THROMBO-ANGIITIS OBLITERANS IN CHINA.


This article is intended to supplement the paper on thrombo-angiitis obliterans which appeared in the CHINA MEDICAL JOURNAL, September 1917. The points which will be considered are: (1) the results of the questionnaire as to the occurrence of this disease in China; (2) differential diagnosis, and (3) treatment.

I. GEOGRAPHICAL DISTRIBUTION.

The following data are based upon the replies made to the postcard issued in September of last year. To those who supplied the information, the thanks of the Association are due.

Altogether one hundred and two replies were received, of which four were unfortunately valueless owing to various omissions. Of the remainder, forty-four reported that they had met with cases of thrombo-angiitis obliterans, while fifty-four replied in the negative. Only eight physicians had met with cases amongst women patients, and even these physicians (with one exception) noted that the large majority of the patients were men.

It will be seen from the accompanying tables that this disease is met with in all parts of China, from Chengtu in the west to Shanghai in the east, and from Harbin in the north to Canton in the south.

Table I shows in parallel columns the affirmative and negative replies arranged according to provinces, with the name of the physician reporting in each case.
H.E. HSU SHIH-CHANG, President of the Chinese Republic.
METHODS

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J

/ EXCELLENCE


KALMERID CATGUT, BOILABLE - Not only sterile, but being impregnated with potassium-mercuric-iodide, exerts a local bactericidal action in the tissues.

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## Table I.

**Showing the Results of the Enquiry as to the Occurrence of Thrombo-angiitis Obliterans in China.**

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Summary of answers received as to the occurrence or otherwise of Thrombo-angiitis Obliterans in different parts of China.

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The details in Table I are given in the hope that, when the present unrest is over and medical work in China resumes its wonted course, others will be able to carry on the investigation of this disease from the point which has now been reached. There are many possible causes that have not yet received thorough consideration, e.g., abnormal condition of the glands of internal secretion, congenital smallness of the blood-vessels, dietetic habits of patients, disturbance of carbohydrate metabolism, excessive use of tea, wine, or tobacco, addiction to opium, the presence or absence of a tight garter round the ankle, etc.

II. Differential Diagnosis.

In the previous article on thrombo-angiitis obliterans the question of differential diagnosis was not adequately dealt with, for there are four conditions with which it may be confused, viz., frost-bite, trench-foot, Raynaud's disease, and syphilitic endarteritis obliterans. These will now be considered.

_Frost-bite._

The gangrene of frost-bite is also due to a thrombosis and obliteration of the arteries or veins or both, and, microscopically, the condition of the blood vessels can hardly be distinguished from that met with in thrombo-angiitis obliterans. The writer has never seen a patient with frost-bite, and ventures to doubt whether, in such a case with gangrene affecting only the toes, arteries as large as the posterior tibial and the dorsalis pedis would be found to be thrombosed or obliterated. This would be the case in thrombo-angiitis obliterans. According to Keen, "the acuteness of the vascular changes" and the fact that the gangrene has immediately followed exposure to severe cold, will enable the diagnosis of frost-bite to be made.
This, too, is a condition in regard to which the writer, having no actual experience, is compelled to rely upon published records. It may be well, in the first instance, to quote some of the conclusions in regard to trench-foot arrived at by an Inter-allied Surgical Conference held in France in the spring of 1918.

"Three clinical forms may be described: (a) slight (85% to 90% of the cases), characterized by painful anaesthesia, oedema, and redness; (b) moderate (13% to 14%), characterized by phlyctenules and limited sloughs; (c) severe (1%), characterized by extensive sloughing and the appearance of septicæmic complications. This form may produce serious mutilation or death."

We have hardly recognized any cases of thrombo-angiitis obliterans either as mild as the first form (a) or as severe as the third (c), i.e., in almost every case a certain amount of gangrene has taken place, but neither septicæmic complications nor death has been met with. In our cases the sloughing gangrenous condition began in a toe (or a finger), and from this it sometimes spread, by contiguity, to the foot (or hand), or it appeared in another digit while in the first the sloughs had separated and the remaining ulcer was slowly healing. In trench-foot, on the other hand, there seem to be several scattered areas of "limited destruction-gangrenous patches on the dorsum of the foot, the sole of the toes."

The very great relief secured for trench-foot patients by the use of generous doses of the iodides is not paralleled in our experience of the use of the same drug in thrombo-angiitis obliterans.

Major Sweet and others come to the conclusion that trench-foot is due to "a spasmodic contraction of the arterioles of the foot," whereas the phenomena of thrombo-angiitis obliterans are obviously explained by the obliteration of the medium-sized arteries concerned. Half the cases of trench-foot gave a history of signs of poor capillary circulation, whereas in thrombo-angiitis obliterans, save in the extremity actually affected, there are no disorders of circulation.

The most important, the conclusive point, in differentiating these two conditions is that Major Sweet and his collaborators in their fifty-three cases of trench-foot were able to use the posterior tibial and the dorsalis pedis arteries for the determination of blood-pressure; it would be absurd to attempt this in any case of thrombo-angiitis obliterans affecting the foot.
Raynaud's Disease.

The differentiation from Raynaud's disease is fairly simple, if attention is paid to the following points:

**Occurrence:** In Raynaud's disease "children are more often attacked than adults" and "females are more liable than males"; whereas in thrombo-angiitis obliterans the conditions are reversed as children are never affected and women very rarely.

**History:** A case of Raynaud's disease may be expected to give a history of attacks of "local syncope" lasting for minutes or hours, and of "local asphyxia" lasting for hours or days, before the occurrence of the gangrene which brings the patient to the hospital. Cases of thrombo-angiitis obliterans, on the other hand, are far more likely to give a history of severe aching in the legs during and after exercise—angina cruris.

**Pathology:** (1) In Raynaud's disease the pulse is not permanently or organically affected, while the permanent, complete obliteration of the pulse is the essential element in the pathology of thrombo-angiitis obliterans. (2) Symmetry of the lesions is another essential feature in Raynaud's disease, but in thrombo-angiitis obliterans the disease is frequently confined to one side of the body.

These two points are mentioned in Raynaud's original thesis: "Symmetry of the lesions and absence of demonstrable changes in the blood vessels are two essential features." (3) "The order of frequency with which the different parts are attacked in Raynaud's disease is fingers, toes, heel." In thrombo-angiitis obliterans, on the other hand, the toes are most generally affected and the heel never.

**Syphilitic Endarteritis Obliterans.**

The differential diagnosis of thrombo-angiitis obliterans from this disease is a more difficult matter, especially in view of the fact that the descriptions of syphilitic endarteritis given in the text-books are sometimes (unknown to the author) based on cases of thrombo-angiitis obliterans. For example, Dieulefroy, in discussing the histology of syphilitic arteritis says:—"Sometimes we find only endarteritis vegetans. . . . . at other times there is thrombo-arteritis obliterans." No proof is adduced of the syphilitic origin of the latter.

Clinically, there are two points that will enable the differentiation to be made: (1) "The cerebral vessels are mainly affected by syphilis," whereas thrombo-angiitis obliterans is confined to the
G. Duncan Whyte: Thrombo-Angiitis Obliterans in China.

Geographical Distribution of Thrombo-Angiitis Obliterans.
Thrombo-angiitis Obliterans in China.

Amongst the answers received to the enquiry was a letter from Dr. Hoyte of Pingyangfu, Shansi, who had seen ten cases of thrombo-angiitis obliterans in the last twelve months. His experience largely confirms what was written as to symptoms, etc., and he gives some valuable advice as to care of patients:

“The line of treatment I adopt, as a rule, is to admit the case, feed the patient well and dress the part for ten days or a fortnight, after which time the living tissue at the line of demarcation usually looks much more healthy. Then I very gently cut away the gangrene, always cutting through dead tissue, leaving a thin layer still adherent. The bones I bite through with bone forceps, cutting them as short as possible without pushing the tissues back off them so vigorously as to lacerate them in any way. With continued dressing the remaining dead tissue gradually separates, and the wound heals, taking some months in the process.” Dr. Hoyte also writes:—“As far as I can remember, all our cases, without exception, have been poorly nourished and most of them have an appearance suggestive of having been dried. Plumpness and perspiration are not for them.”

Some of our readers may not have noticed an article by Sinkowitz and Gottlieb on the treatment of this condition. They recommend an ordinary Bier's suction cylinder large enough to enclose the foot, the rubber cuff attached to the open end of the cylinder fitting round the ankle. This treatment is carried out three times a week, the cylinder being applied and exhausted for 10-15 minutes each time. The beneficial effects observed by them are increased warmth of the part, improved colour and more rapid healing of the ulceration. They are convinced that this treatment gives better results than can be obtained by any other method.

On the basis of extensive clinical observations and the chemical analysis of the blood of a number of patients, Willy Meyer has formed the opinion that the condition described as thrombo-angiitis obliterans is primarily a disease of the blood of endocrine origin. In all the cases that he studied the ingestion of 100 gm. of glucose, after a brief fasting period, produced hyperglycemia. Hence he proposes that the disease should be named “glycophilia,” the similarity of the name to “hemophilia” being intended to point to sex limitation and other obscure
features of the disease. He does not believe that an inflammatory process of the blood vessel walls plays an etiologic rôle. Nor does he believe that the occluding masses within the small arterial bloodvessels are really thrombi: he thinks the masses are each a conglomeration of red blood corpuscles due to erythrocytosis or stasis, the latter being a sequence to the increased viscosity of the blood. To reduce the viscosity of the blood and to restore fluid to the dehydrated tissues he supplies an abundance of water to the system in such a manner as to produce quickly the highest possible degree of hydremia. This is obtained by the simultaneous use of duodenal flushing with Ringer's solution, combined with hypodermoclysis. Patients under this treatment often obtain great relief from the severe pain, but it is doubtful if the disease itself is modified.

REFERENCES.

(2) British Medical Journal, 1918, May 4, p. 516.
(8) Russell: Textbook of Medicine, ed. by late G. A. Gibson.

A UNIFORM SYSTEM OF EYE TESTS.*

By HARVEY J. HOWARD, M.A., M.D., Peking.

