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TABLE OF CONTENTS.

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conjunctival Bridge in Cataract Extraction.</td>
<td>709</td>
</tr>
<tr>
<td>Blood Pressure of Chinese students.</td>
<td>715</td>
</tr>
<tr>
<td>Schistosoma japonicum, Life History of.</td>
<td>726</td>
</tr>
<tr>
<td>Identification of Babies by Footprints.</td>
<td>734</td>
</tr>
<tr>
<td>Early Diagnosis of Laryngeal Tuberculosis.</td>
<td>738</td>
</tr>
<tr>
<td>Chinese Drugs of Therapeutic Value to Western Physicians.</td>
<td>742</td>
</tr>
<tr>
<td>Notes on Cases of Aneurysm.</td>
<td>747</td>
</tr>
<tr>
<td>Imperforate Anus: Report of Case.</td>
<td>748</td>
</tr>
</tbody>
</table>

Clinical Notes.  P. C. Leslie, M.B. 750

Editorial: Fellowship of the Mark of Pain.  754

C. M. A. Council on Public Health  758

Current Medical Literature  760

Orientation of Hospitals in China.  G. Hadden, M.B., Ch.B. 768

Tuberculosis: a Retrospect.  A. C. Selmen, M.B. 771

Purity Campaign in Canton.  F. Oldt, M.D., Dr. P. H. 776

The Demi-Monde of Shanghai  782

Book Reviews  789

Correspondence  791

News and Comments  794

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Fig. 1.—An interpretation of Dr. R. S. Lamb's sketch showing a wide central bridge of conjunctiva.

Fig. 2.—Modification by Dr. Harvey J. Howard of the conjunctival bridge, making it temporal to the median line.

Fig. 3.—A reproduction of Dr. Frank C. Todd's modification of the conjunctival bridge.

Conjunctival bridge as a safeguard against vitreous loss in cataract extraction (Harvey J. Howard).
A CONJUNCTIVAL BRIDGE AS A SAFEGUARD AGAINST VITREOUS LOSS IN CATARACT EXTRACTION.

Harvey J. Howard, M.D., Department of Ophthalmology, Peking Union Medical College, Peking.

The greatest danger associated with the extraction of cataract is the possibility of expulsive loss of vitreous. This accident may occur during the course of the operation or during the early part of the convalescent period, generally within the first twenty-four hours. If occurring during the course of the operation it is caused by contraction of the extra-ocular muscles or the sphincter of the lid. In rare cases the contraction may take the form of a brief tonic spasm which is quite involuntary. In other cases, where irregular muscular contractions occur, the muscles are temporarily beyond the patient's control on account of fear and excitement. If the accident occurs during the convalescent period, it is caused by such things as vomiting, violent coughing, sudden opening of the lids beneath the bandage, or a blow on the eye. If this accident has not happened in the experience of an ophthalmologist then his surgical experience has obviously been small. There are, of course, many precautions an eye surgeon must always take, which, in keeping down his percentage of vitreous loss, may do as much as his own skill and that of his assistant.

The more ignorant the patient the more likely is the accident to happen. In China we are dealing mostly with patients who not only are ignorant but who also either speak a different language from that of the operator or at best the same language in a different way. Furthermore they are often prejudiced in their outlook on life's problems by superstitions and fears instilled into them from earliest childhood. Many of these people approach the operating table with little confidence and many misgivings. It is not surprising then
that there is a great tendency for many of the Chinese to contract the extra-ocular muscles at an inopportune moment during a cataract operation.

The writer spent five years in Canton engaged exclusively in ophthalmological work after having had a considerable surgical experience as house surgeon in one of the largest eye hospitals in America. He approached his first cataract extractions in that city with what seems to him now as considerable sang-froid. He carried out the technic of his teachers with credit to them. He applied all the precautions he had learned in America. But in three out of the first twenty cases the amount of vitreous loss was appalling. Two of these accidents occurred at the time of operation; the third after the operation—due to violent vomiting. The accidents were exceedingly disconcerting and tended to diminish the pleasure which the writer had previously anticipated in performing a cataract operation. Something obviously was wrong. At least conditions were not the same as he had formerly experienced. After careful consideration he decided that he had to meet certain difficulties in addition to those with which he was familiar at home.

Some of these difficulties had their obvious answers. For example, he was operating without trained assistants. He should therefore give more thought and time to the training of assistants. He was dealing mostly with ignorant patients who did not understand his language or his attempts at their language. He should therefore learn the language. He was dealing with patients many of whom had considerable blepharophimosis and symblepharon caused by chronic cicatricial trachoma. He should therefore ensure sufficient room for proper delivery of the lens by a preliminary canthoplasty whenever necessary.

There were other difficulties to which the answers were not so easy. He found that most of the Chinese had deep-set eyes with overhanging brow and folded upper lid. He found that the palpebral fissure was narrower and the spasticity of the lid sphincter was stronger in Chinese than in Caucasians. He found that Chinese women were particularly prone to be excited following a cataract operation. The remainder of this paper is confined to a discussion of the measures the writer adopted to meet these difficulties.
Conjunctival Bridge in Cataract Extraction.

It was quite plain that the eye speculum had either to be entirely discarded or to be used only with very definite safeguards. For a time the speculum was dispensed with and ordinary lid elevators were used. These were held by an assistant throughout the operation. It was found that only a well-trained assistant, one who knew how and when to relax the lids, was competent to do this. This brought four hands close to the field of the operation, so the use of lid elevators was never found to be satisfactory.

About that time (the end of 1913) the writer read a brief descriptive article by Lamb of Washington on "Cataract extraction with conjunctival bridge". Lamb did not state that he had tried the bridge operation himself, but pointed out that any experienced operator would sense the advantages of the operation, which he stated were: "A feeling of security from loss of vitreous even while one is operating, no delayed healing, no prolapse of the iris, no obscuring of the field of operation as in the conjunctival flap operation when the flap is turned over the cornea nor the same amount of hemorrhage as is often present in the flap operation; and as an after result the lessened corneal astigmatism is a great advantage." This sounded so promising that the writer decided to give the method a thorough trial. He performed about fifty cataract operations during the next few months incorporating the conjunctival bridge idea. It was immediately seen that the bridge should be much narrower than Lamb proposed and as he illustrated in a drawing, an interpretive copy of which is reproduced here (Fig. 1). By leaving a bridge of conjunctiva it was possible to use the speculum in all cases, for no matter whether the patient squeezed or not, the flap did not permit the sectioned corneal wound to gape widely. But this was found to have its disadvantage. In many cases it was difficult to extract the lens unless it were first broken up into small fragments with the cystotome. Following this the anterior chamber was always irrigated with salt solution. It was quite impossible by this method to remove the lens in capsule.

By Lamb's method the conjunctival bridge was made at the center of the sectioned wound, where a conjunctival flap would ordinarily be made. The writer conceived the idea of making the bridge somewhat to the temporal side of the midline (Fig. 2) and during the years 1914 and 1915 carried out this modification in over 100 cases. By so doing it was possible to do an iridectomy in
the usual place instead of on one side as forced to do when the bridge was in the middle. It was also found possible to remove the lens more easily, but even then not in its capsule, which of course is the ideal method. The restraining influence of the bridge on the vitreous body was only slightly lessened by this modification. In the series of over 100 cases referred to, no vitreous was lost either during the operation or afterwards. The healing of the wound was found to be unusually rapid and the apposition of the lips of the wound was on the whole much better than in cases without a bridge. However, on account of the occasional inability to remove much of the lens matter a mild iritis occurred in a few cases due to the irritating influence of the lens protein. It was also found more difficult to replace the pillars of the iris coloboma, so several cases ultimately had small incarcerations.

The bridge operation was found to be of great advantage in those cases, fortunately few, in which it became obvious while the section was being made that lens and vitreous would probably be expelled the moment the section was completed. It was a great relief to the operator to realize that in such a case it was not necessary for him to complete the corneal section.

Another advantage of the bridge was revealed to the writer. When it seemed quite certain, after the corneal section had been made and an iridectomy performed, that the patient would not squeeze, thereby expelling the lens and vitreous, and that he would remain quiet and under good control, the bridge was in a number of cases cut with scissors. Sometimes the speculum had already been removed and lid elevators had been substituted; at other times it still remained in position. It was obvious, however, that in those cases where the modified bridge was left uncut, there was greater security against vitreous expulsion from vomiting and other violence that might follow the return of the patient to the ward. The writer is convinced that at least two eyes were saved by leaving the bridge. In one case, the patient awakened suddenly from a nap on the second day following the operation and opened her eyes beneath the bandage. She at once showed signs of great distress because the lids had become everted when she closed her eyes again. Finding that they remained everted in spite of violent efforts on her part to restore them to their normal position she became quite panic stricken. The surgeon was called,
the bandage was removed and the patient quieted down. An examination of the eyeball showed that not the slightest damage had been done. In the other case, the patient, also a woman, had several violent vomiting attacks throughout the night following the operation which were caused by irritation of the gastrointestinal tract by round-worms. When the bandage was removed the next day the anterior chamber was found to be restored and there had been no expulsion of vitreous nor prolapse of the iris. These two cases were certainly very severe tests of the efficacy of the modified conjunctival bridge operation. A third severe test was made. It was found impossible to operate upon a female patient who became violent as soon as she was put upon the operating table. Under ether narcosis it was subsequently possible, by the bridge operation, to remove a cataractous lens successfully and without any untoward complications. The writer's conclusions regarding the operation with the conjunctival bridge on the temporal side, after his experience in China at the Canton Hospital, was that the advantages so greatly outnumbered the disadvantages that there was no good reason why it could not be performed routinely on all Chinese cataract cases. He advised it especially for operators with little experience and where it was impossible to secure a competent assistant.

After leaving China for the United States in the latter part of 1915, the writer read an article in the *Ophthalmic Record*, August, 1915, by Todd, of Minneapolis, on "A cataract incision leaving an undetached conjunctival flap with bridge of conjunctiva on temporal side." He stated that he had seen de Speville of Paris perform an operation in August, 1913, which consisted "in leaving a narrow bridge of conjunctiva well up on the eye-ball over the median line." Todd subsequently performed some of these operations. Finding difficulty in the delivery of the lens he modified the operation by making a wide bridge on the temporal side as shown in one of his illustrations which is reproduced here (Fig. 3.) Todd stated that he had performed the temporal conjunctival bridge operation on thirty-seven cases with such satisfactory results that he urged other ophthalmologists to give it a trial.

A search of the literature reveals the fact that the bridge operation in one form or another is not new. Desmarres is credited by Schweigger with first having described the operation in 1851.
The operation is also credited to Desmarres by Vacher who reported having performed the operation on a number of cases, contrasting it favorably with the corneal suture. The same year Pansier published a paper in which he described a conjunctival bridge operation and enumerated its advantages. The year before, Schweigger published an article in which he stated that in 1896 he had tried an uncut conjunctival flap in order "to support and hold the section in place, the lens being extracted sideways below the adherent flap."

**SUMMARY:**

1. The conjunctival bridge operation was first proposed by Desmarres in 1851, and has been performed by only a few ophthalmologists since then.

2. The writer began to do the operation in 1913, using a centrally placed bridge as proposed by Lamb. In 1914 he modified the bridge by making it somewhat on the temporal side, performing during the next two years over 100 cataract extractions incorporating this method.

3. The advantages of the temporally placed conjunctival bridge are:

   (a) An effective safeguard against expulsive loss of vitreous during the operation and the period of convalescence.
   
   (b) The possibility of using the eye speculum throughout the operation.
   
   (c) The more rapid healing and a better apposition of the sectioned wound.
   
   (d) The bridge can be made routinely in all cases and be cut later if there is no impending loss of vitreous or if there is too much difficulty in the delivery of the lens.

4. The disadvantages are:

   (a) Some difficulty in a few cases in removing most of the lens cortex.
   
   (d) It is sometimes difficult to replace the pillars of the iris, which occasionally results in an incarceration of the iris in the lips of the cicatrized wound.
5. The writer considers that the advantages greatly outweigh the disadvantages and recommends a trial of the modified bridge operation by others doing eye surgery in China.

REFERENCES.

BLOOD PRESSURE OF NORMAL CANTONESE STUDENTS.

W. W. Cadbery, M.D., Canton Christian College, Canton.

It has been a common observation of the writer and his colleagues that the blood pressure of Chinese patients in the Canton Hospital usually registered below the normal standard recognized for the peoples of Europe and North America. It was therefore decided to make a systematic study of the blood pressure of normal Cantonese young men as an aid to the determination of the average blood pressure of the Chinese race. Further, for comparative purposes it is obvious that the first essential is the determination of the normal average of some particular race.

Various methods have been employed by research workers in order to determine the blood pressure. Perhaps the most accurate data are those obtained by the Erlanger sphygmomanometer. In reviewing the literature we find, however, that the mercury instruments are those most generally employed. The aneroid Tycos instrument is preferred by some.
In the earlier reports the systolic pressure was determined by palpation of the pulse. The diastolic and pulse pressures cannot be accurately determined by this method.

More recently, as a result of the suggestion of Korotkoff, the auscultatory method was introduced for reading the pressure. By this method it is universally recognized that the first sound, or beginning of the first phase, represents the systolic pressure. In regard to the diastolic reading, there has been considerable difference of opinion. Barach and Marks, in a series of observations on healthy students read the diastolic pressure in the fourth phase with some, and with others at the disappearance of all sound or the fifth phase. The difference in readings at these two points was generally about 5 mm. of mercury, but was as great as 10 mm. in some instances. Judson and Nicholson recommend reading at the fourth phase. They claim that by reading at the fifth phase there is an error of 11 to 20 mm. Murray also agrees that the diastolic pressure must not be read below the fourth phase. Warfield, however, states that the fifth phase may be used, and that from the fourth to the fifth there is usually only 4 mm. to 6 mm. difference.

According to Weyss and Lutz, "Fischer (1908), Lang and Manswetowa (1908), Van Westenrijk (1908) and Warfield (1912), consider the beginning of the fourth phase as the auscultatory index for minimum pressure; while Ettinger (1907), Gittings (1910), and Goodman and A. A. Howell (1910), consider the fifth phase as the correct index." They conclude that "since the onset of the fourth phase is coincident with the marked decrease in amplitude of the oscillations recorded by the Erlanger sphygmomanometer, it should be considered as the index of minimum blood pressure."

Finally, Mackenzie, quoting W. A. Jaquith, states that "the fourth point is shown to be more liable to incorrect estimation than the fifth," and he further adds that the fifth point thus appears to be the one at which, for the sake of uniformity and accuracy, we should ask an examiner to take the diastolic reading. In one set of readings the average difference between points four and five was only 6 mm. in 1,835 examinations.
In view of these conflicting opinions, we have generally advised those not very well accustomed to the use of the sphygmomanometer to read the diastolic pressure at the disappearance of all sound. In the statistics given below, however, we have generally used the fourth phase for recording diastolic pressure, though in some cases probably the mercury was read between the fourth and fifth phases.

**Systolic Pressure.**

It has been asserted that the normal systolic pressure for any age is roughly 100 mm. of mercury, plus a figure represented by the age of the subject. The difficulty with much of the data at hand is that it deals with special groups of individuals, as, for example, insured persons, athletes, army recruits, etc.

One of the most thorough of the earlier investigations was Woley's study of 1,000 healthy individuals ranging from 15 to 65 years of age. The palpatory method was used. For the whole series he obtained an average of 127.5 mm. for males and 120 mm. for females. For the period from 15 to 30 years of age, the average was 122 mm.

McCrae states that for adults a systolic pressure of 110 or below may be called "low blood pressure." Fraser and Cowell made a study of the pressure in normal soldiers and obtained an average systolic pressure of 110—120 mm.

Barach and Marks examined a group of healthy male students, mostly from 15 to 25 years of age. The systolic pressure varied from 90 mm. to 200 mm., but the majority of the readings were between 110 mm. and 140 mm. In more than 600 cases examined, 204 were recorded as being between 120 mm. and 130 mm. Hg. In 90 per cent. the systolic pressure was under 150 mm.

Lee examined students (freshmen) of Harvard University. The average age was 18 years, the average height 5 ft. 8 in. and the average weight, stripped, 143 pounds. The average systolic pressure was 120 mm. Only 12.8 per cent showed a systolic pressure above 140 mm.

**The Diastolic and Pulse Pressures.**

The diastolic and pulse pressures were not recorded in the older studies and accurate data have only been obtained in recent years,
especially since the introduction of the auscultatory method of read-
ing. MacWilliam and Melvin\textsuperscript{13}, in a series of healthy young
adults, found the average diastolic pressure to be 65 mm. with a
range from 50 mm. to 80 mm. The average pulse pressure was
46 mm. Barach and Marks\textsuperscript{2}, in their series, found that in
92 per cent the diastolic pressure did not exceed 100 mm. and
readings from 30 mm. to 130 mm. were obtained. The great
majority, however, ranged from 70 mm. to 100 mm. The pulse
pressure ranged from 20 mm. to 70 mm. in 88 per cent of their
cases, a large proportion ranging from 30 mm. to 60 mm. The
extreme limits of pulse pressure were from 5 mm. to 100 mm.

In Lee's study\textsuperscript{12}, only 5 students had a diastolic pressure over
100 mm., the average being 80 mm.

Warfield\textsuperscript{5} gives a normal variation for the pulse pressure of
30 mm. to 50 mm.

Fraser and Cowell\textsuperscript{11}, in their examination of soldiers, give 70
mm. to 80 mm. as the diastolic average, and 40 mm. as the
average pulse pressure.

\section*{Influence of Age on Blood Pressure.}

In dealing with young subjects age is such an important factor
that disregard of it renders statistics valueless. Wolfensohn-Kriss\textsuperscript{14}
determined the systolic pressure of healthy children (Table 1)
and concludes that the pressure increases with age, height, and
weight. In children of the same age the taller gave higher
pressure readings than the shorter, and the heavier children than
the lighter. In boys and girls of the same weight, the pressure
readings for boys were slightly higher than those for girls; but, in
general, this observer concludes that practically there was no
difference noted between boys and girls of the same height and
weight (Tables IV and V).

Fisher\textsuperscript{15} gives the average systolic pressure of accepted
insurance risks at ages varying from 15 years to 39 years.
(Table I.).

Katzenberger\textsuperscript{16} gives the general average systolic pressures
recorded by eight other observers besides her own observations
(Table I) for different ages.
According to Judson and Nicholson\(^3\), in a study of 1,344 children, the widest variations occur from the 10th to the 14th year. The systolic pressure shows a gradual rise from the third to the tenth year, and from the tenth to the fourteenth year there is a more abrupt rise. The systolic pressure varies from 91 mm. in the fourth year to 105.5 mm. in the fourteenth year. There is an arithmetical increase from year to year as from the fourth to the fourteenth year there is a total rise of only 14 mm. There is little increase of the diastolic pressure, so that the pulse pressure increases more in proportion than the systolic.

Observations have also been made by the pith-ball oscillation method, a modified Erlanger apparatus, and the ordinary mercury sphygmomanometer, using auscultation for reading the pressure. The observations by these methods differed slightly. We record here (Tables II and III) only the results obtained by auscultation.

Bing\(^7\) examined 138 men, all inmates of an institutional "Home," and found the systolic pressure ranged from 115 mm. to 145 mm. He states that the normal systolic blood pressure seems to be from 100 mm. to 130 mm.

The average systolic pressures recorded by Faught\(^18\) cover the ages, 6 to 17 years (Table I).

