of 'Hun pox' was given to it." Rubbing the body with pure honey, or aceta spicata, steeped in it, was recommended as a cure.

In describing the disease Tao Wen Chung states that it was first introduced from the West of China in the 4th year of Yun Hwei (1654). Evidently this refers to another epidemic. The people used malva leaves, garlic, and fresh goats' blood for treatment.

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By the Chinese smallpox is usually classified among the diseases of children. It is described in excessive detail by native doctors. Fung's "Precious Bag" gives 55 varieties of the disease, 18 rules of contraindications for treatment, several chapters of signs for predicting the result, and a host of preparations for its cure. Great stress is laid on the form, size, character, color, quantity, position, and time of appearance of the eruption. The complications enumerated cover all the sicknesses to which human flesh is heir. As to treatment, acupuncture, moxa, dieting, baths, charms, incantation, and various superstitious practices are employed in addition to drugs. But inoculation is chiefly relied upon as the method of prevention.

Human inoculation of variolous virus was first practised in the Sung Dynasty (1022). The prime minister, Wang Tan, after having had several of his sons suffer severely from smallpox, was informed of the successful preventive inoculation practised by a Szechwanese living at Ngo Wei mountain. Wang Tan had a son inoculated and the inoculation proved very successful. This method was rapidly taken up and became very popular with the people.

In the "Golden Mirror of Medicine" four forms of inoculation are described. (1) The Shui Miao consists of plugging the nose with powdered smallpox scabs laid on cotton wool. This is the method recommended:—for a child of a year old, twenty scabs are used, and for older children, thirty; the scabs are put into a clean porcelain mortar and ground into powder with a willow pestle; a few drops of water are added to facilitate the rubbing. In spring, warm water is used; in winter, hot water is necessary. When the scabs are properly powdered, the powder is put in a piece of cotton wool and rolled up like a date stone. A piece of string is tied around it with about two inches of the free end dangling outside, and the mass is then gently introduced into the nose. Usually it is allowed to remain in the nose for about six hours. (2) Han Miao is a more convenient but less effective method. The powdered scabs are put into the end of a silver tube which is about six or seven inches long and curved at the end. The scabs are blown into the nose. (3) Teu Yi. The undergarment of a child with smallpox is taken off and put on a healthy child for two or three days. The result of this method is rather unsatisfactory. (4) Teu Chang is to smear a piece of cotton with the contents contained in the vesicle and to stuff it into the nose. Chinese doctors condemned this as cruel and said that it would affect the child from whom the lymph was taken.
Smallpox in China.

The Western method of vaccination was first introduced into China in May, 1806. It was brought over from the Philippines to Macao, whence it spread to Canton and other places. It is remarkable that a century before Jenner's epoch-making discovery the Chinese seem to have had an idea of vaccination, for in the “System of Materia Medica” the use of cow fleas for the prevention of smallpox is mentioned. According to Li Shih-chen there are two kinds of cow fleas, the black and the white. In medicine, only the white ones are used; these are ground into powder and made into pills with rice flour. It is not at all impossible that the fleas of a cow affected with variola, when taken by the mouth, might have the same effect as vaccination. That this treatment was once popular proves that there must be some efficacy in it. Had there been a Chinese Jenner to follow up this valuable clue the discovery of vaccination might have been made a century earlier and millions of lives saved.

The various Chinese names for small-pox are as follows:

<table>
<thead>
<tr>
<th>Chinese Name</th>
<th>English Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teu Chwang</td>
<td>Bean pox</td>
</tr>
<tr>
<td>Lu Chwang</td>
<td>Hun pox</td>
</tr>
<tr>
<td>Shing Chwang</td>
<td>Holy pox</td>
</tr>
<tr>
<td>Tien Chwang</td>
<td>Heavenly pox</td>
</tr>
<tr>
<td>Tien Hua</td>
<td>Periodic disease</td>
</tr>
<tr>
<td>Tien Hang</td>
<td>Heavenly flowers</td>
</tr>
<tr>
<td>Wau Teu Chwang</td>
<td>Beanlike pox</td>
</tr>
<tr>
<td>Poh Sui Chwang</td>
<td>One hundred year pox</td>
</tr>
</tbody>
</table>

References.

1. Introduction to Medicine.
2. Prescriptions for Emergencies.

History of Small-pox.—The earliest knowledge of its occurrence is derived from India, where the Brahmins practised inoculation many centuries before the Christian era. In China it is said to have been known as early as 1100 or 1200 B.C. and inoculation was practised there in the end of the sixth century A.D. The date of its appearance in Western Asia is uncertain, and there is much difference of opinion whether small-pox was known to the ancient Greeks and Romans. Some believe the plague of Athens, B.C. 425, to have been small-pox, and Eusebius gives an account of a disease very like small-pox that prevailed in Syria in 302 A.D. Not until the latter part of the sixth century, when it broke out in the Abyssinian army at the siege of Mecca, A.D. 570, is definite information available as to its prevalence in Western Asia. In the tenth century Rhazes of Bagdad wrote his well-known treatise on Small-pox and Measles—the first medical work on small-pox. He quotes extracts from the work of Ahron, who practised in Alexandria in the seventh century, which show that small-pox was then a well-known disease in Egypt, and it had in all probability prevailed in Africa many centuries before that time. Allbutt's System of Medicine.

The first article was a preliminary one in which the report was made that carcinoma had been artificially produced in rabbits by the repeated painting of the ears with tar. The present contribution relates to the continuation of that work and gives more of the details by which to judge the correctness of the former conclusion.

The usual etiological history involves the application of tar to the edge of the inner surface of the ear of a rabbit, daily or every other day, for a considerable period of time. Taking a typical case, on the 83rd day a hard, horned, epithelial tumor appeared, and about the 100th day there appeared about the edges of the mass evidences of new-formed epithelial growth beginning about the base of several hair follicles. The applications were discontinued on the 205th day and the area cleaned with olive oil. At this time the growth was slightly more than one mm. across and by the 513th day the mass of hardened epithelium had become loosened, leaving a projecting moist granulating surface. On the 538th day this area had raised its general level above the surrounding normal epithelium and the center had begun to ulcerate. By the 543rd day the lymphatic glands at the base of the ear had begun to enlarge and 25 days later they were the size of large beans.

In the first report it was stated that the ears of two rabbits, in each of which a typical follicular epithelioma had developed, were identical in the nature of the malignant tumor developed. The center of each mass was occupied by a small group of hair follicles (Fig. 2). The skin at the periphery was clearly differentiated and in the involved area the basal epithelial cells suggested vertical invasion of the corium beneath by being drawn out into variously formed processes the interdigitation of which made the line of demarcation indistinct. One of the tumors took the form of a phagadic ulcer, with some perforation of the basement membrane and lateral extension into the corium and a few disconnected metastases. The outer layers of the hair follicle proliferated first and then this growth extended to the adjacent epithelium. One case, described more in detail, illustrated the cancerous transition from cornified epithelium in which the direction of the line of growth turned downward into the underlying tissues.

In the second experiment the location and conditions of the inunctions were varied. The percentage of positive results are herewith tabulated.

<table>
<thead>
<tr>
<th>Ears experimented upon</th>
<th>No. in which tumors appeared</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inunctions on inner surface of ear</td>
<td>21</td>
<td>15</td>
</tr>
<tr>
<td>2. On external surface</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>3. On incised wound</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>4. On surface above site of injection of scarlet red oil</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>
Fig. 1. Beginning of the infiltrative growth, 90th day.

Fig. 2. Growth on 238th day. F. m. H, Hair follicles filled with keratin; G, edge of healthy epithelium; I. W, beginning infiltrative growth.

CANCEROUS GROWTH CAUSED BY FREQUENT APPLICATIONS OF TAR.
Fig. 3. Cancerous ulcer following epithelial cornification. C.c, corneum cutaneum; Ulc. c, carcinomatous ulcer; F, e, H, strongly cornified area of spontaneously developed broad basal-celled epithelioma.

Fig. 4. Section of margin illustrating infiltrative growth of cancer on 197th day. C. e, h, groups of cancerous cells and cancer ball; Dis, intervening areas of epithelium; E. n, epithelial network.
Fig. 5. Longitudinal section through the primary nodule. C.K. central fibrous mass surmounted by strings of growing epithelium; 11-12, marginal infiltration.

Fig. 6. Lymphatic metastasis in gland beneath maxilla. Dr., glandular tissue; Sk, metastatic scirrhus carcinoma.

CANCEROUS GROWTH CAUSED BY FREQUENT APPLICATIONS OF TAR.
Fig. 7. Metastasis in lymph nodule at base of ear. *L.f.* lymph cells; *E. a.* *W,* arrangement of epithelial cells in walls of malignant ulcer; *A. I.* exudate in cavity of the walls.

Fig. 8. Cancerous tissue showing asymmetrical mitosis. *Bip. asym. M.* highly magnified.

Cancerous Growth caused by frequent applications of tar.
As a rule the tumors appeared about the 100th day. The applications were confined to as small an area as possible, but it was found impossible to thus limit the effect of the irritant. In this series 75 ears belonging to 38 rabbits were painted. A considerable number of the animals died before the development of the tumor, or before the average time had elapsed in which to expect its development; but a table was compiled showing the number of living animals, the number of positive results and the percentage for each ten days of the experiment. The number of positive cases was in direct proportion to the length of time during which the applications were given. The period of maximum development was from 150-200 days.

In a few cases, small projections about the hair follicles were observed as early as the 30th day, but in the ordinary case the first evidence appeared much later. So far as could be determined there was no particular cell or group of cells in which the growth began. The usual tumor form was pedunculated, but there were some with broad bases with a tendency to central ulceration similar to rodent ulcers. One variety of the broad based form is platform-like, with extensive keratin formation more or less evenly placed and eventually resulting in scales that become detached at intervals. The other is shaped much the same but has less keratin formation, is fairly smooth, and inclined to be wet and glutinous on the surface. The differences in the type of growth were attributed to the varying grades of tissue resistance and reproductive power of the connective tissue of the skin. Several of the types had definite lymphatic involvement due to microscopically demonstrated metastases. The diagnostic points upon which the growths were pronounced malignant were: (1) progressive emaciation of the animal; (2) continued growth after the applications of the tar had been stopped; (3) metastases in the lymph glands; (4) microscopic sectioning. The direction of growth in practically every case was first lateral, and then breaking vertically through into the corium it involved the deeper structures including the cartilage. A superficial moisture preceded the central ulceration which was followed by a large aggregation of leucocytes, central gangrene, and peripheral eczema. In some cases, in which the center of an area had undergone malignant transformation, the periphery was occupied by a reticulated epithelium. This broad-based type of growth was more liable to malignant transformation than the papilloma-like one, due probably to the weaker response of the connective tissue.

The epithelium about the hair follicles is ordinarily not distinctive; but when it begins to take on malignant tendencies then the protoplasm and nuclei stain more brightly, thus making the boundary line more distinct. These areas usually manifest a polycentric growth, centering about a small group of hair follicles filled with keratin. At this early stage there is no connective tissue increase and no mucoid degeneration. At first the growth is entirely expansive, resembling a papilloma with a fibrous base; later, the growth proceeds downward and its character becomes that of a typical carcinoma. The basal cells of the external portion of the hair follicles proliferate broadly, extending toward the corium which is penetrated in several places.

In most cases the mitosis was symmetrical, the chief exception being illustrated in Fig. 8. In many instances the hair follicles were quite widely separated from the metastatic growths to which they gave rise (cf. "dis." in Figs. 4 and 10). In these spaces there is much new-formed connective tissue which forms a loose network. There is often mucoid degeneration in the connective tissue of the corium in the rapidly growing portions, but it is fibrous where atrophy of the adjacent tissues is in progress. Fatty change is noted commonly in the epithelial cells surrounding the hair follicles. Pigment production in the hairs of animals which are not white is in abeyance where tumor transformation is taking place. Dropsical degeneration of the epithelium is often noted and together with the lymphocytic invasion of the parts gives a peculiar curly or "bird's eye" appearance. Serous infiltration was seen to affect both the epithelium and corium in some cases.
The third experiment involved the use of 63 ears belonging to 39 rabbits. Young animals were almost unaffected by the tar applications due perhaps to the fact that the corium is relatively so resistant, the relations being reversed in more advanced age. The sparseness of the hairs on the inner surface of the ears was supposed to account for the greater frequency of follicular epithelioma in that locality; and the growth relations between the skin and underlying cartilage are in a measure responsible for the predisposition to rodent ulcer as a result of the application of this irritant. The elimination of any hereditary disposition is facilitated by the fact that in many cases a carcinoma appeared on one ear and the other remained free from malignant disease, in spite of the fact that both ears had been subjected to the same treatment. The female sex was more susceptible and for this reason was employed in these experiments in greater numbers than the male. Back or dark-haired rabbits were much more disposed to the transformation than those of a lighter or white color.

In conclusion the authors state they are satisfied in their minds that the frequent application of small amounts of tar to the ears of rabbits will, in a considerable number of cases, produce growths that are in all respects identical with carcinoma in man. The rabbit is not subject to spontaneous cancer of the ear, and careful histological examinations of a series of ears have failed to reveal evidence of cell-rest or "anlage" capable of giving rise to abnormal growths in later life. Apparently, any group of cells, in this case those about the hair follicles, are capable of responding to stimulation with an atypical growth in such a way as to initiate self-perpetuating malignant tumors. The use of tar, which has antiseptic properties, precludes the possibility of transmission of any infectious agent, and practically proves the correctness of Virchow's theory that a non-specific irritant acting sufficiently upon a pre-cancerous substratum for a protracted period, is sufficient to set in motion forces of independent tissue growth that lead inevitably to the death of the organism.


The former communications have had to do with the demonstration of the existence of both kinds of nerves in relation to the sweat glands and their comparative study in the different available animals. In the horse both kinds are gland exciting; in the sheep it is only the sympathetic enervation that has this function; in man, cats, and cattle, only the parasympathetic has been demonstrated.

Irritation of the cervical sympathetic in the horse produces the secretion of sweat. When this secretion was produced in the horse by adrenalin, it was more concentrated than that induced by pilocarpin, but the composition and the ratio between constituents and total volume was the same in both cases. The central inhibiting power of chloral hydrate and also of pilocarpin was sufficient to inhibit the paradoxical sweat secretion of the horse following large doses of atropin.

The Kitasato Archives of Experimental Medicine.


The growing popularity of sero-vaccines in various diseases because of the milder reaction, ready absorption, and the safer and more rapid immunity produced, has led the author to seek to develop a similar agent for use against the tubercle bacillus. After prolonged search, two dyes were discovered that gradually reduce the virulence of strains grown in contact with them until they can be injected in good sized doses into guinea-pigs, and still produce no disease or trace of injury. Trypoflavin and iodeosin or erythrosin were combined with broth and other appropriate media, and cultures so reared were without pathogenic power. It was
Fig. 9. Metastasis of follicular epithelioma, showing round epithelial cords and cancer balls, with more or less degenerative tendency.

Fig. 10. Epithelial proliferation. Cap. G., invasion of a capillary by cancer cells; C. z., Dis. Em., dissociation of epithelial cells.

Cancerous growth caused by frequent applications of tar.
Japanese Medical Literature.

rarely possible to carry the strains through more than 20 generations with the former drug without killing them; but sufficient rejuvenation was produced by the interpolation of one culture on ordinary glycerine media. In practice this vaccine gives very little reaction, is readily absorbed and contains the full antigenic qualities of the entire bacillus. It apparently has a certain amount of antitoxic value, inasmuch as phagocytic cells accumulate about the foci, connective tissue production is promoted, and healing takes place. In the production of a good tissue reaction the dosage of the vaccine should be very gradually increased, and a repetition of a small dose may be of more value than would be an increase in the size of the previous one. It is good for the prevention as well as the cure of tuberculosis.