The value of comparing results of any kind is proportionate to the uniformity of methods applied in obtaining those results. In studying the literature relating to ophthalmology, one is continually confronted with the difficulty of drawing conclusions from results obtained by different men using a variety of tests. The personal equation alone is trying enough to have to reckon with, but when different forms of apparatus, different tests, and a different application of the same tests

* A paper read at the Conference of the C.M.M.A., held in Peking, February, 1920.
A Uniform System of Eye Tests.

are used to determine the respective ability or condition of certain ocular functions, the task of correlating the results is almost hopeless. We are anxious that the literature on ophthalmology published in China may not only be mutually helpful, but may also constitute a worthy contribution to the world's literature on the subject. I assume that we are all convinced that it is better to employ a uniform system of tests, even though they may not be wholly acceptable to all, rather than continue the heterogeneous methods of the past. For this reason I take the liberty to propose a uniform system of eye tests and measurements which I hope will meet with favor on the part of those interested in ophthalmology in China. In doing so I have endeavored to include only those tests which are least influenced by the personal equation and those which depend least upon subjective statements on the part of the subject being examined.

It is not anticipated that we shall undertake to perform routinely all the tests suggested. But it is hoped that they may constitute the basis of many of our examinations.

Outline of Tests.

I. Inspection. (Bright daylight preferable; record only pathologic conditions.)
   A. Lids.
   B. Tear sacs and puncta.
   C. Conjunctivae.
   D. Cornea.
   E. Pupils:
      1. Size.
      2. Equality.
      3. Shape.
      4. Reaction to Light Accommodation
   F. Eyeball.
      1. Tension (McLean's tonometer).
      2. Shape.
      3. Nystagmus.
   G. Anthropometric measurements. (Record in mm. These measurements are important from standpoint of research)
      1. Interpupillary distance (see VI).
      2. Amount of exophthalmos.
      3. Distance between the two internal canthi.
      4. Distance between internal and external canthi of each eye.
      5. Horizontal and vertical diameters of cornea.
      6. Development of an epicanthus or a Mongolian fold, i.e., either none, slight, moderate, or pronounced.

II. Visual Acuity. (Record in common fractions, e.g., 20/20 or 6/6, using Snellen charts or modifications of same to suit Chinese. The inter-
The China Medical Journal.

national system recording visual acuity in decimals has as yet no proper set of charts)

R. E....................
L. E....................

III. MANIFEST REFRACTION.

R. E........................................ Vision.........................
L. E........................................ Vision.........................

IV. ACCOMMODATION. (With distance correction on, measure in diopters from the anterior focus of the eye, which is 11.5 mm. in front of the cornea; use the Prince rule and the Duane disc; test each eye separately)

V. NEAR POINT OF CONVERGENCE. (With emmetropic correction on, or if subject is presbyopic with near correction on, measure in mm. from the center of rotation of the eyeball, i.e., 25 mm. must be added to the measurement made from the anterior focus.)

VI. INTERPUPILARY DISTANCE. (Measured in mm. by the infinity method.)

VII. ANGLE OF CONVERGENCE = \( \frac{1}{2} \) interpupillary distance \( \times 100 \) + 3 near point of convergence

VIII. BINOCULAR SINGLE VISION.

A. Near.

1. Hand stereoscope and stereoscopic pictures test.
2. Or bar reading.

B. Distance.

1. Have patient look at small spot light with a red glass before one eye.
2. Or use six meter stereoscoptometer test. This tests not only binocular single vision but also depth perception and judgment of distance. Important in testing applicants for aviation service.

IX. OCULAR MOVEMENTS.

A. Maddox rod screen test, or the screen and parallax test. (Record deviation in prism diopters)

1. At 6 meters:
   - Esophoria or esotropia.............. Exophoria or exotropia......
   - R. Hyperphoria or hypertropia... L. Hyperphoria or hypertropia...

2. At 33 cm:
   - Esophoria or esotropia.............. Exophoria or exotropia......

B. Prism convergence power at 6 meters. (Ability of the eyes to converge against prisms placed base out. Best results obtained with the Risley double rotary prism.)

C. Prism divergence power at 6 meters. (Ability of the eyes to diverge against prisms placed base in.)

D. Prism sursumvergence power at 6 meters. (Ability of the eyes to diverge in a vertical plane against prisms placed base up or down)

E. Prism convergence power at 33 cm. (Prisms base out.)

F. Associated parallel movements. (Test the movements of the eyes in the six extreme positions; right, left, up and right, up and left, down and right, down and left.)

X. CENTRAL COLOR VISION. (Jeuning's self recording test is suggested.)

R. E....................
L. E....................
XI. **FIELDS OF VISION FOR FORM AND COLOR.** (Hand perimeter not satisfactory. Good daylight or artificial light should illuminate the test object)

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XII. **REFRACTION.** (Homatropine or atropine cycloplegia if possible; if not, employ fogging method)

A. Total latent error:

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B. Trial case result:

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C. Amount of presbyopia:

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D. Glasses prescribed:

Distance:

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Near:

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XIII. **OPHTHALMOSCOPIC EXAMINATION.** (Record every pathologic condition)

A. Media—cornea, aqueous including depth of chamber, lens, vitreous.
B. Iris.
C. Disc.
D. Blood vessels.
E. Retina.
F. Choroid.

XIV. **DIAGNOSIS OR SUMMARY OF PATHOLOGIC CONDITIONS.**

I. ...........................................

II. ...........................................

III. ...........................................

IV. ...........................................

V. ...........................................

VI. ...........................................

VII. ...........................................

VIII. ...........................................

IX. ...........................................

X. ...........................................

XI. ...........................................

XII. ...........................................

XIII. ...........................................

| Date ...........................................

Examination performed by ...........................................
Owing to China's industrial development, traumatic injuries with fracture of bone are increasing rapidly. Until within the last few years fractures of all kinds were comparatively infrequent. In the interior of the country, away from the centers of modern industry, surgeons are still very seldom required to treat a case of fracture. But in cities where the tram car is used, automobiles are numerous, and where cotton mills, silk filatures, and power plants are established, fractures of the femur are becoming more and more common. The native doctor with no scientific training, and practically no surgical experience, is even more helpless to deal with such injuries than he is to treat a patient suffering from internal disease. At least the poor results of his treatment are more apparent in the surgical cases.

During the past two years at St. Luke's Hospital, Shanghai, there have been treated more than five hundred patients suffering from fractures. The case histories are now being thoroughly studied and it is hoped to issue a full report concerning them later. In this paper we shall only consider details relating to thirty-six Chinese with fracture of the femur, who were treated as in-patients in St. Luke's Hospital during the year 1919.

Age. The average age of the patients was thirty-one years. The youngest was four years old, and the eldest fifty-nine years old. Most of the patients in St. Luke's Hospital are men of middle age.

Occupation. Nearly one half of the number of patients were coolies; this should be expected since the working man doing heavy manual labor is more exposed than others to accidents, especially if his work requires him to be on the streets of Shanghai.

It is interesting to note that 16% of the patients were students. One student was injured while playing indoor base-ball; two by falling off tram-cars; one was run down by an automobile, and one by a carriage. Three of the patients were carpenters. Of these, two were injured by a fall, and the third by falling timber.

Summary of Causes of Accidents. Of the injuries, 33% were caused by a fall of some kind; 23% happened in connection with tram-cars, while 20% of the patients were injured by automobiles.

A study of the forces causing these injuries shows clearly why fractures of the femur are so much more common in the cities having tram-cars and automobiles.

**Seat of Fracture.** The fractures were very evenly distributed between the neck and trochanter, the upper third, the middle third, and the lower third. Neck and trochanter, 22%; upper third, 28%; middle third, 28%; lower third, 22%.

**Complications.** The most extensively injured was Patient No. 5012, who came into the hospital suffering from compound fracture of the left femur, simple fracture of the right femur, and compound fracture of the right tibia and fibula.

Patient No. 6252, with compound double fracture of the femur, caused by a crushing accident, died the following day apparently of shock. Patient No. 6319, with fracture of the neck of the femur, died on the third day with symptoms of embolism.

**Length of Stay in Hospital.** The average length of stay in the hospital of all cases admitted was sixty-six days. Excluding the patients who left the hospital against advice, and the two who died of complications, the average stay of the remaining patients was seventy-four days.

**Diagnosis.** It is more and more our conviction that if we are to obtain good results in every case, we must be able to secure a very accurate knowledge of the condition of the bone. In a large percentage of cases this may be done fairly well without the aid of the X-ray; but even in the cases where we think we have made an accurate diagnosis, an X-ray examination later often demonstrates to us that we have not fully understood the condition. We have been surprised to find so many double fractures of the same bone, and the difficulty often experienced in clearly demonstrating the presence of the second lesion.

There are some cases in which only an X-ray examination will give an accurate knowledge of the condition. We now fluoroscope or take a picture of every fracture coming into the hospital. Often the bones may be set under the fluoroscope. If this cannot be done satisfactorily, a plate is taken and further treatment depends upon the conditions found. An early, accurate diagnosis is necessary for obtaining the best end-results.

**Treatment.** We have no hard and fast routine methods for treating fractures of the femur. We think that each case must be a law unto itself, and that any method of treatment which will approximate the fragments, and hold them there without injury to the surrounding
parts and with least strain upon the general health of the patient, is the best for the particular case.

For compound fractures we rely very much upon Dakin's solution and feel that it is now safe to try to save limbs which a few years ago would certainly have been lost. Another important factor in the treatment of every compound fracture is early and absolute immobilization. In order to secure this immobilization more easily and certainly we have devised a gas-pipe frame, the size of the bed, covered with canvas and with the pulley attached to the frame. With this apparatus a patient can be moved without shifting the position of the fractured bone.

Three of the thirty-six cases left the hospital without treatment. Twenty-two (66.3%) were treated without an open operation; eleven (33.7%) were treated by the open method.

**Summary of Methods of Treatment.** Without open operation: 3 cases with splints only; 12 with splints and Buck's extension; 6 with extension, splints, and casts; 1 case with casts only.

With open operation: 6 cases with plate and cast; 3 with bands and cast; 1 with nail; 1 case with cast only.

Although the hospital owns a complete set of Albee's bone-grafting instruments yet we did not graft in a single case. The reason is twofold. First, we have been using the other methods longer and so are surer of them; and we have not yet found a case which would not respond to one of the other methods.