A very careful analysis of the systolic blood pressure readings of all students entering the University of California has been contributed by Alvarez\(^19\). The readings for 2,930 males were taken with the men lying down. The curve of average pressure does not rise steadily, but drops between the 17th year and the 21st. The upper normal limit for men he places at 130 mm. Fifty per cent. of the readings were between 116.5 mm. and 136.5 mm. (Table I).

According to Hunter and Rogers\(^20\), men of over-weight average a higher systolic pressure than men under weight. A variation of 15 mm. below the average, or 15 mm. above, is within normal limits.

One of the most extensive series of studies of the systolic pressure is that given by Hunter\(^21\) of 67,000 life insurance cases (Table I).
MacKenzie states that the systolic pressure increases with increased weight without regard to age and height. The latter has little effect. There is little change in the pulse pressure until after 40 years of age.

For the period of 15 to 29 years of age the average systolic pressure is 122 mm. the diastolic is 85 mm. and the pulse pressure, 43 mm. From 30 to 44 years of age, the systolic pressure is 125 mm., diastolic, 88 mm. and pulse pressure 43 mm. A diastolic pressure at any age which is under 60 mm. or over 103 mm. is abnormal if constant.

Pulse pressures over 60 mm. or under 25 mm. should cause close scrutiny of every other feature.

According to a leaflet signed by Dr. C. H. Willius, Medical Director of the Provident Life and Trust Company, Philadelphia, and issued to medical examiners, accepted risks between the ages of 15 and 60 years should have an average systolic blood pressure between 120 mm. and 135 mm. (Table I). A normal diastolic pressure may be between 60 mm. and 105 mm.

Faber and James studied the blood pressure in 651 boys and 450 girls, all between the ages of 3 and 17 years. The subjects were normal, mostly school-children. These observers state that age is as satisfactory as any factor, such as height or weight, in determining the normal pressure. In order to smooth out the curves, three age periods were grouped together. Thus for the sixth year of age the averages of the fifth, sixth and seventh years were added together and divided by three. (In Tables I. II. and III. we record the readings for the boys only.)

Other Factors Causing a Normal Variation in Blood Pressure.

It is well known that many factors cause a normal variation in blood pressure. Thus Katzenberger, in a series of observations, notes that the blood pressure tends to fall as the rate of the pulse increases. The lower blood pressure in young children is to be explained by the undeveloped condition of the heart and blood vessels. As height and weight increase, the systolic pressure increases also. Therefore the pressure of children living under good conditions is higher than in children placed in bad conditions.
Owing to their greater size, boys have higher blood pressure than girls. Sleep causes a fall in pressure. Position, psychic phenomena, time of day, taking food or fluid, movements of the body, respiration, and bathing, all affect the pressure.

Faught\(^{18}\) observes that with the onset of puberty adult pressure is established. There is a fall of pressure with increased altitude. In persons of neurotic temperament, according to Goodman\(^{23}\), the blood pressure is likely to be elevated.

Lowered pressure is said by Moulton\(^ {24}\) to be the result of a weakened heart, as in convalescence from disease, and also as the result of a lack of dynamic force in the individual.

Fraser and Cowell\(^ {11}\) noted that in soldiers actually engaged in fighting, especially infantry men, the average systolic pressure worked out higher than among men in the same regiment in support, who were only exposed to occasional fire. The increased pressure of the fighting man tended to drop quickly when resting away from the firing line, so that a systolic pressure of 140 mm. might fall to 110 mm. or even to 100 mm.

The influence of age has been already referred to, and Norris\(^ {15}\) states that preceding the onset of puberty there is a tendency toward a fall of pressure; during pubescence there is a period of increased pressure which is, in turn, followed by a slight decrease after puberty has been established.

The rate of the pulse is thought by Woley\(^ {9}\) to be a factor influencing blood pressure. In persons with a pulse rate under 65, he found the pressure to average 123 mm. whereas if the pulse was over 85, the pressure reached 130 mm.

The effects of height and weight have already been referred to. These factors have been especially considered by Michael\(^ {26}\) who studied 128 normal children and found there was a regular rise in systolic pressure with their increase in height and weight. This is also confirmed by the work of Wolfensohn-Kriss\(^ {14}\), and Chamberlain\(^ {27}\) (Tables IV and V).

The effects of climate are referred to by Castellani and Chalmers\(^ {28}\) as lowering the tension of the pulse, with dilatation of peripheral vessels and increased elasticity of the pulse.

(To be continued).
### Table I. Systolic Blood Pressure

<table>
<thead>
<tr>
<th>Age</th>
<th>Wolfensohn-Kriss14</th>
<th>Fisher16</th>
<th>Katzenberger and other observers18</th>
<th>Judson and Nicholson11</th>
<th>Faught16</th>
<th>Alvarez19</th>
<th>Hunter21</th>
<th>Willits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>90</td>
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*Only one subject of this age was reported.

### According to Age in Different Races.

- Faber and James10
- McCoy28 (Bengal)
- Musgrave and Sison31 (Filipinos)
- Chamberlain22 (White men in Philippines)
- Chamberlain22 (Filipinos)
- Concepcion and Bulatao32 (Filipinos)
- Trimple20 (Chinese)
- Whyte20 (Chinese)
- Cadbury20 (Cantonese)
Table II. Diastolic Pressure According to Age.

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* Record of only one subject.

Table III. Pulse Pressure According to Age.

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Table III. Pulse Pressure According to Age.—(Continued)

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* Only one case.

Table IV. Systolic Pressure According to Height.

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<th>Height in Cm.</th>
<th>Wolfensohn-Kriss**</th>
<th>Michael**</th>
<th>Chamberlain*** (White men in tropics)</th>
<th>Cadbury (Chinese)</th>
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* Height under 162.5 cm.
Table V. Systolic Pressure According to Weight.

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<th>Cadbury (Chinese)</th>
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THE LIFE HISTORY OF *SCHISTOSOMA JAPONICUM* KATSURADA.\(^*\)

The Causative Organism of Oriental Schistosomiasis in China.

*Contribution from the Parasitology Laboratory, Department of Pathology, Peking Union Medical College. Read at the C. M. M. A., Conference held in Shanghai, February, 1923.*

Ernest Carroll Faust, Ph. D., Peking.

and

Henry Edmund Melenev, M.D., Peking.

The disease produced by *Schistosoma japonicum* was first mentioned by Baez, in 1883, although that writer attributed the infection to the lesser liver fluke, *Clonorchis sinensis*. *Schistosoma japonicum* (Katsurada), the causative organism of Oriental schistosomiasis, was first described from Japan by F. Katsurada in 1904, from material secured from man and from the cat. Very soon after Katsurada’s discovery, Catto (1905) published a similar finding from the autopsy of a Chinese coolie from Fukien Province who had died in Singapore. Almost immediately after these accounts were published Logan (1905) recorded the presence of the...
Life history of Schistosoma japonicum.

Fig. 1.

Fig. 2.

Fig. 3A.

Fig. 4.

Like History of Schistosoma japonicum Katsurada.
(Faust and Melene).
infection in Changtchi, Hunan, while Taylor (1907), Houghton (1909), Peake (1909), Wills (1910), Davenport (1910) and others noted the occurrence of the disease in their respective areas. Meanwhile schistosomiasis had been discovered in the Philippines by examination of prisoners in Bilibid Prison (Wooley, 1906).

Following the discovery of *Schistosoma japonicum* as the etiological agent in the disease, several Japanese workers began a careful investigation of the various phases of the problem, particularly those bearing on the life-history of the organism, its pathogenicity, and prophylactic measures necessary to control the infection. In 1913 and 1914 Miyairi and Suzuki published their findings on the life-history of the worm, in which they recorded the mollusk, *Blanfordia nosophora*, as the essential intermediate host, and the cercaria as the infective stage for man. This work was confirmed by Leiper and Atkinson (1915) from Japanese material. Later workers have undertaken the more minute problems of structure of the cercaria, and the route of invasion in the definitive host. Meanwhile, the worm from Chinese infections had never been definitely proved to be identical with the Japanese worm, nor had the molluscan host in China been identified.

More than a year ago we undertook the problem of studying schistosomiasis japonica in China. In order to understand more clearly its practical aspects we first entered into a careful study of the morphology, biology and life-history of the causative organism, *Schistosoma japonicum*. It is our purpose in introducing this seminar on schistosomiasis japonica to present in brief our findings relating to this worm, so that the problem may be viewed from the same angle from which we have seen it.

**The Egg and the Miracidium**

*Schistosoma japonicum* in the adult state in man or other mammals lives in the portal system. Here the worms, which are unisexual, mate, and fertilized eggs are laid by the female. These eggs at the time they are laid are lenticular, ovoid objects, about 0.7 by 0.5 microns in size and bear a more or less distinct spine on one side near the anterior end. This is present on eggs from Chinese as well as Japanese sources. By the time these eggs appear in the feces of infected animals they are usually larger and have attained considerable internal development. However, in the instance of an
Life history of *Schistosoma japonicum.*

Initial schistosomiasis dysentery, various stages of the developing eggs may be found from the earliest stage up to those containing the mature larvae, or miracidia. Occasionally unfertilized eggs are also found. A measurement of five hundred normal mature eggs from Japanese sources, checked by measurement of eggs from human feces from Wuchang, Wuhu, Nanking and Soochow, gives a length average of 89 microns and a breadth average of 66 microns.

The miracidium is a complicated organism. As it develops within the egg shell its glands first become conspicuous. Even before the embryo is mature some of the glands secrete a mucoid substance between the embryo and the shell. Later they are seen to be ciliated and, when fully mature, to turn about inside the egg shell. This accounts at times for the presence of the spine near the posterior end of the egg. In addition to a simple but efficient excretory system of four flame-cells and connecting tubules, the miracidium contains anteriorly an undifferentiated sacculate gut with granular contents and four nuclei. Lateral to the gut is a pair of granular secretory glands with acidophilic reaction, while posterior to the gut is a dense mass of glands with clusters of ducts opening laterad. These latter exude from time to time a mucoid material of basophilic reaction. The larva is thus provided with secretory glands of both basophilic and acidophilic reaction, which are probably endowed with proteolytic powers. The germ balls of the next generation are developed from a generalized germinal mesothelium. A mass of nerve ganglia is also present just behind the gut. The miracidium is covered with cilia. Those anterior to the lateral glands are differentiated in structure and function from those behind this locality.

When the miracidium is mature hatching takes place under favorable conditions. These we have found to consist of a moist medium in which fermentative agents have been reduced to a minimum. Confined fecal matter in which the eggs are present rapidly develops free acid which destroys the miracidium. Desiccation of the stool produces a shrinking of the egg-shell with accompanying exosmotic phenomena, and consequent destruction of the larva within. Development and hatching take place under wide ranges of temperature. Even freezing for a brief period in a diluted medium (an hour at $-14^\circ$ C.) does not cause death, although the same temperature in a semi-solid medium causes
death before that time. In winter mature eggs under extreme conditions in endemic areas would soon die in small fecal dumps, but if deposited in canal water, would sink to the bottom and hatch, or if the water was too cold (40° C.), they would remain viable for several months and probably hatch at a later period. Surface freezing of bodies of water in endemic areas would probably not affect eggs which had been previously deposited in the water and had sunk to the bottom. The upper limit of temperature at which hatching can take place (43° C.) is safely above the temperatures of water in infected areas in which the eggs ordinarily develop.

When hatched the miracidium first adjusts itself to the water medium and then usually ascends to within a few millimeters of the water surface, where it remains in rapid forward movement for a period of 60 to 72 hours, which period constitutes the infective stage. After this time it becomes quiescent and sinks to the bottom. It is in the subsurface stratum that it infects the snail to which it is adapted. In Japan this snail is Blanfordia nosophora; in Formosa it is the related form, Blanfordia formosana. In the Soochow district it is the species Hemibia schmackeri. All of these snails have the habit of living just above the surface of the water or just under it, so that a slight rise in the water level would bring the snail and the miracidium within the same horizontal plane.

The miracidia of Schistosoma japonicum have a specific adaptation to certain members of the mollusk group Hydrobiidae, to which the above named mollusks belong. When they come within a short distance of these mollusks they become positively attracted to them, and attack them at the nearest point of contact. This is usually the head or the foot of the snail. A few of these snails, to which the miracidia of Schistosoma japonicum respond positively, may, when placed in the same medium with the miracidia, cause the removal of practically all of these miracidia from the water.

The miracidium may enter the snail either by the direct or indirect route. In the former instance, it passes into the mantle cavity, penetrates the gill filament, enters the blood stream and thence migrates through the lymph vessels into the inter-hepatic lymph spaces, in which position it develops normally. In the
Life history of *Schistosoma japonicum.*

Second instance it penetrates the tissues of the head or foot, finding a lymph space in that region or artificially creating one, and thence, by gradual progress through the lymph spaces bathing the various organs, it works its way past the salivary glands, esophagus, intestine and renal organ and finally comes to lie in the inter-hepatic lymph spaces. Contrary to expectation the miracidia develop as well in the second course as in the first.

Differentiation of the miracidium into the sporocyst takes place from about the fifth day on, when the proteolytic glands of the worm disappear. At the three-week stage the organism has become elongate and contains within itself germ balls of the second generation sporocyst.

Between the sixth and the seventh week the primary sporocysts have become mature and in many instances have ruptured, setting free the slight sausage-shaped second generation sporocysts. These, in turn, develop the cercarial generation within themselves. The cercariae mature about the ninth week and sporadically escape from the lymph spaces, probably through the rupture of the over-taut membranes of that region.

The cercaria escapes through the opercular opening of the snail-shell and comes to lie under the surface film of the water. It is a forked-tailed larva, about 300 microns in length. The cercaria of *Schistosoma japonicum* is characterized throughout by a covering of reversed spines. It is provided with a primitive gut and five pairs of acidophilic cephalic glands of a proteolytic nature, lying in the posterior part of the body and connected with the cephalic region by long heavy ducts. These in turn open through hollow boring spines, which function in drilling microscopic holes through the skin of the mammal exposed to attack. There is also a median head gland. The excretory system contains four pairs of flame-cells. Free swimming cercariae in the water remain infective for a period of thirty hours or more. Discharge of the cercariae takes place in the event that the mollusk host is at or under the water surface and harbors a brood of mature cercariae. A snail under dry conditions because of its operculum, may remain alive for a period of several months. If it is infected with mature schistosome cercariae, it seems probable that these cercariae may wait several months for the opportunity of erupting, without suffering the loss of viability. Thus an infection might be carried over a period of
drought or a winter season and, on contact with the water during the coming season of high water, may prove a source of danger to the locality.

We have studied the course of invasion of the cercaria into the mammalian host and consecutive stages of migration and development of the young worm through the tissues of experimental mice, rabbits and dogs up to adulthood.

Exposure of the host consists in a portion of its skin being immersed in infected water. On coming in contact with the skin of a susceptible mammal, the cercaria initiates a drilling process through the several layers of the skin. This can probably be accomplished even after the mammal has left the water provided there is a layer of moisture covering the skin held in by the fur of the animal. The process of invasion consists in a mechanical boring produced by the hollow-spined tips of the cephalic glands, together with the secretion through these duct-openings of a proteolytic substance which digests away portions of the tissue. As the cercaria effects penetration its tail is dropped. The portion entering the host measures about 125 microns in length by 30 microns in breadth.

While complete penetration through the several skin layers has been observed in some cases to take less than twenty-four hours it seems likely that most of the worms require about two days for penetration into the underlying tissues. Some of these invaders get lodged temporarily in lymph nodes, particularly the inguinal and popliteal nodes, but a greater share secure entry into the veins, whence they soon arrive in the lungs. Average individuals reach this position 48 to 70 hours after exposure of the host to invasion. Some of these penetrate through the tissues of the lungs and come to lie in the pleural cavity, but in no instance have we any proof that these worms get through the mediastinum or diaphragm. The majority rather continue through the capillaries of the lungs into the pulmonary vein, whence they reach the left heart and are distributed through the systemic circulation. We have no evidence that there is any selective distribution of the worms in the systemic circulation. Our evidence seems rather in favor of impartial distribution, for we have found stages from the third to the eighth day following infection in the mesenteric arteries, in the legs, in the kidneys, as well as in the liver and
Life history of *Schistosoma japonicum*. 733

spleen. However, there are sufficient data to conclude that the normal development of the worm takes place only in the hepatic portal system. Only the earlier stages are found in the organs and tissues through which the worm migrates into the portal system. They never develop beyond these early stages in the lymph nodes or even in the lungs. The pleural cavity is evidently an aberrant route since specimens found there after the eighth day are degenerate. Furthermore, the young worms cannot migrate from these loci after the fifth day, when their proteolytic secretions have been used up, except passively through the blood channel.

When the worms once reach the portal system their development is rapid. The first arrivals are found at the end of the third day following infection. They proceed immediately to the intrahepatic portion of the system, and here the gut of the young worms begins to elongate and function by the digestion of red blood cells. No products of digestion have been found in these early stages that have not reached the portal system. It seems probable that the worms remain within the liver until they have attained sufficient size and muscular activity to wander back in the mesenteric veins against the blood stream.

Those individuals which pass through the arterial circulation into channels other than the hepatic portal system are evidently unable to secure a proper source of nourishment and sooner or later must degenerate. They are, therefore, to be regarded as foreign-body emboli, acting as toxic elements at the foci to which they have been carried. This may account for the urticarial rash observed by some clinicians (Lanning et al) sometimes following infection.

The greatest development of the young worms takes place from the fourteenth to the nineteenth days, following which development is less rapid. Sexual differentiation and mating has been observed as early as the seventeenth day, although sexual maturity is not reached until about the thirtieth day. At this time the worms lie in pairs in the radicles of the mesenteric veins far out toward and, perhaps, in part, within the capillaries. The exact place of deposition of the eggs and the penetration of the eggs through the tissues of the intestine will be the subject of a later paper.
In conclusion, we wish to emphasize our belief that the most usual infections occur by invasion of the skin. It is no more than theoretically possible for the cercariae to penetrate through the oral mucosa and the concentration of HCl in the stomach is probably sufficient to kill all cercariae of *Schistosoma japonicum* attempting migration through that channel.

### DESCRIPTION OF FIGURES.

Fig. 1.—Mature egg of *Schistosoma japonicum* from feces. (x 500).

Fig. 2.—The miracidium or larval stage of *S. japonicum*, hatched from the egg. (x 500).

Fig. 3A.—Second generation sporocyst of *Schistosoma japonicum*, with maturing cercariae within, and Fig. 3B.—mature free-swimming cercaria of the worm. (x 75).

Fig. 4.—Mature cercaria of *S. japonicum*, showing internal organization. This is the infective stage for man and mammals. (x 325).

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### IDENTIFICATION OF BABIES BY MEANS OF FOOTPRINTS.*

**Lee M. Miles, M.D., Peking.**

The need of a simple and accurate method of identification of babies in the hospital nursery has been felt by everyone who has charge of maternity wards. It is said by Morgenthaler that the present method of identification is the most glaring fault in the management of the obstetrical nursery. Many women object to being delivered in a maternity hospital, because they fear that babies are exchanged in the nursery, and lawsuits have been instituted on these grounds.

Hence the ideal method of identification must give assurance to mothers that they leave the hospital with their own and not someone else's baby; and it must be such that, in case of lawsuit, it may be presented in court as evidence.

The methods in use are nearly as varied as the number of hospitals doing maternity work. The simplest method is to write the name of the baby on a piece of adhesive plaster which is then

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Identification of Babies by Means of Footprints (Miles).
applied to some part of the infant’s body. This is the only means of identification used in many hospitals. It is far from satisfactory because the ink very easily becomes blurred, and in handling the babies the adhesive plaster frequently becomes detached.

The mother’s name may be written on the baby’s back using a dye dissolved in a 50 per cent silver nitrate solution. The silver nitrate becomes oxidized after some hours and the mark will usually remain legible for the period the infant is in the hospital.