In the Saikingaku Zasshi, October, 1915, appeared a paper by the author on the resistance of T. B. to dyes and chemicals in which he described the resistance of the organism to trytophavin and erythrosein (iodeosin). The resistance thus fostered was not lost even under repeated subcultivation on other media.

In the same journal of July, 1915, another article outlined the experiments with avirulent strains of T. B. and the therapeutic animal tests made with them. Most cultures grown in the presence of the different dyes were not reduced in virulence, the chief exceptions being the ones noted above. Furthermore, such cultures sensitized by exposure to contact with immune serum were rendered still less pathogenic, but this acquired property was not long retained when they were subsequently cultivated on any media. The low infectivity was indicated not only by the results of section after injection but on the living animals by complement fixation and von Pirquet tests.

In the Saikingaku Zasshi, April, 1916, was described the method of preparing the sero-vaccine and the use to which it could be put clinically. The weighed culture was diluted sufficiently with saline, mixed with immune serum diluted 1-5, shaken one hour, incubated three hours, centrifuged, and the sediment washed with saline. This was ground five days in an agate mortar, emulsified with saline, and mixed with the filtrate from a culture of an erythrosein-resistant strain grown in broth, so that 5 mg. of the broken bacilli were suspended in 1 ml of the filtrate. This was harmless to guinea-pigs in doses of 0.5-1. mg.

The action is considered to be two-fold; the filtrate containing the soluble toxin of the culture excites the formation of antitoxins, while the cell bodies stimulate the natural defensive forces of the body tissues. The conditions of use and the indications are similar to those recognized in the treatment with the various forms of tuberculin.


Isolation of the blood platelets. Blood was prevented from coagulating by mixing with a solution of sodium citrate, 3%; sodium chloride, 0.9%; glucose, 1%; in sterilized water, and then was centrifuged for 30 minutes at 1,000 per minute. The supernatant liquid containing the blood platelets was carefully drawn off leaving the red and white cells as sediment. A further centrifuging of this liquid at 2,000 per minute for five minutes removed the cells completely; then further revolving at 3,000 per minute for a half hour produced a white sediment of blood platelets, which was washed with some of the fresh solution and again centrifuged. The sediment resulting was almost pure blood platelets with only an occasional red or white cell (not more than 1-500) the form being perfectly preserved and capable of excellent staining.

Antibloodplatelet was produced by repeatedly injecting these bodies into rabbits, and then preserving the serum with chloroform.

Tests on antibloodplatelet in vitro. Agglutination. Using the citrate-glucose-salt solution instead of saline for dilution, the titre was between 1-80 and 1-320. Sera prepared with other animals was equally active.
**Hemagglutination.** Using 1.0 ml of a 2% emulsion of guinea-pig corpuscles and varying dilutions of sera, the guinea-pig serum was active to a high degree (max. 1-1280); the others were almost inactive.

**Blood plateolysis.** Blood plate emulsion, varying dilutions of antiserum and complement, were incubated one hour, and then kept at room temperature the remainder of the time. At the end of 24 hours lysis had occurred as high as 1-160, but only 1-20 being dissolved at the end of three hours.

**Hemolysis.** There was practically no action.

**Changes in blood platelets after injection of antibloodplatelet.** The average count of blood platelets in normal guinea-pig blood, using a Thoma Zeiss hemocytometer and a diluting fluid of citrate-glucose-salt solution with .2% brilliant cresyl blue, was 719,000 (550,000-888,000). Guinea-pigs injected with 1 ml of antibloodplatelet were dead in less than 24 hours, the blood platelets being reduced more than half (extreme case, 95,000).

**Changes in red and white cells of guinea-pig.** No special alterations.

**Changes in coagulability.** Tests made just after the injection were practically normal, the average coagulation time being 2 minutes and 40 seconds. Death occurred in most cases, with marked evidence of purpura, in 24-72 hours, and just before death the lengthening of the time was decided, even to 10-12 minutes. It is important to note that no matter how much the blood platelets were reduced the blood was not rendered entirely incoagulable.

**Production of experimental purpura hemorrhagica.** The injection of antibloodplatelet initiates a specific intoxication, but operates chiefly when the antiserum prepared in the guinea-pig is injected into one of the same species. Several other species were used with this serum and with homologous sera, but with very indifferent results. Twenty-five guinea-pigs were injected with varying amounts and by different routes, but almost all died in a few hours with multiple hemorrhages of serous and mucous membranes. In case of subcutaneous injection the site was surrounded by an edematous bloody exudate. The hemorrhages were not due to emboli, and the blood in the vessels was without evident alteration. Histological examination of the different lesions did not reveal anything characteristic or tangible.

**Immunological examination.** Series of injections beginning with a sublethal dose and gradually increasing were given to guinea-pigs until several times the maximum dose could be given without producing any symptoms. Animals killed before immunity was complete gave evidence of the same sort of lesions that had been present at death in those killed by large doses, the only difference being one of degree. Those killed after immunity had been completed were without any demonstrable lesions.

(457) **Tubercle bacilli of the Human Type injected into White Rats, Path of.** Pp. 235-250, Y. Watanabe.

Portions of an emulsion of tubercle bacilli were injected into the peritoneal cavity of white rats and the fate of the organisms studied in detail. Both human and bovine bacilli found their way into the mesentery, omentum, and cells of the peritoneal cavity, but only those of the bovine type were able to proceed to the mesenteric and other glands and to the internal organs and to proliferate there in the form of a miliary process. The white rat, being naturally immune to the human strain, was a favorable animal for the testing of the differences in the manner of development.

That the serum was not the active agent in producing this immunity was indicated by mixing samples of the serum of a susceptible and an immune animal with cultures of the bacilli, and injecting them after suitable incubation into a susceptible animal. No difference in growth or viability was noticed.
A uniform dose of 1/50 mg. of the culture was injected in the rats, and samples removed at intervals from the abdominal exudate or tissues, taken from animals killed at proper intervals, were examined for the presence or absence of bacilli. Normally, this fluid contains 30-50% lymphoid cells, but with the introduction of tubercle bacilli or foreign bodies it contains numerous "transitional" cells with indented nuclei. Phagocytic cells later make their appearance, followed by mononuclears which persist in the form of a "permanent inflammation."

The bacilli are nearly all taken up by phagocytic cells, there being a preliminary climax in their activity about four hours after injection, followed by a decline, then a prolonged period of activity from the end of the 1st day until the 8th. Another period of decline follows, and by the 14th day no more free bacilli are found, but those taken up by cells are numerous. By the 21st day there are scarcely any left, although culturally they can be demonstrated to the 26th day. The intracellular bacilli are more or less degenerated, the process beginning about the 4th day, although cultures show that they are not killed until very late.

Histologically, nodules can be distinguished about the 10th day, but by the 35th day only proliferating endothelial cells mark the spot and even they are gone by the 55th. By comparison, the bovine type when injected under the same conditions begins the formation of nodules in eight hours, and they can be demonstrated in the mesenteric lymph glands by culture in five days, and as swollen glands in 35 days. The human type does not reach the mesenteric glands at all. Within 24 hours after injection the bacilli are found in the great omentum and can be demonstrated there for 35 days. The human type gradually degenerates, while the bovine strain continues to develop and ultimately finds its way into the regional lymph glands, then to the spleen, liver and other organs.

(458) LABYRINTH OF A BIRD'S EAR DESTROYED BY VIOLENT NOISES, RESTORATION OF. PP. 251-262. N. SATO.

Nippon Gankwagakkai Zasshi
Journal of the Japan Ophthalmological Society.
Vol. xxi, No. 9, September 28, 1917.

(459) CORNEAL OPACITY, NODULAR, TREATMENT OF. PP. 1179-96. B. Sato.

The pathological tissue stains readily with ordinary acid dyes and is not dissolved by ordinary solvents. Russel's hyaline stain gives a red color and with iodine and Gram's solution it is yellowish brown. With Giemsa it is acidophilic like Russel's bodies, cylindroids in the kidney, and other hyaline material. Electricity was the only remedial means of value.

(460) BERI-BERI, A CAUSE OF BILATERAL NEURITIS AXIALIS CHRONICA. PP. 1197-1229. R. SODA.

This form of amblyopia is to be carefully differentiated from that due to alcohol and tobacco, and the long list of injurious chemical substances. The chief points mentioned were; (1) bilateral, and equal in degree; (2) high degree of functional disturbance but without alteration of color sense; (3) age of patients generally between 15 and 50 years; (4) no relation to sex; (5) decoloration of the papilla and temporal area in half the cases. The treatment is that of beri-beri, with injections of pilocarpine 1% daily or every alternate day, in doses beginning with 0.1 and increasing to 0.5-0.6.

(461) CENTRAL RETINITIS. PP. 1230-57. I. MATSUOKA.

On the basis of 640 cases the author makes the following observations:

Causation. Syphilis, 16%; beri-beri, 2.8%; constitutional disorders, 5.9%; dissipation, 12%; unknown, 63%.
Refraction
Subjective vision, normal, 440; altered, 200; total, 640. Objective vision, normal 57; altered, 50; total, 107.

Distribution
Left eye, 159; right eye, 203; both eyes, 278. (One eye only, 362).

Seasonal incidence
Max. January to April, decrease in summer months, but increase again in November.

Age
Majority between 17 and 40 years of age.

Sex
Males form the majority of the cases.

Occupation
Disease more frequent in those employed indoors.


The growth in size during the first two years of life is very rapid and the eye-ball is comparable in size with that of the adult at eight years of age. The cornea is practically full size at two years. The further development is largely in the posterior portion of the ball behind the equator, while the change in the portion to which the rectus muscles are attached is mainly one of expansion of the arc beneath. Some of the average measurements of the eyes of babies at birth and of adults is here reproduced.

<table>
<thead>
<tr>
<th></th>
<th>New born baby</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equatorial circumference</td>
<td>... 55.0 mm.</td>
<td>77.51 mm.</td>
</tr>
<tr>
<td>Antero-posterior diameter</td>
<td>... 17.83</td>
<td>34.22</td>
</tr>
<tr>
<td>Vertical diameter</td>
<td>... 17.58</td>
<td>23.81</td>
</tr>
<tr>
<td>Horizontal diameter</td>
<td>... 16.6</td>
<td>23.79</td>
</tr>
<tr>
<td>Oblique, upper inner to lower outer</td>
<td>... 17.03</td>
<td>24.77</td>
</tr>
<tr>
<td>&quot; upper outer to inner lower</td>
<td>... 17.02</td>
<td>24.3</td>
</tr>
<tr>
<td>Weight</td>
<td>... 2.8 gm.</td>
<td>7.43 gm.</td>
</tr>
</tbody>
</table>

Comparison of the growth of the cornea in the same conditions were;

<table>
<thead>
<tr>
<th></th>
<th>New born baby</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical diameter</td>
<td>... 9.98</td>
<td>11.52</td>
</tr>
<tr>
<td>Horizontal diameter</td>
<td>... 9.2</td>
<td>10.54</td>
</tr>
</tbody>
</table>

The expansion of the eye in circumference at different points:

<table>
<thead>
<tr>
<th></th>
<th>New born baby</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of attachment of rectus muscles</td>
<td>... 53.4</td>
<td>69.48</td>
</tr>
<tr>
<td>Equatorial circumference</td>
<td>... 55.0</td>
<td>77.51</td>
</tr>
</tbody>
</table>

Juzenkai Zasshi

(Journal of the Perfection Medical Society, Alumni of Kanszawa Medical School)


The dilatations were chiefly of the soft parts with an occasional thickening of the periosteum; rarely any trace of bony change.


Two men of average strength and ability were examined for three different periods with the following results:

June 1—July 4, for daily working period, 13 hours 5 minutes.
July 20—Aug. 18, " " " 13 " 45 "
Oct. 3—Oct. 18, " " " 8 " 7 "

62 The China Medical Journal.
Japanese Medical Literature.

The averages for the first two periods were for the two men.

<table>
<thead>
<tr>
<th></th>
<th>Total calories</th>
<th>Albumen</th>
<th>Fat</th>
<th>Carbohydrate</th>
<th>Alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. A.</td>
<td>3786 cal.</td>
<td>333 cal.</td>
<td>169 cal.</td>
<td>3148 cal.</td>
<td>136 cal.</td>
</tr>
<tr>
<td>K. Y.</td>
<td>3746 cal.</td>
<td>375 cal.</td>
<td>182 cal.</td>
<td>3125 cal.</td>
<td>64 cal.</td>
</tr>
</tbody>
</table>

In order to test the value of the staples only of the Japanese diet, one of these men was placed on rice and salted radish and compelled to work for the same length of time as above. He rapidly lost strength until unable to work any longer. The N-intake was 9.77 and the outgo 12.3; the balance was rapidly restored when hashed fish was added to this limited diet and he was able to resume work as before.

Saikingaku Zasshi

(Journal of Bacteriology)

No. 265. October 10, 1917.


The interesting feature of this article is the attention which the author calls to the frequency of tuberculosis among school teachers, especially of the primary grades, to which he attributes the prevalence of this infection among the young people of Japan. The mental fatigue of both teachers and pupils is attributable to some error in the educational system which he feels must be remedied. (Reviewer's note. Slight acquaintance with this system as applied in Korea fails to suggest any particular point to which this objection might hold. The most obvious difference between it and the American system is the shortness of the summer vacation and the leisurely way in which the day's program is carried out. Ventilation is generally pretty good, and during recess time there is a special "setting up" exercise out of doors which is a definite part of the daily work of the school.)


This abstract of work published elsewhere sets forth the claim that rat-bite and cat-bite fever are one and the same disease, as indicated by a detailed study of the organisms concerned and the symptoms produced.

Hiukwa, Hitshmyokwa Zasshi

(Japan. Zeitschr. f. Derm. u. Urol.)


A new synthetic product described chemically by the author as "chloromethylbencatechienmethylenenblau" is said to be able to kill various organisms as gonococcus, streptococcus, and tubercle bacilli in five minutes, in dilutions as high as 1:5000. Injections of 0.2 mil on alternate days into buboes as large as a hen's egg caused complete resorption after 5-7 treatments. It was found equally good for tuberculous lymphadenitis.


Iji Shimbun

(Medical News)


This article deals with the lesions following the experimental injection of infectious material into guinea-pigs. The infection produced becomes one of long
duration, the organisms persisting and multiplying enormously in the connective tissues all over the body.

1. **Site of inoculation.** An inflammatory reaction soon manifests itself reaching a culmination about the 5-7th day, coinciding with the development of a frank blood invasion. The skin is greatly swollen with edema and cellular infiltration in which polymorphs take the most prominent part but associated with numbers of lymph cells and plasma cells.

2. **Eyelid, nose, and upper lip.** These parts are often early involved no matter how the organisms were introduced, and the characteristic reaction takes place but involving not only the skin of the parts but also the conjunctiva, and the mucosa of nose and mouth. The bases of the hairs are invaded and alopecia results. The organisms spread, through the corium chiefly, until the entire skin is affected and much of the hair lost.

3. **Lymph glands.** These swell, contain spirochaetes and the capsules and periphery become infiltrated.

4. **Spleen.** Swelling takes place about the eighth day and a few organisms can be found in the pulp.

5. **Liver.** Swelling from hyperemia is the chief abnormal condition, but microscopically there can be demonstrated an infiltration about the blood vessels of the capsule in which a few spirochaetes occur. The gall bladder is not affected and the bile is sterile to animal injection.

6. **Lung.** Hyperemia and an occasional hemorrhage summarize the lesions of this organ.

7. **Heart, kidneys, adrenals, pancreas, intestinal tract, marrow, salivary glands and other organs were negative so far as macroscopic lesions were concerned, but all contained more or less numerous spirochaetes in the connective tissues everywhere.