In certain old cases where there has been little or no attempt at union we believe that bone-grafting is preferable. Even these cases may respond very readily to plating. We remember with considerable satisfaction the first patient we ever treated with a plate of the femur. He was a middle-aged man who had received a fracture of the upper third of his femur eighteen months before. He had been constantly in bed since that time. There was marked shortening of the femur and no attempt at bony union. Extension was put on for two days and the thigh was opened. The fragments were brought to the surface, well freshened with a curette and all the surrounding fibrous tissue removed. The ends were then approximated after much extension and counter extension. A six-screw plate was inserted and the wound closed. Convalescence was uneventful. By the end of the eighth week the patient insisted upon being out of bed and by the ninth week walked out of the hospital without a limp. In this case the plate was not removed. For several months afterwards the patient revisited the hospital, apparently as strong as ever, and without any pain or tenderness over the plate.
Operative Technique. There is no form of surgery which demands a more rigid aseptic technique than that required by operations on bone. After much experience Lane has laid down regulations for this class of cases which, if faithfully followed, will make the operative risk very slight. In all our work we insist on observance of the following rules. Every one assisting in the operation, doctors and nurses, must wear a sterile hood, gown, sleeves and rubber gloves. The skin must be covered as soon as the incision is made. All gauze or sponges going into the wound must be handled with sterile forceps. Under no circumstances are the fingers of the operator or his assistant to be allowed to enter the wound. There must be as little traumatism of the surrounding parts as possible, and the wound should be closed accurately, without open pockets for the collection of blood, and the parts be firmly immobilized after operation.

In acute fractures we have found that plates, bands, nails are quite satisfactory. In a very oblique fracture there is nothing more efficient than a band which draws the fragments closely together and at once makes the bone almost as strong as ever it was. The greatest objection to metal appliances is that they require another operation to remove them. However, this is quite a simple operation and can often be done under local anesthesia.

Results Obtained. Excluding patients who left the hospital before the effect of the treatment could be ascertained, good results were obtained in ninety-five per cent of the cases. "Good" does not mean perfect results. It does mean that the union was good and strong and that the patient was able to walk without pain.

The unsatisfactory case in this series was a fracture of the anatomical neck in a man aged fifty-nine. The treatment of this patient was simply by extension and abduction. He got only fair motion and usefulness, there being a displacement upward of the lower fragment.

Conclusions.

1. Fractures in China are rapidly on the increase and will continue to increase as modern industrial life is extended.
2. The class of middle-aged coolies is going to suffer most during this period of change from "rice" or man power to machine-made power.
3. Early, accurate diagnosis is necessary to obtain the best results.
4. Perfect immobilization is required, especially in compound fractures.
5. A thorough cleaning of the injured part followed by the use of Dakin's solution is the best treatment for compound fractures.

6. Open treatment is necessary wherever good approximation cannot be certainly obtained by the closed method.

7. The injured part should not be opened unless the most rigid aseptic technique can be assured.

DISCUSSION.

Dr. Van Gorder said it would be very interesting to discuss the relative values of all the splints used in the treatment of fractures of the femur, but because of the limitation of time, it was necessary to mention only the most important and most efficient,—the Thomas splint.

The value of this splint is unquestionable and at the present time we can state without hesitation that it is the simplest and best splint that can be employed for any kind of fracture of the femur. There is one point, however, which he should like to emphasize concerning its use and that is, we must be sure that the back portion of the ring is always kept at the proper level on the leg, just below and against the tuberosity of the ischium. If this is not done, the traction will very often be non-effective. Further, both the perineum and the rami of the pubes are areas that are too sensitive to be points for strong counter pressure in adults, so in order to prevent the ring from slipping upward it must either be made to fit the patient's leg perfectly, so that it cannot possibly override the tuberosity; or else the ring must be held up against the posterior aspect of the leg by means of a rope tied to an overhead bed-frame. Being thus held closely against the posterior contour of the leg, the ring cannot override the tuberosity, and very heavy traction can be employed without great discomfort to the patient. If the ring does not fit the leg perfectly, or if no overhead frame can be obtained, then the only recourse remaining is to fasten the lower end of the Thomas splint to the foot of the bed and raise the end of the bed on wooden blocks, thus allowing the patient his own body weight to be the traction. However, this method has two main objections: (1) it necessitates an uncomfortable position for the patient, whose feet are higher than his head (no pillow being used); (2) in bad compound fractures the purulent discharge tends to gravitate toward the most dependent part, the gluteal region. Those who have had large experience in the treatment of compound fractures of the femur realize that this area must be protected from sepsis. If possible, therefore, it seems most advisable to keep the patient's leg in a horizontal position during treatment.

Time does not permit a discussion of the various materials used for traction, such as adhesive plaster, Sinclair's glue, Steinman's pin in the crest of the tibia, heel stirrup, ice-tong calipers, etc. One may say that all the materials are exceedingly useful and have their important parts to play in particular types of leg fracture; but for fractures of the femur, I believe that the ice-tong calipers (after the design of Major Pierson, of Edmonton, England) is the most effective instrument that can be used. By employing it, the greatest amount of bone length can be gained with the least amount of weight pull. Moreover, the insertion of the tongs at a point above the level of the knee joint allows full motion of the knee without interference with the femur fracture. Thus stiffness of the joints can be avoided and convalescence markedly shortened. Such materials as canvas leggings, anklets, or bandages across the dorsum of the foot, are to be condemned for strong traction purposes.

Thomas splints are easily made, economical, and their introduction into general usage for all types of femur fractures as a result of the surgical experience
of the recent war, is a benefaction and scientific advance that China needs.

Dr. Branch, of Changsha, also highly commended the Thomas splint, especially for use in small hospitals, as being the easiest and most efficient way to treat fractures. If possible, an X-ray examination should always be made. Several plates should be used, never a single one, and views should be taken both anteriorly and posteriorly.

Dr. Van Gorder was asked what his experience had been of bone-grafting in fracture of the femur. He replied that in England he had seen a good deal of the procedure. As to results generally, in more than 1,000 cases of fractured femur there had been found only one case following the operation in which there was non-union. The bones of old people had a tendency not to unite.

Dr. Vann called attention to the value of X-ray examination in any treatment of fractures. In his own work the usual routine is to use the old method: diagnose and set the fracture and then X-ray it. Many fractures can be set perfectly in this way; but many cannot, and as we never can be sure whether we are or are not successful, an X-ray examination should be made from all angles, and the fracture adjusted accordingly. If it is practically impossible to make perfect alignment then an open operation is advisable.

Dr. Gray, Peking: After the fracture has been set it is important to see that there is perfect immobilization of the femur. In one of his cases, the fracture was not thoroughly immobilized; at the end of four or five days the patient had a "nightmare," there was a sudden movement of the leg and later it was found there was a bending of 45 degrees. In another case a bomb fell near a patient and gave him a violent start, which resulted in the bone plate being bent again. It is no easy matter when once the screws have been fixed to get down and rescrew them again. He had not yet seen any fracture of the femur that could not be put right.

Dr. W. S. New, Dr. Lewis, and others referred to various difficulties or made interesting suggestions as to treatment.

In summing up the discussion Dr. McCracken thanked all who had taken part in it. He was especially pleased with the remarks of those who had been to the Front. He stated that his paper was a study of all cases of fracture of the femur which had been treated in St. Luke's Hospital, Shanghai, during the twelve months from September, 1918, to August, 1919. Since that time other and newer methods of treatment had become popular. Time alone would tell how many of these would take the place of the older methods; he did not believe that the last word on the treatment of fractures of the femur had yet been said.

Plating in Fractures of Tibia and Fibula.—In The Lancet, March 6, 1920, C. F. Strange, who had a very large number of fractures of the lower limb under his care at No. 1 Chinese General Hospital, B. E. F., France, describes fifteen consecutive cases in which he plated the tibia, and in some cases the fibula also. In every case the injury was severe as both bones were broken, and in many instances the bones were badly comminuted at the site of fracture. It is encouraging to note that in each of the fifteen cases a perfect result was obtained, despite the absence of a highly trained nursing staff.

"It is now 25 years since Sir W. Arbuthnot Lane first introduced the then novel and revolutionary treatment of operating on cases of simple fracture and uniting the fragments in position by plates screwed into the bones. Since then many surgeons have adopted the practice in selected cases with varying results. Many have made hopeless failures through bad technique or lack of surgical skill, and consequently this treatment of fractures is frequently derided. But this series shows that, if the principles of aseptic surgery are scrupulously carried out and the operating surgeon understands the technique of bone plating, this method, far from being a failure, becomes an unqualified success. Speaking generally, the nearer the time of the operation to the date of the injury the better will be the result. It certainly makes the operation infinitely easier if it is performed before callus has been laid down."
TUBERCULOSIS: PRESENT STATUS OF THE TUBERCULIN TREATMENT.*

Wade H. Venable, M.D., Kuling.

"Physicians or no physicians, science or no science, nature is quietly, but none the less persistently and effectively, immunizing the human race against tuberculosis."

When the physician attempts to find out the present status of the tuberculin treatment by reviewing the literature, he is struck by the fact that the medical profession is largely divided into two hostile camps, the one praising it to the skies, the other discarding it as utterly worthless. To find such widely divergent opinions expressed so emphatically, and often with some "spleen," is confusing to the beginner and distasteful to any unbiased seeker after truth.

As an example of an unfavorable opinion we may take the following from Fishberg's volume on "Pulmonary Tuberculosis." "The writer has given tuberculin therapy a fair trial and has found it either altogether wanting in therapeutic effects, when used in infinitesimally small doses as is advised by most of its contemporary advocates, or decidedly harmful when given in substantial doses. This opinion is shared by most of those engaged in the treatment of tuberculosis, excepting such as have themselves discovered some tuberculin, or who are in charge of sanatoria catering to well-to-do private patients." "There is no record in medical literature that any investigator has succeeded in curing or benefiting a tuberculous animal with tuberculin treatment." "Very often dormant tuberculous processes are activated after the administration of tuberculin. Bacilli which gave no trouble were mobilized, producing a bacteremia."

In strong contrast to the above is the opinion of Pottenger, who writes: "Tuberculin as a therapeutic measure is so well established to-day that when a clinician fails to obtain results by its employment, he must consider that there is some error in his technic or his observation rather than believe that the remedy is at fault. The fact that many good observers, who have studied tuberculosis carefully and who are devoting their energies to its cure have been able to obtain good results from its use is sufficient to establish its value. A man should not start with the purpose of testing tuberculin. It has already been tested. He should start rather with the idea of testing his own ability to administer tuberculin. He may fail, but he must not lay the failure to the remedy."