At the Wesson Maternity Hospital, Springfield, the baby’s name is written on a round card reinforced at the edges with a tin ring. The card, so labeled, is shellacked and tied around the child’s neck with tape. At Grace Hospital, New Haven, a similar method is used, except that the marking disc is made of aluminum and the name and other data are engraved upon it with a scratch awl.

Most maternity hospitals now use the following means of identification: a necklace is made of lettered beads, by means of which the mother’s name is spelled, blank beads being used to make up the proper length, and the whole is strung on a stout silk or linen cord, the ends of which are sealed around the child’s neck with a split shot. This has proven to be quite satisfactory as it pleases the mothers and such a necklace is more comfortable to the child than the disc of cardboard or aluminum.

None of these methods, however, is ideal as a means of identification. In China so many families have the same name, Wang, Li, Chang and Liu, making up such a preponderance of surnames, that confusion is likely to occur unless much additional information is given. Furthermore, the principle of identifying persons by means of an attached mark is fundamentally wrong. One could not, in case of doubt or lawsuit, state positively that such mark had not been accidentally or maliciously exchanged.

The method of identification should be one that is an actual impression of some part of the infant itself. Two such methods are in use, namely, identification by means of finger-prints and by foot-prints. It is not the purpose of this article to discuss in detail the identification of individuals by the study of the microscopic minutiae of the fine lines and whorls occurring in the skin of the fingers and thumbs. Such study is necessary in the case of criminals because in the committal of crimes they do not usually leave evidential
impressions of their whole hands or feet. It they did, identification could be readily established by a study of the coarser lines and markings, which are just as individual and characteristic as the finer lines and whorls. Hand-prints or foot-prints taken intentionally show these lines clearly, and also much of the detail of the fine lines and whorls. Study of the latter offers difficulties and demands a technical knowledge, while the coarser markings can be compared with ease and the identity of the individual established beyond reasonable doubt.

The Chicago Lying-in Hospital uses foot-prints made in the following manner: a rubber roller is inked with printer's ink and run over the sole of the infant's foot. The foot is then pressed against a piece of paper which takes the impression. This is preserved with the history. As a substitute method Taylor suggests that the child's foot be rubbed with cold cream and then pressed against a piece of paper. The cold cream adheres to the paper and finely powdered charcoal is then spread over the impression with a camel's hair brush. The charcoal brings out the latent lines as clearly as the ink method and it is decidedly cleaner. Unfortunately this impression is temporary and must be carefully preserved in an envelope.

We have tried the ink method and have found difficulty in obtaining clear prints of the foot; besides, the method is a messy one. In the maternity ward of the Peking Union Medical College Hospital two means of identification are used. At the time of delivery three tags of adhesive plaster are prepared and marked with the mother's name; one tag is fastened to the baby's back; the second, to the baby's bed; and the third, to the placenta basin. In addition to the tag on the baby an impression of the left foot is taken before the child is taken from the delivery room.

While there is nothing new in the principle of taking foot-prints for identification, the method we have devised has not hitherto been described. By it an accurate impression is obtained which is permanent, and the process is simple, rapid and inexpensive.

The apparatus consists of a blotter holder of the wooden rocker pattern the base of which is 5½ inches long and the curved surface 6 inches long by 2 inches wide. The back is fastened to the base by a screw handle. The handle is loosened and a strip of
kymograph paper, 8 inches by 2 inches, is applied over the curved surface of the rocker, the ends being inserted under the base, drawn smooth and the handle tightened. The paper is then smoked to an even black over a candle or a fishtail gas burner.

In taking the impression the baby's left foot is held in one hand and the smoked surface of the paper is applied to the sole of the foot with the other hand. The impression begins at the heel and with a forward rocking movement the rest of the foot comes into contact with the paper. The pressure applied must be very gentle and care must be taken not to slip the paper along the skin, which would blurr the lines. The mother's name, hospital number, date of birth of the child and sex are marked on the paper with a sharp pencil point, the paper is removed, immersed in a solution of shellac and dried. This print is then attached to the baby's history. If any doubt or question arises a second impression can be made at the time of discharge, and a comparison with the original made in the delivery room should clear up all doubt. In the four photographic reproductions of foot-prints presented here the utter dissimilarity of the lines of the feet of the three babies represented, and the identity of the lines of the two prints of the feet of a baby taken at an interval of four months, may be seen.

These records are permanent and no one can doubt their effectiveness as a means of identification. The method presented here, because it is simple and sure, offers decided advantages over previously described methods of taking foot-prints.

REFERENCES
THE EARLY DIAGNOSIS OF LARYNGEAL TUBERCULOSIS.*

Jui Hua Liu, M.D., Peking.

It is not the purpose of this paper to give in detail the etiology, pathology, symptoms and signs of laryngeal tuberculosis. I shall devote myself largely to the importance of the early diagnosis and not attempt a complete discussion of the whole subject, which would be impossible in the limits of this article.

It is unfortunately true that few physicians are expert in the use of the laryngoscope, or are familiar with laryngoscopic diagnosis. Even to-day, while conditions have bettered considerably, laryngoscopy is not universally used by general practitioners. The result of this failure to recognize that the larynx is an essential part of the respiratory system which must be studied in every complete physical examination has been to delay the early diagnosis of laryngeal tuberculosis, so that it is too often not found in those stages when it is most curable, but only discovered when the condition is so far advanced as to make a cure impossible. I am sure many physicians do not care to use the laryngoscope because they think it is outside their province, and that it is for the specialist to examine the larynx laryngoscopically. Nevertheless, the examination should be made and often it takes only a few minutes to make the necessary diagnosis.

Among the symptoms and signs of early laryngeal tuberculosis the sensation of tickling in the throat and a feeling of dryness are by far the most common. Hoarseness is another sign; this condition varies, of course, from a slight huskiness to complete aphonia. Pain and dysphagia are rarely complained of until the epiglottis is involved and ulceration has extended to the pharynx. Frequently with the laryngoscope there is seen early in the disease a pallor of the mucous membrane. I do not mean a pallor of the laryngeal mucous membrane alone, but also a pallor of the pharynx. But this is by no means always the case. Cohen says, "congestion of mucous membrane almost always marks the earliest recognizable..."

*Read before the Section on Laryngology, C. M. M. A., Conference, February 1923.
stage of the acute form, while pallor of the mucous membrane almost always characterizes the earliest recognizable stage of the chronic and more frequent form."

Whenever the mucous membrane of the larynx is found very pale in colour, with here and there areas in which the blood vessels are slightly dilated, one should always bear in mind that this is a very suspicious sign of early laryngeal tuberculosis. Unfortunately, an ordinary catarrhal laryngitis may give almost the same appearance as that given by tuberculous catarrh. However, the most characteristic feature of the tuberculous catarrh is its tendency to affect only a part of the larynx, while the ordinary catarrhal laryngitis is more often general.

Infiltration is by far the most characteristic sign of an early laryngeal tuberculosis. The tubercles, situated just beneath the mucous membrane, appear as grayish elevations about the size of the head of a pin. The tubercles are frequently massed together to form a table-like elevation, which may be small and uneven, or, as in the later stages, they form a large lobulated tumour. These are frequently in the ventricular bands or aryepiglottic folds but most often are found in the posterior commissure. The further course of these elevations may be either ulceration or the formation of granulomata. Infiltration of the vocal cords in tuberculosis is almost always isolated to one cord or portions thereof; or if bilateral, both sides are rarely involved to an equal extent, whereas in non-specific inflammation the infiltration is symmetrical and general. The same rule holds true for the arytenoid cartilage and ventricular bands.

The typical tubercular ulcer is always dependent upon infiltration and is produced by the disintegration of caseated tubercles. These ulcers are very characteristic; they are broad and shallow with gray bases and ill-defined outlines. The vocal cords when ulcerated are irregular in outline and often have a serrated appearance, a condition better known as a mouse-like nibbled appearance. Ulceration of the epiglottis tends to spread rapidly, causing great oedema of this part of the larynx. Consequently the patient suffers from great dysphagia and pain.

The following few cases which have come under the writer's notice are illustrative of the foregoing points in the early diagnosis of the condition under consideration.
Case. I. S. A. Li. Married man, aged 29 years.

*Family History.*—No history of tuberculosis in family.

*Personal History.*—Gonorrhoeal urethritis four years ago. No history of syphilis. Has had the usual diseases of childhood. Except for indulgence in the opium habit for one year, which was stopped 3 months ago, there is nothing in the previous history of the patient bearing directly on the condition discovered.

*Present Illness.*—The present trouble began with sensation of tickling in the throat and hoarseness which came on rather gradually for three months. He feared that he might be getting syphilis. There was very little dry cough, no sputum, no hemoptysis, no afternoon fever, or night sweats.

*Physical Examination.*—Pharynx: not inflamed but rather pale. Larynx: epiglottis not inflamed, no edema, no ulceration. Arytenoids: not injected nor swollen; right ventricular band normal; left ventricular band infiltrated. Vocal cords: both cords infiltrated and congested. Examination of chest: dullness of apices, especially right side and in both clavicular regions. Râles at second interspaces. X-ray report of chest: “Extensive lesions of both apices, on the right extending down to the second interspace area; and on the left, down to the third interspace area. Almost surely tuberculosis.”

*Wassermann Test.*—Negative.

*Treatment.*—Patient was told that he had tuberculosis, both pulmonary and laryngeal, and was sent to the Western Hill Sanitorium. Word was received after a month saying that he was doing well. Hoarseness improving, no pulmonary symptoms.

The points of interest in this case are: the absence of pulmonary symptoms; the marked improvement of both pulmonary and laryngeal conditions; the absence of sputum. This case is therefore one of the types sometimes termed “closed tuberculosis,” in contradistinction to the open form in which sputum is present, a distinction of practical importance because while the latter cases are highly infective, the former are not a source of danger to contacts.

Case 2. C. K. H. A married man, aged 26 years.

Patient complained chiefly of hoarseness which had lasted for two months with a slight cough. No hemoptysis, no afternoon fever, no night sweats, no pain in throat.

*Physical examination.*—A well developed young man. Pharynx: negative.
Early Diagnosis of Laryngeal Tuberculosis.

Larynx: Epiglottis and arytenoids not inflamed nor swollen. No ulcerations. Spots of grayish elevations on right ventricular band. Left ventricular band, negative. Vocal cords inflamed and swollen. No ulcers. Chest examination: Definite apical dullness, more marked on right side, where a few clickling rales after coughing are heard in both anterior and posterior aspects. Not much change in breath sounds.

Diagnosis.—Early apical tuberculosis.

The points of interest in this case are (1) the hoarseness, which was the only symptom that drew the patient's attention and brought him to seek for advice, and (2) it was a type of case in which both lung and laryngeal conditions can be arrested.

Case 3. C. J. C. Aged 22 years.

Family history.—Father died of heart disease. Mother and two brothers living and well.

Past history.—Nothing of interest.

Present illness.—Two weeks ago, patient began to notice that his voice was becoming husky and steadily growing worse. He became quite hoarse in about ten days after the onset. There was some cough, night sweat, and afternoon fever during the past week, and there had been hemoptysis six times during the two weeks.

Physical examination.—Temperature 39° C. Pulse, 120.

Pharynx: negative. Larynx: epiglottis inflamed and swollen; turban shaped. Right arytenoid: inflamed and swollen. Left arytenoid: inflamed, but very much less swollen than the right. Vocal cords: both cords swollen and inflamed. No ulcerations on any part of the larynx. The posterior commissure looked dirty-grayish in color, due to infiltration. Chest examination: rales in all lobes of lungs, more on left than on right side. No relative dullness. Left upper lobe most involved. Bronchial breathing in left upper lobe.

Wassermann test.—Negative.

The points of interest in this case are (1) the laryngeal symptoms and signs simulating those of an acute laryngitis, and (2) the short history.

Treatment of Laryngeal Tuberculosis.—The employment of antiseptic oily solutions is of service in diminishing the pain, preventing infection by coating the larynx, and to some extent sterilizing the sputum. The only effective method of using them, however, in the past has been by trularyngeal or tracheal injection. The fact that these injections have to be given by the surgeon has greatly lessened their utility. Dundas Grant (Jour. Laryngeal and Otol., February, 1922) has described recently a method more simple and effective. About half a drachm of the oily solution is poured by means of a small glass syringe into the patient's nostril while he is sitting up with the head thrown back and the mouth open. The patient should continue breathing gently and resist any inclination to swallow. Med. Annual. 1923.
CHINESE DRUGS OF THERAPEUTIC VALUE TO WESTERN PHYSICIANS.

*Read before the Section on Pharmacology, C.M.M.A., Conference, February 1923.

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In his "Principia Therapeutica", Dr. Harrington Sainsbury remarks that if it be true, as Plato, the master thinker has said, that an unexamined life is not worth living, then it must follow, since the greater includes the less, that an unexamined practice is not worth practising. It is for this reason, and because we are in constant peril of being engulfed in the immense number of Chinese native drugs, and the ever-rising flood of new remedies and patent medicines, that I have ventured to suggest the formation of a Council on Pharmacy and Chemistry in China, and to report my investigation of the properties of six Chinese drugs, in the hope that it may prove of service to all engaged in the practice of medicine in China.

Among the great mass of drugs in the Chinese materia medica, long ago there might have been discovered a considerable number which possess definite and genuine therapeutic value had they been tested by the searching light of scientific pharmacology and the crucial test of clinical medicine. However, our knowledge hitherto concerning them has consisted of little more than mere speculation. As we all know, science abhors speculation almost as nature abhors a vacuum. So in this paper, the little information which I wish to offer will be mainly based on facts, either empirical or rational, with as little deduction from these facts as possible.

Quisqualis Indica (使君子).—This popular drug, which has been empirically used for centuries by Chinese physicians as a panacea for the numerous and diverse diseases of children, was clinically and definitely tested as a satisfactory substitute for santonin by Dr. C. J. Davenport in 1918. Recently, in the Peking Union Medical College Laboratories, its pharmacology has been carefully studied. No alkaloids nor glucosides have been isolated. The non-volatile fat and the sugar residue possess no anthelmintic properties. Hence the volatile fraction contains the active vermifuge principle of the drug.
The crude medicine is simple to prepare and easy to administer to the patient. It is customary to take several seeds, generally seven, and roast them; the kernels are extracted and administered on an empty stomach in the morning. Chinese mothers have for centuries incorporated the quisqualis kernels into the ordinary home-made cakes given to their children. The children have chewed the kernels and swallowed them without knowing they were medicinal. The present exorbitant price of santonin should commend quisqualis as a substitute.

_Tang Kuei_ (當歸)._—This is an umbelliferous plant, the root of which has for centuries enjoyed a high reputation in China for the treatment of female complaints. It has not, so far, been definitely identified by Western botanists. The derivation of the Chinese name, as Dr. G. A. Stuart has partially expounded, is from its supposed power to make the female “revert” to her husband, and much of its employment is probably to be referred to the wish of Chinese women to stimulate their generative organs in order to increase their opportunities of bearing children. But it has other uses than this, as the experimental data will bear out. It is held by the Chinese that the physiological action of the drug is to direct the gas and the blood where they ought to return, or to map out the proper course for these two vital elements of the human body. In the language of modern medical science it serves as a regulator of the general circulation and of internal respiration. It was introduced into the European materia medica some twenty-five years ago as an emmenagogue. An extract has been marketed under the proprietary name of “Eumenol.” According to a Japanese investigator, working with the root identified as _Ligusticum acutelobam_, the active principles consist of ethereal oils, a lactone-like substance and a phenol ether. Pharmacologically, it is a cerebral depressant. On the frog, it has a most pronounced narcotic action. On the mouse, besides the general stupefying effect, it frequently causes spasmodic respiration. In dogs, a subcutaneous injection produces milk relaxation and antipyresis; intravenous use causes hypnosis and ataxia, besides symptoms of irritation such as whining, restriction of motion, or tonic cramping; it induces also a fall of blood pressure and slowing of the pulse, initial stimulation with subsequent weakening of respiration, a fall of temperature and finally total collapse.
Unreported work done in Peking during the past year upon Tang Kuei shows that the active principles of this root have a very strong specific action on uterine muscle, producing a characteristic fleeting contraction like that of pituitrin. The root that is commonly used in North China has been identified as Angelica anomala var sinensis, Oliver, and should show an action different from that of Japanese Tang Kuei.

Portulacca Oleracea (馬齒莧).—The common purslane, which is said in the Pen Tsao to contain about 0.5 per cent mercury in the leaves, has been for ages used in China for various pathological conditions, both external and internal, before J.H. Fabre found it to be a very efficacious palliative for the poisoning of the processionary caterpillar. Recently, H. R. Knight, working on the poisonous nature of the white-marked tussock-moth, observed that the relief obtained from the local application of this remedy was surprising. As might be expected, I have found no trace of mercury in the drug. However, in the course of analysis for mercury, the metallic element manganese was detected. We could not attribute the therapeutic value of the drug to this element as traces of manganese seem to be essential to the growth of most plants.

Hydnocarpus anthelmintica (大風子). The oil obtained from this plant has been used in China for all kinds of skin lesions including syphilodermia and leprosy. Dr. Muir, the well known authority on leprosy in India, recently working on the different samples of seeds used in the treatment of leprosy, has declared that the ethyl esters of the Chinese seed compare very well with any of the others. Professor Reed of Peking, is reporting to this conference the results of a chemical study which supports the view that hydnocarpus oil is preferable to chaulmoogra oil.

The world-wide hygienic renaissance of the present day is causing us to live in an age of preventive medicine. Every branch of medical science has contributed more or less to this rapidly growing science. Why should modern pharmacology not do its part in China? So the next two drugs, which I am going to present, have a bearing on public health.

Allium Sativum (蒜). Garlic bulb. This alliaceous plant of many medicinal virtues, has been used in China, since the time of the great Emperor Huang-ti, more than four thousand years ago.
Chinese Drugs of Value to Western Physicians. 745
to correct the unwholesomeness of water, to destroy the noxious
effect of putrid meat and fish, and to prevent goitre and pestilential
diseases. It is found to contain allyl sulphide \((C_3H_6)_2S\) as its
active principle. This substance possesses efficient antiseptic
power. Its phenol coefficient has been determined to be a little
more potent than phenol itself. On account of its volatile nature
and antiseptic virtues, it has been suggested as either a therapeutic
or prophylactic agent for accessible tuberculous processes.

*Illicium anisatum* (茴香 八角珠). The seeds of star anise
owing to their spicy fragrance have been used in China as a
condiment in preparing food ever since the T'ang Dynasty. Its
name, as the Chinese characters indicate, means "reverting
fragrance" (回香). When used in cooking putrid meat, it has a
reflected aromatic odor or "bosom fragrance" (㱃香), for peasant
girls grind these seeds and then put them into little cloth bags
which they insert in the bosom of the dress. Unfortunately, the
very poisonous seeds of *Illicium religiosum* or *Anisatum religiosum*,
because of their cheapness, are often mixed with, or sold instead
of, the seeds of *Illicium anisatum*. The public have used these
seeds indiscriminately, with the result that a number of deaths
from poisoning by these seeds have been reported from various
places in China. The writer had one such case four years ago
while practising as a physician in Anking. The method of pro­
cedure for the identification of the kinds of seeds, the poisonous
principle (sikimin) of the *Anisatum religiosum* and its convulsant
effects on the animal organism with the antidotal treatment, were
all described in the *China Medical Journal*, July, 1922. The only
point which I wish to repeat here, is the need for public information
to prevent the collection, sale, and use of *Illicium religiosum*. In
a country like China where the Public Health service is in its
infancy, the responsibility of preaching preventive medicine to the
public naturally falls on our profession. Every one of us here
ought to assist in the propaganda of Public Health.