8. **Eye-ball.** The cornea is often involved, with inflammation in the early stages and opacity in the later ones. In this respect it resembles closely Weil's disease, relapsing fever, seven-day fever, and hereditary syphilis. Organisms can be found scattered in different parts of the eye and wherever found are associated with more or less cellular infiltration. The invasion of the nasal and oral mucosa with the presence of the organisms in the secretions is believed to be the most important factor in the spread of the infection by bites.

Tokyo Iji Shinshi
(Tokyo Medical News)
No. 2048, November 3, 1917.

(471) **Morax-Axenfeld bacillus, infections by.** Pp. 2271-4. K. Kawa-shima.

The erosions about the nose and corners of the mouth so common in children and occasionally found in adults are frequently caused by this organism and hence readily yield to applications of 5% zinc sulphate solution.

Chugai Iji Shimpo
(Home and Foreign Medical News)
No. 903, November 5, 1917.

(472) **Phenolphthalein as a test for occult hemorrhage in feces.** Pp. 1306-10. S. Yaoita and M. Hino.

As a solution of phenolphthalein, 1 gm; zinc powder, 10; potassium hydrate, 25; and distilled water, 100, is apparently in common use in the clinics of Japan, this has led the author to investigate its value fully. He believes it to be
sensitive to one part in a million when the acetic acid-alcohol extract of the feces is used, hence he cautions about the diet when making the test.

Various fish, flesh, and fowl that are eaten in Japan, commonly in the uncooked state, were tested for their relative content of hemoglobin and the degree to which dilution of their extracts must be carried to give a negative test. Five grams of the meat sample were ground in a mortar with 3 mils of 30% acetic acid, stirred with 20 mils of alcohol and then filtered through a dry filter. 5 mils of the filtrate were taken as the basis and diluted until the test became negative. The degree to which this was necessary is given in the table. The meat was uncooked, unless otherwise stated.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rabbit</td>
<td>0.0003-0.0005 mil</td>
<td>0.0005</td>
<td>0.0001-0.0002</td>
</tr>
<tr>
<td>Guinea-pig</td>
<td>0.0001</td>
<td>0.0003</td>
<td>0.00005-0.0001</td>
</tr>
</tbody>
</table>

This information was applied clinically in selecting three squads of two healthy men each and giving them test meals. The first pair were allowed to eat as much of the flounder at one meal as they cared for, and the positive test was found to persist for three days in the stools. Those of the second group were given 80-100 gms. of flounder twice a day; the stools were positive when the fish had been eaten raw, but negative when cooked. The remaining two as controls received meat-free diet.

The tr. guaiac test is recommended as a check on the delicacy of the test in the clinic.

Chosen Igakukai Zasshi
(Korea Medical Society Journal)
No. 16, December 4, 1917.


These poisonous creatures, previously reported from Manchuria in Abstract No. 364, have been found also in Korea at An Ju (Japanese pronunciation An Shu) located near Shin An Shu, a place marked on every railroad map, and at Whang Ju (called in Japanese Ko Shu, Whang Hai Province) situated near Ko Shu station on the Seoul-Euiju line. Scorpion poisoning is not considered to be common in the peninsula, and these localities are evidently near its limit in this direction. Altogether, 81 cases of injury to human beings were noted in two years, of which four proved fatal. The months covered were from May to October, the greatest number being in June and July, with August a close third. There were a few more males in the list than females. The symptoms were those of pain and local inflammation, often terminating in local gangrene, from which recovery was slow.

The average yield of poison from a scorpion was between 0.005 and 0.02 mil, of which 74% was water, the remainder being a crystalline yellowish mass. When injected into animals this was able to produce the typical symptoms and sometimes death. The lethal doses for two animals were determined in terms of kg. of body weight.

--------|--------------|---------------|----------------|
Rabbit  | 0.0003-0.0005 mil | 0.0005 | 0.0001-0.0002 |
Guinea-pig | 0.0001 | 0.0003 | 0.00005-0.0001 |

The dried poison taken up in saline was found under proper conditions to hemolyze the corpuscles of the dog and chicken, but to have very little or no effect.
upon those of the rabbit, guinea-pig, cat and goat, when in 0.1% solution in the incubator for two hours and at room temperature for 24.

(474) **Snakes of Korea.** Pp. 52-62. S. Muroya.

Thus far 14 species of snakes have been identified in Korea of which the four last named are poisonous.

<table>
<thead>
<tr>
<th>Japanese name</th>
<th>Known Habitat</th>
<th>Author's Collections</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Natrix vibakari (Boine)</td>
<td>Japan</td>
<td>Funan.</td>
</tr>
<tr>
<td>2. N. tigrina (Boine)</td>
<td>Japan</td>
<td>Funan.</td>
</tr>
<tr>
<td>3. N. var. lateralis (Berthold)</td>
<td>China</td>
<td>Gensan.</td>
</tr>
<tr>
<td>5. Elaphe schrenkii (Stranch)</td>
<td>Korea</td>
<td>Seoul.</td>
</tr>
<tr>
<td>6. E. Boine (Pallas)</td>
<td>Korea and China</td>
<td>Seoul?</td>
</tr>
<tr>
<td>7. E. taeniurus (Cope)</td>
<td>Japan</td>
<td>Seoul.</td>
</tr>
<tr>
<td>8. E. quadrivirgata (Boine)</td>
<td>China</td>
<td>Korea.</td>
</tr>
<tr>
<td>10. Diodon rufozonatum (Cantor)</td>
<td>Japan</td>
<td>Seoul.</td>
</tr>
</tbody>
</table>

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</tr>
<tr>
<td>10. Diodon rufozonatum (Cantor)</td>
<td>Japan</td>
<td>Seoul.</td>
</tr>
</tbody>
</table>

A few details of structure of these different forms are given in the following tables in which the numbers of the species correspond to those above.

**Abdominal scutae,** **Av.** **Post-anal scales,** **Av.** **Total body scales,** **Av.**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>137-151</td>
<td>144</td>
<td>88-85</td>
<td>71</td>
</tr>
<tr>
<td>2.</td>
<td>150-169</td>
<td>163</td>
<td>65-63</td>
<td>75</td>
</tr>
<tr>
<td>3.</td>
<td>147-171</td>
<td>154</td>
<td>53-65</td>
<td>59</td>
</tr>
<tr>
<td>4.</td>
<td>167-185</td>
<td>175</td>
<td>49-60</td>
<td>55</td>
</tr>
<tr>
<td>5.</td>
<td>210-226</td>
<td>218</td>
<td>62-76</td>
<td>69</td>
</tr>
<tr>
<td>6.</td>
<td>179-207</td>
<td>193</td>
<td>50-71</td>
<td>61</td>
</tr>
<tr>
<td>7.</td>
<td>229-233</td>
<td>231</td>
<td>95-111</td>
<td>103</td>
</tr>
<tr>
<td>8.</td>
<td>165-214</td>
<td>205</td>
<td>70-99</td>
<td>85</td>
</tr>
<tr>
<td>9.</td>
<td>180-221</td>
<td>201</td>
<td>85-99</td>
<td>92</td>
</tr>
<tr>
<td>10.</td>
<td>185-208</td>
<td>197</td>
<td>57-83</td>
<td>70</td>
</tr>
<tr>
<td>11.</td>
<td>132-146</td>
<td>141</td>
<td>44-56</td>
<td>49</td>
</tr>
<tr>
<td>12.</td>
<td>137-159</td>
<td>138</td>
<td>46-53</td>
<td>49</td>
</tr>
<tr>
<td>13.</td>
<td>135-151</td>
<td>144</td>
<td>29-49</td>
<td>35</td>
</tr>
<tr>
<td>14.</td>
<td>151-163</td>
<td>156</td>
<td>36-49</td>
<td>41</td>
</tr>
</tbody>
</table>

Further data are given of five specimens from near Seoul, classified as:

<table>
<thead>
<tr>
<th>Abdom. scutae.</th>
<th>post-anal scales.</th>
<th>length.</th>
<th>neck girth.</th>
<th>belly girth.</th>
</tr>
</thead>
<tbody>
<tr>
<td>169</td>
<td>80</td>
<td>15.4 inches</td>
<td>.9 inches</td>
<td>1.3 inches</td>
</tr>
<tr>
<td>162</td>
<td>64</td>
<td>31</td>
<td>1.45</td>
<td>2.</td>
</tr>
<tr>
<td>167</td>
<td>62</td>
<td>20</td>
<td>1.3</td>
<td>1.8</td>
</tr>
<tr>
<td>219</td>
<td>66</td>
<td>70.</td>
<td>3.45</td>
<td>5.</td>
</tr>
<tr>
<td>199</td>
<td>71</td>
<td>42.</td>
<td>1.9</td>
<td>3.1</td>
</tr>
</tbody>
</table>

This article evidently intends to include the description of the new species listed under No. 13 in the above list. The only observable difference in the figures is that relating to the count of the post-anal scales which may have suggested the name "brevicaudus." Further measurements are given of eight specimens, seven collected in Seoul and the last, a larger one, in Pyeng Yang, Korea. In order the abdominal scutae were, 149, 147, 148, 149, 146, 151, 151, and 137; the length of the
Seoul specimens averaged 18.9 inches; the neck circumference, 1.0 inch; and the maximum abdominal girth, 1.54 inches. The Pyeng Yang snake was larger, 22.0, 14.5, and 3.7 inches. Strangely enough, the post-anal scales did not conform to the species' name or the averages as given above but were respectively, 44, 45, 40, 49, 44, 41, 43, and 43. The color also was the most varied, being for the same specimens, "fire-like," light brown, pure black, black, blue, and black, deep green, and one not stated.

This species of poisonous snake, whatever its varieties may be, is known in Japan under the name of "Mamushi" and is said to correspond to the family Crotalidae of America and the pit viper of England. It is viviparous and this has given rise to the Korean name, "Salmosa," which means "matricide snake," the idea being that when growing up it kills its own parent. It is a small, agile, and secretive snake that bites when least expected. It is greatly feared by the natives but it is an open question as to how severe the bite would be if untreated. The swelling that ensues is taken as an indication for the application of a tourniquet; this is often left in position so long that gangrene is inevitable. The author details two cases in which this is the only possible explanation.

The head is said to be triangular, has strong teeth, well developed paired fangs, and a loreal pit, a depression in front of the eye. There is a small white spot on the anterior angle of the post-orbital plate.

It is popularly believed that some of the species ordinarily considered to be non-poisonous may become poisonous at certain seasons of the year. Just before and after the winter's hibernation, some of these are said to bite, the lesions produced being painful but not leading to gangrene. The common name for them in Korea is "Tawk sa," or "poisonous snake"; it is clearly differentiated from the "Salmosa," or "matricide snake."


The symptom complex known as Manchurian gastric fever was first described during the Russo-Japanese war by Horiuchi, and later by Botkin and Simuitzki in the "Journal of Clinical Medicine." It was said to resemble typhoid fever closely and to be produced by an organism of the typhoid group. It most closely approaches the B type of paratyphoid but has certain not clearly defined differences. Milk is coagulated very slowly, indol appears after several days of cultivation, and the cultures invariably died out after 1-2 weeks. Nine patients were examined and the strain "Hotomi" was the most typical one isolated. Agglutination with the patient's serum was positive to 800-1500 dilution, while that of a paratyphoid patient's was positive to 50. Another strain, "Ishizuki," was more like the typhoid bacillus, but gave different agglutination reactions and slight cultural dissimilarities. Injection into rabbits produced sera of good titre.

Clinicall3, the fever is said to have a more abrupt onset and fall than that which ordinarily characterizes typhoid, and the pulse is relatively rapid. No extensive epidemic has been observed.


A peninsula called Byun San, in a region which is near the southern part of Korea on the side next the Yellow Sea, is especially noted for the number of distoma cases. Nearly all the affected persons belonged to the farming class, and most of them lived at the base of a mountain rather than out on the plains. Several in a family were commonly found to be infected; girls in the first three decades of life were not often infected, but above the age of 30 the sexes were equally affected.

Clubbled fingers and serious anemia were the outstanding signs, but tuberculosis and pleural inflammation were occasionally found. Some patients that had been infected for fully 30 years were still able to enjoy life to a reasonable extent.

Fully 200 crabs were captured in this vicinity but none of them was evidently affected by the cysts. The crabs were taken chiefly from the marshes, not the brooks, and were not as hairy as the so-called "hairy crabs," although this variety is said to be commonly eaten in that region.

A number of crayfish, called in Korean, "Ka chai," and scientifically, Astacus japonicus, were examined for the presence of cysts and it was found that about one-fourth of them were infected. The liver and in some cases the gills were the sites of infection and, so far as could be determined, the cysts were of this parasite. No statement is made as to the edibility of this crayfish.
THE JAPANESE OPIUM TRADE WITH CHINA.*

A SCANDAL CALLING FOR INSTANT AND DRASTIC REPRESION.

In the "North China Daily News" of September 15, 1915, a correspondent explained in some detail the large proportions to which had attained Japan’s morphia traffic with China. He expressed his belief that the morphia trade was the most lucrative of all trades conducted by Japanese in China. He pointed out that the trade with Tairen alone in 1913 amounted to six and a quarter tons of morphia, and that between the price at which this morphia made in Europe was purchased in Japan, and the price ultimately paid for it by the consumer, there was a margin, that is to say there was a profit to the intermediary in the six and a quarter tons, of $8,400,000.

That morphia trade still flourishes. It is a larger trade now than it was in 1913. Morphia, however, can no longer be purchased in Europe. The seat of industry has been transferred to Japan and morphia is now manufactured by the Japanese themselves. Although Japan is a signatory to the Agreement which forbids the import into China of morphia or of any appliances used in its manufacture or in its application, the traffic, inasmuch as it has the financial support of the Bank of Japan as explained by your correspondent, is carried on with the direct approval and encouragement of the Japanese Government. In no other country in the world has there ever been known such a wholesale contraband traffic. Literally tens of millions of yen are transferred annually from China to Japan for the payment of Japanese morphia. The chief agency in the distribution of morphia in China is the Japanese Postoffice. Morphia is imported by parcels post. No inspection of parcels in the Japanese postoffices in China is permitted to the Chinese Customs Service. The Service is only allowed to know what are the alleged contents of the postal packages as stated in the Japanese invoices, and yet morphia enters China by this channel by the ton.

18 TONS OF MORPHIA ANNUALLY.

A conservative estimate would place the amount of morphia imported by the Japanese into China in the course of the year as high as 18 tons and there is evidence that the amount is steadily increasing.

*An article reprinted from the North China Daily News, Shanghai, December 17, 1918. It is brought to the attention of medical missionaries throughout China so that on professional and ethical grounds we may resist with our whole strength this traffic so ruinous to the Chinese nation.
Wherever Japanese are predominant there the trade flourishes. Through Tairen morphia circulates throughout Manchuria and the province adjoining; through Tsingtao morphia is showered over Shantung province, Anhwei, and Kiangsu, while from Formosa, so favoured by geographical propinquity, morphia is carried along with opium and other contraband by motor-driven fishing boats to some point on the mainland, from which it is distributed throughout the province of Fukien and the north of Kuangtung. Everywhere it is sold by Japanese under extraterritorial protection. How efficient is that protection may be gauged by the fact that no Japanese has ever yet been punished for dealing in contraband in China. When Chinese police raid the morphia shops along the Tsinanfu railway in Shantung, as they have a right to do, for the traffic is illegal, Japanese gendarmerie rescue the arrested and exact a fine, not from the guilty, be it understood, but from those who attempted to uphold the law. In recorded instances known to American investigators the magistrate himself has been compelled to pay the fine.

In South China morphia is sold also by Chinese peddlers each of whom carries a passport certifying that he is a native of the Island of Formosa and therefore entitled to Japanese protection. Japanese drug stores throughout China carry large stocks of morphia. Japanese medicine vendors look to morphia for their largest profits. Everywhere Japanese prostitution, the systematic extension of which from Yunnan city even to Urga is such an inspiring evidence of the business activities of our Asiatic Allies, goes hand in hand with the sale of morphia.