* A paper read at the Conference of the C.M.M.A., held in Peking, February, 1920.
Fortunately, there are a few writers who take a sane, middle course between these conflicting opinions.

In regard to the question of the "mobilization" of the bacilli by tuberculin, Riviere and Morland remark: "Virchow was responsible for the conception of the tubercle bacillus, previously lying quiet and inert in the lesion, being drafted out to various parts of the body as the result of tuberculin reactions; the work "mobilization" passing into common use as the term descriptive of this dreaded result. The conception is now scarcely more than of historical interest." On the same subject Lawrason Brown says: "Experimental and clinical evidence has failed to show that the bacilli may be disseminated by the use of tuberculin."

A very sensible and careful statement on the subject of tuberculin treatment is made by Baldwin: "First, tuberculin may work much good in some patients by lessening the sensitiveness to itself; secondly, it may act as a stimulant to healing; or, thirdly, it may aggravate the disease." According to King: "Tuberculin is a powerful toxic agent and one capable of doing much harm, if improperly used. Only those physicians who are willing to devote considerable time to the study of the subject and who have had experience in observing and handling tuberculous patients should attempt its use." Metcalf states: "Further investigations have fully proven to men of unbiased minds that tuberculin has a distinct place in the treatment of tuberculosis."

Again: "Tuberculin of to-day is not the last word in the treatment of tuberculosis; far be it from me to assume it. But of all the remedies that have been projected, tuberculin, in my opinion, stands so much in advance of any other single agent that it cannot be thrown aside by the conscientious practitioner."

It would be a great help to the solution of the tuberculin problem if we knew whether laboratory tuberculin was the same as the product of the tubercle bacillus in the animal body. This is usually assumed to be the case. In fact, Pottenger says: "Tuberculin is nothing new to the tuberculous patient. It is the same bacillary protein that is given out from his own focus of infection and the same protein which is necessary for the production of immunity; and without which no natural cure ever occurs in tuberculosis." Though this is quite a positive statement, he seems to contradict it in another place. Arguing for the use of tuberculin in cases with fever, he says: "The prevalent idea is that a patient with tuberculosis, while suffering from fever, has his bloodstream surcharged with tuberculin; but this is not true, as can readily be seen from an analysis of the condition present. We often
look into the larynx during a prolonged high fever, or into a tuberculous ulcer of the pharynx, and see no reactions present. According to the theory of the patient's being surcharged with tuberculin, these foci of infection would certainly be highly stimulated and take upon themselves a rapid necrosis. In the second place, in these patients who are suffering from fever, and have visible tuberculous foci, I have repeatedly injected tuberculin and observed a focal reaction following the injection when there was none prior to the injection, the same as occurs in patients who are not running fever.'

If this last statement justifies us in concluding that auto-tuberculin can cause fever without causing local stimulation, and, conversely, that laboratory tuberculin can cause local stimulation without causing fever, there must be a difference between the two. Pottenger himself would probably not consider contradictory the two statements quoted above, as he says that the chief cause of fever is not the tubercle toxins. However, he admits in another place that the tubercle toxins are partly responsible for the fever, for he writes: "I believe that the primary causes of fever are at least three in number: the tubercle bacillus and its toxins; associated bacteria and their toxins; and enzymes and products resulting from their action upon the body cells.'

That auto-tuberculin and laboratory tuberculin are not identical is borne out by other facts elicited in the study of immunity. On this point Lawrason Brown observes: "Tuberculin immunity is not immunity to tuberculosis, and animals immunized to tuberculosis show tuberculin susceptibility for some time." 'The only perfect immunity obtained in animals has been by use of the attenuated cultures of the living human tubercle bacilli, which would suggest that the tubercle bacilli under the stimulation of the cells and juices of the body produce some toxin not otherwise generated (Welch)." "Small quantities of the toxin of the tubercle bacillus affect man profoundly, while he usually has fairly good resisting powers against the tubercle bacillus itself.'

The facts cited above go far to show that there is a difference between laboratory tuberculin and the tubercle toxin generated in the body (auto-tuberculin.)

Immunity.

Our knowledge of the subject of immunity in tuberculosis has a very important bearing upon the question of tuberculin treatment. Let it be understood at the start that there is no such thing as absolute immunity to tuberculosis, and that when immunity is spoken of in this
connection it means relative or temporary immunity. Even a previous attack of tuberculosis with recovery does not give complete immunity.

A robust adult free from organic and functional disease possesses a very high degree of natural immunity to tuberculosis. On the other hand, children are very susceptible. This relative immunity of robust adults is not due to the fact that they have never been infected with the tubercle bacillus, but just the contrary. When tuberculosis is first introduced among a primitive people who have never been infected with it previously, it assumes an acute and usually fatal form. Hence we must conclude that the relative immunity of adults in countries where tuberculosis has existed for a long time is due to the protective influence of a healed infection in childhood.

In childhood a mild infection usually heals and results in relative immunity. Massive infections produce a severe form of the disease, which is often fatal.

Having seen that the so-called natural immunity to tuberculosis is produced by a previous infection with the tubercle bacillus, we naturally ask whether tuberculin can produce the same result, and the answer is, "No, not in a healthy individual," as antibodies to the tubercle bacillus are formed by tuberculous individuals only. But in tuberculous animals and human beings tuberculin undoubtedly stimulates the production of antibodies, and in this fact lies the scientific foundation of the tuberculin treatment.

ANTIBODIES.

In his work in "Infection and Resistance," Zinsser gives us some light on the formation of antibodies by the injection of tuberculin. "The specific reaction of antibody formation in tuberculosis seems to be closely associated with the tuberculous tissues themselves. The same inference can be made from Bail's experiments in passive sensitization. For although passive sensitization of guinea-pigs with the serum of tuberculous animals has been unsuccessful, Bail succeeded in obtaining lethal anaphylactic reactions by injection of macerated tuberculous tissues, following these on the next day by injections of tuberculin. It is plain from this, as Friedemann correctly argues, that we must assume that the antibodies (receptors) formed against tubercle bacilli are closely bound up with the tissue cells, the reaction of tuberculin being largely with 'sessile receptors.'"

This experiment may be accepted as proving that certainly one variety of antibodies is produced in tubercular tissues by the injection of tuberculin. There is equally good evidence that, following the
injection of tuberculin, antibodies of a certain kind are produced by the normal cells of a tubercular individual. For instance, von Pirquet, having employed his left forearm repeatedly for tests, was able to obtain positive reactions in this area with tuberculin diluted to one in 1,000, whereas his right forearm was negative to tuberculin ten times as concentrated.

Bandelier and Röpke make much more explicit statements in regard to the antibodies produced by the injection of tuberculin. They state that, "Engel and Bauer with appropriate tuberculin treatment were uniformly successful in demonstrating antibodies producing fixation of complement in the serum, not formed like the agglutinins in normal cells, but in the tubercular tissue." They also state that, "Löwenstein and Pickert have proved beyond question that true antitoxins occur in the blood of tuberculin treated patients. To obtain immunity comparatively large quantities of antigen are essential. Antitoxins are most easily found in highly immunized patients.'"

"The bacteriolytic bodies for tubercle bacilli are produced in increased quantities in the tubercular organism and their presence can be proved in the serum. This raised bacteriolytic power of tubercular patients helps to explain their immunity to re-infection. . . . . many clinical observations point to the fact that the bacteriolytic resources of the organism are increased by specific treatment.'"

Observation of the opsonic index is of much less value in tuberculosis than in many other infectious diseases. The activity of opsonins and phagocytes comes into play chiefly after the disease has taken a turn for the better and the bacilli have become weakened by the other protective forces of the body. Thus by eliminating these weakened bacteria and lessening the absorption of poison by the individual they render an important service.

Speaking of the work done on tuberculo-opsonius, Zinsser says: "We are forced to the conclusion that in this disease the opsonic fluctuations are far more irregular than in most other conditions. . . . All these data render it uncertain whether the opsonic index as determined for polynuclear phagocytosis may be at all regarded as a reliable indication of increased or diminished resistance, and on this basis the control of therapy in tuberculosis by opsonin estimation is of course placed upon an uncertain basis." Metcalf states briefly that, "Wright's opsonic index is of no practical value," i.e., in tuberculosis.

Brief reference must be made to the theory of Wolff-Eisner that the blood of tubercular individuals contains a lysin (tuberculo-lysin), and when tuberculin is injected it is split up by this lysin into a
poisonous and a non-poisonous fraction. If this theory is correct, it is probably this poisonous fraction which stimulates the production of antitoxin.

The above facts relating to the production of antibodies by the injection of tuberculin put the tuberculin treatment on a sound scientific basis.

Clinical evidence as to the value of tuberculin treatment abounds in every civilized country. Riviere and Morland in their bibliography refer to more than 150 authors, and these authors have not written books to oppose the tuberculin treatment. Bandelier and Röpke in their bibliography refer to 301 articles or books on tuberculin treatment, a few, of course, being unfavorable, but the vast majority favorable. Among the advocates of tuberculin treatment are men of eminent scientific attainments in England, Scotland, America, France, Belgium, Australia, Switzerland, Germany, Bulgaria, and many other countries. Those who wish to study further the clinical evidence in favor of tuberculin treatment are referred to the works of Bandelier and Röpke, Riviere and Morland, Pottenger, Sahli, Bonime, and others.

As some of this favorable clinical evidence has already been quoted, it is sufficient here to make one brief quotation from so cautious and thoughtful a writer as Baldwin.19 "The use of tuberculin may produce two opposite effects according to the method of administration. When used in small doses not increased, tuberculin maintains the sensitiveness. . . . it appears to be a rational method for localized forms of tuberculosis. On the other hand, a gradual increase in dosage leads in favorable conditions of nutrition to a complete loss of sensitiveness and coincident improvement in health. In pulmonary tuberculosis, at least, I feel inclined to select tuberculin immunization as the goal for treatment."