The foregoing narration of facts merely indicates that only a
beginning along this line has been made. Who can deny that, in
the future, our list of standard pharmacopeial preparations will
include not only the recognized Occidental drugs, but also a group
of indispensable drugs from the Orient? Dr. John R. Mott once
eloquently remarked that steam has eliminated nine-tenths of the
earth, and electricity the remainder. The world at the present day is really too small for the existence of so many different national pharmacopoeias, formularies, dispensatories, etc. One single international pharmacopoeia to include all the useful drugs under the sun, with standard methods of preparation, written in the various languages of the present day, would be abundantly sufficient for all physicians, pharmacists and manufacturing drug firms.

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Illicium anisatum (茴香八角辣).
NOTES ON TWO CASES OF ANEURYSM.

B. RANDALL VIGERS, M.B., B.S., Shiuchow, Kwangtung.

In spite of the frequency of syphilitic infection aneurysms are not very commonly met with in China. In the past four years I can only recall four cases of non-traumatic aneurysm. The affection, however, is sufficiently common to necessitate the practitioner constantly bearing it in mind, seeing how disastrous may be the result of wrong treatment.

I propose to describe two cases of aneurysm that I have seen, and to pass on to others the lessons they taught me. The first was a lesson in treatment. The patient was a soldier, who in the summer of 1919 had received sundry superficial bullet wounds about the face and head. In the early autumn of that year I went to the Shiuchow Hospital and found him an in-patient there. His wounds were septic but were progressing well. But upon one branch of the superficial temporal artery, in the situation of an already closed wound, there had developed a typical traumatic aneurysm of the size of a small lentil. My Chinese assistant, who had already observed the tumour, was very anxious that I should extirpate it, but I preferred to wait in the hope of seeing it disappear by Nature's own method. By the time the man's wounds were fully healed the aneurysm was smaller and firmer, and it was satisfactory to note that with a few weeks' further rest the little pulsating tumour had lost all pulsation and was only represented by a firm thickening upon the line of the artery.

At first it was very tempting in this case to cut down, tie off the vessel above and below, and remove the sac; but to my thinking a surgeon should not, as a practice, submit a patient to operation if a satisfactory result can be obtained apart from operation. The next time I see a traumatic aneurysm on a small peripheral artery I shall certainly not hurry to cut it out.

In the second case there was a lesson in diagnosis. About a year later a woman came among the out-patients complaining of what she called "a lump in the left breast". I found she had an elastic tumour, almost the size of a pumelo, near the inner end of the anterior axillary fold. I was much pressed for time and did not examine her thoroughly, but noticed that the tumour sprang
The China Medical Journal.

from somewhere deep beneath the pectoralis major. Obviously it was not a cyst of the breast. But I told the woman to come to Hospital and that I hoped the tumour could be cleared out by operation. She came in, and I made a more complete examination. I was much puzzled to know what fluctuating tumour, except an aneurysm, could occur in that position and this tumour did not appear to be pulsating. Not forgetting Osler’s dictum qua aortic aneurysm, that “a good light is essential to diagnosis”, I searched carefully by inspection, palpation, and the two chop-sticks method for pulsation but found none, and had to confess the diagnosis was beyond me.

The patient was very anxious to be rid of the mass, and I said I would operate; at any rate, I would “look and see”. The day before operation I again examined her carefully and it occurred to me to examine her lying down as well as in the erect posture. When she lay down, careful inspection revealed a small area towards the posterior part of the growth which was pulsating. The beating was limited to a small region but it was unmistakable. Sitting the patient up again, the pulsation disappeared entirely.

I will leave it to those who have worked single-handed in country stations in China to imagine what my feelings were when I realized what an awkward predicament I had been delivered from. But to all I leave this observed instance of a large aneurysmal tumour not pulsating in the erect, but pulsating in the supine position.

IMPERFORATE ANUS: REPORT OF CASE.

E. H. BRUNEMEIER, S.M., M.D., TUNGJEN, KWEICHOW.

On July 9th, 1923, there was presented at the Evangelical Hospital, Tungjen, Kweichow, a Chinese male child, 82 days old, weighing nine pounds, 12 ounces, in excellent physical health and bodily nutrition, with the complaint that from birth the child had passed no feces by rectum, but had done so regularly through the penis. Relief from this condition was sought because the parents felt that as soon as the child began to take solid food it could not live with such a physical defect. On examination it was found that in the anal region there was a light brown dimple about 15 mm. in diameter,
entirely covered with skin. Below the skin the sphincters seemed to be present. It was impossible to elicit any signs that indicated the presence of the rectum anywhere within two centimeters of the external sphincter. The child was observed to urinate normally without the same time passing feces, and without later finding fecal matter in the urine; and at different times and distinctly separate from the act of urination, defecation took place through the penis, as well as the discharge of intestinal gas. The discharge of feces and gas took place through the urethra itself and not through a separate fistula. Feces passed were of normal color and consistency. Efforts were made to determine the site of entrance or discharge of intestinal contents into the urethra, but the attempts failed to disclose where the common passage began. External examination of the penis, which was of normal size and shape, and of the scrotum and bladder region also failed to disclose the presence of the rectum, or its point of discharge into the urethra.

Left inguinal colostomy was advised and performed on July 10th, 1923. An incision 3 cm. in length, was made through the peritoneum under local anesthesia, 2% apesthesine (Parke Davis & Co.) with very little discomfort to the patient. But on account of the continual straining of the patient, it was found necessary to induce light general anesthesia before the operation could be satisfactorily completed. Exploration through this incision (made at right angles to and bisected by the center point of a line from the left anterior superior spine of the ilium to the umbilicus) was unsatisfactory, and the exact pelvic condition unfortunately remained undetermined. It was thought unwise to prolong the operation unduly and to make a longer incision. It was noticed that practically all mesenteric lymph glands and the spleen were markedly hypertrophied, but otherwise their appearance was normal.

The patient made a quick, uneventful recovery. The colostomy loop of gut was removed July 19th, and the patient was discharged two days later. He was brought back July 24th for another inspection. Thereafter he was returned to his home about 90 li (30 miles) from Tungjen. The colostomy seemed to be functioning well and the patient was in excellent physical condition. No more feces passed the urethra after excising the colostomy loop of gut.
The China Medical Journal.

CLINICAL NOTES.

Percy C. Leslie, M.D., Changteho, Honan.

I. Malaria.

The surprise of the Clinic here during the spring of 1923 has been the unusual number of patients with quartan malaria, occurring, or rather coming for treatment, out of the mosquito season. Invariably they gave a history of having suffered for several months, even as long as nine months. At times the attacks were constant; at other times there would be freedom from paroxysms perhaps for a month.

There are certain features of this form of malaria which differentiate it from the benign and malignant tertian infections.

Although these patients had suffered many months they never showed marked anaemia, and never cachexia. Usually they are able to keep at their daily occupations; a few report that they had been confined to bed but never for any length of time. The disease was not considered of sufficient import to induce them to come for treatment when the attacks first occurred; it was only when they got tired of not getting better that they came. The paroxysms, while beginning with the two-day interval, usually became more frequent so that paroxysms occurred on each of two successive days, followed by a one-day interval (double quartan fever). Occasionally there were daily paroxysms. After a month or two, the condition would revert to the two-day interval type. The patients' statements regarding their condition did not always correspond with the blood examinations, for we have found in a patient who said he had fever at two-day intervals parasites in different stages of development which should have given him paroxysms with only a one-day interval. Patients who reported on their "off-day" would sometimes be found to have a fever of 102° F. or 103° F. Evidently the paroxysm may become so moderate or inert that the patient is able to ignore it, while the alternate attack may give unmistakable symptoms. On one or more occasions a patient had a paroxysm at the clinic, with a temperature of 104° F. or higher, yet he did not exhibit great distress and
insisted on returning home the same day. The condition during the paroxysms is nothing like what we have seen in patients with benign tertian, who are prostrated and entirely overcome.

One does not see in the quartan variety the anaemia that so soon marks the benign tertian, and while the spleen is slightly enlarged, it is not markedly so, nor is there any sign of the cachexia so apparent in sub-tertian cases in which the enlarged spleen and liver give a typical picture.

As to the parasites we have seen them in all stages of development, including the ring forms, partially mature, fully mature, and sporulating forms. The ring forms are larger than in the tertian, either benign or malignant, and show more blue-staining protoplasm and a larger mass of chromatin. The half-mature forms have been round or oval in shape, while the mature forms are round and completely fill the enclosing red cell. The regular outline, as contrasted with the irregular shape of benign tertian is very marked. Never have we seen in quartan malarial fever the manifold appearances observed in the tertian, in which no two parasites are alike in shape. The quartan parasites maintain marked similarity of outline, while the pigment is much more plentiful and coarser. The enclosing red cell does not show perceptible enlargement even when the parasite is well matured, nor does it assume an irregular outline, in both these features being a contrast to the tertian.

In the treatment of the disease quinine will readily give relief, but to effect a cure, the treatment must be pushed and prolonged. The statement, "it is useless to look for the parasite in the blood after the patient has had quinine for twenty hours," is not true as regards quartan infection. We have seen the parasites in the blood after many days treatment. By far the most effective method of administering quinine that we have tried is the intravenous injection of the hydrochloride salt, ten grains to the dose, supplemented by dosage by mouth. This soon brings the condition under control and after a few days of such treatment the patient experiences great relief. The treatment must be prolonged to get good results, and in order to get Chinese patients to continue taking quinine long enough, a very good plan, which appeals to many patients, is to make a covering charge for successful treatment payable in advance. This ensures the regular
attendance of the patient at the clinic, although much the better way is to get patients into the hospital wards where they are thoroughly under control.

II. SYDENHAM'S CHOREA

After twenty years in China we have at long last seen a case of Sydenham's chorea. A boy of twelve years was carried to hospital, having suffered for several months, growing worse all the time. His condition was pitiful. Unable to stand erect, his whole body went through characteristic contortions, limbs, head, and body all being affected. At times he would assume the position of opisthotonos; the hands were usually flexed and pronated, as though the musculo-spiral nerve was involved. Unable to feed himself except with a piece of bread or cake clutched in the hand, the patient was still able to pick up objects after vain attempts and many false movements. His was an exaggerated type of a disease, of which it is said that to define it is impossible. However, according to Sturges, "chorea consists in an exaggerated fidgetiness.”

No history of rheumatic infection in the family could be obtained from the father. Treatment with arsenic and bromides with strict isolation brought about slight improvement. But the patient did not remain long enough to enable us to observe the ultimate result.

III. ACUTE RHEUMATISM

Acute rheumatism has been as rare a disease with us as chorea so that I was interested this spring in having one patient whose condition was typical of a mild attack of acute rheumatism. A number of joints were affected, the trouble shifting from one to the other. This, with the swelling pain, tenderness, and rise of temperature furnished a typical picture.

IV. NASAL POLYPUS WITH EXTENSION TO FRONTAL SINUS.

A patient came to the clinic with a well-defined nasal polypus of only moderate development, but to me the principal feature of his trouble was a swelling just under the eyebrow of the corresponding side. This was soft and pulpy to the feel, and at once we suspected involvement of the frontal sinus. With a suspicion that the condition might be malignant, we hesitatingly removed
the polypus from the nostril and waited for two months to see if any development would take place in the growth over the sinus. As there was no sign of this, nor of recurrence of nasal growth, we decided to open the sinus, and at least explore.

Making an incision just under the margin of the supra-orbital ridge, we came upon a sausage-shaped polypus lying free outside the frontal sinus, the orbital wall of which was partially eroded as well as the bony wall between the naso-pharynx and the orbital cavity. The growth was removed with forceps and curette, and the cavity packed, the packing being well extended into the nose. After two weeks the patient is doing well, but it will take a long time ere the cavity granulates up, if indeed a fistula does not remain. This is the first case we have seen of such a condition and my available literature makes but passing reference to the possible extension of nasal polypus to the frontal sinus.

Alastrim and Small-pox.—Opinions are still divided as to the identity or otherwise of alastrim with small-pox. According to MacCallum and Moody (Amer. Jour. Hyg., 1921, 388,) the evidence is scarcely sufficient to warrant the statement that alastrim is a disease distinct from true small-pox, especially in view of the extraordinary variation in severity of small-pox in various epidemics. Mild cases of small-pox may show only a few scattered lesions and slight fever, while in alastrim the initial fever is high and the body is covered with pocks which are often almost confluent, and yet the patients are not very ill, the liability to secondary infections is slight, and the mortality trifling. Watkins (Med. Record, 1921, II : 1149) who believes that alastrim is a mild form of small-pox, attributes the modification of the symptoms to the fact that persons who have lived for generations in the tropics, and in an environment diametrically opposed to that of temperate climates, do not react to acute infections like white or black men in the north. On the other hand, Goldsmith and Loughman (Jour. R. A. M. C., 1921, I : 66) consider that alastrim differs from small-pox in the following respects: vaccination against small-pox affords but slight protection from alastrim—the disease can occur after recent successful vaccination; (2) the severe lumbar pain of small-pox is absent in alastrim; (3) the secondary fever during the pustular period is very mild and may be absent in alastrim; (4) true umbilication of the scabs is not seen; (5) the very mild form which alastrim assumes in adolescence; (6) absence of scar formation; (7) low mortality-rate—1.5 to 2 per cent.

Alastrim differs from chicken-pox in the following points: (1) it occurs at all ages; (2) the marked tendency of the vesicles to become confluent; (3) the disease is liable to be prolonged in all its stages, and more particularly in the pustular stage, which may last as long as ten days. The discussion will probably continue until the specific germs of this group of diseases have been discovered. Hoffmann (Jour. Trop. Med., June 15, 1923) thinks that blood examinations may possibly contribute very much to the further elucidation of the problem. It would be of great value, consequently, if for that purpose blood studies of the same kind were published from countries with undoubted pure alastrim epidemics, and also from countries with the severest forms of small-pox as China and India.
THE FELLOWSHIP OF THE MARK OF PAIN.

The biographies and autobiographies of medical missionaries are usually very interesting, partly because the philanthropic nature of their work appeals to all; and partly—in all modesty be it said—because the lives are of men and women of marked individuality and ability, who have really accomplished a work worth recording. To other missionaries the practical suggestions contained in such books are often very helpful. For this reason attention is directed to a fragment of autobiography recently published entitled: On the edge of the Primeval Forest; Experiences and Observations of a Doctor in Equatorial Africa. By Prof. Albert Schweitzer. Dr. Theol., Dr. Med., Dr. Phil., (Strasburg). Author of “The Quest of the Historical Jesus,” “Paul and his Interpreters,” “J. S. Bach,” and other books.

While still a young man, Dr. Schweitzer acquired a great reputation as a theologian. His writings helped to form the apocalyptic school of New Testament criticism, which has exercised a great influence in the theological world. He is also a most accomplished musician. Suddenly, when thirty years old, he gave up his position of professor in the University of Strasburg, his literary work, and his organ playing, and began the study of medicine in order to go as a physician and surgeon to the mission field. In 1913, he graduated, and the same year started with his wife, who had qualified as a nurse, for the difficult station he had chosen in a sleeping-sickness area, Lambarene, on the River Ogowo, Equatorial Africa.

What were the motives which induced “the brilliant young German doctor, eminent musician, terrible theological critic, frequenter of Berlin salons, to go to the barbarism, the loneliness, the dangers of the fever-stricken Congo, to tell the natives the story of Jesus?”

(1) The sympathy inspired by the Christian religion. “I had read about the physical miseries of the natives in the virgin forests; I had heard about them from missionaries, and the more I thought
about it the stranger it seemed to me that we Europeans trouble ourselves so little about the great humanitarian task which offers itself to us in far-off lands. The parable of Dives and Lazarus seemed to me to have been spoken directly of us! We are Dives, for, through the advances of medical science, we now know a great deal about disease and pain, and have innumerable means of fighting them: yet we take as a matter of course the incalculable advantages which this new wealth gives us! Out there in the colonies, however, sits wretched Lazarus, the coloured folk, who suffers from illness and pain just as much as we do, nay, much more, and has absolutely no means of fighting them. And just as Dives sinned against the poor man at his gate because for want of thought he never put himself in his place and let his heart and conscience tell him what he ought to do, so do we sin against the poor man at our gate."

(2) The obligation of human atonement. The dark races have been greatly wronged by the white race. "We and our civilisation are burdened, really, with a great debt. We are not free to confer benefit on these men [in the dark places of Africa] or not, as we please; it is our duty. Anything we give them is not benevolence but atonement. For every one who scattered injury some one ought to go out and take help, and when we have done all that is in our power, we shall not have atoned for the thousandth part of our guilt. That is the foundation from which all deliberations about 'works of mercy' out there must begin."

An interesting description is given of the medical work in Lambarene. The hospital was of rather primitive construction.

"When the roof of the dormitory [hospital] was ready, I marked on the floor of beaten earth with a pointed stick sixteen large rectangles, each indicating a bed, with passages left between them. Then the patients and their attendants, who hitherto had been lodged, so far as possible, in a boathouse, were called in. Each patient was put into a rectangle, which was to be his sleeping place, and their attendants were given axes with which to build the bedsteads; a piece of bast on a peg showed the height they were to have. A quarter of an hour later canoes were going up and down stream to fetch the wood needed, and the beds were ready before nightfall. They consisted of four short posts ending in forks, on which were tied two strong side-poles, with shorter pieces lying across, the whole bound firmly together with creeper stalks. Dried grass as a mattress. The beds are about 20 inches from the ground, so that boxes, cooking utensils, and bananas can be stored below, and they are broad enough for two or
three persons to occupy them at once; if they do not provide room enough, the attendants sleep on the floor. They bring their own mosquito nets with them."

Nevertheless, despite the difficulties under which he labored, Dr. Schweitzer rendered most valuable service to the natives and acquired a great reputation among them for his skill, patience, and kindness, and the medical evangelistic work brought him its own reward. "The African sun is shining through the coffee bushes into the dark shed, but we, black and white, sit side by side and feel that we know by experience the meaning of the words: 'And all ye are brethren' (Matt., xxiii. 8). Would that my generous friends in Europe could come out here and live through such an hour."

It is Dr. Schweitzer's conviction that the humanitarian work to be done in the world should, for its accomplishment, call upon us as men, not as members of any particular nation or religious body. Hence his own work, though connected with the Paris Evangelical Mission was, in itself, undenominational, international and independent. Financially, it was supported by himself with the assistance of kind friends in Germany, France and Switzerland. When the great war broke out in 1914, mission difficulties of every kind multiplied, the health of his wife and himself became impaired, and after a brave struggle they were obliged to return to Europe. But Dr. Schweitzer means to return to the field again. How will he obtain the necessary financial support? He is going to rely, to some extent at least, on the "Fellowship of those who bear the Mark of Pain." Here is a practical point of great importance. Is he indicating a source of income for medical missions which has not hitherto received the attention it deserves?

Who are the members of this Fellowship? "Those who have learnt by experience what physical pain and bodily anguish mean, belong together all the world over; they are united by a secret bond. One and all they know the horrors of suffering to which man can be exposed, and one and all they know the longing to be free from pain. He who has been delivered from pain must not think he is now free again, and at liberty to take life up just as it was before, entirely forgetful of the past. He is now a man whose eyes are open with regard to pain and anguish, and he must help to overcome those two enemies (so far as human power can control them) and to bring to others the deliverance which he has himself enjoyed. The man who, with a doctor's help, has been pulled through a severe illness, must aid in providing a helper such as he had himself for those who otherwise could not have one. He who has been saved by an operation
from death or torturing pain, must do his part to make it possible for the kindly anaesthetic and the helpful knife to begin their work, where death and torturing pain still rule unhindered. The mother who owes it to medical aid that her child still belongs to her, and not to the cold earth, must help, so that the poor mother who has never seen a doctor may be spared what she has been spared. Where a man's death agony might have been terrible, but could fortunately be made tolerable by a doctor's skill, those who stood around his death bed must help, that others, too, may enjoy that same consolation when they lose their dear ones.