Morphia, no longer purchasable in Europe, is manufactured now in well equipped laboratories in Japan and in Formosa. During recent years the bulk of the Persian opium coming into the market has been purchased by Japan for conversion into morphia, for Persian opium yields a larger percentage of morphia than Indian opium. Opium grown in Korea, the cultivation of which it is interesting to note followed immediately upon the closing of the opium shops in Shanghai, Japanese officials providing the seeds, and opium grown under Japanese protection in Manchuria, is an ever expanding source of the supply of morphia, and, it may be added, of opium required by the administration of Formosa.

MORE PROFIT IN OPIUM.

But while the morphia traffic is a large one, there is every reason to believe that the opium trade, upon which Japan is now embarking with such enthusiasm, is likely to prove even more lucrative. In the
Calcutta opium sales Japan has become one of the considerable purchasers of Indian opium. She purchases for Formosa, where the opium trade shows a steady growth and where opium is required for the manufacture of morphia. She purchases for import into Japan. Sold by the Government of India, this opium is exported under permits applied for by the Japanese Government, is shipped to Kobe, and from Kobe is transhipped to Tsingtao. Large profits are being made in this trade, in which are interested some of the leading firms of Japan.

One must emphasize that this opium is not imported into Japan. It is transhipped in Kobe harbour to Tsingtao, from which point of vantage, assisted by the Japanese-controlled railway to Tsinanfu, it is smuggled through Shantung into Shanghai and the Yangtze Valley. Opium purchased in Calcutta for Rs. 3,500 per chest—about Tls. 1,000—costs, delivered in Kobe Harbour, all told well under Tls. 1,200 per chest. This opium—Tsingtao opium—is sold in Shanghai at $500 a ball, of 40 balls to the chest—a total of $20,000 per chest. China's failure to sell "for medicinal purposes" her opium at $27,000 per chest, the price asked by the opium ring, is thus explained. The price is undercut by the Japanese. The dimensions that the traffic has already assumed are noteworthy. There is reason to believe that between January 1 and September 30 of this year 1918, not less than 2,000 chests of opium purchased in India were imported into Tsingtao via Kobe.

Upon this amount the Japanese authorities levy a tax which does not appear in the estimates, equivalent to Tls. 4,000 per chest, a total for the 2,000 chests at the present rate of exchange of two million pounds sterling. The acquisition of this immense profit from a contraband traffic would explain the origin of those immense sums now being lavished upon the development of Tsingtao and the establishment there of Japanese commercial supremacy.

CUSTOMS MANNED BY JAPANESE.

It may be asked how it is possible that at Tairen, where the morphia traffic is greatest, and at Tsingtao, which is the chief centre of the Japanese opium trade, the importation of this contraband continues without the knowledge of the Chinese Maritime Customs. But at both Dalny and Tsingtao, the Chinese Maritime Customs are wholly under the control of the Japanese and wholly manned by them. Japanese military domination would forbid in both ports any interference with a traffic in which the Japanese authorities were interested, either officially or unofficially. In Dalny the highest civic dignity has been
The Japanese Opium Trade With China

conferred upon the chief dealer in morphia and opium. Moreover in the case of Tsingtao by the agreement which relinquished to Japanese the exclusive charge of the Chinese Maritime Customs, any trade in which the Government is interested, contraband or not, can be carried on without the official knowledge of the Customs. Article 3 of the Agreement of December 2, 1905, perpetuated in the Agreement of August 6, 1915, provides that any goods landed in Tsingtao under "certificates of government" shall be free from customs examination. The way has thus been opened, not only for the illegal import of opium, but of contraband in arms, by which the bandits of Shantung province are provided with the means of harrying and looting and murdering the peaceful peasants of the most sacred province of China.

"MILITARY STORES."

The Maritime Customs returns of 1917 show that 45 piculs of boiled opium were admitted into Tsingtao in 1917. The actual amount was probably 50 times greater. The balance enters in cases stamped Chun pung p'iu ("military stores"), and boxes so stamped are to be seen commonly in the Japanese drug stores along the Shantung railway. In 1917 morphia to the amount of nearly two tons is recorded as having entered Tairen for use in the Leased Territory, but no morphia is recorded as having entered Manchuria from the leased territory during the year, nor does any entry of morphia appear in the Tsingtao Customs returns for 1917. Yet a competent witness, Dr. Wu Lieteh, states that "Almost every Japanese drug dealer or peddler in Manchuria (and Shantung he might have added) sells morphia in one form or another, and does so with impunity, because no Japanese can be arrested without first informing the Consul."

Your readers will remember that not long ago efforts were being made by the Japanese to remove from the control of any but Japanese subjects the Chinese Customs of Antung and of Newchwang. It would perhaps be unjust to say that the chief object sought for in the removal of these stations from foreign control other than Japanese is the removal of obstruction to Japanese contraband traffic, but none the less the effect of such removal would be this desirable end.

P. S. On December 27, 1918, the same correspondent states there is no indication, so far, that the Japanese intend to suppress this noxious trade of their nationals, which is opposed to treaties and the laws of humanity. The situation in North China, indeed, appears to be growing worse, and there is no doubt that this will continue until Japan takes up the matter, either voluntarily, or when the indignation of the world is more clearly revealed.
Hospital and other Reports.

General Hospital, American Church Mission, Wuchang, Hubei.

Hospital Staff:

Women's Department (Elizabeth Bunn Memorial Hospital): Mary L. James, M.D., Supt.; Nurses, Miss Dexter, Miss Johnson.

Men's Department (St. Peter's Hospital): C. McA. Wassell, M.D., Supt.; G. P. Foster, Business Manager; Nurse, Miss Gibson.

The new Hospital, in Wuchang, of the American Church Mission, was formally opened December 14, 1918. In 1874, medical mission work was first begun in the city by this mission, in rented property which was used as a hospital for men. In 1883 the Elizabeth Bunn Memorial Hospital for Women was opened. In 1894, St. Peter's Hospital, very good for its day, was built on property adjoining the compound of Boone University. In 1910, owing to the rapid development of the University and because of the greater need on the other side of the city where there are many factories and yamens, the medical work was transferred to the present site, a large General Hospital being constructed, consisting of the "Men's Department" and the "Women's Department."

The main building, three stories high, is constructed of re-inforced concrete and red brick. It is piped for steam heat, hot and cold water, sanitary drainage, and is lighted by electricity. It can accommodate two hundred patients, though at present arrangements only permit the care of one hundred and ten. The total cost of land and buildings amounted to $203,229.45 Mex., of which sum the Chinese gave $18,000.

The religious service formed the principal part of the opening ceremonies. Bishop Roots, of Hankow, accompanied by several of the clergy of the diocese, Chinese and foreign, proceeded to the various wards, all of which were duly consecrated, with the beautiful chapel, to the noble purpose for which they had been erected.

Addresses were afterwards made by the Military Governor of the province, who praised the mission for erecting such fine buildings for the healing of the sick; by Consul General Cunningham of the American Consulate, who referred to the hospital as being evidence of the friendship which America bore for China; by the Chairman of the Chinese Chamber of Commerce; by Dr. Woo of the Hanyang Iron and Steel Works; and by Dr. Yen, of the Canton-Hankow Railway. Bishop Roots gave a short address in which he emphasized the duty
GENERAL HOSPITAL, WUCHANG, OF THE AMERICAN CHURCH MISSION.
of Christian missions to provide medical help to those in need of it, and showed that while not in any way competing with Government or private ventures in this direction, yet the Church had a duty to perform in shouldering the burdens of this variety of philanthropic work. He also urged upon his Chinese hearers to take their share in helping this most deserving object. Numerous visitors from the Wuhan cities spent some time in inspecting the various wards and operating rooms of the Hospital. The musical selections rendered by the brass band of Boone University added greatly to the enjoyment of those present.

Fourth Annual Report of the Red Cross General Hospital (Shanghai), (Formerly the Hospital of the Harvard Medical School in China), 1917-1918.

This is the last report of the Red Cross General Hospital as administered under the China Medical Board of the Rockefeller Foundation. When on July 1st, 1916, the Board took over the equipment of the Harvard Medical School which had operated the hospital under agreement with the Red Cross Society of China, it agreed on a two years' continuation of this work by special grant. The property has now been returned to the Red Cross Society which has made other arrangements for its operation. Whatever the future of this institution may be, all must deeply regret that the Harvard Medical School of China, which has done such fine medical and educational work for several years past, has now ceased to exist. In the near future, however, the China Medical Board will establish hospital and educational work in Shanghai on a much larger and stronger basis, so the community will gain greatly by the changes.

The report, which is naturally much briefer than former reports, contains the usual hospital statistics.

General Hospital, Changchow, Ku., First Quarterly Report, July—September, 1918.

Physician in Charge:—Dr. W. B. Russell.

In this, the first report of the hospital, Dr. Russell gives an interesting account of the negotiations which led to its opening. The Methodist Mission had planned to begin medical work in Changchow in 1919; but in 1917, several of the gentry of the city, apparently unaware of this intention, approached Dr. Claude Lee of the American
Church Mission, Wusih, with a similar object in view. Dr. Lee referred them to Dr. Russell and his Mission. In January, 1918, a consultation was held, and later a joint committee was appointed to make the necessary arrangements. At first the Changctoow gentry wished only to open a Summer Cholera Hospital, but under Dr. Russell's influence they became more enthusiastic and enterprising. They finally decided to open a General Hospital, secured a fine yâmen for the purpose, and gave $3,000 towards expenses.

The hospital was formally opened in July, 1918. In the report a description is given of its different departments, and of the Nurses' Training School which has already been started. During the three months much good work has been accomplished, especially in surgery. The confidence of the community has been completely gained so the success of the venture is assured. It will be interesting to note how long the management will be content with a native building as a hospital.

Report for the Third Quarter, July—September, 1918, on Work for the Eradication and Control of Uncinariasis in Siam.

By M. E. Barnes, M.D., Representative of the International Health Board, Rockefeller Foundation.

During the period covered by the Report there have been examined 7,711 persons, of whom 5,939 were found to be infected with hookworms and 4,262 received the first treatment. In addition, 489 received treatment for infection with other intestinal parasites, making a total of 4,751 first treatments administered for all causes.

The total number of persons examined thus far is 27,920 of whom 21,397 were found infected. Of these 15,843 received first treatment for hookworm infection. An additional 1,990 received treatment for other parasitic infections, making a total of 17,833 first treatments administered for all causes. The report contains the following notes.

**Physical Benefit Following Treatment of Uncinariasis.**

One evidence that great physical benefit follows the freeing of people from hookworms is in the opinion of the people themselves. The fact that large numbers continue to apply for treatment shows that people generally realize the benefits of treatment. This is borne out also by the large numbers of individuals who have recovered health and been restored to usefulness. However, the benefit of freeing infected persons from hookworms has been shown graphically by Hluang Boriraksha, of the Army Medical Service. He weighed his cases before treating, and a year after treating. By comparing the
weights of men treated and of men found infected but not treated, he found a most remarkable difference. Thus, 69 men found infected and given one treatment with 50 grains of thymol gained on the average 4.8 kilogrammes in weight. While 30 men who were found infected but were not given treatment gained on the average only 0.5 kilogrammes.

AMEBIC DYSENTERY CURED BY OIL OF CHENOPODIUM.

Within a few weeks after the beginning of the campaign in Chiangmai, Siam, a number of dysentery cases were given chenopodium by one of the subordinates through a mistake, with the unexpected result that the dysenteric symptoms entirely disappeared. It was thus accidentally discovered that oil of chenopodium was beneficial in certain cases of dysentery and at once careful investigation was made as to the type of dysentery yielding to this treatment. The results of this investigation were published by Barnes and Cort in the *Jour. Amer. Med. Assoc.*, August 3, 1918. The favorable results therein detailed continue to be secured, and all dysentery cases applying for treatment have been treated and a large number have been cured. This feature of the work adds to the importance of the campaign. For not only have many lives been saved by the treatment administered for dysentery, but also a very large number of cases of dysentery have been prevented, as the treatment for hookworm infection with oil of chenopodium removes the cysts of the aneiba which causes most of the dysenteries occurring in the Chiangmai valley.

FLOODS A HINDRANCE TO SANITATION IN SIAM.

There are many obstacles to the introduction of sanitary measures in this region of Siam. The most serious obstacle does not lie in the customs of the people or in their reluctance to introduce new customs, for experience has shown that the people are quite ready to take up with new customs if they are convinced of the benefit in them. The greatest obstacle in the way of sanitation is in the heavy flooding to which a large part of the valley is subject several times a year. In the villages, this factor can frequently be guarded against by various measures. But in the city, where there is a much larger population to protect, the flooding constitutes a very grave problem. Until the city is protected by proper embankments from being flooded by streams, latrines which will be safe and sanitary at all times of the year are beyond the financial reach of the majority of the people. Progress has been made in certain sections of city where the conditions were favorable for the installation of pit latrines. A second survey is now being made of this work.
Medical Reports of Chinese Customs Service.

Public Health of Tengyueh, Yunnan, 1917-1918.

NIHIL CHAND, Sub-assistant Surgeon, Tengyueh.

METEOROLOGICAL REPORT. The following table shows the monthly maximum, minimum, and mean temperatures during the year under review, and also the monthly rainfall as compared with that of the previous year, as recorded at the Custom House, Tengyueh.

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<th>MONTHS 1917-18</th>
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<td>Total Rainfall</td>
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During the year under report the highest maximum temperature recorded on any one day was 83° on the 26th July, 1918. The lowest minimum temperature was 24° on the 31st December, 1917, and on the 1st January, 1918. The heaviest rainfall on any one day was 2.12 inches on the 1st August, 1918. The rainfall during the year has been several inches more than it was in the preceding year. The rains started as early as March, therefore there was practically no spring this year. The climate during the winter months was very cold and delightful, but in the summer it was very damp.

POPULATION. Foreigners, 8; estimated Chinese population, 25,000.

GENERAL SANITATION. This port is very far from being sanitary. No improvements have been effected in conditions under which the foreign community and the Chinese population live. The streets and by-lanes are always very dirty, and are usually defiled by the children every morning; moreover, the rubbish from the houses is collected at several places in each street and is practically never cleared away.
Chinese houses are always full of flies, and are kept very untidy. There are no public latrines, but in nearly every house there is a private one. The method of removing and disposing of night-soil is very defective, and is open to many serious objections. Gardeners are the chief scavengers here; they empty the latrines once in every four or five days, and dispose of the night soil into pits dug in their gardens for this purpose. The night-soil is afterwards used to manure their vegetables. Nearly every Chinese house has got its own small vegetable garden; but besides these small ones there are many big gardens, both inside and outside the city, where the night soil is used. The worst of this method is that it is practised during the day-time by means of uncovered wooden buckets, which sometimes overflow or leak, thus spreading the filth on the public streets and roads. It is a matter for great surprise that in spite of all these insanitary conditions of the port, during the year under review there has been no case of any serious epidemic such as plague, cholera, influenza, or small-pox. Epidemics of the first three diseases are unknown here.

**Water Supply.** This is obtained from wells, which are about 35 to 45 feet deep; the quality is fairly good and the quantity quite sufficient, except during the early summer months when most of the wells run dry and scarcity of water is complained of; but no such thing happened during the year under report, as the rains started very early.

**Personal Hygiene.** Like the general sanitation, this is also very much neglected; bodily cleanliness is not considered to form an essential part of the daily life, and this is proved by the fact that in no single Chinese house is there any bath room. The daily bath is not in use here. The clothing of most of the people is also very dirty; there are no professional washermen and clothes are washed by the women of each house in any kind of water available. All this accounts for the various skin diseases that are so common here: itch, scabies, ringworm, and eczema. Personal uncleanliness is also responsible to a great extent for most of the eye diseases which are also very common, especially among the poor; ophthalmia, granular lids, and blepharitis are the chief of such troubles.