Statistics also show two important results of tuberculin treatment. First, patients with bacilli in their sputum when treated with tuberculin lose their bacilli more quickly than those not so treated. Second, patients who have been cured under the tuberculin treatment show a smaller percentage of relapses than those cured by the ordinary dietetic and hygienic method. We naturally ask, "In the face of all this laboratory and clinical evidence in favor of tuberculin, why are there still so many clinicians who claim to have given the remedy a fair trial and yet who have discarded it as useless?" The answer is simple. They expect too much of tuberculin at the beginning; they expect spectacular results and do not get them. With every beginner in the use of tuberculin there is a period of discouragement and disap-
pointment, when he is ready to give up the use of it and pronounce it a failure. At this stage, some actually give it up and consider that they have given the remedy a fair trial. Of course from this time on they go to swell the ranks of the opponents of tuberculin. Others persevere, and in course of time begin to see beneficial results. Every successful and experienced user of tuberculin will testify that after its long continued use he could get far better results with it than when he first began to use it. This fact should make the beginner more willing to persevere through the early stage of discouragement. He should say: "I am going to use tuberculin because I believe that laboratory experiments have proved it a useful adjunct in the production of immunity, and because overwhelming clinical evidence has shown its value, even though I do not get visible or spectacular results at the start." Or, in the words of Pottenger, already quoted: "A man should not start with the purpose of testing tuberculin. It has already been tested. He should start rather with the idea of testing his own ability to administer tuberculin."

In order to avoid discouragement at the beginning we should remember that patients differ very much in their ability to respond favorably to tuberculin treatment. The writer has seen cases that under the tuberculin treatment were failing to gain in weight, but began to gain as soon as the tuberculin was stopped. He has also seen cases that were not gaining under the ordinary treatment, but who began to gain soon after beginning tuberculin treatment. But these two classes are exceptional, as in most of our cases we cannot tell whether the improvement is due to the ordinary treatment or to the tuberculin, especially in incipient cases where the ordinary treatment is successful in such a large proportion of cases. However, we continue to use the tuberculin in these cases, as we believe that with it our patients will get greater immunity and be better protected against relapse. Moreover, in many cases of tuberculosis the treatment of the underlying disease or condition that made the tuberculosis possible is far more important than the treatment of the tuberculosis as such. Naturally, in such cases, tuberculin treatment will prove disappointing, especially if one lays stress on tuberculin as the chief line of treatment rather than regarding it as a mere adjunct, or delaying its use until the underlying disease is cured or improved.

CONCLUSIONS.

1. Tuberculin when properly used is capable in most cases of tuberculosis of producing antitoxins, agglutinins (in the normal cells of
the body), bacteriolysins (in the blood), and complement fixing antibodies (in the tubercular tissues).

2. Tubercular patients with bacilli in their sputum lose their bacilli more quickly when treated with tuberculin than those not so treated.

3. Patients who have received a thorough course of tuberculin, and who have recovered, show a smaller percentage of relapses than those who have recovered without the use of tuberculin.

4. In the face of the overwhelming amount of clinical evidence by competent and scientific men in favor of tuberculin, the conscientious practitioner cannot afford to condemn it.

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ASIATIC CHOLERA: A STUDY OF ONE HUNDRED CASES.*

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This paper is based on a study of 100 consecutive cases treated at the Shantung Christian University Hospital by Drs. Gillison, Shields, Evans, Stearns, Wheeler, and the author, during the epidemic which reached Tsianan about the middle of August, 1919, and which lasted about six weeks.

ETIOLOGY.

Microscopic preparations, stained with one-tenth strength carbol fuchsin, were made from the small white flakes taken from the thin watery stools of a large number of the patients admitted. These flakes contained what seemed to be an almost pure culture of bacilli. Some of

*Read before the Conference of the China Medical Missionary Association, Peking, February 1920.
the bacilli were slightly bent, tapering a little at the ends, much like Koch's comma bacillus. Judging only from the smears, however, it was not possible to say with certainty that the organisms were anything but colons bacilli, although they seemed smaller. After growing on artificial media, they could not be thus mistaken. For lack of time, very few strains were cultivated, and only one was observed for a long period of time. In the original smear this strain did not seem different from the others. The patient from whom it was taken recovered.

One mil of a 24-hour broth culture of this strain caused the death of a guinea-pig, when injected intraperitoneally, in 24 hours. The strain was again recovered in pure culture from the serous peritoneal fluid, a small amount of which was present in the guinea-pig at autopsy. A slant agar culture one week old contained numerous involution forms; it liquified gelatin; its growth was very much augmented by incubating for 24 hours in salt peptone solution; it agglutinated very well with sera from convalescing patients.

Of the 100 cases, 80 were men, 20 were women. They were divided into two groups, A and B, depending on the severity of their symptoms on admittance. (Table V, and Fig. 5.) This was done to facilitate the study of the cases. The figures seem to indicate that the disease is more severe in women than in men. The explanation may be, in part, that Chinese women do not like to go to public hospitals, so that those who came under our observation represented only the more severely ill. The average age of Group A was 36 years; of Group B, 23 years. (Table I, and Fig. 1.)

One would naturally expect that those who had been ill two or three days would be more severely ill than those who had been attacked later, and that this would determine whether the patient should be reckoned in Group A or in Group B. Frequently this was the case, but not always. (Table II, and Fig. 2.)
It is interesting to note that of the patients below 30 years of age almost all recovered. Of those past 30 years, the older they were the smaller was their chance of recovery. (Table III, and Fig. 3.) The relation between sex and the death rate may be seen from Table IV, and Fig. 4. The relation between the time that hospital treatment was begun after the onset of the disease and the death rate, which is very striking, may be seen from Table VIII, and Fig. 6.

SYMPTOMS.

I think we are justified in dividing the symptoms, as recorded by us, into two classes, primary and secondary. The primary symptoms, such as copious watery diarrhea and vomiting, are largely due, apparently, to the local action on the intestinal mucosa of the toxins liberated by the rapidly multiplying bacteria. The secondary symptoms, such as cramps in the legs and fingers, hoarseness, deafness and failing eyesight—the symptom complex of what we call shock or collapse—are due to the toxins, which are of a colloidal nature, entering the blood stream and combining with the electrolytes or crystalloids of the blood and tissues, thus depleting them. The number of these secondary symptoms present, depends on the amount of toxin that has entered the blood stream. In Table V, they are listed according to the frequency of their appearance. From the plotted curve, Fig. 5, it can be readily seen that the only difference between the patients in Group A and those in Group B is that, in the latter, not sufficient toxin had entered the circulation to bring on very many of the secondary symptoms.

DIAGNOSIS.

Certain observations were made with regard to physical and laboratory findings which have a bearing on the diagnosis. (Tables VI and VII.)
As soon as the patient was admitted, the pulse rate, the respiratory rate, and the axillary and rectal temperature were recorded. To avoid error, the same thermometer was used both for axilla and rectum, the time being five minutes in each case. The very low axillary temperature and elevated rectal temperature, mentioned by Manson, was not commonly observed in this series. The greatest difference recorded at any time was 5°F. In the fatal cases, if we had taken the temperatures shortly before death, we would have found a greater difference.

As to the blood, it was only in five cases that we made a white blood cell count, so this observation is not of great value, although in all the patients there was a leucocytosis. The increase of w. b. c. is undoubtedly relative, due to the marked anhydremia. MacCallum states that the red cells are far above 5,000,000 per c.mm. The increase in the specific gravity of the blood is most likely due to the same cause. The frequency of oliguria and the development of toxic symptoms induced us to try the phenolsulphonephthalein renal function test on a few patients, one of whom had developed toxic symptoms. Here, too, it is to be regretted that so few tests were done. All the ten cases tested had sustained severe injuries of their kidneys. The tardy appearance of the drug in the urine, the small amount excreted during the first hour, but the comparatively larger amount excreted during the second hour, indicated that the renal cells had not lost their power of secreting, but that the process was slower, perhaps because of the marked swelling of the cells and the lowered blood pressure.

**TREATMENT.**

The wards on the ground floor of the hospital were given over to cholera patients; ordinary patients were cared for on the second and third floors. Cheap Chinese beds covered with straw matting, and hospital bedding consisting of a sheet and one or two quilts were used. The straw mats were usually burned when the patient left the hospital and a new mat was given to the next patient. Sometimes the mats were left in the sun for some hours and used again. The bedding was frequently soaked in five per cent phenol solution for some hours and then dried in the sun. The floors were mopped with antiseptic solution once or more a day. The food for the cholera patients came from the general hospital kitchen, but all dishes were boiled before returning. Almost all the physicians, interns, nurses, and coolies working in the cholera wards were vaccinated against cholera. None of these contracted the disease, nor did a single case develop among the ordinary patients on the floors above.
On admittance, the patients received one mil of brandy and ether, half and half, subcutaneously; if very restless, an eighth or a sixth grain of morphine was given.

Various means were used to combat the toxic symptoms appearing in some of the cases, none of which proved very satisfactory. Two of these patients were given two per cent sodium bicarbonate in normal saline, intravenously; one of them died. Dr. Gillison gave a sixth of a grain of pilocarpine to a patient that had developed a slow, bounding pulse, slow and very deep respiratory movements, flushed face, oliguria, and who had been unconscious for three days. He at once began to eliminate profusely through the bowel, kidneys, and skin, and finally recovered. In others this heroic form of treatment was of no avail. Several received soda by mouth with some benefit.

If the radial pulse was very weak, or could no longer be felt and there was grave danger that the patient would die in a few hours, he was given hypertonic salt solution intravenously at once. It was introduced by gravitation at an average rate of one liter per half hour. The formula used was that recommended by Rogers: sodium chloride, 20 gr.; potassium chloride, 6 gr.; calcium chloride, 4 gr.; sterilized water, 1 pint. From one to three liters were introduced at a time. Frequently, after some hours a second injection was necessary, and sometimes a third. In the beginning, all patients were given salt solution. It seemed, however, as if those who were not in severe collapse sometimes became exceedingly uncomfortable because of the injection.

Having read in the *China Medical Journal*, July, 1919, a short abstract of an article written by a physician in charge of a hospital at Nish, originally published in the *Rev. Med. Suisse Romande*, September, 1918, wherein the author is reported to have given up all other forms of treatment, including the hypertonic salt solution treatment, in favor of kaolin, we decided to try this in the less severe cases. Proving satisfactory, it was later given also to those more severely ill. From Table X, it will be seen that 15 in Group A received this treatment as compared with 20 in Group B. It was given in a heavy suspension, about as thick as thin gruel, 800 grams stirred up in 1,000 mils sterile water. It was given by mouth in doses of three ounces every hour to adults, if the vomiting was severe. After six to eight hours, the vomiting usually abated somewhat, and the watery evacuations from the bowel also decreased. It was then given every two hours only until the vomiting ceased. As a rule, it was not necessary to give kaolin over a period of more than 12 to 15 hours, and frequently six or seven hours sufficed. No food was given during the time that the drug
was being used. The average total amount of salt solution or of kaolin
given to those that recovered, and to those that did not, can be seen
from Table IX.