"Such is the Fellowship of those who bear the Mark of Pain, and on them lies the humanitarian task of providing medical help in the colonies. Their gratitude should be the source of the gifts needed. Commissioned by them, doctors should go forth to carry out among the miserable in far-off lands all that ought to be done in the name of civilisation, human and humane.

"Sooner or later the idea which I here put forward will conquer the world, for with inexorable logic it carries with it the intellect as well as the heart. But is just now the right time to send it out into the world? Europe is ruined and full of wretchedness. With all the misery that we have to alleviate even under our very eyes, how can we think of far-off lands?

"Truth has no special time of its own. Its hour is now—always, and indeed then most truly when it seems most unsuitable to actual circumstances. Care for distress at home and care for distress elsewhere do but help each other if, working together, they wake men in sufficient numbers from their thoughtlessness, and call into life a new spirit of humanity."

Practically this constitutes an appeal to all mankind, whether Christian or Non-Christian, for there are few who escape sickness and pain. If the logic of the appeal and its emotional effect are indeed irresistible the response should be very wide and exceedingly generous. But the New Testament story of the healing of the ten lepers of whom one only returned to give thanks should moderate our expectations. The memory of sickness and pain in time loses its poignancy, and the sense of gratitude for deliverance becomes correspondingly less keen. Still, if one in ten of all who have suffered would express their gratitude in practical form by aiding medical institutions, especially those in foreign lands where scientific medicine is almost unknown, the benefit to the world would be very great. At any rate, we hope that Dr. Schweitzer will find gratitude for recovery from illness is so general and so often finds practical expression in generous donations to medical missions, that he will have no financial difficulty in continuing his own medical work in the mission field.
NOTES OF MEETING, JUNE 26, 1923.

The Council met in the Peking Union Medical College, Peking, on June 26, 1923.

Members of the Council present: Drs. Grant, Kirk, Maxwell, Yen, Houghton, Wakefield and Wampler. Drs. Appleton and Ida Bell Lewis, Chairmen of sub-committees, were present to report, and Dr. Peter and Miss Dingman were present as visitors.

In accordance with the new constitution of the Council on Health Education, it was necessary to elect an alternate representative on the Executive Committee of the Council on Health Education. Dr. James L. Maxwell was recommended to the Executive Committee of the C.M.M.A. for election to this position.

Because of the constant confusion due to the similarity of names of the Council on Health Education, with headquarters at 4 Quinsan Gardens, Shanghai, and the C.M.M.A.'s Council on Public Health Education, it was decided to recommend to the Executive Committee that the name of the C.M.M.A.'s Council be changed from the "Council on Public Health Education" to the "Council on Hygiene."

The reports of the four sub-committees, one on the Field of College and Middle School Health Activities, a second on the Field of Primary School Activities, a third on the Field of Child Health Activities, and a fourth on the Field of Community Health, were all approved and referred to the Council on Health Education for action.

A brief summation of the four reports is as follows:

The sub-committee on College and Middle School Health Activities urged the formation of an organization for those working on these lines. A manual for the use of school doctors and educators is to be prepared, in fact, there is some material already together which will form the basis of this manual. There should be a preliminary examination of all students before entrance. A thorough examination should be made later. Under school sanitation the toilets, kitchens and dining rooms are given special consideration. Emphasis in this report, as in all others, is laid upon getting the health habits into actual practice.
The preliminary findings of the sub-committee on Primary School Health Activities emphasized the correction of defects found in the annual physical examination and the teaching of hygiene in every school year with emphasis upon habit formation. The report also insists on physical training in each year.

The sub-committee on Child Health Activities urged a more adequate provision for obstetrical care. This to be accomplished by more space for obstetrical cases in hospitals, by increasing opportunity for training in obstetrics and the instruction of women in pre-natal classes in hospitals or Children’s Health Centers. In the second place, the mother should be instructed in the care of her baby before she leaves the hospital and in Children’s Health Centers.

Since smallpox and the house fly are everywhere present in China and since there is already sentiment against one or both of these in some communities, the sub-committee on Community Health recommended that the members of the C.M.M.A. make a special effort against these two menaces, and recommended to the Council on Health Education that they prepare posters and literature suitable to arouse interest and activity against these two conditions. It was also recommended to ask the Council on Health Education to prepare a manual in English and Chinese on how to conduct a community health campaign.

Budgets for the expenses of the Council on Public Health for 1923 and 1924 were presented and passed.

Miss Dingman, secretary of the Industrial Advisory Committee of the World’s Y. W. C. A., gave a report of industrial conditions in the Far East and some efforts to improve them by the Sub-committee on Industrial Problems of the National Christian Council. The Council expressed its interest in the proposals and referred the report to the Executive Committee of the C.M.M.A. for their consideration.

The Council also expressed the wish that reports of the work of this Council be reported to the C.M.M.A. through the China Medical Journal, and our representative on the Executive Committee of the Council on Health Education was also asked to report the important actions of that Council to the C. M. M. A. constituency through the C.M.J.

Fred. J. Wampler,
Secretary.
Current Medical Literature.

SURGERY: PRE- AND POST-OPERATIVE TREATMENT.


As experience grows, one is impressed with the fact that, to reach satisfying results, equal care must be taken of the patient before, during, and after operation. While our minds are taken up with operative technique and diagnosis, other important issues must not be forgotten.

Carey (*Surg. Gyn. and Obst.*, 1921) and others, following on the work of Crile, advise the alkalization of operation cases. After referring to Crile's theory of acid intoxication, and discussing the connection between acidosis and shock, he insists that the body fluids must be preserved, and the alkali reserve must be maintained. He concludes emphatically that the giving of alkalis before operation lessens post-operative discomfort, that catheterization is required less frequently, and that 'gas pains' are reduced to a minimum.

The sisters in Mercer's Hospital, Dublin, in charge of the wards have the following written instructions in connection with the patients under my care:

*Preparation Before Operation*:

1. Twenty grains of bicarbonate of soda every four hours, for two or three days if necessary, until urine is alkaline.
2. Large quantities of water by the mouth, or saline by the rectum, for the ten or twelve hours preceding operation.
3. In anxious cases, or in children about to undergo bone operations, glucose to be given if possible for two or three days before operation.
4. No enema on morning of operation.
5. No laxatives to cause purging in patients preparing for operations. Simple laxatives, as in non-operative cases, are alone necessary a day or two before.
6. Special instructions to be given in cases of intestinal cancer.

*Patients After Operation*:

1. Unless restricted for some special reason, such as fracture of bones, etc., the patient may move as much as he likes in bed from the first after operation.
2. The patients may sit up out of bed on the second or third day after ordinary operations, provided they are not drainage cases and there is no fever.
3. The freedom of the room to be given after four days, a bath after seven days, and out for walks or drives not later than the tenth day.
TREATMENT OF LIVER ABSCESS BY ASPIRATION.

Manson-Bahr, Low, Pratt, Gregg, *The Lancet*, May 12, 1923.

Fifteen cases are reported in which there have been no deaths nor even supervention of any untoward symptoms following aspiration, combined with medicinal treatment. An ordinary Potain's aspirator is used. The needle should not be inserted to a depth exceeding $3\frac{3}{4}$ inches. When pus is struck by exploratory puncture, complete evacuation of the abscess cavity should at once be carried out as part of the same operative procedure. Should the pus prove too thick for aspiration, Manson's trocar and cannula can be inserted along the tract of the aspiration needle, and a free evacuation of the abscess cavity thereby obtained. No definite instructions are laid down about the site of puncture; the site of election should be the point of greatest tenderness and swelling, should such exist. In the absence of any localizing signs, the routine procedure adopted by the authors has been: (1) eighth interspace in anterior or midaxillary line, (2) the epigastric route. Without a general anesthetic not more than three punctures at one time are advocated, but under general anesthesia success has attended the search for pus after as many as six punctures. As much pus as possible should be evacuated at one aspiration. No special advantage seems to accrue from the injection of emetin or other amebicidal substances into the abscess cavity. Healing appears to take place without them. The effusion of serum into the abscess cavity probably takes place normally and should be regarded as the natural method of repair. The risk of hemorrhage after multiple punctures, although theoretically great, in practice appears to be of small import. Whenever possible, puncture of lung tissue should be avoided as increasing the risk of hemorrhage.

PLAGUE BACILLI ISOLATED FROM HEALTHY HUMAN CARRIERS.


The authors have obtained Yersin bacilli from the glands of healthy inhabitants of Dakar who had been in contact with plague, but who did not present any morbid symptoms other than swollen painless inguinal glands such as are common to most North Africans.

HEREDITY OF MENTAL DISEASE


The research here reported was begun in 1912 and carried on under special grant. Hereditary conditions in two families were studied from biologic and social standpoints, heredity research and
the clinical psychiatric standpoint. Fifty-five members of one family and sixty-two of the other were investigated. The research covers six generations, a total of 391 and 361 members with 21 and 26 with mental disorders. The mental affections are a blend of three types: schizophrenia, alone or with manic-depressive insanity, or with epilepsy. A tendency to what they call schizoidia is also apparent in some branches. Four branches of one family have entirely escaped the taint. They emphasize that the proportion of persons affected has been growing less in the later generations, with none in the present generation.

**PITUITRIN IN INOPERABLE CANCER**

*Medical Annual, 1923*

Norgate (Brit. Jour. Surg., 1922) mentions some interesting observations in connection with the use of "Pituitrin in inoperable cancer." He draws attention to four cardinal points present in these cases: (1) Hopeless melancholy; (2) Profound cachexia; (3) Liability to hemorrhage; (4) Offensive discharges. He finds that the injection of 1 c.c. of pituitrin into the tongue muscle in a case of hemorrhage from extensive epithelioma in addition to checking the hemorrhage, brings about a decrease in the size of the glands. In a case mentioned, the injections were repeated every week for three months, and the patient made rapid improvement, put on flesh, and the cachexia disappeared. Similar results were obtained in cases of malignant growths of the lower jaw, the injections being made into the centre of the growth. The whole growth appears to have gradually shrunk in size, and the patient became bright, cheerful, and hopeful, for about twelve months. After the injection the effect on the growth was remarkable, the colour gradually fading away until it was paper white; there was a general shrivelling, which lasted for about twenty minutes. Two injections a week gave no better reaction than one. Norgate suggests making the injection into the perineal tissues or the buttocks, in bladder, vaginal, and rectal cases. After injection there is sometimes an alarming anaemia, with weakening of the pulse, relieved at once by a little brandy.

Norgate's contribution is an exceedingly valuable one for those who have the misfortune to be responsible for the treatment of inoperable cancerous growths.

**PAIN OF ULCER OF STOMACH**

*Porges, Medizin. Klinik, March 31, 1923.*

Porges found that colic was caused by ulcers, but practically by no other affection of the stomach. Pressure with the pain
diminishes the pain. During the pain from ulcer the patient sits with knees drawn up, or lies on his side, pressing his thighs against the abdomen, or lies on the abdomen with a pillow under it. Lessening of the pain after intake of alkalis speaks for ulcer and against spasm. He gives one teaspoonful of a mixture of magnesium oxide and calcium carbonate every two hours. If the patient is constipated, more magnesia than calcium carbonate should be used. The diet eliminates strong spices, too hot and too cold food and fluids, and strong alcoholic beverages. Since the supposedly anacid cases of ulcer have an acid secretion when examined three or four hours after a hearty meal, the same alkaline treatment should be used.

PREMATURE BIRTH STATISTICS AND CONGENITAL SYPHILIS.


From statistics taken from the Dresden Maternity Clinic for the years 1914-22, KEHRER finds that there were 1,541 premature births. The Wassermann reaction of the mother was taken in 71.3 per cent. of the cases and was only found to be positive in 11.5 per cent. This figure is considerably less than the figures quoted by other authors—for example, Ruge states that 83 per cent. of premature births are due to syphilis, Seitz 91.6 per cent., Heynemann, 60 per cent. Of the premature children, 74 per cent. left the clinic healthy, and 6 per cent. died; in these cases the mother had a positive Wassermann in only 17 per cent. In 21 per cent. of the stillbirths the mothers gave a positive Wassermann reaction, and 20 per cent. of the premature children who died in the clinic were also syphilitic. In the 125 premature deliveries where the mothers showed a positive reaction, 37 per cent. of the infants left the clinic healthy, 15 per cent. were macerated, 33.5 per cent. stillborn, and 14.5 per cent. died shortly after birth. It was also found that the syphilitic premature children were more liable to die shortly after birth than the non-syphilitic—namely, about 14.5 per cent. Among the macerated foetuses expelled during the period investigated 41.3 per cent. were syphilitic, which again is a much lower percentage than is generally estimated, Seitz putting the percentage at 80. On the strength of his statistics the author considers that syphilis does not play a great part as a cause of premature delivery, at any rate not the important rôle that has usually been attributed to it. On the other hand, he regards the prognosis for the child of a syphilitic mother to be bad, as intrauterine death is likely to occur, and if born alive the child is more liable to die during the first few days of life than are the children of a healthy mother.
TREATMENT OF MORPHINE ADDICTION.

VIVIAN, Med. Press and Record, 1923.

"We would not attempt to cure a consumptive of twenty years' standing in a few weeks, so why try to cure in haste a person whose system has been saturated with morphine, and who is suffering from as real a disease as the consumptive?"

Most institutions for the cure of addicts either cut off the drug entirely and at once, or reduce their daily allowance so rapidly that much suffering is entailed, and they are discharged in a few weeks, almost sure to relapse.

The method used by Vivian is much different and, as is logical, much more time-consuming. Whatever the patient had been taking he is immediately reduced to two grains a day, on which dosage he can live comfortably. When he has become accustomed to this dosage he will eat and feel better. The daily dose is then reduced by one-quarter grain, each reduction remaining stationary until he has become accustomed to it. This is repeated until an allowance of one grain a day is reached, and eventually this is given at one time, in the morning, when it is most needed. From now on the reduction is carried out very slowly, one-half grain at a time, even if it takes twelve months to get rid of the last grain.

The hypodermic injection of emetine has been found a valuable ally. The writer used daily three doses of one-sixth grain each, reducing the dose after the first month or two.

A SUMMARY OF OUR KNOWLEDGE OF RICKETS


Following the close of the war, information began to reach London that rickets was extremely prevalent in Vienna as a result of deficiency in diet. The Medical Research Council, which had been carrying on special investigations of this disease, appointed a committee to carry on investigations in Vienna jointly with the Accessory Food Products Committee. The committee found at once that war edema had been prevalent, but was no longer so, and that scurvy was common among infants. Moreover, rickets had increased both in incidence and in severity.

As is pointed out in the report just issued, the problem of the cause of rickets is approaching solution, but the interplay of the various factors influencing the satisfactory digestion of calcium phosphate in the growing skeleton is still obscure. Certain

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investigators were of the opinion that rickets is an infectious disease, whereas others were definitely committed to the view that the disease bears a certain relationship to diet. In his foreword to the present report, Professor Pirquet, in whose clinic Dr. Harriette Chick and her colleagues carried on the work, states that he himself believed that rickets was of an infectious origin, but following their three years of conscientious work, he now has been convinced that the disease is definitely associated with a diet poor in fat soluble vitamins and with the absence of sunlight. The British workers, he says, succeeded with the accuracy of a laboratory experiment in maintaining a large number of artificially fed babies free from the disease, and, further, were invariably successful in healing children with rickets already developed.

This extensive clinical investigation completes the final establishment of views regarding the cause and therapy of rickets which mark an epoch in the control of this disease. In their summary of the results, the workers outline for us a history of the research which completes the record and assigns to each of the workers a correct share in the success. It has been shown that the following factors play a part in the etiology of rickets: (1) an organic factor in diet concerned with the calcification of bone; (2) light, and (3) an adequate amount and correct balance in the diet salts of calcium and phosphates. To Mellanby is given the credit of having discovered the importance of the organic factor and having stressed the influence of the balance between this factor and the energy bearing constituents of the diet, particularly the amount and nature of the cereal element. MacCollum, Hess, Unger and others have extended these investigations, and have shown that other factors also have an influence. In 1890, Palm suggested the importance of sunlight following study of the epidemiology of the disease, and in 1919 Huldschinsky showed the curative effect of radiation from the mercury vapor lamp, which was shortly confirmed by Hess and others. The study of the conditions in Vienna indicated well the importance of all these primary factors, and it now remains only to show the extent to which each of them operates.

**DISH TOWELS AND TUBERCULOUS INFECTION**


In a series of twenty-five instances of guinea-pigs inoculated from the washings of dish towels used by tuberculosis patients no positive results were obtained by Floyd and Sikorsky. In three control experiments, in which gauze was thoroughly impregnated with viable tubercle bacilli and thoroughly washed, no positive results were obtained. The most reasonable explanation of these negative results would seem to be that the strong alkali soap or soap powder
used for a period of weeks in the home must very deleteriously affect any viable tubercle bacilli that may be caught in the meshes of the dish towel and either kill them or so impair their vitality as to make them unable to produce infection in small numbers.

**NAPKIN DERMATITIS IN INFANTS.**


This troublesome ailment, affecting the gluteal region, which can occur in older children who have enuresis, should, the writer thinks, be classed amongst the toxic dermatoses. Its exciting agent is ammonia, caused by the action of a gram-positive saprophytic bacillus on the urea of the dejecta. He calls it *D. ammoniacigenes,* and he has isolated it in every case examined. Its source is the faeces. The remedy is to impregnate the napkins with an antiseptic such as mercury sublimate, when both dermatitis and ammoniacal odour soon disappear.

**HEMORRHAGE AFTER EXTRACTION OF TEETH.**


Haeorrhage after the extraction of teeth may be serious, and since the patient may not take alarm until several hours have elapsed, it often becomes the duty of the nearest available doctor to treat the case. Plugging the socket, providing it be accurately applied, will generally suffice, but may not be easy, and many styptics have been recommended as an adjuvant. Some of these, for example ferric chloride, give rise to subsequent sloughing, which more than outweighs their haemostatic action, and are therefore to be condemned; others, like adrenalin, are so quickly diluted by saliva or blood that they become ineffective. Mr. F. S. J. Steadman, in an interesting paper which was read before the Section of Ondontology of the Royal Society of Medicine advocates the use of oil of turpentine, and states that over an experience of twelve years he has not known it to fail. The method of application is simple. The gauze is soaked in the drug and the socket packed; if necessary it is kept in place by stitching or by applying a pad over the gum and bandaging the jaws.

**GLANDULAR FEVER**


It is remarked that glandular fever, which until ten or twelve years ago was fairly known, has lately become so infrequent as often to escape recognition. The incubation period is from five to ten days. The onset is sudden, with sore throat and stiffness in the neck, and often pain in the upper part of the abdomen or left
hypochondrium. Nausea and vomiting are common. The temperature, which is usually normal in the morning and not above 102° F. in the afternoon, usually becomes settled within a week. The cervical glands are chiefly affected, but the supraclavicular, infraclavicular, axillary, and inguinal glands are almost always palpable. The spleen is enlarged and tender in about 60 per cent of the cases. A rise in the white-cell count to 17,000 is the rule, and is entirely due to increase of the mononuclears. The average lymphocyte percentage varies from 75 to 85. Several weeks may elapse before the blood-count returns to the normal. Glandular fever is easily distinguished from tuberculosis, mumps, and acute cervical adenitis by careful physical examination and blood-count; and from acute lymphatic leukaemia by its milder course, absence of haemorrhages, and the appearance of the blood-smear, which shows an absence of immature, atypical, and degenerating forms of leucocytes, and the presence of large numbers of the bi-lobed or Riedel form of cells. The prognosis is favorable, only four fatal cases having been recorded.