**General Health.** The general health of both the foreign and Chinese population, as compared with that of the previous year, was on the whole fairly good throughout the period under review. There was practically no epidemic of acute dysentery or diarrhoea such as usually occurs during the early summer months.
MALARIAL FEVERS. Though there were almost always cases of malaria coming under my treatment throughout the year, yet the majority of these cases were treated during the autumn of 1917 and at the beginning of the present rainy season. The cases originating in the neighbourhood of Tengyueh were mostly benign tertian, though some were of the quartan form. As in former years, the malignant tertian types were most frequent amongst people returning from Burma and the Shan States. These malignant tertian cases often prove fatal, especially among those patients who either do not avail themselves of foreign treatment or do so only when it is too late.

ENTERIC (?) FEVER AMONG CHINESE. During the months of May and June there were very many deaths in the villages in the vicinity of Tengyueh from some kind of fever, which in my opinion was enteric in nature. I did not have much chance to attend such cases; since the Chinese mostly do not apply for foreign treatment for this kind of fever, as they think that it is confined to China and is better treated with their own Chinese medicines.

DIPHTHERIA. During the spring of this year a few cases of diphtheria were attended by me, most of the patients being children.

SMALL-POX. The number of vaccinations is steadily increasing year after year, and the protection it gives is much appreciated by the Chinese. It is mainly due to their increasing confidence in vaccination that in recent years there has been no epidemic of small-pox which, before this port was opened, used to be very prevalent here nearly every spring.

LEPROSY. There were altogether eight cases of leprosy treated as out-door patients during the period under review; most of them were of the anaesthetic type, but the hands and faces of the others were covered all over with the blotchy variety. There is no leper asylum in the neighbourhood of Tengyueh.

TUBERCULOSIS. Several cases of different forms of this disease were treated during the year, viz., pulmonary phthisis, caries of the spine, tubercular enlargement of the cervicle glands.

MIDWIFERY CASES. Ten cases of child-birth and one case of adherent placenta were treated during the year under report. In six out of the ten cases the head presented, and in all of the cases living children were born. In the remaining four cases the presentation was transverse, and in all of them dead children were delivered by podalic version. I am glad to report that all the ten patients recovered.
There are some native midwives here, who attend on such cases, but they are only old women of the poor, working class, without any modern qualifications. The case of adherent after-birth was attended by me two days after delivery, when the patient was already suffering from daily fever with other septic symptoms; the entire placenta was removed by hand, but the woman died of septicaemia within five days after the operation.

Poisoning Cases. One case of opium poisoning and one of combined opium and gold poisoning were treated during the year; both were females, and both recovered. In the second case the woman took opium and also swallowed her gold ring to be quite certain of death, but unfortunately for her intention she was saved. Emetics and purgatives were both used in her case; the gold ring was passed after nearly 28 hours.

Surgical Operations. The total number of operations performed during the year under review was 85.

Gun-shot Wounds. Only three such cases were treated during the year, and they all recovered; one patient was shot through the arm, one through the thigh, and one through the leg.

Very few cases of other surgical injuries or accidents are treated here since no machinery or power-driven vehicles are in use.

Appendicitis. No case of this disease was diagnosed during the year.

Diseases among the Lower Animals. During the months of July and August, 1918, glanders and rinderpest were prevalent in Tengyueh, especially in the surrounding villages, and they caused many deaths among ponies, mules, and cattle. My own pony died of anthrax within 24 hours, but no case of anthrax occurred among human beings.

Charitable Hospital. Formerly a hired house with accommodation for eight beds only was used for this purpose; but it is gratifying to note that during the year under report the local Chinese authorities placed a temple, called Chi Ssü T'ang (祭祀壇), close by my house, at the disposal of the hospital committee, who have changed it into a hospital by effecting some necessary repairs and foreign modifications in the main building. This new hospital has now got accommodation for fifteen beds, and it is serving a most useful purpose. The number of in-door patients treated during the year was 450; there were thirty-eight deaths, which gives a mortality of 8 per cent of the total treated. Most of the deaths occurred among patients brought to the hospital in
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a moribund condition. Malarial fevers, dysentery, diseases of the respiratory system, and ulcers, were the chief diseases for which relief was afforded. The Yunnanese, at present, do not avail themselves of this hospital so much as the Szechwanese. The hospital is steadily gaining in popularity both with the Chinese officials and with the public, who are maintaining it by their generous donations and subscriptions.

In conclusion, I am pleased to report that during the year under report a microscope has been supplied for use in the dispensary under my charge here. This instrument has been purchased with funds contributed by the Chinese Maritime Customs and the British Government. I am very thankful to the Commissioner of Customs and H. B. M.'s Consul at Tengyueh for kindly helping me to provide the hospital with this instrument.

HYPNOTISM IN CHINA.

Some time ago a friend in Shansi sent me an advertisement cut from a Shanghai paper extolling the virtues of hypnotism (催眠術). Being urged to investigate the bona fides of the advertiser I set out on a tour of investigation and found, within easy reach of our office, two establishments which profess to teach the black art and one which, in addition to teaching hypnotism, specialises in psycho-therapeutics. There were no patients in residence when I called on the professor and he was very diffident about being interviewed. When I had convinced him that I was a seeker after truth and not connected with any detective agency, he thawed out a little and our conversation was more cordial.

The knowledge of hypnotism has been introduced into this country from Japan, and the books which were for sale had been printed in Kobe. Besides expounding hypnotism most of the volumes taught sleight of hand and magic. The professor explained that the spirits were sometimes recalcitrant and that it was necessary at times to eke out the skin of the lion with that of the fox.

Seeing that a local theatre advertised an exhibition of hypnotism and being still ardent in the pursuit of truth I attended the seance. The professor—a Chinese—appeared dressed in a black European suit and he wore a mortar-board cap.

He asked for volunteers to go into the trance state and, after considerable nudging and pushing, two youths and a girl went on the
stage. The professor rejected two of the dauntless three as being insusceptible; the youth selected seemed to understand perfectly what was expected of him. Unfortunately, all the professor's frantic gesticulations failed to induce the trance state. This may have been due to the fact that the temperature of the hall was below freezing, or because the audience insisted on helping the professor by also concentrating its will power on the victim. When the professor had made the mystic-passes for the nth time unsuccessfully and then pointed his finger with an annihilating gesture at the wakeful youth and in a voice of thunder commanded him to “sleep!” the audience also pointed accusing fingers and in an aggrieved tone adjured him to sleep! Truly the spirit was willing but the excitement was too much for the poor boy, and there was no more wide-awake person in the hall than the unfortunate subject on the platform who appeared deeply chagrined that in spite of his good intentions sleep he could not.

Efforts at thought reading were equally unsuccessful. I was probably the only person in the theatre who was not disappointed with the entertainment. As a séance it was certainly a failure but as a lesson in spiritualism as taught by Japanese and practised by Chinese it was worth the dollar charged for admission.

A book, the title of which is 聖術講義, promises to reveal the hidden things of darkness and teach all the arts of the spirit world for $1.00, postage extra. Advertisements of this class are specially designed to attract the notice of people in the interior—the so-called 俗民. Purchasers may not become experienced platform demonstrators through the perusal of this volume, but they will have a lesson in the power of hypnotism as exercised by the printed page, and maybe save themselves many dollars in days to come, as the boy said pins saved people’s lives—“by their not swallowing them.”—The China Bookman.

**Note.**—It is surprising that the youth in the above performance, evidently a willing subject, was so insusceptible to the professor’s influence, as usually the Chinese can sleep at any time and place, and on every possible occasion. During the decoration of the streets in Shanghai preparatory to the armistice celebrations, passers-by were horrified to observe the motionless body of a Chinese coolie resting against the top of a high telegraph pole, partly covered by decorations. It was supposed he had been electrocuted. Messengers were hurriedly sent to get the electric current cut off, and preparations were made to lower the body. Suddenly, the coolie showed signs of life and, seeing the excitement below, made his escape by an adjoining platform. He had casually fallen asleep while at his work.

No doubt there are many Chinese who are fairly proficient in the art of hypnotism. According to Giles (“The Civilization of China”) hypnotism is mentioned in Chinese literature as far back as the middle of the seventeenth century, and is used as a means of inquiry into the future and also for the cure of serious illness. Formerly, it was practised in great secrecy as it was an offence against the law.

As to the practice of psychotherapy among the Chinese, the subject is seriously considered in a paper by Dr. Merrins, “The Emmanuel Movement in China,” China Medical Journal, 1910, p. 28.—Ed.
Epidemic of Septic Sore Throat due to Milk.—In the Journal American Medical Association, 1917, lxviii, 1305-1307, Rosenow and Von Hess give a full and careful description of an epidemic of sore throat which occurred in Galesville, Wisc., U. S. A., a town of about 1,200 inhabitants. The clinical picture in the epidemic was typical of “septic sore throat” described in numerous other milk-borne epidemics. Etiologic relationship of the streptococcus found in the milk was proved. The disease occurred almost exclusively in persons who consumed the milk. In some instances the drinking of one glass was sufficient to bring on an attack. In cows suffering from mastitis the streptococcus was found in enormous numbers in the material from the parts of the cows’ udders which were diseased, and in small numbers from the normal part. The streptococcus was also isolated in large numbers from the throats of patients. High virulence of the organism was proved by inoculation of animals. The lesions produced resembled those found in patients, especially in those animals which in the methods of inoculation simulated those which occurred in the epidemic. Erysipelas was produced in a monkey by scratching the skin with a wire dipped in the infected material. In the same monkey inflammation of the throat, associated with acute enlargement of the lymph-glands in the neck, with surrounding edema and otitis media, followed swabbing the throat with cotton saturated with the same material. Peritonitis, pericarditis, endocarditis, myocarditis, and syphovitis were common in the animals as in patients. Heating the milk to 60° for twenty minutes was sufficient to render it innocuous. Virulent bacteria may be present in the udder of cows with no demonstrable sign of disease. It is practically impossible to handle milk without risk of contamination from human and other sources, even though the rigid technic of an operating room be employed. Since milk is such an excellent culture-medium, inspection of dairies, certification and grading of milk according to sediment tests, and bacterial counts as now practised, while valuable, cannot permanently safeguard the public health. Efficient pasteurization should be universally adopted.

AN EPIDEMIC OF SCARLATINA PROPAGATED BY MILK.—D. Jørup (Ugeskrift for Laeger, October 4, 1917, p. 1645).—Little has hitherto been known of the spread of scarlatina through cow’s milk, and this channel of infection is generally regarded in Germany as negligible. In England it is agreed that milk may be an agent in infection, but it has not been established whether the ultimate source of infection is a cow or a human being. W. Hunting, however, in the Veterinary Journal for 1911, says:—“...we may safely acquit the cow...and concentrate attention on finding a human source of infection.” This view is supported by the writer’s observations in the summer of 1917. The daily milk supply of Copenhagen is distributed by six dairies, one of which is the Trifolium. In July the incidence of scarlatina in Copenhagen and its suburbs was
low, only about 15 cases a week being reported.

Towards the end of the month and early in August, there was a sudden infection of 236 patients of whom 200 had drunk Trifolium milk. It was reported that the health of all connected with the dairy was excellent. On the staff being examined, four were found to be absent. Followed to their homes, two were found to be in bed with sore throats, and the other two had already developed scarlatina, but the date of their illness seemed to preclude them from being the source of infection.

Finally, inspection revealed the fact that about July 20 a milkmaid had suffered from scarlatina, and had continued to milk and to attend to the milking utensils. Two children on the same farm were also suffering from scarlatina, and of 95 persons living on the farm or in its immediate neighbourhood there were eight suffering from scarlatina, and five from a sore throat without a rash. The sale of milk from this farm was prohibited. This measure was followed in four to five days by a reduction of notifications almost to the usual number.

Clinically this epidemic presented several curious features. The number of cases without any rash was comparatively high, as was also the ratio of adult to juvenile patients. This high incidence of adult cases was probably due to the adults having, as a rule, drunk the infected milk unboiled, while it had usually been boiled for children. The first symptom in many cases was diarrhoea, and considerable enlargement of the cervical glands was common; but there were very few cases of nephritis.

TREATMENT OF ORAL SEPSIS.—N. C. Fischer, M.B. (Brit. Med. Journ., p. 287).—The original focus of the severer types of oral sepsis is at the margin of the gums and teeth. Mastication forces food in between the teeth, and between the gums and teeth. This food sets up a certain amount of irritation, and forms a suitable nidus for various organisms. The first problem is how to prevent food lodging in these sites. This can be solved only by efficient cleansing with a fairly stiff brush, used after each meal in conjunction with a powder.

The following is excellent: Mag. carb. pond., 3 parts; sulph. sublim., and sapo Castil., of each 1 part; ol. menth., pip. q. s.

If gingivitis or pyorrhoea has already commenced, the affected area should be firmly swabbed with a small tightly rolled pledget of wool held in a pincette and dipped in liq. cresol saponis or any of its substitutes, taking care to remove the excess before using. A tumbler of warm water and spittoon should be ready to use immediately after. A thymol mouth-wash should be prescribed.

This method will come as a revelation to all who have laboured for weeks and months with iodine, hydrogen peroxide, and other methods, as it is so rapid in effect; only in very advanced cases has the writer found it necessary to apply the liq. cresol saponis twice, and rarely three times, at two-day intervals.

In severe cases of pyorrhoea there is a dirty greyish-brown sloughing appearance at the gum margins, often extending to the adjacent buccal mucous membrane; all these sites should be firmly swabbed, although the surfaces bleed in the process. A similar condition is sometimes seen on the surface of the tonsils, and should be treated in a similar way. A sponge on a holder may be necessary here, dipped in sterile water or any mild antiseptic, if the person is too young or unable from
any other reason to gargle. In septic conditions of tonsils and the back of the throat, the ordinary chlorine gargle or swab should be applied every three or four hours after the initial swab with liq. cresol saponis.

A very septic socket may develop after extraction of a tooth, causing days and sometimes weeks of pain; if a swab soaked in liq. cresol saponis is firmly pushed into the socket, the relief is almost instantaneous, and a second swabbing after 24 or 48 hours is rarely necessary.

The pain inflicted in swabbing gums is practically negligible, but may be rather severe in the case of sockets.

Surgery.

J. C. McCracken, M.D., F.A.C.S., Shanghai.

SHOCK DURING GENERAL ANESTHESIA. — After discussing the different possible causes of shock during anesthesia, the probable physiological mechanism involved, and their relation to ether anesthesia, F. C. Mann (Jour. Amer. Med. Assoc., 1917, lxix, 371-374; Collected Papers of Mayo Clinic, 1918) reaches the following conclusions:—

Surgical shock, using the term in the sense employed by the surgeon, occurring during general anesthesia may be due to several causes. For a correct understanding of the physiologic mechanism involved it is necessary to differentiate between these possible causes.

The most common cause of the symptoms of shock is free hemorrhage. It should be emphasized that all persons do not react the same to loss of blood and that the estimation of hemorrhage during operation is very inaccurate.

Another common cause of shock is trauma to the viscera. Under this condition shock is due to loss of circulatory fluid in the traumatized areas, mainly brought about by a local peripheral mechanism.

Shock produced by excessive nerve irritation under an anesthetic is probably a much more rare occurrence than clinical reports would seem to show. The mechanism involved in these cases is unknown. In cases of fractures and operations involving trauma to large areas of fat in which shock is diagnosed, pulmonary fat embolism may be a cause. (In this connection there is an article in the same volume of Collected Papers of Mayo Clinic, p. 534, by W. W. Bissell, on “Pulmonary Fat Embolism—a Frequent Cause of Post-operative Shock.” Ed.)