Table VIII. The relation of the various forms of treatment to the number of
days spent in the hospital and to the death rate is seen from Table X,
and Figs. 7 and 8.

Of the total of 100 patients, 41 received hypertonic salt solution
only, 24 salt solution and kaolin, and 35 kaolin only. Of the 67 in
Group A, 32 (48%) received salt solution only; 20 (30%), salt solution
and kaolin; 15 (22%), kaolin only. Of the 33 cases in Group B, 9
(27%) received salt solution only; 4 (12%), salt solution and kaolin;
and 20 (60%), kaolin only.

The average number of days spent in the hospital by those given
salt solution only, was eight days; by those given salt solution and
kaolin, six days; and by those who received kaolin only, four days.
Of the first class, 9 (22%) died; of the second, 7 (29%) died; and of the
third, 1 (2%) died. (The last mentioned was a woman who had complete
anuria from the time she entered the hospital till she died, so it is
doubtful if any form of treatment would have saved her.)

The value of hypertonic salt solution, given intravenously, was
pointed out by Rogers some years ago. He maintained that its bene-
ficial effect was mainly twofold: supplying the blood and tissues with
water, and with chlorides. Benjamin Moore has recently given a fairly
satisfactory explanation of how the hypertonic salt solution acts when
introduced into the blood stream. He maintains that the cholera toxin
is a colloid, and that there is always an adsorptive interaction between
colloids and crystalloids. He says that this is definitely seen by the
changes in osmotic pressure following upon variations in the concentra-
tion of salines in which the colloid is in solution. Such variation can be explained only by union between colloid and crystalloid. He further states: "In cholera, the condition is one of excess of toxic colloids and defect of balancing electrolytes or saline. The crystallo-colloidal balance is upset. Electrolytes are wanted to combine with the circulating toxic colloids and with the colloids of the tissues to prevent these from linking on to each other. Free saline in the blood in such diseases as cholera combines with the toxin to form a crystallo-colloidal union, and this is an essential factor in the excretion of the poison by the intestine and kidney. The unattached colloidal molecule of toxin possesses no osmotic pressure, nothing to drive it through an excreting cell. The unattached toxin is like a drifting barge with no motive force of its own; the crystalloid from the saline is like the tug to this barge. The tug takes the toxic colloid out through the intestinal mucosa or renal epithelium. It is, indeed, this rapid passage out of an immense navy of crystalloid tugs which depletes the blood of its crystalloids; this in turn depletes the nerve cells and leads to shock or collapse."

After the toxins have entered the circulation in such quantities as to deplete the blood and tissues of their crystalloids until a number of the symptoms of this depleted condition appear, such as cramps, hoarseness, deafness, failing eyesight—the secondary symptom complex,—salt solution intravenously is undoubtedly indicated.

If the above explanation of the action of free saline in the blood stream is correct, then it follows that if a large amount of it is introduced into a patient whose blood stream is not overloaded with toxin there will be an excess of electrolytes present which will combine with the colloid molecules of the blood protein and tissues, thus depleting the tissues and harming the patient as when the converse condition exists. The crystallo-colloidal balance is upset as well in the latter as in the former condition.

In the class of patients, who have not developed many of the secondary symptoms, if something can be given which will satisfy the combining power of the toxin colloid while still in the intestine, or perhaps render inert the bacteria, it is evident that it will pass out of the intestine without being absorbed, and the patient will make a rapid recovery.

A great deal of work on the chemistry of colloids has been done in the last few years, but the field is, as yet, largely unexplored. It has, however, been fairly well established that there is an adsorptive interaction between colloids and crystalloids; and according to Young, it
has recently been found that a similar interaction takes place between two opposite electrical colloids when in proper concentration.

Kaolin (aluminum silicate) has long been known for its great absorbing power; it is highly probable that, when taken in large quantities, it quickly combines with the toxins liberated in the intestine, thus rendering them harmless. It is also probable that it makes a rather unfavorable medium for the bacteria to multiply in. Those of our patients who received kaolin only made a much quicker recovery than the others; and none of them developed the distressing and dangerous toxic symptoms during convalescence which many of the others did. The drug is practically insoluble and apparently passes out unchanged. We saw no ill effects from patients taking large quantities of it. Two became very constipated. In one of these, a child, the impacted lumps were removed manually, in the other, a water enema sufficed. A number of patients who had received only salt solution also needed enemas on the second or third day after the diarrhea ceased.

CONCLUSIONS.

On the basis of this study, it would seem that (1) persons over 50 years of age contracting cholera have only a very small chance of recovering, even though they receive treatment; (2) that cholera is a more severe disease in women than in men; (3) that the prognosis is very good if proper treatment is commenced during the first day of the illness; (4) that hypertonic salt solution is the best form of treatment for those in severe collapse, but that it is harmful to those who have not yet developed many of the secondary symptoms; (5) that kaolin is the remedy of choice if the patient does not come under treatment too late.

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THE USE OF COLLOID SOLUTIONS IN CHOLERA.—With the object of replacing the fluid lost from the blood in cholera, which may amount to 67% of the plasma volume, injections of saline solutions are given. Sir Leonard Rogers found that isotonic sodium chloride (0.85 per cent) was practically useless, but that hypertonic solutions (1.2 per cent) were of much greater value. Since the walls of the
blood vessels, however, are freely permeable to salts, there is no permanent difference of osmotic pressure between their contents and the tissue fluids outside them. Hence there is no permanent force to prevent the escape of fluid from the blood vessels. As long as the salt content of the blood, as raised by the introduction of hypertonic solutions, exceeded that of the tissue fluids in his cases, there would be absorption of water and the blood volume would be maintained; but before long the salt concentration of the tissues would rise to that of the blood, and there would no longer be the difference of osmotic pressure necessary to hold the fluid in the circulation against the filtration due to the arterial pressure. This would explain the repeated injections found necessary by Sir Leonard Rogers. In some experiments a two per cent sodium chloride was found to leave the circulation and cause oedema, although not so rapidly as isotonic solutions did.

Although the walls of the blood vessels are permeable to salts, they are impermeable to colloids, so that if we could introduce a solution of a colloid which possesses an osmotic pressure it would not leave the circulation, and its property of attracting water and preventing loss by filtration would be more or less permanent. Professor W. L. Bayliss, the well-known physiologist, points out that we have such a colloid in gum acacia. A six or seven per cent solution of this substance in 0.9 per cent sodium chloride maintained the blood volume under various conditions in which it was defective. Such solutions were used extensively in France for the treatment of haemorrhage and wound shock. He therefore recommends the trial of this method in cholera.

In the Brit. Med. Jour., September 20, 1919, Sir Leonard Rogers states that he has tried gum solutions in cholera with very disappointing results. Their use was followed by increasing distress, difficulty of breathing, and cyanosis, and he was compelled to abandon their use. He believes the explanation to be that the gum solutions lead to the retention in the circulation of the deadly cholera toxins, which are absorbed from the bowel in increasing quantities with the restoration of the circulation by intravenous injections of large quantities of salt solution, with or without gum, but which are usually sufficiently rapidly re-excreted through the kidneys and bowels after hypertonic saline to avoid dangerous accumulation in the blood. The fact that he found salines made up with freshly distilled water produced febrile reactions, indicating that the fever was due to toxin absorption, lends support to this view.

Professor Bayliss, in reply (Brit. Med. Jour., October 4, 1919), says that the symptoms described by Rogers were noticed occasionally in treating cases of shock in France, and were attributed to the water used. He refers to special precautions necessary in preparation of the gum solutions. With regard to the excretion of toxic substances through the kidneys, one of the most striking facts in his experiments was the restoration of the flow of urine by gum-saline when it had stopped from various causes, such as low blood pressure, destruction of blood corpuscles, etc. He thinks it may be worth trying the effect in cholera of alternate injections of saline and of gum-saline, in order to increase the renal excretion and at the same time maintain the blood pressure. He is confident that the difficulties attending the use of gum-saline will be eventually overcome.
Patients suffering from cholera were first admitted into our hospital on August 23, 1919. The disease had probably been present in the city and suburbs for several days. Reports had been received and investigations made, but its occurrence had been denied by the police, and it was not until August 21 that its presence was substantially proven. The first cases occurred along the river in the south suburb among the boatmen, who had no doubt carried it from Tientsin.

The presence of cholera was at once reported to the local authorities and to the administration of the Peking-Hankow Railroad. The latter took prompt and effective action. A mat shed was immediately erected near the railroad station, quite large enough for all ordinary needs, and here all who applied were given free treatment. Altogether 47 cases were admitted during the epidemic, forty-one of which proved to be clinically cholera. The other six were suspects; these improved and were discharged within a few hours. There were six deaths (about 14.5%) among the positive cases.

The method of treatment was as follows: As soon as the patient was admitted, his temperature, blood pressure, and the specific gravity of his blood were determined, this last being done by the method, suggested by Rogers, of using small bottles containing aqueous solutions of glycerine with specific gravities ranging from 1056 to 1070, the specific gravity in each successive bottle being increased by two degrees. A urinometer was used to determine the specific gravities. We then followed the Rogers method of giving atropin, gr. 1/120, administering it twice each day, morning and evening. If the blood pressure was down to 80 mm. or below, or the specific gravity of the blood was up to 1063 or above, we gave an intravenous injection of hypertonic saline, using three pints for 1063, four for 1064, five for 1065, and six for 1066 or above. Several patients had specific gravities running above 1066. The effect of the saline injection was often most gratifying. The hands and feet of the patient became warm; the blood pressure usually rose to 100 mm. or more, the pulse filled up, and the patient felt generally much improved. It was often like bringing him or her back to life again.

If the patient was vomiting or having many movements from the bowels, we immediately started the medication, using either potassium permanganate pills or kaolin solution. We usually used the former as we had only a limited supply of the kaolin. The pills were
made up with vaseline, and contained two grains each of potassium permanganate and kaolin. Two pills were given every fifteen minutes for the first two hours, and after that one or two every half hour until the stools became small and green in color. There were times when we thought that the potassium permanganate pills tended to make the vomiting worse, or at least did not relieve it; in these cases we used the kaolin solution (one part kaolin to three parts cold water, four oz. every hour.) This usually stopped the vomiting. When the medicine was vomited we immediately gave another dose.