ORIENTAL IMMUNITY TO INFECTION.

Mendelson, Phil. Jour. Sci., XXII, No. 2. 1923.

Specific immunity to typhoid infection can be demonstrated in 15.5 per cent of the people in the Philippines. This is in the nature of a racial immunity, acquired as the result of using, for many generations, an infected water and food supply.

Although resistance to certain diseases, such as cholera and plague, cannot be demonstrated by specific blood reactions, it is present in the form of a marked resistance to germ infection as a whole—that is, "general infection immunity."

The nervous system of Orientals is much more resistant to the effects of germ infection than is the nervous system of Occidentals.

The natural immunity to infection and resistance to disease, as exhibited by the Oriental, is of real value to the health officer working in the East under present conditions.

Foreigners in the Tropics.—Sambon pointed out long ago that if proper sanitary and other measures against disease were introduced into the tropics, and if care were taken with regard to food, drink, excessive heat, and the rays of the sun, there is no reason why the European should not live healthily in these regions; and this is true to a certain extent, but in our experience the length of residence must be considered, as even with every care, he may become debilitated by the direct climatic influences and require a change to a temperate climate, otherwise after a time, the length of which varies much in individuals, his health will be undermined and break down in some way.
THE ORIENTATION OF HOSPITALS IN CHINA.

GEORGE HADDEN, M.B., Ch.B., Changsha.

In a previous paper on "The Place and Use of Verandahs in Hospitals in China" (Ch. Med. Jour., XXXVII: 510), reference was made to the passing of the old, cave-like buildings with rooms buried from the glare and the sizzling air-born heat of the outside world; with them there passed also the true meaning of the verandah as a protection from the sun. Modern architectural practice provides instead out-door sitting and sleeping accommodation, as much as possible without shading the rooms, and combats the heat and glare of the sun with sun-blinds, shutters, and other contrivances. Hospital designers are demanding more healthy arrangements as regards sun-flushing, the cheerfulness of wards, and the open-air accommodation for beds, as well as more modern interpretation of summer ventilation problems. Particularly in the interests of economy, they are demanding a further study of space utilisation, specially in the smaller hospitals where economy so greatly counts.

The study of this subject culminates in a reconsideration of the entire orientation of hospitals in China. The architectural commission for the Changsha Hospital and Peking Hospital after making an exhaustive study of hospitals, during which they took evidence in every part of China, reported that the advantages of an orientation on a north to south axis, the long sides facing east and west, are almost overwhelmingly great. Experience has amply confirmed their opinion and most of the larger hospitals built during the last ten years have been so designed.

The wards, almost entirely open at their south ends, are swept by the summer winds along their whole length, while they have their backs to the north winds of winter, no small matter in this country of ill-fitting windows, where wards exposing their long flanks towards the north are nearly impossible to heat. The solarium, on the south, is an open-air continuation of the ward. In the Changsha Hospital it takes six or eight all-the-year-round beds, arranged in series with the ordinary ward beds inside. During the summer heat, the shutters are closed along the east side in the forenoon, and on the west in the
The Orientation of Hospitals in China.

afternoon; but in the absence of verandahs the wards are so bright that the fact is scarcely noticeable and there is literally no sunshine within. During the rest of the year, and at nights, all the shutters stand open.

In side-rooms which face the north or south, and in single-windowed wards, there is found the same brightness with absence of sun problems as in the main wards. In those facing east and west, there is little to choose during the sunny parts of the day between the rather pleasantly diffused light admitted by open-slatted shutters, and the corresponding conditions in one-sided rooms opening on to hot and glare-filled verandahs during the same hours. During the remaining twenty-three twenty-fourths of the year, they are immeasurably more airy and bright and whenever desired they can be completely flushed with sunshine.

Ventilation is immensely improved by the new orientation in all parts of the building, even in the one-sided rooms. The unobstructed sweep of the air movements along the north to south axis of the corridor seems to encourage their entrance, even by the side windows, all the way along. In this respect, it is much superior to the old orientation, where the air movements are baffled and broken up in the east to west corridor, which runs at right angles to the general line of movements. Also in the absence of verandahs there is no blanketing, and the air movements in the building respond very sensitively to even the lighter airs outside.

In the smallness of wall area presented to the sunless north, the new orientation has an immense advantage over the old, which deliberately sacrificed its northern face, drawn out, under the obsession of summer fears, to its greatest possible length. It is condemned, with all its rooms, to perpetual sunlessness, to the cold of winter winds, and, worst perhaps of all, to the ingrained damp of driven rain in porous brick walls, which never get a glint of sun from equinox to equinox.

As for actual protection from the shining sun, the ordinary slatted shutter is quite satisfactory. In Changsha, the lower half of it is so hinged to the upper as to open outwards from below. This transforms the lower half into the equivalent of an Italian blind, and with shutters flush with the outside wall, the results are very pleasing.
The Soochow Hospital has adopted the slatted blinds, slung in tapes, which are drawn up out of the way under a small coping in the thickness of the wall above the windows.

The main objection to outside sun-blinds of the Italian type is the expense of upkeep. A satisfactory, and inexpensive substitute, adopted by the Peking Union Medical College for its Nurses' Residency, is the suspension of small reed jalousies from simple iron brackets above the windows, so that they hang two or three feet clear of the walls. They roll up from the bottom, after the manner of jalousies, by cords passing over pulleys above. Their aesthetic effect leaves something to be desired and they need attention in high winds, but they are efficient and airy during the one twenty-fourth period of time when protection from the sun is a real problem. During the rest of the time, they are out of the way, and after the equinox they are removed altogether until the sun becomes troublesome again the following year.

Occasionally it is urged that an exposed western wall will heat through with the sun. Actually, with ordinary thickness of outside wall, there is little to fear, but assurance can be made doubly sure by using "hollow-wall" construction, or merely by stud-plastering. In either case, the half-inch of dead air is an absolute barrier to heating. In Russia, the air-seal between their double windows is effective with differences of often as much as $140^\circ\text{F.}$ on either side of what is otherwise but a pair of trifling sheets of glass.

Finally, there is no ultimate remedy for the inconveniences and discomforts of hot weather, but fans, ice, and endurance. Yet modern architectural science has done so much for us, especially in the hospitals where hitherto we have relied on endurance pure and simple, that the least we amateurs can do is to study its results with an open mind. If we do study, keeping before us all the factors that enter into the problems of physiology, of ventilating science, of bacteriology, of economics, of bed accommodation, and of climate, it is impossible that our conclusions shall remain long in doubt.
TUBERCULOSIS: A RETROSPECT

A. C. SELMON, M.D., SHANGHAI.

For many centuries "consumption" was a term applied to practically every wasting disease that slowly emaciated the body and wore down the vitality. It was not until medicine began to share in the new life of the period in which new continents were being discovered and books were being printed, that examination of the body at autopsy and by dissection laid the foundation for real progress in the study of consumption and other diseases. This pathological examination opened up a new era, and investigators began to report that in the bodies of consumptives that came to autopsy were to be found tubercles, small nodules of diseased tissue. But these post-mortem findings were not of much clinical help to those earlier disciples of the healing art, because they were unable by any diagnostic methods then in vogue to determine the presence of the disease in its early stages.

Further progress had to await the work of a man who was himself a victim of the white plague, Rene Theophile Hyacinthe Laennec. In 1816, Laennec was examining a patient's chest by the only method then known, that of applying the ear directly to the chest wall. Not being able to hear clearly he began to cast about for a better method, and was led to try the expedient of rolling up a sheet of paper into a solid cylinder. By placing one end of this on the chest, and with his ear at the other end, he heard the sounds of the heart clearer than he had ever heard them before. Thus was the use of the stethoscope discovered, for he soon made improvements that produced an instrument very similar to the stethoscopes in use to-day. Laennec had fashioned a new tool and introduced a new method of diagnosis, and thus brought to light things that had previously been beyond man's ken. He worked energetically with his newly discovered instrument, and described and named what he heard in the lungs in health and disease. His work was so accurate that the names he introduced are the ones in vogue to-day, and very little has been added to the descriptions he then gave.

As a result of checking up his physical findings in the examination of consumptives with the findings at autopsy, Laennec announced that tubercle caused consumption. His work established the unity of tuberculosis, showing that no matter in what form it
later manifested itself, it is a disease which starts from a focus and from this focus other tubercles arise in near or distant parts of the body. In Laennec's work there was a faint lead pointing to the infectious nature of tubercle, but as yet no inkling of the true etiology. It was held by those in the front rank of the profession of that day, that there was an inborn tendency or vice which led to the development of the disease, and the tissues of the body once having taken on this abnormal tendency, climatic conditions, dust or some other factor, might fan this abnormal disposition into the production of consumption.

Laennec died ten years after his discovery of the stethoscope. Up to the time of his death and for the succeeding forty years, his teaching that tubercle was the anatomical basis of consumption met with bitter opposition, except on the part of a few who were his followers. Virchow, who was one of the recognized leaders of medical thought, rejected the idea. He held that tubercles were something separate and apart from caseation and consumption; that consumption was the end result of many conditions, e.g., septic infections, pneumonias, colds, etc., and that when a consumptive contracted the tubercles he was the worse off because of the combination, or as one of his associates expressed it, "The worst thing that can happen to a consumptive is that he become tuberculous".

It remained for Villemin, a fellow-countryman, to demonstrate that Laennec was correct in his teaching that tubercle was the anatomic basis of consumption. Villemin called to his aid animal experimentation, showing that whether he injected material from tubercles, from cheesy matter, or from the sputum of consumptives, the rabbits always developed tuberculous swellings, and that these tubercles subsequently changed into cheesy material. Villemin began these experiments in 1865. The French Academy of Medicine did not look with favor upon these revolutionary pronouncements. In spite of all the evidence very few were willing to break with the past. Villemin's experiments were repeated by others and confirmed in every particular. One of the most brilliant and convincing demonstrations was made by Virchow's former assistant, Cohnheim. He injected tuberculous material into the anterior chamber of the rabbit's eye, and was thus enabled to watch all stages of the development of tubercle.
Tuberculosis: A Retrospect.

Following the publication of Cohnheim's work the unity and infectious nature of tuberculosis was generally accepted. Henceforth it was taught that the cause was a virus. Just three years before the discovery of the tubercle bacillus Cohnheim wrote:

"Whoever is convinced of the parasitic nature of the infectious kinds of virus will not doubt that the poison of tuberculosis is something that has form and substance, and for this reason he may with certainty predict that, in the not too distant future, there will be demonstrated in the interior of tuberculous nodules and of scrofulous products those specific formed elements that some lover of historic names may again designate as tubercle particles."

Diligent use was being made at this time of Antoni van Leeuwenhoek's microscopes in searching blood, pus, and every description of diseased tissue, for the specific, formed elements that caused disease. There is no reliable evidence of anyone having seen bacteria in diseased tissue prior to the year 1837 when Alexander Donne saw bacteria in the pus of a syphilitic sore. Soon bacteria were being discovered in almost every accessible part of the body, both in health and disease. It was noted that many varieties might be found in the same specimen, and the inability to separate one kind from another put an effective check to further progress for the time being.

The next advance came when Koch developed his plating method of securing pure cultures. Following this the search for the "contagium animatum" of tuberculosis went on apace. In 1881 Koch himself took up the search and on March 24th, 1882, at a meeting of the Berlin Physiological Society, he reported having traced the life history of the specific cause of tuberculosis, and gave it the name of tubercle bacillus. Koch's work on the bacteriology of tuberculosis is one of the most brilliant chapters in the history of medicine. Starting by exposing to the air sterilized slices of potato, and after incubating finding spots of different colors, each of these spots upon examination was found to be composed of a pure culture of a single organism. He then proceeded to the next step. By taking a needle previously dipped in a mixture of bacteria and drawing it across a gelatin plate, he was enabled to separate one kind of organism from another. Later on, in his work with the tubercle bacillus, he modified Karl Weigert's stain, making it slightly alkaline and then decolorizing
with acid and alcohol, thus discovering the acid-fast properties of
the tubercle bacillus. The culmination of this work was the
formulation and proof of his well-known postulates. Some years
later he made one other valuable addition to the problem of the
diagnosis and treatment of this disease in the production of his
tuberculin.

Concerning the mode of transmission of tuberculosis there has
been more investigation, more controversy, and more shifting of
emphasis than in the case of any other disease, with the possible
exception of cancer. While some of the very earliest writers
believed that it was contagious, yet the rank and file held that
tuberculosis developed spontaneously in predisposed soil. Even
fifty years ago it was not generally believed that the disease was
communicable in any way. In 1865 Villemain had announced that
tuberculosis was the result of a specific causal agent, a virus, and
that this virus originated outside the body. The belief in the
hereditary transmission of the disease held its own, in spite of the
fact that congenital tuberculosis occurred so rarely that even its
very existence was denied. As late as 1914, Roemer could find
but thirty instances recorded, and he states that some of those were
questionable.

Some of the first experiments undertaken definitely to prove
the communicability of tuberculosis were done by two veterinaries,
Chauveau and Gerlach. They infected calves by feeding them
tuberculous material. After the discovery of the tubercle bacillus,
Koch's associate, Cornet, attempted to prove that the infection
was dust borne, and for a decade his doctrine of dust infection held
the field. In 1897, Carl Flügge and his associates began an
extensive series of experiments to discredit the dust infection
doctrine and establish the theory of droplet infection. The evidence
adduced to prove droplet infection served rather to establish the fact
that ingestion is one of the most important means of transmission.

Koch himself held very strongly that human infection occurred
through the inhalation of dried sputum. At the British Congress
on Tuberculosis held in London in 1901, he somewhat dogmatically
announced that tuberculosis was practically always inhaled, and
that the cases of ingested bovine infection in man were no more
numerous than those of hereditary transmission. In 1905, at the
International Tuberculosis Congress at the Hague, Calmette stated
that the digestive tract was the atrium through which the tubercle bacilli found entrance into the bodies of men and animals. From that time up to the present the evidence has continued to accumulate showing that infection by ingestion is very common, and that infection usually occurs during childhood. It has been pointed out how many opportunities there are for the child to become infected in this way; furthermore, in America and Europe it has been proved that fifteen to twenty per cent of childhood tuberculosis is due to the bovine type of the bacillus. Rosenau, summarizing the present status of the discussion, says that human sputum is the main source of human tuberculosis, but whether the tubercle bacilli are usually transferred directly or indirectly, in moist or in dry state, by inhalation or ingestion, are questions still undetermined. Infection occurs in both ways and the question at issue is mainly relative, that is, how often does infection occur by the direct aerogenic route, how often through tonsils and upper respiratory passages, and how often through the digestive tract.

Substantial progress in phthisiotherapy fortunately did not have to wait on the work of the pathologist and bacteriologist, for as early as the second century of the Christian era we find that Galen was recommending milk diet, dry climate and sea voyages in the treatment of consumption. More than two hundred years ago the English Hippocrates, Thomas Sydenham, was prescribing abundance of fresh air and horse-back riding in the treatment of this disease. The originator of the modern sanatorium treatment of tuberculosis was Brehmer of Silesia. A victim of tuberculosis himself, and being convinced of the curative value of fresh air, he first demonstrated its efficacy in his own case. Having succeeded so well, about 1859 he opened a small institution for the treatment of consumptives, making use of the maximum amount of fresh air, together with a very carefully regulated régime of rest and exercise. One of Brehmer's pupils, Dettweiler, also a victim of the white plague, improved upon the methods of his master by placing more stress upon the value of absolute rest in "taking the cure." The third member of the trio of pioneers in the modern treatment of tuberculosis was Trudeau. While taking the cure in the mountains of northern New York he started what has now become the famous Trudeau Sanatorium. The work of Brehmer,
Dettweiler and Trudeau laid the foundation and demonstrated the value of the modern sanatorium treatment of this disease. In view of the complex nature of the problems involved in the effort to eradicate tuberculosis, the progress being made is most encouraging, for in the United States, Great Britain, and Germany, the present tuberculosis mortality of one hundred per hundred thousand is barely half of what it was twenty years ago.

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Trudeau's Autobiography.

PURITY CAMPAIGN, CANTON.

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The first impulse of the writer was to refuse the request to present a paper on a subject connected with sex hygiene, on the ground that there was nothing in the work done or experience gained by him that would justify writing. Later, it seemed to him that in connection with the Purity Campaign held in Canton in 1922, there were ideas and facts worth recording.

In the fall of 1921 the Canton Christian Council, supported by the churches of the city, started a Purity Campaign with the purpose of raising the standard of moral purity of the Christians and increasing their spiritual power. It must be remembered that concubinage and child slavery are common, everyday matters in China, and are not so repugnant to the average new Chinese Christian as to people who have had years of monogamous Christian teaching and experience. Towards those outside the church the purpose was fourfold: (1) abolition of girl slavery; (2) elimination of impure books, pictures, and shows; (3) elimination of prostitu-
Purity Campaign, Canton.

tion; (4) prohibition of polygamy. The first three months were spent in arousing the churches, giving them new ideals, and lining them up for work outside the church. Sermons, prayer meetings, a weekly bulletin, and purity Bible Classes were the means used. Three thousand Christians were enrolled in these classes.

A survey was made and a report presented in January, 1922. It was estimated that slavegirls form over 11 per cent. of the population and concubines about 8 per cent. This means one slavegirl in five-ninths of the homes, and concubines in one-half of the homes. Some of the figures in detail are here given.

Table I. Showing Proportion of Slavegirls and Concubines in Homes of Canton.

<table>
<thead>
<tr>
<th>Families</th>
<th>Members</th>
<th>Slavegirls</th>
<th>Concubines</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homes of middle class</td>
<td>234</td>
<td>1419</td>
<td>180</td>
<td>120</td>
</tr>
<tr>
<td>Homes of students</td>
<td>203</td>
<td>1479</td>
<td>251</td>
<td>89</td>
</tr>
<tr>
<td>Homes of Christians</td>
<td>78</td>
<td>404</td>
<td>77</td>
<td>30</td>
</tr>
<tr>
<td>Homes of other people</td>
<td>283</td>
<td>1176</td>
<td>262</td>
<td>260</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>798</strong></td>
<td><strong>4478</strong></td>
<td><strong>770</strong></td>
<td><strong>499</strong></td>
</tr>
</tbody>
</table>

In a total of 798 homes with 5,747 people, 770 were slavegirls and 499 were concubines. One-third of the concubines were formerly prostitutes; one-third slavegirls; one-fourth were sold into concubinage because of poverty; some were enticed. Very few were concubines from their own desire.

In the city there were 1,936 registered prostitutes. From this source of revenue the government received $773,000, over $399 per prostitute. The reasons for women becoming prostitutes were various. Some said it was poverty; other girls said they had been enticed and sold; concubines followed the life because they did not like their husbands; other victims were orphans, slavegirls; and girls seeking pleasure. Hospital records seem to show that about one in five of these persons had venereal disease. Soldiers were worst affected by them, followed in order by officials, merchants, laborers and students; farmers were almost free. The following table gives the distribution by occupation of venereal disease among in-patients of the Canton Hospital whether they came for the treatment of venereal disease or not.
The China Medical Journal.