Some of the endocrine glands, particularly the suprarenals are factors in some causes of shock, but it is very difficult to determine to what degree they participate as primary active agents in producing the state, or how much they are affected by the low blood-pressure and the changes incident to the condition itself.

The nerve impulse probably bears no quantitative relation to shock.

Deep etherization may produce most of the symptoms of shock. The continued depressed state following deep anesthesia, while primarily due to the anesthetic, is soon complicated by the resulting factors of low blood-pressure, subnormal temperature, and other changes.

Some cases of the conditions diagnosed as surgical shock may be due to a combination of deep
anesthesia with reflex inhibition of respiration.

Ether certainly does block afferent impulses to the higher centers, but some of the reflexes involving the medullary centers, particularly those which inhibit respiration, are not blocked when very strong stimuli are employed.

Less Loss of Blood during Operations.—In a paper giving his impressions of the operative methods of noted Chicago surgeons, Hertzberg, in the New York Medical Journal, September 7, 1918, says that the much diminished use of artery clamps during operations is very noticeable. Where it was a common sight two or three years ago to see from twenty to forty artery clamps sticking about a wound, each grasping and crushing anywhere from a shred to an ounce of tissue, now only the bleeding vessel itself is carefully caught and tied as soon as possible. Clamps are only left on the tissue that is to be removed, and insistence is made that, in the past, many a recoverable case was lost by too strenuous a use of artery clamps.

Speed that sacrificed safety and did careless and rough work has been replaced by slower but more careful work, work based on anatomical knowledge. Wherever possible, known main branches of vessels are isolated and clamped before cutting them, instead of cutting first and tying after the loss of considerable blood.

Anesthesia during Dressing of Wounds.—According to an article in the Military Surgeon, April, 1918, p. 485, in the dressing of painful wounds a very valuable method of anesthetizing the patient may be used without danger, even though required daily. The formula of the anesthetic is as follows: Ethyl chlorid, 5 mils; chloroform, 1 mil; ether, 24 mils. A piece of flannel cloth is saturated with the entire amount and placed over the patient's face; this is covered with another piece of flannel, and this in turn is covered with oiled silk containing a small aperture, fitting over the nostrils. This is tied around the patient's face with a bit of tape or rubber tubing. The anesthesia produced will last for ten minutes, and the dressing can be started on the second breath. This anesthesia is apparently devoid of danger, is not accompanied by unpleasant complications, is followed by no deleterious after-effects, and is welcomed by the patient.

Pain with Indirect Pressure as Symptom of Fracture—Nystrom gives illustrations of the findings in 100 cases of fracture and several cases of sprains, etc., when the bones were pulled lengthwise or to the side or pushed in, and the resulting sensations compared with the roentgen findings. The soft parts share in the production of the pain, and the findings generally are not specific, but certain instructive points seem to be brought out by his research. Among them is that no pain was induced in this way when the fracture was not complete and there was merely a fissure or infraction. Also with a transverse fracture without dislocation of the stump. The absence of pain with these maneuvers thus does not exclude fracture, but testifies that it is incomplete or in a good position. Pain speaks in favor of a probable fracture when a long bone is involved. The bones of the hand and foot are generally painful on indirect pressure whatever the injury. Upsala Läkareförningens Förhandlingar, 1917, 22, No. 4.
Appendicitis as a Complication of Pregnancy.—In the Amer. Jour. Obstet., 1918, lxxvii, Mussey, of the Mayo Clinic, Rochester, Minn., discusses operations for conditions complicating intrauterine pregnancy. He states that normal pregnancy is not often complicated by surgical conditions. In the three years from 1914-1916 inclusive, there were more than 10,000 abdominal operations on women at the Mayo Clinic, and in that number 253 pregnant women were found to have definite surgical lesions not dependent on, although associated with, the pregnancy. One hundred and thirty-eight of these were advised to have operations and 123 were operated on, no less than 57 being cases of appendicitis. In another group of 130 pregnant women with surgical complications who did not come to operation, there were 31 cases of appendicitis.

As to appendicitis in pregnancy, Mussey states that it is "a frequent occurrence and is most dreaded on account of its danger to mother and child." Paddock, quoting Schmidt in 1911, says that 2.5 per cent of women having appendicitis are pregnant, and one per cent of all pregnant women complain of or suffer from appendicitis. This percentage agrees with our statistics, that is 57 (19 per cent) in pregnant women out of some 3,000 cases of appendicitis in women operated on during the three-year period. The incidence of appendicitis is not higher during pregnancy than at other times, but a woman having had attacks of appendicitis is apt to have a lighting up of the condition during an ensuing pregnancy. De Lee asserts that this fact in itself should not necessarily indicate operation unless the patient's condition, or further attacks, make it advisable.

"An acute attack of appendicitis during pregnancy calls more imperatively for operation than an attack during the non-pregnant state. The danger of abortion or general peritonitis following ruptured appendix in these cases is greatly increased and the mortality rate is higher. Murphy advised immediate operation, and quoted Wagner as estimating a 77 per cent mortality in the cases of acute appendicitis in which operation was not done. Most of our cases (27) in which operation was done were of the interval type, and it is in this group, when immediate operation is not imperative, that decision is most difficult."

As to the relative safety of the operation for both mother and child, in the 100 cases there were 9 miscarriages, two of which were terminal events with the death of the patient from other causes. A conservative estimate would indicate that every fifth or sixth pregnancy in private practice ends in abortion (Williams). Four of the miscarriages occurred in gestations under two months, two at two months, two at three months, and one at four months. Therefore, of the 50 patients operated on within a three months gestation there were seven (14%) miscarriages; of 45 patients between three and five months, two (4.4%) miscarriages. There were five pregnancies of more than six months in which there were no miscarriages.

The general conclusions are as follows:

1. Any operation which can be postponed until after confinement should not be done during pregnancy.
2. When necessary, operations for appendicitis can be done without undue risk to mother and child.

3. It is rarely necessary to operate for fibroid tumors complicating pregnancy, but when operation is necessary, it is associated with little danger.

4. The removal of an ovarian cyst during pregnancy is less dangerous to the mother than is expectant treatment.

5. While the time most favorable for operation is believed to be in the first half of pregnancy, when necessary, it can be done later.

Tropical Diseases.

TREATMENT OF MALARIAL RELAPSES.—In the Interim Report of Sir Ronald Ross to the British War Office, on the Treatment of Malaria, he mentions Captain Meredith Harrison's method of using oral and intramuscular administrations together, as being valuable when large dosage is employed, and by some physicians it is regarded as the best method for old cases.

It was used between July 10 and October 6, 1917, for forty-nine chronic cases of malaria, mostly of benign tertian, and mostly from Salonica. Of these only five had relapsed after the cessation of the treatment in October until the end of February, 1918. The percentage of cases relapsing was therefore only 10.2. Captain Harrison reports that with this treatment the fever was reduced within from twelve to twenty-four hours, and that no asexual parasites could be found after forty-eight hours. The effect of the treatment as regards general improvement of health was good. The treatment was well borne by the patients, except for deafness and tinnitus, and there was very little vomiting. But the patients always object to stopping in bed for twelve days; and we are informed that this line of treatment is not yet to be definitely recommended until its effect on the sight and hearing has been more exactly measured.

The treatment was as follows: The patient was put to bed for twelve days and given daily throughout this period 15 grains of quinine bichloride intramuscularly in each deltoid muscle, together with 10 grains of quinine hydrochloride in Anticachexia Mixture No. 1 thrice daily, totaling 60 grains of quinine daily for the twelve days. After this the patient was allowed up, and given for three days Anticachexia Mixture No. 2 four times a day (60 grains of quinine daily by the mouth). After this the patient was given Anticachexia Mixture No. 3 four times daily for fourteen days (20 grains of quinine daily). He was allowed to do light work all this time.

The prescriptions were as follows:

Anticachexia Mixture No. 1.
Quinin. hydrochlorid., grain x;
Tinct. ferr. perchlorid., min. v;
Liq. strych. (B. P.), mi
Liq. arsenic, hydrochlor. dil., min. v;
Acid, nitrohydrochlor., dil., min. v;
Magnes. sulphat., drachm ss;
Syrup. tolut., drachm ss;
Glycerini, min. x;
Agua, add ounce j.
For a dose, to be given as directed after food.

Anticachexia Mixture No. 2.
As No. 1 but add Quinin. hydrochlorid., grain v;
Acid, nitrohydrochloric. dil., min. v.
to the dose.

Anticachexia Mixture No. 3.
As No. 1, but reduce Quinin. hydrochlorid., grain v;
Acid, nitrohydrochloric. dil., min. v.
in each dose.
A mixed treatment included the use of tartar emetic, acid arsenoids, sodium-quinine sulphonate, ethyl quitenine hydrochloride, and collosol quinine, but the results were not satisfactory.

Sugar Content of the Blood and Acclimatization in the Tropics.—The extensive researches of de Langen and Schut at Java (Mededeelingen van den Burg. Geneesk. Dienst, Batavia 1918, No. 3) have demonstrated that in both man and animals the sugar content of the blood is from 30 to 75 per cent higher in the tropics than in Europe. The seventy-five pages of their report are in parallel columns of English and Dutch. On change to a mountain climate (3,800 feet) the sugar content drops, but it returns to its former figure on return to near sea level. They found further that the sugar content of the blood always ran up, about an hour before a malarial chill and fever, and persisted high during the attack, but subsided anew just before the close of the attack. Quinin did not modify the sugar in the blood directly. They recently reported marked differences between the cholesterol content of the blood in the East Indies and in Europe, and they here refer to other findings which suggest that the calcium content of the blood is unusually low in the tropics. Low calcium content usually pairs with hyperglycemia, and there is much to sustain the assumption that the infrequency of calcium deposits in the tropics in blood vessels or lungs has some connection with the high sugar content of the blood. They insist that the chemical intensity of the light is no greater in the tropics than in Europe, so the heat must be the main factor. It may act on the sympathetic system; this would explain the high sugar content, the low cholesterol content, and various other factors which enter into the process of acclimatization. If we accept the hypothesis of sympathectomy as an important element in acclimatization in the tropics, than it follows that measures to reduce the hypersensitivity of the sympathetic system are required. Chief among these is the administration of calcium chloride. With this can be prevented hyperglycemia and hyperthermia in animals given a drug which otherwise promptly sends up the temperature and the proportion of sugar in the blood. When the sugar content of the blood is increasing on arrival in the tropics, higher demands will be made on the kidney filter, and some of the sugar may be cast off in this way—a true renal glycosuria. Another way for the body to get rid of the excess of sugar is by combustion and de Langen and Schut are convinced that the majority of cases of long persisting "low fever" in persons not acclimated to the tropics can be explained in this way. The "low fever" to which they refer is not a disease; not a single abnormality can be detected. The complaints are the same as with renal diabetes, and both yield to the same measures, namely, change to a cooler climate or administration of calcium. A sea voyage is a sovereign remedy for "low fever," but it has not been tried for renal diabetes, they believe. They emphasize in conclusion that persons inclined to renal glycosuria, the tuberculous, and those displaying sympathectomy, should be warned against settling in tropical regions, at least near sea level. On the other hand, a healed apical tuberculous process in persons of the vagotonic constitution need not be a contraindication to life in the tropics.
Christianity and the Virtues—Faith, Love, Joy, Patience, Courage, Loyalty, Service, Self-control, Hope, Goodness, Compassion, etc.

HACKETT MEDICAL COLLEGE FOR WOMEN.
CELEBRATION OF 20TH ANNIVERSARY OF FOUNDATION.
Twentieth Anniversary of Foundation of Hackett Medical College, Canton.

The Hackett Medical College in Canton is one of the oldest, if not the oldest, of medical colleges for women in China. It is under the U. S. Presbyterian Board of Missions, and was founded by Dr. Mary Fulton twenty years ago. During this period over one hundred young women have graduated and gone out to serve their fellow countrywomen. Although the majority are still to be found in Kwangtung, yet many have scattered widely,—going into other provinces of China or foreign countries, there to help spread the knowledge of sanitation and healing. Students in greater number are now coming from the more remote parts of China, later to return and practise there. This year 55% are from outside Kwangtung province. Neither is their activity confined to one line of work. Forty-five per cent have married, and are teaching by example the lessons of a healthy home and family. The great majority of these women are practising medicine outside their homes as well. Fifty per cent of the total number are in private practice; 16% are directly connected with some mission; and our records show that 33% have been at some time or other associated with mission work; only 14% are not practising; 8% are in private hospitals; 6% are in Chinese philanthropic associations; 4% are working for the Government, and 2% are studying abroad. They are all very useful, public-spirited women, wide-awake and active, many of them standing in the forefront of the Chinese Red Cross and Young Women's Christian Association movements.

In November, 1918, the College celebrated the twentieth anniversary of its foundation, and for three days was given over to festivities. A great, open mat-shed was erected on the campus lawn and gaily hung with banners. Here all our meetings were held. The twenty-first of the month was named as Founders' Day and celebrated with Founders' Day Exercises in the morning, followed by luncheon for the guests; Commencement Exercises for the medical students and the nurses were held in the afternoon, and an alumni dinner was given in the evening. The American Consul presided. The sessions were opened fortissimo, as it were, with music by some sixty of General Chan's Military Band. Excellent addresses were given by Dr. Wu Ting Fang, former Minister to the U. S. A.; Dr. John Kirk, of the New Zealand Mission; Dr. Cheng-Ho, President of Kwong Wa Medical College, and Dr. Howard of the Canton Christian College. Dr. A. A. Fulton, brother of Dr. Mary Fulton, the Founder of the College, gave
The China Medical Journal.

a most interesting sketch of the life of Dr. Fulton and of the founding of the College, officially presenting on half of Dr. Laai Kuen Chung two fine pictures of Dr. Fulton and of Mr. E. A. K. Hackett, through whose generosity the two college buildings were built, and for whom the college is named. These pictures will be hung in the chapel. Other addresses were made concerning the Future of the College and the Relation of the Alumni. Many beautiful gifts of furniture and pictures for the new dormitory were received from alumni and students of the Medical College and the Nurses' Training School.

On the following day all middle schools and special schools of middle school rank or higher were invited to send representatives to an All-Schools Day Entertainment, or, as the Chinese name might be translated, a "Get-together Bee." Some twenty schools appeared and as each had prepared its own part in music, plays, or other form of entertainment, the interest ran high.

The final event of the week came on Saturday, in a Twentieth Century Miracle-play. "Every-sick-man on His Way to Health," done in the style of the church moral plays of the Middle Ages. A form of play often seen in the Colleges of America, it was new to the Cantonese audience and the absolutely fixed attention which they gave it was excellent evidence of their deep interest. The Sick, a group of nine, both rich and poor, but all sick and sorrowing, sought health and happiness by many methods. Incantation, Drugs, Knowledge, the Sciences, Experience, Sunlight, Breezes, Pure Water, Surgery, and Good Nursing, all came to their aid, working for them until all were healed in body and mind. But the stubborn presence of fear, sorrow, and sin, in their hearts was only finally done away by Christianity and the Virtues. In the final analysis all the methods of healing came together at the call of Christianity, recognizing her as the real inspiration and controlling force in the healing of man's body, mind, and soul. Over ninety characters entered into the final tableau, for the singing of "Joy to the World, the Lord is Come." The blending of color and design, and the union of voices created a most beautiful effect.

The celebration had three main aims, all of which those connected with the College feel were in part at least attained; the first, to do honor to Dr. Mary Fulton; the second, to increase the city's interest in and knowledge of the College; the third, to teach lessons of Christian healing.
Book Reviews.