If the patient was badly depleted of fluid, or we had to give a second or third infusion, we always began the infusion, as suggested by Rogers, with 500 mils alkaline saline, and then continued the hypertonic saline to the amount indicated by the condition of the patient. We found it necessary to infuse 27 of the 41 patients, or about 66%, giving them altogether 55,200 mils of alkaline and hypertonic saline, averaging about 2,000 mils each. Several patients received as much as 3,000 mils in two injections, and one received 8,600 mils in five injections. In addition to the infusions several patients were given either normal saline, or the alkaline saline diluted one-half, by rectum every two to four hours. This was begun as soon as the purging ceased and aided very materially in replacing the body fluids and increasing the urinary output.

Twenty-eight cases were given potassium permanganate in rather large amounts. The average was 70 grains. One patient received 248 grains; another, 232; still another, 188 grains. Apparently there were no bad effects from its use. Kaolin alone was only used in three or four cases. It seemed to act very satisfactorily when given.

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CHOLERA IN SOOCHOW, 1919.

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The epidemic of cholera which swept over all the eastern portion of China in the summer of 1919, has renewed the interest of the medical profession here in this disease. In the CHINA MEDICAL JOURNAL, July 1919, the use of kaolin was mentioned, and some practitioners have ventured to try this method with apparently good results. Cholera patients in the Soochow Hospital were treated by the Rogers method. The cases were not numerous but as we were able to keep a fairly good record of each one we believe it worth while to report them with the results obtained.
In Soochow the epidemic did not attack a large number of people as it did in such places as Shanghai and Wusih. The cases we received form a fair index of the extent of the epidemic in Soochow. The severity of the disease in those attacked is in marked contrast to the number of cases.

From July 28 to September 24, 1919, we received and discharged 62 cases of what seemed to be real cases of Asiatic cholera. No culture confirmations were made in the laboratory. The symptoms were classical. The epidemic reached its height during August 7-9, on which days we admitted four, five, and six cases respectively. During this same period we were called on to see more than 100 other cases which were supposed to be cholera but which we diagnosed otherwise; most of these cases were either dysentery or malaria. Many patients, overcome by the fear of cholera, had interpreted their discomfort as being evidence of the disease.

Patients needing hospital attention were kept in and all others were sent home. One case was particularly striking. A young boy was taken with chill and nausea and general discomfort. The Chinese supposed it was cholera and gave him a bottle of cholera mixture purchased on the street at the rate of 12 bottles for $1.00. A little later he was given a second bottle and the next morning a part of a third bottle. He was brought to the hospital with symptoms of opium poisoning. His disease was found to be malaria.

Rogers' method of treatment relies on hypertonic saline solution given intravenously in a sufficient quantity to raise the blood pressure to near normal. The blood pressure is the indication for giving, stopping, or repeating the saline solution. If the blood pressure drops to 70 mm., saline is said to be indicated. We are inclined to say that a blood pressure of 80 mm., especially if cramps are present, calls for the saline; a smaller quantity can be given and the disease is often checked at once. The formula for the solution is as follows: sodium chloride, 15 gm.; calcium chloride, .5 gm.; potassium chloride, .8 gm.; distilled water, 1000 mils.

In addition to intravenous treatment Rogers recommends calcium permanganate to be given by mouth, and any other treatment that may be indicated by complications or symptoms. For the complete management of cholera we would refer readers to his book on the subject.

We feel that the hypertonic saline is of prime importance and the one thing on which chief reliance can be placed to bring the patient back to life from an apparently dead state. A patient is brought to the hospital in a state of extreme collapse, coma, arms and legs cyanotic,
skin cold and clammy, with no discernible pulse or blood pressure, and the entire body shrivelled, and to watch the speed with which the circulation starts up and the patient comes to life is really marvelous. We are of the opinion that the saline is best given at room temperature, especially during the heat of the day. This avoids the violent reaction which is apt to follow a hot solution.

The calcium permanganate we believe to be of value in oxidizing the toxines, but it often is quite nauseating to an already vomiting patient. In many cases we used rectal irrigations of the permanganate and believe these to be of much value. It is quite probable that kaolin is of greater value than the permanganate and it will be interesting to see reports concerning its use. We do not believe that kaolin can take the place of hypertonic saline which so quickly replaces the lost fluids.

The treatment of the kidneys is perhaps the most important side issue. In our 62 cases casts were found in 48. Five patients died before a specimen of urine was obtained; it is perfectly fair to assume that all of these patients had casts. Thus 85% of the cases were complicated with nephritis and two of the deaths were directly due to uremia. The use of normal saline, 500 mils every two hours by rectum, after the blood pressure was brought to normal by the intravenous hypertonic solution, seemed to produce a good quantity of urine in our cases and to ward off symptoms of uremia. If the patient passed 1,000 mils of urine in the 24 hours we felt at ease regarding the kidneys.

The large number of our cases which had flagellates in the feces was interesting. The feces were examined in all but two cases and in 18 (30%), flagellates were present. The percentage for all in-patients in 1918 was only 2.2.

Ten cases (16%) were complicated by malaria. All were microscopically diagnosed following some suspicious indication. One patient had malaria for a week before her cholera began. She was rather slow in recovering. We did not notice any apparent effect of quinine on the cholera itself.

The ages of our patients ranged from four to fifty-seven years. Apparently, age had no influence on the mortality.

In one cholera patient, a woman fifty-five years old, there was the complication of an ovarian cyst and an obstructing lesion of the duodenum. She had a very narrow escape. Another patient had an ulcer of the stomach. Both were instructed to return for operative treatment.

Reactions were few, but every patient died that had a temperature of over 105° F. All temperatures were taken by rectum.
Two cases were severely complicated by cholecystitis but both recovered. One patient had hiccough for 3½ days. Aromatic spirits of ammonia relieved it for only a short period at a time. Another patient was troubled with hiccough for 24 hours.

Our routine Wassermann examination of all patients was suspended in cholera cases and therefore latent syphilis as a complication was not recorded.

As to sex the patients were almost equally divided: 28 females and 34 males.

We have divided our 62 cases into three groups according to the condition of the patient on entrance, indicated chiefly by the blood pressure. Group I showed no appreciable loss in blood pressure but we believe from other symptoms these were mild cases of cholera. However, it is possible to question the diagnosis in these three patients, especially in one of them. Treatment consisted only of rectal injections of hypertonic saline solution.

In Group II we put all those whose blood pressure was over 70 mm. and whose condition indicated the necessity of intravenous treatment. There were only six patients in this group. One of these died with a reaction in which the temperature reached 108° F.

Group III included all whose blood pressure was 70 or below. In this group there were 53 patients; 45 of them failed to register any blood pressure whatever with the Tycos instrument. The radial pulse could be felt in none of these 45 and the brachial in only a few. This is a fair indication of their condition on entrance. Sixteen of this group died.

The duration of the disease previous to entrance is of some interest. In Group I the duration averaged eleven hours before entrance; in Group II it averaged twelve hours; in Group III it averaged 16½ hours. The average for the entire 62 cases was sixteen hours. The average for the seventeen that died was only fourteen hours. In this connection Group I may be left out of consideration. With Group II a delay of a few more hours would have probably brought them into the extreme collapse of Group III. The early treatment with the intravenous solution prevented the collapse and enabled the body to take care of the toxins, which we are persuaded is the evil underlying the whole condition. We are convinced that nearly all in Group III would have died without treatment, and a further delay of an hour in the case of many would have made their condition hopeless. No case in Group II received more than one intravenous injection and the quantity required to raise the blood pressure was much less than that required in Group III.
Of the 53 cases in Group III, 37 received only one intravenous injection and of these nine died. Two of these might have been saved if there had been more careful watching for relapse and if a second intravenous injection had been given. Eight had a relapse and were injected a second time. Only one of these died. Five relapsed a third time and had a third injection. Three of these died. One relapsed a fourth time, one a fifth, and one a sixth time and all three died. When the blood pressure went down below 70 mm. it was counted a relapse and intravenous injections were repeated as in the beginning.

As to the length of time the patients were in the hospital, the 17 patients that died had been in the hospital an average of 2.7 days. Those that died within 24 hours have been reckoned as having been there one day. The 45 patients who were cured stayed an average of seven days.

Three patients were five months pregnant. One aborted and went home cured; one aborted and died shortly afterwards; and one died without abortion. Pregnancy did not seem to be a very favorable condition.

RESULTS.

Of the 62 cases, sixteen died in the hospital, and one was permitted to go home after the fourth relapse in a dying condition, and is included here with the others. Of these seventeen fatal cases, eight of the patients were males and nine females. Thus 27.4% of all the cases died; 23.5% of the males, and 32% of the females. None of Group I died, only one (16.2%) of Group II, and 16 (30%) of Group III. Thus it is evident that if we were able to treat a case before it went into extreme collapse the chances of recovery were much greater.

In two cases the cause of death was uremia. In both, the kidneys simply refused to act. One patient, a woman, died 20 minutes after entrance. She was brought to the hospital in coma, with pupils dilated, cold and clammy all over, and perspiring profusely; there had been only a few small watery stools, no vomiting, severe cramps, and the abdomen was distended. Her first symptoms had started only eight hours before, and she was unconscious almost from the beginning. The pulse could not be felt anywhere. Much phlegm was in the trachea from the first. Hypertonic saline was quickly given and the circulation revived even in the fingers. But she died immediately from the retained toxins. Rectal temperature was 102.°F. A bloody fluid came from the lungs after death. Had pneumatic plague been prevalent this case might easily have been diagnosed as such.
While the epidemic was at its height nearly all the patients were cured. Cases near the end of the epidemic had a very high death-rate. Of the last fifteen cases that entered, between August 20 and September 21, nine (60%) died.

None of the hospital nurses or coolies contracted the disease. One prophylactic rule was established from the beginning: "Keep everything away from the mouth." Flies were not tolerated. Antiseptics on the floor and hands were freely used. No cold foods were permitted to be served from the kitchen.

It will be noted that the Soochow epidemic had two peculiar features: (1) the small number of cases and the high virulence; (2) the high mortality at the end of the epidemic and the low mortality during its height.