Table II. Incidence of Venereal Disease According to Occupation Among Male Hospital Patients

<table>
<thead>
<tr>
<th>Occupation</th>
<th>With venereal disease</th>
<th>Without venereal disease</th>
<th>Total</th>
<th>Percentage with venereal disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soldier</td>
<td>105</td>
<td>130</td>
<td>235</td>
<td>44.7</td>
</tr>
<tr>
<td>Business</td>
<td>60</td>
<td>123</td>
<td>183</td>
<td>38.0</td>
</tr>
<tr>
<td>Laborer</td>
<td>56</td>
<td>187</td>
<td>243</td>
<td>23.0</td>
</tr>
<tr>
<td>Student</td>
<td>12</td>
<td>105</td>
<td>117</td>
<td>11.4</td>
</tr>
<tr>
<td>Farmer</td>
<td>11</td>
<td>233</td>
<td>244</td>
<td>4.4</td>
</tr>
<tr>
<td>Children</td>
<td>0</td>
<td>122</td>
<td>122</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Among the 62 women patients in the Canton Hospital with venereal disease, 60 were married. Of the two who were single, one was a student and one a prostitute. In the Gregg Hospital for Women there were 186 patients with venereal disease, of whom 172 were married, and 14 were single.

In February, 1922, the Purity Campaign was opened with a mass meeting of Christians, who were addressed by Mayor Sun Fo and Minister of Justice, George Hsu. They promised the abolition of prostitution provided public opinion was sufficiently strong to support and justify their action.

A "drive" for membership in the Purity Bible Classes enrolled 8,000 with an average attendance of 6,000. Lectures by leading physicians, preachers, and teachers, and illustrated lantern lectures, were held for two weeks in the principal churches. This was followed by a ten-day exhibit with lantern shows, movies, and morality plays at the Y.M.C.A. On March 31st, 1000 students canvassed each shop in the city asking the proprietors to show their support by posting over their doors the sign: "This shop approves the abolition of prostitution". About four out of every five did so. The campaign was concluded by a big parade made up of physicians, nurses, Red Cross workers, the schools, labor unions, and others. Its object was to present a petition to the officials to abolish prostitution.

In the organization of this campaign, among other secretaries was a secretary for the medical side, as naturally a discussion of venereal diseases would hold an important place. With the secretary was a Health Committee, composed of Dr. F. C. Lee,
Commissioner of Health of Canton; Dr. Chan Tsun Kon, Superintendent of the Municipal Hospital and the City Laboratories; Dr. Chan Hin Fan, President of the Kwong Wa Medical School; Doctors Wong Hang Tong, Luk King Fai, and Chiu Hak Shing, teachers in the Kung Yee Medical School; and the Rev. Eugene Siu. The Committee’s work included all that had to do with sex hygiene, venereal disease, and prostitution. It had to prepare for the two weeks lectures in the churches, special meetings in the Y.M.C.A. and schools, the ten-day exhibit, lantern shows, movies, and the morality plays.

In working up material great help was rendered by the Council on Health Education in furnishing wax models, slides, movie reels, tracts and other literature. Besides the Council’s own tracts they furnished others which were prepared locally. The exhibit consisted of a series of nearly 100 posters showing the evil effects of impure living, prostitution, and venereal disease. Slides, amounting to about eighty, to illustrate lectures on the “Dangers of Prostitution” and “Damage of Venereal Disease,” were made up from pictures of local places of prostitution, prostitutes, patients suffering from venereal diseases, posters, pictures, and the slides loaned by the Council on Health Education. One set of slides on sex hygiene for young men and older boys entitled, “Keeping Fit”, loaned by this Council, was put into Chinese form, both pictures and description, and used with good effect, especially among students.

At first it looked as though all the objects of the campaign were going to be secured; but the anti-Christian movement delayed, and the political upheaval prevented official action from abolishing the evils. Nevertheless, after a year’s time the campaign can still be said to have been well worth while for the public opinion that was formed, for those who were led to live purer lives, for the stand for purity taken by the students of the whole city, for the material prepared and still used in purity education, and for the raising of the ideals of the Christians and making them stronger in fighting moral evil. The church demonstrated that it is a power for righteousness far beyond its numerical strength and social standing.

What contribution can the experience arising from this campaign give toward a programme for social hygiene in China?
r. Value of Campaigns.—All recognize the value of big campaigns and other propaganda in starting health work in China, and are thankful that it has made possible the next step, namely, the doing of various bits of health work as models for demonstrations and to secure experience for larger work. It must not be inferred therefore that the day of such campaigns has passed. True, much of the effect is transitory, yet enough is permanent to justify their continuance. While not lessened, their usefulness is more specific. If such Public Health work is about to be undertaken as vaccination, trachoma, hookworm, venereal disease clinics; tuberculosis prevention, baby welfare and school hygiene, propaganda is a necessity.

2. Campaigns to obtain official action.—There is a large use for campaigns for this purpose, although we record the failure to secure the ends sought in the Canton Purity Campaign. This was due to a cause beyond local control—the political upset. Our experience in this and other attempts at official co-operation inclines to the judgment that anything requiring official action should wait till there are officials with sufficient permanence of office to enable them to act, in the meantime quietly working up things for the government to do later.

3. Campaigns of a general or specific nature in cooperation with the Church.—These campaigns are very useful, as proven by the lantern lectures in connection with evangelistic meetings, as well as in the purity campaign. Opportunity for work of this kind is not to be neglected. It has value more than the mere drawing of crowds. It is a gospel of goodwill, a message for the saving of life; and, as such, it predisposes the hearers to consider favorably the message of the preacher.

Suggestions as to Methods.

1. Use the Students.—Students did their part well in the study classes, in the survey, in the city-wide canvas and in the parade. This means that one generation of students of Canton took a decided stand for purity and acquired some useful knowledge of sex hygiene. It ought to mean much for the personal purity of each student.

2. Morality plays.—For drawing crowds and driving home lessons in pure living and in results of impurity morality plays are very useful and can be given anywhere. The Chinese are good
actors and enjoy plays. A popular dramatic club and several churches and schools gave plays. Each troupe wrote and worked up their own play, but care was taken that nothing objectionable was staged. A different play was put on by a different organization each evening.

3. The Exhibits.—Campaign exhibits should be improved and made up into a set or two of charts. These and the slides make good material for propaganda against venereal disease and should have a wide use.

Social Hygiene Program.

If, as may be judged by the Conference held in May, 1922 and the Educational Commission Report, the medical missionary should do health work and make the hospital the center of a wider community service, then the social hygiene program is an important line to consider, not only in purity campaigns but in venereal disease clinics, in work among soldiers, and in the teaching of sex hygiene in schools. It is a line closely identified with religious work, and church and hospital can be of help to each other.

1. Teaching of Sex Hygiene in Schools.—How to teach sex hygiene to the young is a perplexing and delicate question in the home countries. It is hard to say what is the right procedure in China. Our experience with the set of slides translated from the “Keeping Fit” set is, that this method of education is very helpful to young men and boys in middle schools. A set suitable for girls should be made, and both sets used in the schools so that each student could see them at least once. The films, “How Life Begins,” are good to be used in connection with the slides. Since the slides have written descriptions with carefully selected sex hygiene teaching sufficient for boys and young men and requiring no oral explanations, it makes almost a “fool-proof” method for teaching the subject.

The incidence of venereal disease among students as shown by the cases in the Canton Hospital mentioned above, indicates a need for sex education so that students may not get venereal diseases while ignorant of the danger during their school days, and that they be forewarned of the danger when they enter business or professional life when, as we know, the incidence is high.

2. Venereal disease in Soldiers.—The figures which we have given as to the distribution of venereal disease accord with the
observations of many others in various places, and present a peculiar problem that should have immediate attention, namely, the high incidence among soldiers and the low incidence among farmers. Soldiers are mostly drawn from the farmer class. What will happen when these soldiers are disbanded and go back to homes and communities where the incidence of venereal disease is low, or are moved from one community to another? In the U. S. army it has been demonstrated that venereal disease can be controlled in a body of men under discipline more easily than in civil life. This is a field of effort well worth trying, especially among soldiers commanded by officers willing to co-operate.

3. **Venereal Disease Clinics.**—These produce more lasting educational effects among people among whom it is most needed than purity campaigns, and have the added importance in that treatment has a large place in prevention. Another consideration is that this work supports one of the important teachings of Christianity. As such it should compel a high standard of purity in the church, add greatly to the prestige of the church outside, and be of no mean apologetic value. Hospitals located where prostitution or the social evil is prevalent should take this into account in planning community or health service. Venereal disease clinics should be one of the first things started in social hygiene work. Campaigns, propaganda, sex hygiene teaching can be carried with added force from a hospital, as a centre, holding venereal disease clinics.

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**THE DEMI-MONDE OF SHANGHAI.**

The following article is the gist of a pamphlet published by the Moral Welfare League based upon careful investigation. Written by Chinese it tells of the underworld of Shanghai as it was in 1920, before the policy had been adopted by the Municipal Council of withdrawing the licences to immoral houses, and of gradually closing them. The information is given here because there are probably the same grades of prostitution in every large Chinese city, and as a considerable number of the patients who go to mission hospitals and dispensaries are sufferers from venereal disease it may be useful to know something of the circumstances in
The Demi-monde of Shanghai.

which it was probably acquired. In this miserable traffic Chinese women and girls seem to reach the lowest point of human degradation. They should be pitied and helped, the more so as many have been driven into the life against their will; or, because of their ignorance and foolishness, have been enticed into it. Wherever there are Christian missions, steady and united efforts should be made to abolish, or at least to diminish, this terrible evil, by Moral Welfare Leagues, Purity campaigns, Health campaigns, and the establishment of Rescue Homes.

"Sing-Song" Girls.

Those who are commonly called "sing-song" girls have been known by various names in Chinese, the more fashionable designations not being equivalent to "sing-song," but to "story-teller" or "entertainer," 書史 or 講史 or 說書人. The term shu yu 書寓 was used to denote the residences of these so-called "narrators of books" or entertainers. The places of public entertainment where they displayed their art were called shu ch'ang 書場 or shu lou 書樓. This class of prostitutes (妓女) in their residences sold their (色) beauty and in the public places of entertainment they sold their skill. The two matters were kept quite distinct from each other. That the "sing-song" girls practised prostitution in their residences was an open secret (賤淫是公開的秘密) but they themselves said they only sold their skill, and would not admit the secret vice. Their apparent income (from singing) was small, yet they were able to display great extravagance and might be seen with opium pipes or water tobacco pipes worth eight hundred or a thousand taels. As for the splendour and extravagance of their clothing there is no need to speak about it.

In the early days of Kuang Hsii the "sing-song" girls of the Chinese city nearly all migrated to the International Settlement, and their signboards could be seen in many streets; their number was then from 200 to 300. As they became more numerous their price declined, patrons were of a poorer class, and eventually the "sing-song" girls joined the Ch'ang San class of prostitutes. Attempts have been made to re-establish the prestige of the shu yu, but these have been short-lived, and the name shu yu is now chiefly one of past history.

The Ch'ang San (長三) Class

The term "Ch'ang San" is the name of a domino used in playing; it has three dots doubled. In past days a certain class of prostitutes received three dollars for their services in pressing guests to drink, and three dollars more for accommodating the guest for the night. These fixed amounts resembled the "double three" of the domino, so this class of girls became known as the ch'ang san. At one time they used to be Shanghai's highest grade of prostitutes. When the name became common, some noted women introduced the name shu yu to differentiate between higher and lower classes, selecting for the former those who could gain a living by their skill. The distinction being made, some of the patrons naturally preferred the shu yu
and lightly regarded the ch'ang san, so in the early years of Kuang Hsü the latter had come to be regarded as a lower class of prostitute. When the ch'ang san moved into the International Settlement they did not number 500. Subsequently, when the shu yu was no longer a novelty and men began to tire of it, the ch'ang san used their best endeavours to better their position; they abolished the "double three" system and followed much the same customs as the shu yu, but made themselves very accessible to pleasure seekers; thus the "sing-song" girls of the shu yu were displaced by the ch'ang san, and had nothing to do but change and themselves become ch'ang san; and this class then naturally became the highest class of prostitutes. For a time the name "story-teller" was applied to them, but as they seldom appeared at the entertainment halls, or if they did they only sang a few songs and did not tell stories, they gradually ceased to be called and were only called hsien sheng. Their ways of getting money from the guests were many; besides what was paid for encouraging drinking and for the accommodation of the night, there were the expenses of the feast; these costs from four taels to ten taels, and the brothel's share was about one-third. Then there were presents or tips, amounting to about four taels; it was reckoned that half of this was to go to the instrumentalists and accompanists, and half to the cook and servants; but in reality the greater part of it went to the brothel.

The receipts of the ch'ang san are four kinds. 1. The price for going to a place when invited; 2, the share of the feast expenses; 3, receipts from the games at cards or dominoes; 4, presents and tips. The first of these was one dollar; the feast would bring in 10 dollars, and dominoes six dollars or more. While under this plan nothing was openly charged for spending the night, yet in fact what with one thing and another this item cost more than the previously mentioned four kinds put together, as one night would cost the pleasure-seeker from 30 to 50 dollars. The gambling receipts are now more, as many men connected with foreign firms, and returned students, like to play poker for high stakes and it is customary to reckon twelve dollars as the girl's share.

The life of a ch'ang san is at best one of great bitterness. There are some people who can only speak of the gaudiness and extravagance of the ch'ang san prostitutes; but they do not know of the bitter tears of the girls, and that the gaudiness is but a sign of their distress. When their charms begin to fade and men look coldly on them and pass them by, they cannot then escape the beating and cursing of their mistress, and ridicule and indignities from others; at such times only the sun knows their grief by day, and the lights see their tears fall at night.

There are three kinds of ch'ang san prostitutes—the free, the half-free, and those not free at all. The first kind enter the brothel of their own accord, pay all expenses from their earnings, and are in everything their own mistresses. The second kind have mortgaged themselves to the brothel for a term of years, after which they revert to their previous condition; in this case some control is exercised over them by the house. Those not free have been sold absolutely to the brothel and are regarded as chattels to be
The Demi-monde of Shanghai.

dealt with as their owners please; they have a very bitter lot. At present
most of the ch'ang san belong to the second kind; those of the third kind are
fewer, while those of the first kind are not more than one in 20 of the whole.
There are also some mothers who put their own daughters into prostitution,
but these are few.

In 1918 the number of ch'ang san was about 1,200. The numbers of
those engaged in brothels in various capacities is quite as large, as every
prostitute of the ch'ang san class has one or more attendants of much the
same moral character, so the number just given might safely be doubled.
In an estimation of the number concerned there is also to be taken into
account the mistresses and other women, the book-keepers, cooks and
servants, runners, rich pullers, etc.

The Domino Class.

We next speak about the "Yao cr" (△）class. Yao cr is the name
of a domino, the "one-two" (Ｉ・Ｉ). In the early days of T'ung Chih, there
was at Shanghai a class of prostitutes who received 1,000 cash as tea money,
and 2,000 cash for assisting in the wine drinking. This reminded people of
the "one-two" domino, so the name Yao cr was popularly applied to these
girls. This class at one time ranked about the same as the ch'ang san, but
as the last-named advanced to the place of the shu yen, the yao cr were left
behind and are now regarded as a lower class. The receipts from their
patrons were 1,000 cash for tea, 2,000 cash for the wine drinking, 5,000 to
10,000 for the feast, and 2,000 for the night. This was afterwards changed,
so that while new acquaintances paid for tea, regular patrons paid nothing;
the feast cost $6 or $8, and there was $12 for cards or dominoes. For the
accommodation of the night, newcomers, or those who had not shared in the
drinking or playing, paid $6, while old friends just gave $2 as a present.
As lower grades became more popular, the yao cr lost some of their business,
their patrons being limited to a few of certain classes. An investigation in
1918 gave the number of yao cr at about 500.

The life of the yao cr is a hard one; in clothing, housing and food, the
conditions are unsatisfactory. Being of a lower class, they wear poor
clothing, and their food is very poor; the houses they are in may be passable
on the outside, but they are extremely bad inside. Except those who have
night guests, they are packed five or six in a small room without as much
comfort as pigs or dogs. Those with guests have beds, truly, but what
sleep can they get? They have other hardships; when the guests are
many the girls suffer physically, and they contract venereal diseases. If
the guests are few, they are bullied by the mistresses and others and this
kind of life is a life of hell.

The "Pheasants" or "Wild Birds."

The Yeh Chi (野鸡), "Pheasants," or "Wild birds," are a class of pro-
stitutes who go about from place to place like flying birds, and as their
gaudy clothing resembles the pheasant, the name yeh chi or pheasant, has
been given to them. Formerly they operated in the Chinese city, but gradu-
ally they invaded the Settlements until, in the central parts, they could be
found anywhere. Their number is greater than that of any other class of prostitutes, they are of low class, and are entirely dependent on vice for a living. They are great disseminators of venereal diseases, and in general are much like mere animals, so people regard them simply as a means for passion gratification and do not think about their condition, which is worse than that of animals, and cannot be regarded as human. As the number of yeh chi increased, they became of different grades; besides those who stood on the sides of the streets, there were those who went into tea-shops, or wandered about the streets seeking custom, so that vice-seekers were gathered in by them from all classes. The practice of seizing hold of men was followed by some; others used their arts to get men to go with them to places for immoral purposes. Bartering took place on the streets, and the girls would go wherever the patrons wanted. Street-walking began about seven in the evening, and went on till eleven or twelve, and these girls were known as "night-wandering spirits" (夜遊神). An investigation made in 1918 of the numbers of yeh chi gave an estimate of at least 6,000.

The lower class of yeh chi consisted practically entirely of those who had been sold into the life, and they had no freedom of movement to speak of. In teashops and on the streets their business was to attract men; in the former much trouble and many arts were required to lead men to the houses, and often efforts failed, so it was not an easy task. But the streets were worse. No matter the weather, hot or cold, rain, frost, or snow, when evening came they must stand in groups and call out to men and on the least response they must take hold of them and cajole them to respond. If not successful, the girls were beaten. In the cold weather their clothing was insufficient, but as they dare not go back without a patron they had to stand shivering and enduring hardships from the elements. If they secured a patron they had a little respite, but if not they knew what to expect from their mistress, and the poor girls could only prepare their skins for a good hiding! The lower grades had very poor food and no proper sleeping accommodation. Among the yeh chi there are very many girls of 13 and 14 years of age; this compulsion of young girls to prostitution is a crime against humanity, but brothels are most anxious to get these young ones, and the mistresses are after profit, so while the brothel system is allowed, the compulsion of these young ones cannot be avoided.

The P'ëng Ho T'ai.

The name P'ëng Ho T'ai (彭斡) is given to a class of prostitutes who hang out signs at their doors, giving their names, and in their houses there is card-playing and drinking, with payment for the same similar to the ch'ang san. When they go out by invitation, the charge is $1. Some of them have no fixed charges for the night's accommodation, but those connected with the smaller places require at least $10. There are about 40 houses, with about 110 inmates of this class.

The White Pigeons.

The Po Ko Tang (白鴿堂) are the "White Pigeon Gang." Pigeons only know their old homes, and if taken elsewhere they take the first oppor-
The Demi-monde of Shanghai.

The homing pigeon is a bird that returns home to its nest. The class of women who are considered to be similar to the homing pigeon in Shanghai are known as "white pigeons." This is because they are particularly prone to escape and leave their husbands or the money they were sold for. The term "gang" has been added to describe the actions of these women working together. Men kidnappers, often using various devices, kidnap a woman and then use their power and art to gain her affection. When they know she will return, they sell her to some foolish rich man, as a way of relieving him of some of his money. Various schemes are used. The man will sometimes himself sell the woman to the victim, and cause her escape soon with some valuables; at other times someone else will take the woman, and after a few days the pimp will appear to claim her, asserting she has been kidnapped, and talking about going to law, and so extorting money from the victim as well as taking the woman away. Another plan is for the woman to entice the victim to her house and while in the midst of his infatuation he is seized and charged with adultery and made to pay heavily to settle the matter.