Sir Leonard Rogers, in his foreword, after mentioning the great prevalence of kala-azar in Assam and India, states that in the intravenous injection of soluble antimony salts we have an undoubted specific remedy, by means of which practically every patient, coming for treatment before the very advanced stages of the disease have been reached, can be cured, and refers to the success of Dr. Muir in curing many scores of cases at his mission hospital.

Taking a wide survey of the field, Dr. Muir says that at present there are two great difficulties in the way of getting successful results, viz., the difficulty in diagnosing the disease in time and the difficulty in carrying out the treatment. Hence his object in writing this book is to help medical practitioners to overcome these difficulties. We think he does this admirably; everything he writes is to the point and practical, and the case histories are very interesting. There are several helpful illustrations. One of them shows a group of far advanced kala-azar patients; another the method of diagnostic spleen puncture and of giving an intravenous injection; others are photographs of kala-azar patients progressing under treatment, and of a group of old kala-azar patients who have remained cured from one to three years. An appendix gives a tabulated list of 150 patients treated during June, 1917—May, 1918, with an analysis bringing out the most interesting points. The whole work is so good and the price—little more than a Mexican dollar—so moderate, that every physician in China who encounters kala-azar cases in his practice should possess a copy.


This work is designed both as a text-book and general reference book of gynecology. It is divided into three distinct parts. The first deals with the physiology of the pelvic organs and with the relationship of gynecology to the general organism. In this edition the section which relates to organs of internal secretion has been almost entirely rewritten and considerably amplified. This forms one of the most original and valuable features of the book. Further, Freud's theories regarding infant sexuality have been introduced. As to their value, sharp differences of opinion will probably always exist. The author mentions that Freud finds among men a definite relationship between energetic infantile thumb-sucking and a later tendency to excessive drinking and smoking. So it is that man is born to trouble as the sparks fly upward; he forms in infancy depraved habits which eventually lead to complete moral ruin! The plight of the infants of the other sex seems to be just as bad, if not worse. However, it is just as well that physicians interested in gynecology should at least have a bowing acquaintance with Freud. The rest of this section is of much greater practical value.

The second part of the volume is designed primarily for the under-graduate student who is taking his initial course in gynecology. It includes a description of those diseases which are essentially gynecologic. The author has added an account of the recent advances in the radium treatment of cancer and of non-malignant gynecologic diseases.

In the third part, on purely operative gynecology, as distinct from the treatment of the diseases of women by drugs and mechanical treatment which are considered in the earlier sections, a number of new operations are described and illustrated, most of which have not appeared before in text-books.

The author has written a most instructive work, introducing all recent advances in gynecologic knowledge and practice, and from the wide view he takes of his subject it has a distinctive interest. As is usual with volumes published by W. B. Saunders Co., the illustrations are extremely good.
The China Medical Journal.

English-French-Italian Medical Vocabulary, Including Reference Tables of special value to physicians and nurses; phrases for directing first aid to injured; articles of pronunciation; European money tables, etc. By Joseph Marie. Price, fifty cents. Publishers: P. Blakiston's Son & Co., Walnut Street, Philadelphia.

This convenient little vocabulary of medical terms in three languages was compiled mainly for the use of doctors and nurses at the "Front." Happily, the war is now over, but the book may still be of service to those obliged to translate medical terms from one of these languages to another.

The Medical Clinics of North America. Published bi-monthly by W. B. Saunders Co. Price per annum, G. $10.00 (Foreign £2. 0. 0.).

The May number of this very useful publication consists of contributions from medical teachers and practitioners in the southern states of America, and so contains much that is interesting to those practising in hot climates in other parts of the world. Of particular value are the articles on Malaria by Dr. C. C. Bass, of New Orleans, and by Dr. Deaderiek of Hot Springs, Ark. The papers on pneumonia, pneumo-thorax, typhoid fever, syphilitic fever, pellagra, severe headaches, and other subjects are all well worth reading. The volume contains many good illustrations and charts.

American Journal of Physical Anthropology. Founder and Editor, Ales Hrdlicka, U. S. Natural Museum, Washington, D. C. Annual subscription, United States and Canada, G. $5.00; other countries, G. $5.50.

The great war is responsible for many advances in science. Anthropologists have done good service in setting standard measurements for recruiting, and anthropological data, bearing upon the vexed problems of the relationships of nations, will be given due consideration at the peace conference. It is not surprising, therefore, to find that a new journal of physical anthropology has been founded. Two numbers have been issued. The first contains a concise statement by the Editor of the scope and aims of physical anthropology and a number of other interesting papers. In the second number we find a paper by E. T. Williams, formerly chief of the Far Eastern Division of the Department of State, on "The Origins of the Chinese," which is of special value to us. Mr. Williams has considered the problem from many aspects and arrives at the conclusion "that the various Chinese tribes appear to have come in to what is now China from some region to the northwest." He expresses the opinion "that the Sumerians appear to have come into the Euphrates valley from some place to the northeast of Babylonia." Since "their language and script are strikingly like those of the ancient Chinese," he concludes that it does not seem at all improbable "that the Chinese forefathers and the ancestors of the Sumerians may have been related and may have migrated from neighboring regions, the Chinese toward the east and the Sumerians toward the west. The hypothesis that the great central Asian tablelands are the cradle of the human race and the center of dispersal to all parts of the world is strongly supported by Matthew also. Geologists tell us that great changes in climate have taken place in this region which would explain the migrations. Evidently the best way to appreciate the religion, character, and potentialities of the Chinese is through the scientific study of anthropology, comparing them carefully with other peoples. It is worthy of note in this connection that the two numbers of the American Journal of Physical Anthropology under consideration contain a summary of current literature which bids fair to be one of the most complete in the English language.

The Malaria Problem in Peace and War. A consolidation of papers read at the Annual Meeting of the National Committee on Malaria, November, 1917, and the Annual Convention of the New Jersey Mosquito Eradication Committee, January, 1918, materially revised, enlarged and brought down to date. By Frederick L. Hoffman, LL D., Vice-President and Statistician of the Prudential Insurance Company, North America.

This is a most instructive publication, containing numerous charts. The first part deals with modern methods of eradicating malaria and the results attained in various countries of the world, including India, Burma, and the Straits Settlements. The second part is given to the consideration of malaria in relation to the problems of war. We shall refer to this valuable work again in our next issue.
Correspondence.

The Biennial Conference Program.

To the Editor, C. M. J.,

DEAR SIR:—Those who will undertake the preparation of a paper for the next conference, and those who have suggestions for the program committee, please communicate without delay with the chairman, Dr. J. G. Cormack, Chün Yu Hutung, Peking. The call is sent out thus early because it is desired in the next two months to fix on the program. It is expected that with a program planned far ahead and with papers which represent a year of work, we shall have a conference worth the attendance of even the most southern of our members.

Yours sincerely,

Wm. G. LENNOX,
Secretary.

Missionary Physicians Needed in Shensi.

To the Editor, C. M. J.,

DEAR SIR:—With reference to your editorial in the November number, I should like to say that there are two practising missionary physicians in the province of Shensi, one in Sanyuan and the other in Sianfu. I think that at the only time there have ever been four doctors in Sianfu, two of them were married ladies with children and doing no practice.

At present the province is much disturbed, wounded are continually being brought in to both hospitals, and there are no prospects of any reinforcements.

Yours sincerely,

CHARLOTTE YOUNG.

Sianfu, Sh., December 22, 1918.

*** The draft of resolutions on the subject has already been received from Dr. Geo. G. Worth and will be laid before the Executive Committee at its next meeting. We hope something effective may be done, but the alterations in the Constitution and By-laws made at the last Conference greatly circumscribe the powers of the Committee, and of the Association itself, in the periods between Conferences.—Ed.

Leucocyte Count in Influenza.

To the Editor, C. M. J.,

DEAR SIR:—Influenza has been a widespread and familiar disease. It is curious, therefore, that so little has been said about the leucocyte count in it. The only reference I find in the available textbooks is in Osier’s System, where a moderate leucocytosis is mentioned. Undoubtedly the literature will be flooded soon with statistics gathered during the recent pandemic. While awaiting these I wish to record the results of white counts done on fifty cases of influenza in Peking.

The average count in these fifty cases was 6,600. In 85% of the cases it was
The counts were distributed as follows:

<table>
<thead>
<tr>
<th>Temperature</th>
<th>No. Cases</th>
<th>White Count</th>
<th>No. Cases</th>
<th>Temperature</th>
<th>No. Cases</th>
<th>White Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>98-99</td>
<td>1</td>
<td>4500</td>
<td>1</td>
<td>27-28</td>
<td>2</td>
<td>7000</td>
</tr>
<tr>
<td>99-100</td>
<td>6</td>
<td>6000</td>
<td>2</td>
<td>29-30</td>
<td>3</td>
<td>6500</td>
</tr>
<tr>
<td>100-101</td>
<td>3</td>
<td>6100</td>
<td>3</td>
<td>31-32</td>
<td>4</td>
<td>6000</td>
</tr>
<tr>
<td>101-102</td>
<td>14</td>
<td>7000</td>
<td>4</td>
<td>33-34</td>
<td>5</td>
<td>5500</td>
</tr>
<tr>
<td>102-103</td>
<td>9</td>
<td>6300</td>
<td>5</td>
<td>35-36</td>
<td>6</td>
<td>5000</td>
</tr>
<tr>
<td>103-104</td>
<td>7</td>
<td>7200</td>
<td>6</td>
<td>37-38</td>
<td>7</td>
<td>4500</td>
</tr>
<tr>
<td>104-105</td>
<td>7</td>
<td>6400</td>
<td>7</td>
<td>39-40</td>
<td>8</td>
<td>4000</td>
</tr>
</tbody>
</table>

Even such a small number of counts justifies the conclusion that in influenza the leucocytes are normal in number or decreased, rather than increased. Presumably in the cases with a leucocytosis there is an invasion of another organism, a matter for bacteriological rather than clinical diagnosis.

Yours truly,

W. G. LENNOX.

Peking, December, 1918.

Pil. Hydrarg. in Affections of the Chinese.

To the Editor, C. M. J.,

Dear Sir:—I have been much gratified with the results obtained from the use of this drug in various affections of the Chinese. To show a few instances of its usefulness is the object of this letter.

In all the following types of cases, I find mercury in the form of pil. hydrarg. acts better than as calomel, hydrarg. creta, etc.

(1) In what I called by the name of "Spring Vomiting Sickness of the Chinese" I find it is most satisfactory. This is a condition in which the gastric juice is being continuously secreted causing agonizing pain and gastric intolerance. It seems to be due to an already existing hyperchlorhydria being converted into a continuous hypersecretion through de

(2) Another type of case one meets with in the spring time is that in which there is violent watery diarrhoea, which nothing in the way of opiates, astringents, or bismuth salts will touch. The report of a case will show the kind of affection I refer to. Male, aged 56, had been ill for the last two or three days; there was a shivering attack, followed by anorexia and diarrhoea. When I saw him on the tenth day, the temperature was 96° F, he had eaten little for days, there were several large watery motions per diem, and he was lying in a listless condition of mental hebetude, unable or unwilling to answer questions. Less severe cases complain of weakness of the limbs, loss of appetite and lack of "go." A dose or two of pil. hydrarg. arrests the diarrhoea, improves the appetite, and clears up the muddled mental state. This condition is somewhat similar to the "Hill Diarrhoea" of India, but in these cases liq. hydrarg. perchloridum had been given without any benefit. As this affection has not been described as existing in China I was loath to diagnose it as such. However, on looking over some volumes of the CHINA MEDICAL JOURNAL I find that Maxwell and Begg (November, 1911,) described satisfactory results of treatment of a case of Hill Diarrhoea in a Chinese with chromo-santonin.

(3) Another type of case met with in spring is that of spasmodic cough, as if arising from laryngeal irritation. Linctuses, throat sprays, etc, are all of no avail. The cough is sub-diaphragmatic in origin, and is recognised by its harsh, hollow, explosive sound. Enquiry usually elicits the fact that the appetite is poor. A dose of pil. hydrarg. improves it instantly, and the cough vanishes. This is the so-called "Stomach Cough."

(4) The so-called "Rheumatism" of the Chinese we meet with at all times of the year, but much more so in the spring. I have been much disappointed with the results of giving salicylate in these cases. What the cause of the rheumatism is, and why it should occur more frequently at such a time, I know not. Is it exaggeration of the muscular pains as-
Correspondence.

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sociated with hyperchlorhydria and is structive. In Peking we have nineteen active (or potentially active) and two honorary members. In Siberia we have two members, and on furlough five.

Yours truly,

Wm. G. Lennox, Secretary.

“Injection,” not “Infection.”

The Peking Branch of the C. M. M. A.

To the Editor, C. M. J.,

Dear Sir:—A good occupation for a new medical missionary is the reading of the files of the Journal. In doing this, I come across, in an eight year old number, the constitution of the Peking branch of the C. M. M. A., a branch long dead, but lately beginning to bud anew. The constitution, among other things, states that the secretary shall send reports of the branch meetings to the Journal. Therefore this.

We meet every three weeks at the various homes and hospitals. The meetings are alternately clinical and literary. At the former are shown whatever interesting cases the members have been able to capture; at the latter such papers as “Splenectomy for Kala-azar,” “The Health of Students,” “Influenza,” “Grouping of the Pneumococci” are read and discussed. The gatherings are entirely pleasant and also somewhat instructive. In Peking we have nineteen active (or potentially active) and two honorary members. In Siberia we have two members, and on furlough five.

Yours truly,

Robert Chalmers.

Swabue, Kuangtuug.

The Peking Branch of the C. M. M. A.

To the Editor, C. M. J.,

Dear Sir:—In my paper on “Duodenal and Gastric Ulcers,” which appeared in the issue of last September, (C. M. J., 1918, pp. 413-420) in the last paragraph on p. 418, which reads: “The presence of a duodenal ulcer is evidenced by a thickening of the first part of the duodenum, which may be slight in extent and confined to one wall only, or may involve the whole circumference, forming a mass as large as a walnut. There is often infection of the peritoneal surface, which may have a contracted, scarred appearance,” the word “infection” in the last sentence should be changed to “injection.”

Yours truly,

C. C. Elliott.

Paoning, Sze., December 9, 1918.

Dr. F. F. Tucker, of Tehchow, on the “Flu” in U. S.

To the Editor, C. M. J.,

Dear Sir:—Having had an opportunity to get some data on “the flu” you may be interested in my observations which have been mostly made at the Massachusetts General Hospital, my work being there and at the Harvard Medical School.

Boston was the first city in the United States to be involved in what has become a pandemic of influenza, much more virulent than any that have preceded it. It was therefore not strange that the city was slow to organize effectively. Cities to the west have done much better. One of our autopsies was on a Chinese, and the findings were characteristic. No race or walk of life escaped, though the poorly housed and those who were denied plenty of fresh air suffered most. Good authorities, such as Dr. Smith of Massachusetts General Hospital, assert that practically none die from influenza, but all from pneumonia. There is generally a sudden onset, toxemia, and diffuse capillary bronchitis in fatal cases. The patient usually complains early of headache, pain in back and limbs, malaise, cough, and often dyspnea. The pulse is
The China Medical Journal.

no guide; the temperature ranges from 102° F. to 104° F. The leucocyte count is low and urine negative. The respiratory rate is seldom high. In 72 hours many cases have a normal temperature, but there is a recurrence of fever 24 hours later. In severe cases there is toxæmia and delirium in three to four days, with increasing evidence of lung involvement. The number of small patches shown by the X-ray is large after about three days; if the lung involvement is progressive. The sputum often fails to show the influenza bacillus. Nearly all pregnant patients either abort or miscarry.

A second group shows gastro-intestinal symptoms, and a third shows a diffuse catarrhal condition of the bronchioles, perhaps at one apex or the base. There may be consolidation and a broncho-pneumonia. Sometimes there is a dilatation of the right heart as death approaches. If there is associated marked cyanosis in the skin (in patches), or if fine crepitant râles are heard the patient nearly always succumbs. Foci of pneumonia seem to be often overlooked, though the lung involvement is of course the important item. If a given case is lethal it so terminates because toxic, and the patient is really "drowned" in his own lung secretion. Often there may be a degree of hemorrhage into the lung or bronchi. Perhaps a key to the severity of the epidemic is this tendency to hemorrhage.

The influenza bacillus renders the lung liable to pneumonia, the pneumococcus, streptococcus, and sometimes the gas bacillus finding the lung tissues splendidly prepared. It follows that the mortality rate is high, and it goes without saying that the present strain of the "flu" bacillus is relatively virulent. Most authorities here are agreed that there is a diffuse broncho-engorgement (in the severe cases) masked by broncho-pneumonia caused by a variety of organisms. It is of note that nearly all patients want to get out of bed, even at their worst.

Yours truly,

F. F. Tucker,
NEWS AND COMMENT.

BIRTH.

FLEMING.—On December 7, 1918, at Tsinanfu, Shantung, to Dr. and Mrs. Fleming, of the Shantung University Medical School, a daughter (Euphemia Cargill).

ARRIVALS.—On October 30, 1918, from furlough in U. S. A., Dr. and Mrs. F. W. Goddard and children, of Shao-lungfu, Che.

DEPARTURES.—On October 28, 1918, to U. S. A., Dr. and Mrs. C. F. Mackenzie, of Kinhwaful, Che.

On November 19, 1918, to Ireland, Miss M. F. Shire, M.D., of Foochow.

RETIREMENT OF DR. SWALLOW, OF NINGPO.—The Rev. Robert Swallow, M.D., Missionary of the United Methodist Church, went to Ningpo in 1874. During his first period of service he worked as an evangelistic missionary with the Rev. F. Galpin. On his first furlough he devoted his time to medical study in London, the rest of his course he took in San Francisco, where he graduated M.D. in 1892. This degree was obtained by devoting his summer vacations to travelling from Ningpo to America in order to further his purpose, surely a heroic effort; but he desired the equipment that he might better serve Christ. During the twenty-six years he had charge of the medical and surgical work at Ningpo, 200,000 patients were treated in the dispensary and hospital. Every furlough Dr. Swallow took in England he used all his spare time in professional study, that he might learn what new remedies had been discovered. He gathered round him a number of young Christian Chinese, trained them as assistants, and gave those more gifted the opportunity of receiving a full qualification.

The Conference has now granted permission to Dr. Swallow to retire from the active service of the Mission, to whose work he has given forty-four years.

RELIGIOUS WORK IN TSINANFU MEDICAL SCHOOL.—At their last meeting the M. M. A. Committee were specially delighted at information concerning Bible work amongst the medical students in the Tsinanfu Medical School which was conveyed in a letter from Dr. Gillison— who has just joined the Faculty as the first representative of the London Missionary Society—to his Society, and which, by the courtesy of Mr. F. H. Hawkins, they were permitted to see. Dr. Gillison reports that eighty-three students gave in their names for some new Bible Study classes that have been started, and these have been divided into ten groups, taken by members of the staff and Chinese leaders. Dr. Gillison is taking a splendid share in this spiritual activity, and we can but praise God that one who has ever kept to the front the spiritual side of medical mission work in his former sphere of labour in Hankow is now joining so heartily in the great cause at Tsinanfu. Dr Gillison yearns to be able to reach the men in their deep spiritual need, and as he appeals for the prayers of God’s people we are sure that a very great number will unite in intercession that Tsinanfu may become more than ever a mighty redemptive force in China.—The Missionary Herald, July 1918.

MOUKDEN MEDICAL COLLEGE.—In a letter to England dated June 29, 1918, Mrs. Christie writes:

“Not very much has happened since the last report was written. We expected to know by now whether or no we can take in new men next year, but it is still uncertain. The Scotch and Irish cannot help us in any way to meet the difficulty, but it looks as if the Danes might... Dr. Ellerbek has recently started a new work, with the assistance of one of the students—work among the prisoners in the prison. He gives medicine and treats those who are ill, and also preaches to them. This is in the meantime once a week. It is a grand opportunity, and quite a new departure. Our medical evangelist, Dr. Lu, is now in Mal-mui-ki. ... It is a disappointment that we cannot go on with the buildings, for, of course, our temporary dissecting-room in the basement of the College is not very suitable. But it is out of the question till the War is over, on account of the many foreign fittings required. The Rockefeller improvements in the Hospital are also held up.”

CANTON HOSPITAL.—The Canton Hospital announces the return of Dr. J. Oscar Thomson, Chief Surgeon, and the arrival
of Dr. Charles A. Hayes, to be the Head
of the Department of Ophthalmology dur-
ing the absence of Dr. H. W. Boyd, and
Dr. Calvin C. Rush, Visiting Ophthalmol-
gist.

HOSPITAL WORK IN TAICHOW, CHI-
Kiang.—The new hospital for women, of
the care of Mrs. J. A. Anderson, M.D., of
the China Inland Mission. Two-thirds of
the cost of building was contributed by
the Chinese friends. This hospital is
located about three minutes' walk from
the hospital for men under Dr. J. A.
Anderson's care. The China Inland Mis-
sion has conducted work in this city
for over twenty years, and each Dr.
Anderson is widely and favourably known
in that region.

PRISON REFORM IN CHINA.—It must
be admitted that some progress has been
made in prison reform. There are now
some sixty or seventy model prisons
throughout the country, and report has
it that they are conducted as well as any
in the western world. The other day we
visited the Peking First Prison and were
agreeably impressed with the intelligence
and humaneness of its administration.
In it prisoners are given opportunities to
improve themselves mentally as well as in
the arts of life. They are taught
trades and occupations. Most interest-
ing of all is that their work is charac-
terized by typical Chinese leisureliness.
There is no speeding up, no slave driv-
ing. Peking and the other model prisons
indicate that reform is being undertaken.
It has yet to be universal in the country.
When that time comes the abolition of
extraterritoriality may be considered.—
N. C. Daily News.

HONGKONG UNIVERSITY.—At the
close of the academic year 1917-1918, at
Hongkong University, two students of
medicine, Ma Chiu-ki and Ong Huek-
chey, having satisfied the examiners,
received the degrees of M.B., B.Sc.,
(Eng).

HEALTH OF ICHTH.—During October
and November, 1918, a very serious
epidemic of malaria fever was pre-
valent in this district. The Chinese from
the country around tell of large numbers
of deaths. The disease has been seen
in great numbers of soldiers, and by
microscopical examination in a large
number of the cases has been proved to
be the malignant form of the fever.

U. S. BREWERS AND CHINA.—Follow-
ing upon the report that certain large
brewery interests are to establish their
business in China, a large meeting of
Americans and others was held in Nan-
kung, December, 1918, to voice the senti-
ment of the community in regard to the
matter. It was decided unanimously to
send a letter to the American Minister
at Peking, Hon. Paul S. Reinsch, asking
him to "bring every legitimate influence
to bear, both upon the American Govern-
ment and upon the Republic of China, to
make this contemplated debauching of a
weak and helpless people impossible."

To this it was added, "We believe that
the vast majority of American residents
in China and the great mass of Chinese
people will regard the establishing of the
American Breweries and similar indus-
tries forbidden by law in America, in this
land as a decidedly unfriendly act to-
toward China, and that it will very greatly
injure the good name and the high
standing of all Americans. We believe
that China without active support and
co-operation on the part of American
official representatives, will be helpless
and hopeless in opposing the brewery
forces and other vices: with this co-
operation, she will effectively ward off
this great danger to her future manhood.
We believe that America has no right to
impose this additional handicap upon
China in this hour when she gives prom­
ise of grappling with her already many
evils and perplexing problems. The
United States is now widely regarded in
China as the champion of the rights and
the liberties of oppressed peoples. She
manifestly has a sacred duty to China in
helping to protect her from a business
now no longer to be tolerated in our own
country, and that will bring the worst
forms of oppression. It is, therefore,
intolerable for right thinking American
breweries to fasten their blighting curse
upon China. We, therefore, call upon
you to use every legitimate means to
avert this impending calamity."

CHINESE TREATMENT OF INFLUENZA.
—The temples are well massaged, then
the nose is worked backwards and for-
ward for a time, next the lobe of each
ear is drawn down to its full limit a
number of times. The nape of the neck
is well curried with an inverted bowl,
then the small of the back is done, also
the cavity at the back of the knee, and
last of all on each side of the shin bone.
Those who receive this treatment are
said to recover very quickly.—N.C.
Daily News.
BUSINESS RECRUITS FOR CHINA, THEIR COST.—In a little pamphlet issued by the American Chamber of Commerce, entitled ‘How to Keep Well in China,’ it is said that ‘It has been generally estimated that it costs a [business] company from one to two thousand dollars gold to bring a new man to China and fit him for service in this special field. For this reason, and for the higher humanitarian reason involved, it is important that every individual coming out to China for the first time should be instructed in the ordinary rules for keeping well and physically fit in China.’

CHINESE RED CROSS SOCIETY.—Mr. Shen Tun-ho, Deputy Director of the Chinese Red Cross Society, has received a telegram from the Society’s Peking office, stating that the Society’s nomination of President Hsu Shih-chang as its Hon. President has been accepted by the Chief Executive.

AMERICAN RED CROSS WORK IN CHINA.—The American Junior Red Cross Committee is preparing the issue of a series of booklets and calendars as a means of increasing the interest of the young people of China in the purposes and work of the Red Cross and to suggest to them what they may do to help their neighbours. The first of the series, in Chinese, is to be ‘The Story of the Red Cross.’ The committee wishes a cover design for this pamphlet and offers a prize of $10 for the one selected, the theme to be American children offering their services to Chinese children that they may work for China as American children work for America. Designs should include the Red Cross emblem and be in colour on paper 16 in. by 21 in. Drawings should be sent to Dr. S. M. Woo, 5 Quinsan Gardens, not later than December 20.

CHINESE WOMEN’S RED CROSS SOCIETY.—On December 22, 1918, an interesting meeting was held in Peking of the Flood Relief Bureau, when the Chinese Women’s Red Cross Society assembled under the presidency of Madame Hsiung Hsi-ling. An address was given by Madame Hsu Shih-chang; but, as she was unable to speak owing to a sore throat, it was read by Madame Nyi. The meeting evinced much interest in the Chinese troops in Siberia.

CHINESE WOMEN’S WORK FOR RED CROSS.—New things in China are coming with a rush. One of the latest developments is the increasing interest which Chinese women are taking in Red Cross work. Last year in Shanghai a class met weekly at the Chinese Y. W. C. A. to roll bandages and prepare supplies which were sent through the British Red Cross to the near East, for the use of foreign soldiers.

Further, during the Red Cross drive, large numbers of Chinese women joined as members. In some of the non-Christian schools, almost every girl wore a Red Cross membership button.

During the summer in Peking, a Chinese Women’s Red Cross Society was organized. Its purpose was not merely to raise funds. It also purposed to knit and make warm garments for the use of Chinese soldiers in Siberia. The Chinese soldier, as such, is a person of small account in China. He is hired to fight and looked down upon accordingly. Western women in all their Red Cross work have been inspired by the fact that their brothers, or sons, or husbands might possibly profit by their efforts. These high class women, wives of officials and professional men, in their work for the ordinary soldier, drawn mostly from the coolie class, are certainly engaged in altruistic work.

At present in Shanghai the Young Women’s Christian Association is organizing a distributing centre for Red Cross work. Members meet weekly, to distribute wool, cloth, etc., to be made up in the homes and returned completed. Several well-known Chinese women are prominent in this work.

The most unusual development took place in September, when a party of thirteen Chinese lady doctors and nurses, under the chaperonage of two foreign doctors, left for Red Cross work in Siberia. This is the first time that a band of Chinese women have left their own country to engage in such work for soldiers and citizens of other countries. The Chinese Young Women’s Christian Association proposes to undertake part of the support of these young women while they are in Siberia, and has made provision in its budget accordingly. These facts serve to show the new spirit of social service that is spreading amongst Chinese women.

THE JAPANESE AND ALCOHOLISM.—Japan also is alive to the drink problem. Recent Japan papers report that the Public Health Investigation Committee of the
Home Department has passed the following resolutions:

1. Measures necessary for promoting the mental and physical development of young people under age should be passed.

2. The Finance Minister should be asked to restrict the brewing of sake in view of insufficient supplies of rice.

3. The Minister of Education should be asked to prohibit absolutely the consumption of sake among pupils of Primary and Middle Schools.

4. The importation of foreign liquors and spirits containing a high percentage of alcohol should be restricted.

Reception of Deputies Appointed to Supervise Opium Burning.—The Society for Constructive Endeavour and nineteen other public institutions gave a reception early in January, 1919, to the Government deputies, commissioned to supervise the destruction in Shanghai, of the 1,200 chests of opium taken over by the Government from the "Opium Combine" several months ago. All the deputies attended. Mr. C. C. Nieh presided.

The Chairman said that the reception might be regarded as the precursor of the total extirpation of all things harmful to China. As soon as it became known that the Government was going to purchase the unsold stock of opium, the Shanghai public institutions rose to protest in a body and, as their voice had been very weak, it was a matter for congratulation that the Government had so resolutely decided to commit the whole stock to the flames, at which decision both the Chinese and foreigners here were heartily pleased. The Chairman then extended cordial welcome on behalf of the institutions to the deputies.

Mr. Chang I-peng expressed his thanks for the cordial reception to himself and his colleagues. He was confident of obtaining public support and help in the performance of his difficult task so he had been enboldened to accept the present responsible mission.

International Anti-Opium Association.—A public meeting, comprising representatives of various consular and municipal authorities, nationalities, officials, educational bodies, merchants, gentry, and the general public, was held on January 17, 1919, for the purpose of forming an International Anti-Opium Association, to take the necessary steps for the restriction of opium and morphine to their proper medicinal uses.

The following were the members of the Convening Committee:

A. Ariyoshi, Consul-General for Japan.

Chang I-peng, Vice-Minister of Justice, Special Commissioner for Supervising the Burning of Opium.

Ivan Chen, Commissioner of Foreign Affairs.

C. J. Davenport, M.D., President China Medical Missionary Association.

Feng Kuo-shun, Superintendent Chinese Maritime Customs.

G. A. Fitch, President American University Club.

W. S. Fleming, President American Association of China.

T. H. Lee, President World's Chinese Students' Federation.

Isaac Mason, Secretary Royal Asiatic Society.

Hus Chen-mei, Jus. D., Vice-President Chinese Young Men's Christian Association.

H. Y. Moh, President Chinese Returned Students' Club.

C. C. Nieh, Chairman Cotton Mill Owners' Association.

F. L. Hawks Pott, D.D., President American Red Cross Society.

Thomas Sammons, Consul-General for America.


D. Siffert, Consul-General for Belgium.

H. C. Sooug, President Chinese Bankers' Association.

A. G. Stephen, President Chinese Association.

H. R. H. Wade, Commissioner of Customs.

Y. P. Waug, Vice-President Kiaungsu Educational Association.

A. L. Warnshuis, Secretary China Continuation Committee.

Wu Lien-teh, M.D., Director of Plague Prevention Service.

Outbreak of Pneumonic Plague in Shanxi.—From Linhsien, 350 li southwest of Taiyuanfu, comes the report of some fifty or sixty deaths from a disease that may possibly be pneumonic plague. The provincial authorities are on the alert, and, at the request of Governor Yen, Dr. Percy T. Watson of Fenchow, who is at the head of the nearest hospital to the scene of the supposed outbreak, has sent competent investigators to look into the situation.

In a later report, dated January 15, 1919, it is confirmed that the disease which has broken out at Linhsien is pneumonic plague.—N. C. Daily News.