The Hwa Yen Chien.

The Hwa Yen Chien (花嫖娼妓女) are a lower class of prostitutes whose lives are very pitiable. Disease is so rife amongst them that almost every one of them may be called a representative of disease. In 1918 there were over 1,000 of these girls: some have been sold to the brothels because of poverty, others have been kidnapped or in other ways victimized. They are the slaves of the mistresses, and their earnings are taken by them. By day or by night these girls have to be on the lookout to invite patrons, and on receipt of 20 cents they have to submit to vice. If they have a guest for the night they may get a little rest, but otherwise there is little or no sleep for them. The mistresses treat them harshly: if they do anything a little displeasing, anger is vented upon them, and if they do not secure many men they are beaten and cursed. They have to be seeking business in all kinds of weather, and also occupy spare time with needlework.

The "Nailing Shed" Class.

The Hwa Yen Chien might well be called the lowest class of prostitutes, and yet there is a lower class still, a most deplorable set the "Nailing-shed" prostitutes (鉚嫖娼妓). Ting Pêng Ch'ang Chi. The origin of the name Ting pêng cannot be discovered for certain. There are in Shanghai about 40 of this class, who have sunk below the other classes. They are so full of disease as to be outcast, or they are of evil disposition, or they have been sold specially out of spite by hard mistresses. The price of their service used to be five cents, but may now be 10 cents: and yet they have so many visitors of the lower classes that they may make $2 for the day and night: if they take less than this their mistresses exhibit the whips of punishment.

The Salt-Water Sisters.

The Hsien Shui Mei (鹹水妹), Salt-Water Sisters, are Cantonese prostitutes who mostly live at Hongkew and their number in 1918 was about
Most of these girls speak a little English, and cater to foreign sailors and soldiers, etc. Others are patronised by Cantonese. These girls dress differently from the usual Chinese courtesan; they do not have the gaudy finery, and often they do not wear stockings, and at times are bare-footed. They are more hygienic than some others, partly because of the Cantonese love of cleanliness, and partly because they wish to attract foreigners.

**Immoral Houses**

To complete the picture of Shanghai’s underworld, mention must be made of various other forms of vice-attractions, and this will now be done briefly.

There are places where men and women are introduced to one another for illicit intercourse, which are known as *t’ai chi* (台基). Some of these are camouflaged as photographers’ shops. A place is rented, and arrangements made with a few girls, and the thing is begun quite easily. At first there are some restrictions, and only those who are known can enter, but in course of time anyone can go. The higher graduates of *t’ai chi* require $10 to $15 for introducing a couple to each other, and the next grade want $5 to $8; of this amount two-thirds go to the girl, and the rest to the master of the shop or house. Most of the girls who go to these places have an infatuation for some particular man, but because of family difficulties they cannot get their desire, so they use this means to gain their end. At first they only have relations with the one to whom they are specially attracted, but the proprietor of the house knows how to take advantage of the weakness and brings pressure to bear, with the result that after one visit other visits are paid, until the girl becomes a regular prostitute. Some girls go to these places from economic reasons, or family or marriage difficulties; others are led by passion and seek introductions with the idea of gratifying desire and getting a little extra money at the same time.

At the time when opium dens were in evidence, there were women who frequented them for vice purposes; these were called (妓院妓院). Tea-houses are often associated with vice, and so are many places of amusement. Many Chinese hotels are used for assignation, this being a very serious form of the evil at Shanghai. Houses or rooms are often advertised as being to let, and on inquiry it is found that the intention is temporary accommodation for immoral purposes. What are known as “little rooms” (小房子) are also rented for these purposes, and are much frequented.

**Reform**

Gambling, drinking, opium-smoking and extravagance are associated with prostitution, and it is not easy to effect reform in these matters. Various attempts have been made to improve matters, and there are also institutions for rescue work, the Door of Hope being especially well known and appreciated. After hearing the report of the Vice Commission not long ago, the foreign ratepayers at their annual meeting adopted the policy of gradual elimination of brothels from the International Settlement. It will be an excellent thing if we all help the movement which has such a good intention.

When the sixth edition of this well-known work was issued a short time ago, it was favorably reviewed in the Journal (1920). A new edition has now appeared, and the opportunity has been taken to make a careful revision so as to bring all the articles up to date. The therapeutic advice given by the author is no more repetition of what may be found in other medical works, but is largely based on his own personal experience, supplemented in the surgical sections by the contributions of specialists. Reference to every subject in the volume has been made easy, as in addition to the diseases being arranged alphabetically there is a very full index at the end. As the articles practically cover the whole field of medicine and surgery it is a most useful work for the busy general practitioner to have on his office desk, and to carry with him when travelling or staying at health resorts. This edition brings the number of copies disposed of to 38,000, so further commendation is hardly necessary.


It is the author's object to present a concise description of the most important pharmacologic reactions and to show their practical use in influencing the various disturbances that occur in disease. The first part of the work consists of a general consideration of drugs and their administration; in the second, a description is given of all the drugs in the U. S. Pharmacopeia according to their therapeutic action, also antitoxins, vaccines and serums, and remedial measures other than drugs; the third part deals with applied therapeutics, the treatment of the principal diseases being given. The work has been brought well up to date. In this edition reference to the following agents appears for the first time: benzyl benzoate, papaverin, pituitary extract, thyroxin, thromboplastin, methyl alcohol, benzyl alcohol, mercuriochrom, germanium dioxid, enectin, yeast, acid sodium phosphate, aluminum chlorid, phenobarbital (luminal), cinchrom (atophan), silver arsenenamin, acriflavin, proflavin, profalin, surgical solution of chlorinated soda, chloramins, scarlet red, quinidin, ethyl-hydrocuprein (optichin), surgical paraflin, carbon dioxid snow.

To general practitioners the volume is commended as a careful, reliable guide concerning the properties of drugs, and their uses in the treatment of disease.

The wide scope of the work is indicated on the title page. It is intended primarily for college students and for readers who wish to obtain a general knowledge of the important applications of bacteriology as well as of the principles that underlie it. Believing that no science has a more intensely interesting history than bacteriology and that few textbooks treat it in more than an incidental fashion, the authors have dealt fully with this side of the subject. Plant pathology has been included in the part dealing with animal and human diseases.

The work is written in a clear, interesting style, and it should be of value not only to college students, but to all who are interested in matters relating to public health; indeed, not a few physicians may read it with profit as it gives much information not usually found in bacteriological works intended only for the medical profession.


This little book of only 140 pages is packed full of sound knowledge. It is an elaboration of widely quoted lectures which first appeared in the American Review of Tuberculosis. Members of the medical profession especially concerned in waging war against the white plague have very little hope of ever finding a specific cure. Practically all feel that further progress lies in a better understanding of the circumstances and conditions that control infection, and after infection has once taken place it is felt that immunity is the controlling factor. Environment is shown to be an all-embracing term. Under this heading are discussed not only physical environment, but also occupation, psychic factors, malnutrition, fortuitous and accidental circumstances, infectious diseases, etc. The suggestion is made that immunity is a function of allergy, and therefore in discussing resistance, allergy is given the place of prime importance. The author has succeeded in giving a very clear and convincing presentation of allergy and the part it takes in the symptomatology, pathology and therapy of tuberculosis. The practitioner who wants to be up with the latest on tuberculosis will find the book most profitable reading.

A. C. S.


This little volume belongs to a series of “Aids” specially designed to assist students in grouping and committing to memory the subjects upon which they are to be examined. The information given is adequate and reliable, and, though compressed, is presented in a clear and interesting manner. “Aids to Gynaecology” is one of the best of the series.

Report of United Fruit Company Medical Department. 1922.—The United Fruit Company has about 67,000 employees. It owns 1,577,000 acres of land in tropical regions, and leases an additional 162,000 acres, with streams and their tributaries, also swamps and ponds, all possible breeding places for mosquitoes. On its plantations, or adjacent to them, there are at least 150,000 people who must be provided with the
Correspondence.

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

To the Editor, C. M. J.

Dear Sir:

As the causation and treatment of sprue is now attracting so much attention in the Far East, perhaps you can find room for the insertion of the accompanying instructive account (Jour. Amer. Med. Assn., June 30, 1923) by a medical man of his own personal experience of the disease. Being very much interest-
ed in sprue myself, I hope that the remedies suggested by this writer, Harold Scott, and others will be given a thorough trial by practitioners in China and a statement of the results sent to you for publication.

Yours sincerely,

A. A.
A Personal Experience with Sprue

S. M. Lambert, M.D., NEW YORK.

Along the coast of North Queensland, Australia, there are endemic areas of sprue. In December, 1918, I began field work for the control of hookworm disease in this region, succeeding a man who had been invalided home with sprue. Previous to his departure, I had lived in close association with this man for six weeks. In January, 1919, I developed a condition that was diagnosed as sprue by Dr. Philip S. Clarke, a physician of Cairns, who has had years of experience with this infection. There were no mouth symptoms at first, but I had all the gastro-intestinal symptoms attendant on the disease: intestinal fermentation, and the characteristic frothy, straw colored stools, enormous in amount, which would begin early in the morning and continue until afternoon. These were accompanied by a mental depression out of all relation to the condition. I restricted my diet to bananas and milk, and this measure in a few days checked the number of stools. It brought about a severe constipation, however, but this was finally relieved by liquid petrolatum. In the district in which I was working, it was almost impossible to obtain bananas and fresh milk outside of Cairns, and when the supply of fruit and milk that I took with me on my field trips gave out and I tried other food my sprue motions invariably returned.

By the early part of March, my weight had fallen from 232 to 193 pounds (from 105 to 87.5 kg). About that time, my attention was called to an article by Brown, who had studied the gastro-intestinal contents of a Porto Rican suffering from sprue, and had found them entirely lacking in hydrochloric acid and pancreatin. The patient showed marked improvement when these substances were administered to her.

I obtained a supply of the acid and pancreatin, and determined to give them a thorough trial. That night I took a dose of the acid and then, for the first time in two months, ate a hearty dinner. This included deviled crab and beefsteak. Half an hour later, I took 10 grains (0.65 gm.) of pancreatin, and passed a tranquil evening and night, though I had some distention with gas.

I continued the treatment until September, taking 15 minims (0.2 c.c.) of 0.2 per cent. hydrochloric acid before, and 10 grains of pancreatin after, each meal without dietary precaution. During this period I modified the method by sipping the acid in a large glass of water with my food. One day in May, I forgot my medicine, and was forced to eat a meal without it; the next day I was awake from very early morning with sprue stools. Fasting for one meal and resuming treatment corrected the difficulty. In July, I tried to discontinue the medication, but after five days I was forced to resume it, as this time I had a sore mouth as well as sprue stools. My tongue still shows the effects of this experience. By September, I found that I could do without the medicine, and I remained in Australia in endemic centers for another year without the recurrence of symptoms.

The hydrochloric acid-pancreatin treatment spread into general use along the Queensland coast, and was found quite satisfactory in the treatment of many early cases. We cannot expect it to be effective in cases of long standing when we remember the extreme destruction of tissue occurring in such cases.

I am giving my experience with this treatment because it saved my health and enabled me to continue my work, and I think that it merits more general attention than it has attracted.

Correspondence.

Brigandage in Hupeh.

To the Editor, C. M. J.

Dear Sir:

As many of your readers will have learnt from the newspapers, we have had the misfortune to be in the way of a large band of brigands, who, issuing from the south of Honan Province, have been damaging the landscape in the north of Hupeh. Two schools, two Bible schools, Chinese doctor's house and some smaller buildings, as well as my own house, have been burnt out, but the main hospital buildings were not burnt, in spite of efforts in that direction. The banditti, however, did their best to stop medical work for the present, for they stole whatever they thought worth taking away, including building, instruments, etc., and what they did not carry away they most effectively destroyed. Even the dispensary bottles, wooden chairs and tables, and kitchen crockery were smashed up, and the beds broken.

Our local London Missionary Society Council has steadfastly set its face against demanding indemnities for various reasons that will readily occur to those who have ever had anything to do with their collection, not the least reason being that it has been the practice in the past for the money to be wrung out of the people of the locality, leaving a long-lasting legacy of ill-feeling. On the other hand, we are naturally very anxious to re-start the medical work as soon as possible. The purchase of the necessary drugs, instruments and equipment, however, is going to be a serious matter, and I am writing this letter hoping there may be some means of refitting at a reasonable cost. May I ask all who are in charge of hospitals that they would look over their equipment and note any of it that is really spare stuff and not wanted. Probably many hospitals are now receiving new equipment and scrapping old, and it may be that new hospitals are just being finished and the equipment of the older buildings is not suitable. If so, the superintendents will do us a real service and give us big help by writing to me and sending a list of the equipment that they can spare, and its price. I am not proud, and I shall not take exception to the price being low. Our hospitals accommodate about 50 patients, and we run over 1,000 in-patients and 16,000 out-patient visits in the year. This will give some idea of the type of equipment required.

May I add that speed is important. It so happens that the hospital has been crippled at a time when it is most necessary to the people of the district, and though for a little while we can work along with improvised equipment we cannot do anything like the amount or quality of work that we should. Please do not forget that practically all our equipment is smashed. Dispensing bottles, laboratory apparatus and equipment, these as well as the more obvious requirements of instruments, dressings, operating room furniture, etc., are needed. We shall indeed be grateful for any help or suggestions that can be given.

Please address all letters to me c/o Dr. T. Gillison,
L. M. S. Hankow,
as Tsao Shih is still too unsafe a place to wait for correspondence in.

Yours very sincerely,

J. L. H. Paterson.

September 5, 1923.
NEWS AND COMMENT.

BIRTH.

KING.—On July 27th, 1923, at Lanchowfu, Kansu, to Dr. and Mrs. King, of the China Inland Mission, a daughter (Ivy Star).

MARRIAGES.

The wedding of Miss F. R. Mead, to Dr. Walter Garfield Hiltner, of Shanghai, took place on Wednesday, August 8, 1923, at the bride's home, Sunnyside, Plainfield, New Jersey. Mr. Frederick R. Sites formerly of Shanghai, acted as best man. Dr. and Mrs. Hiltner sailed immediately for Shanghai.

On June 30, 1923, at Danville, Kentucky, Miss Margaret Esther Erskine was married to Dr. Richmond Douglass, elder son of Mr. and Mrs. C. W. Douglass of the Presbyterian Mission Press, Shanghai. Dr. and Mrs. Douglass have been appointed missionaries under the Northern Presbyterian Board and hope to arrive in China next month.

OUR EXECUTIVE SECRETARY.—Office address, 4 Quinsan Gardens, Shanghai. Residence, 135 Dixwell Road. At either place the Secretary will deem it both a privilege and pleasure to see members of the Association whenever they are in Shanghai.

REGISTRATION OF CHINESE DOCTORS.—A storm of protest is being raised by local Chinese against the decision of the authorities to have all Chinese medical practitioners and herb shops registered with the Bureau for the Suppression of Drugs. The doctors and herbalists have threatened to strike unless the order is cancelled forthwith, but the Street Unions have urged them not to take this drastic step until they (the Unions) have conferred with the authorities.

THE MAGGOTS "EXTRACTED" BY CHINESE DENTISTS.—One of the impressive performances of the Oriental quack is to discover a maggot in some aching organ of his patient. It has been found by Pawlowsky (Bull. Soc. Path. Exot. November 1922,) that some larvae "extracted" by Chinese dentists from aching teeth are Cecidomyiidae (gall gnats).

DENGUE IN MANILA.—An epidemic of dengue, or influenza, has been recently spreading throughout Manila. The number of sufferers increases daily, and the Bureau of Health officials are at a loss as to the cause of the infection, its extent or the method of control best calculated to give the most effective results. Officials of the contagious diseases division of the service declared recently that they know little if anything of the situation owing to the indifference in reporting cases of infection.

FREE VENEREAL CLINIC IN SHANGHAI.—The Municipal Council of Shanghai has opened a free Clinic for the treatment of foreign seafarers and indigent male foreigners with venereal disease.

CHINESE DOCTORS ON STRIKE.—Kinkiak is in a bad way. It is without native doctors, according to a Chinese statement. The officials proposed to have an examination to set the qualifications of the native medical fraternity who, however, disagreed with such an action and went on strike last week.

DR. GREIG'S WORK IN KIRIN.—The principal work of the American Red Cross for Russian Refugees has been in Kirin, where General Dieterichs and between six and seven thousand of his men took refuge in
December and January after the evacuation of Vladivostok. Hospitals for men and women were established, dispensaries and bath houses, together with dining and work rooms for women and children, were opened in the various internment camps, underwear and other clothing was distributed and outbreaks of typhus and typhoid were checked. All this was due to the active and able Committee of the handful of foreign missionaries and Y.M.C.A. workers in Kirin, under the very capable chairmanship of Dr. J. A. Greig, for 34 years a missionary in that city.

DR. WU LIEN-TEH.—"We understand that Dr. Wu Lien-teh has been invited by the Imperial Universities of Tokio and Kioto to visit Japan and give a course of lectures before the staff and students of these institutions. The large conference of Japanese doctors, meeting at Kishin on October 13-14 of this year, has also sent a letter to the distinguished Chinese scientist to attend its meetings. All things considered, China is indeed going ahead."—N.-C. Daily News, Aug. 14, 1923.

THE RELIEF OF LEPROSY.—On July 13, 1923, Viscount Chelmsford presided over a meeting at the India Office, attended by influential personages, which unanimously decided to form a British Empire Leprosy Relief Association. A strong general committee was appointed with an executive committee and sub-committees to prepare plans for carrying out the object of the Association with a view to ultimately eradicating the disease from the Empire.

ESTABLISHMENT OF MEDICAL COLLEGE IN CHINA.—As a preparatory step for the establishment of a medical college in China, Dr. Tatsu-kichi Irisawa, head of the Medical Department of the Tokyo Imperial University, was sent to China on July 15th, 1923, to investigate the medical needs in the country. The plan is referred to as the first step of cultural works for the welfare of the Chinese people, to be shortly undertaken by the Japanese Government with a fund voted by the Diet at its last session. The proposed hospital is expected to cost Y.3,500,000.—Japan Medical World.

ESTABLISHMENT OF FOOD RESEARCH LABORATORY IN JAPAN.—With a view to improving the health conditions of the Japanese people, Baron Masuda and Baron Mitsui have contributed Y.200,000 to Keio University to establish a food research laboratory in connection with the University Hospital. The institute is reported to be the first of its kind in Japan. Dr. Z. Kawakami has already been sent by the University authorities to Europe and America to study similar institutes in those countries and Dr. K. Omori, who is expected to be appointed head of the institute, will also make a trip abroad for inspection this fall.—Japan Medical World.

THE TRAINING OF NURSES.—"Every year we become more impressed by the importance of the training of nurses. The patients, in being cared for by educated women from among their own people, and the nurses, in undertaking this work, learn more of the Christian ideal of service than they could perhaps in any other way. The nurses, too, have an intimacy of contact with the minds of the patients which it is almost impossible for a foreigner to gain, and lessons both spiritual and hygienic come home with greater force from their lips and lives than they do from ours. As a woman medical missionary said when the training of Chinese nurses was in its very early stages, 'I can see in this movement one of the greatest healing and evangelising agencies in the whole of China.'"—Report of Engi. Baptist Mission Hospital, Tatsuyenju.
The China Medical Journal

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