ABSCESS OF THE LIVER.* (SUPPLEMENTARY REPORT.)

A. I. LUDLOW, M.D., Seoul, Chosen.

In my article on "Abscess of the Liver" (China Medical Journal, May, 1917), thirty cases were reported. In this paper these form Series 1. Series No. 2 refers to thirty additional cases, eight of which were operated on by my Korean associates, Dr. Oh and Dr. Pak, and the remainder by myself. The two series thus comprise a total of sixty cases. All the patients were Koreans. According to time the cases are distributed as follows:

In the year, 1912, 5 cases; 1913, 4 cases; 1914, 6 cases; 1915, 12 cases (during this year the writer was in America for nine months, so Dr. Oh operated on six of the patients); 1916, 14 cases; 1917, 4 cases; 1918, 2 cases (the writer was in Siberia for six months); 1919 (to October 15), 13 cases.

Mortality.

In the first series of thirty cases there were four (13.3%) deaths; in the second series, also of thirty cases, there were three (10%) deaths. The mortality, seven deaths for the two series combined, was 11.6%.

The following particulars are given of the deaths in series No. 2.

Case No. 1. Male, aged thirty years. Previous to operation abscess had ruptured into the abdominal cavity and there was the further complication of active dysentery.

*Article No. 18. Research Department, Severance Union Medical College, Seoul, Chosen (Korea).
Abscess of the Liver. (Supplementary Report.)

Case No. 2. Male, aged forty-one years. Large central abscess, case complicated by active dysentery, ascites, and pleural effusion.

Case No. 3. Male, aged forty-six years. Patient so ill that no history was obtainable. At first it was hard to determine whether he had a chronic empyema or abscess of the liver. There was a fistula leading down to the eighth rib in the right posterior axillary line. Upon operation we observed that a portion of the seventh and eighth ribs for a distance of 5 cm. was necrosed and that it had fractured spontaneously. Beneath was a large abscess cavity extending from the third to the tenth rib. It was only after excision of a portion of the abscess wall and microscopical examination of the tissue that we were able to reach a positive diagnosis of abscess of the liver.

Age of Patients. In Series No. 1 the age ranged from seven to fifty years; average, twenty-five years. In Series No. 2 the age was from twenty-one to fifty-three years; average, thirty-two years.

Sex. In Series No. 1 there were twenty-seven males and three females. In Series No. 2 there were twenty-nine males and one female. Total, fifty-six males and four females.

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<td>Series No. 2</td>
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<td>Total</td>
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Abscesses, Number of. As in the first series, so in the second, most of the abscesses were single or easily converted into single abscesses.

Complications. In Series No. 1 rupture into the pleural cavity occurred in five cases, and in Series No. 2 in two cases. In Series No. 1 there was rupture of the abscess into the abdominal cavity in six cases, and in Series No. 2 there was the same complication in two cases.

Microscopical Examinations. The results of the examination of feces, urine, blood, and sputum did not vary much from those reported in article concerning Series No. 1.

Symptoms. There is nothing further to report concerning the symptoms except to confirm the sign which was mentioned under palpation and which has been constant, viz., deep-seated pain in the region of the abscess elicited by a sudden poke with the end of the finger.

Operation. In most of the additional cases we have adhered to the operation described in my former paper, viz., drainage through opening
formed after excising portion of the ninth rib. In the following cases the operation was differently performed.

No. 1. In this case an incision was made over the outer border of the right rectus muscle from the costal margin downward. The patient made a good recovery.

No. 2. In this case, judging the abscess would be found well walled off, the first incision was made over the border of the right rectus. Upon finding that the liver was not adherent we made counter drainage in the usual place over the ninth rib. The patient, aged fifty-three years, made a good recovery.

No. 3. Laparotomy, median incision. The patient died. This case (No. 1) is mentioned in the comments on the mortality.

No. 4. This was one of our last and most interesting cases. Patient, male, aged thirty years. There was a large area of dullness over the region of the left lobe of the liver extending downward about two inches below the costal margin. An incision was made from the costal margin downward for about three inches along the outer border of the left rectus muscle. Upon opening the abdomen we found the left lobe of the liver greatly enlarged and pale in color. It was adherent for two inches below the costal margin. Fearing to rupture the abscess while the abdominal cavity was open, we proceeded to close the abdomen. Just as we finished the closure the abscess ruptured close to the costal margin. There being so little room for drainage we made a counter opening by resecting a portion of the left ninth rib. Patient made a good recovery.


After-treatment. We have tried Dakin's solution in five cases and hypertonic saline solution in five cases. Neither solution seemed to hasten the healing process to any noticeable extent though of course each was of value in the irrigation of the cavity. Of the two, the hypertonic saline is preferable.

Treatment by Emetine. Lately, several reports have been made of successful treatment by aspiration of the pus, and injection of emetine (0.15 gm. emetine in 30 mils distilled water) into the abscess cavity; and some who have reported condemn severely those who operate for abscess of the liver. In the cases we have had lately, we have been trying the method recommended, and we shall publish the results later.

The hesitation to adopt the newer method was due to the following reasons. 1. All our patients of late have had very large abscesses. 2.
In nearly every case the pus has been so thick that it would have been possible to aspirate only a part of it. 3. Our operative results have been very good. Certainly nothing but a radical operation was practicable in our third fatal case. It is also very questionable whether aspiration would have done any good in the other two fatal cases.

We now give a hypodermic injection of emetine (one grain) daily for four days after operation, or before if the case does not need immediate operation. We also give an intestinal antiseptic, such as tri-methol, for the reason that we have had three patients in whom no amoebae could be found in the feces before operation, yet they developed dysentery afterwards. As most of these patients formerly had dysentery at some time or other, the disease was evidently quiescent for some time before operation and perhaps the recrudescence was due to the operative procedure. If no intestinal symptoms develop we discontinue the emetine after the fourth day.

Our further experience induces us to repeat the following advice:—

1. Keep a mental attitude of suspicion as the possibility of abscess of the liver in localities where amoebic dysentery is prevalent, and do not exclude the diagnosis because of normal pulse, temperature, respirations, or blood count.

2. Use the aspirator only when preparations are made for further operation, unless the aspirator used is very small. Nothing but positive findings are of value.

3. While it may be necessary to vary the operation according to the condition found, yet in most cases the operation described in my former article proves satisfactory.

4. It is very important to keep a good opening for drainage. If the subsequent cure of the case is left to an assistant, unless he is well instructed he is very apt to let the external opening close too quickly.

The Surgeon and Unsuccessful Cases.—Surgery is said to resemble war, in which the most successful general is the one who makes the fewest mistakes. Even the most careful, even the most timid surgeon, cannot hope altogether to prevent what have been called "surgical catastrophes," however strictly he may follow the recognized rules of practice; much less is a pioneer likely to escape them whilst breaking altogether new ground. Lister was by no means a timid surgeon, and whenever such an incident occurred, indeed whenever a patient caused serious anxiety, he felt it very acutely at the time. But when the crisis was over he could shake off the depression, and put what was irremediable behind him perhaps more quickly than some less sensitive natures. With him the lesson was learned, the pitfall would in future be avoided, but useless remorse was not allowed to interfere with the next step forward. He had thought out each problem with such care, and was so conscious that he had done his best, that he was able to feel a large measure of that spiritual support in which his upbringing and his early surroundings had accustomed him to trust.—Life of Lord Lister.
EXSTROPHY OF BLADDER: IMPLANTATION OF URETERS INTO RECTUM.*

A. J. Ludlow, M.D., Seoul, Chosen.


Operation. Patient was operated upon on September 24, 1919. Each ureter, together with a rosette of mucous membrane, was stripped back for a distance of two inches. The ureters being thus freed the remainder of the bladder was carefully dissected away. The peritoneal cavity was not opened during the procedure. Forceps were inserted into the rectum and on being passed through the rectal wall the ends of the ureters were seized and implanted into the two separate openings. There was considerable difficulty in pulling the ureters into the rectum. The mucosa about the ureters was so friable that it would tear upon even moderate tension. After we succeeded in implanting the first ureter, it slipped out during the manipulation to implant the second. We finally succeeded in getting both implanted. The day following the operation there was leakage from above. The patient suffered considerable shock and died on the ninth day after operation.

Comment. Naturally, we desire to report only good results, but it is only fair that we should make known our failures, if by so doing there is a lesson in them for ourselves or others. In the China Medical Journal, May, 1919, I reported a case of implantation of the ureters into the rectum which proved very successful. This case proved the opposite. Since coming to Chosen in 1912, I have seen only three cases of this congenital malformation of exstrophy of the bladder. One patient was a female, Korean, twenty-two years of age. Unfortunately, we were not able to obtain a photograph of her. No operation was performed. The second patient was a baby six months old. A review of the case now reported indicates that: (1) We had an erroneous conception of the degree of resistance of the patient; we should have waited longer before operating and have endeavored to build up his strength. (2) Perhaps too much of the mucosa was left about the ostium of the ureters. This made a larger opening

* Surgical Case Reports, Issued by Severance Union Medical College, Seoul, Chosen. Article No. 16.
Ludlow: surgical case reports,

EXSTROPHY OF BLADDER.
1. Rudimentary penis. 2. Opening of right ureter.
3. Opening of left ureter.
Bercovitz: Gangosa in South China.

Chinese case of Gangosa seen in Hainan.
Gangosa in South China: Report of Two Cases.

necessary in the intestinal wall, which no doubt was responsible for the leakage. (3) The intestinal portion should have kept its position without tension. In another case, to make sure of this, I would be inclined to strip the ureters further back.

GANGOSA IN SOUTH CHINA: REPORT OF TWO CASES.

NATHANIEL BERCOVITZ, B.Sc., M. D., Kacheck, Hainan.

Gangosa (rhinopharyngitis mutilans, Leys) is found chiefly in Guam, Fiji, the Caroline Islands, and the island of Dominica in the West Indies. Cases have been reported from Ceylon and the Philippines. It is apparently quite rare in China.

The two patients, whose condition is here reported, are members of begging troupes. A photograph of one only could be secured, but the physical characteristics of both cases are practically identical. The onset was insidious, and no clear history of the course of the disease could be obtained. The home of one of these men is near Luichow, and that of the other near Pakhoi, in the south of China. No native of Hainan with the disease has been seen.

In each patient the mouth was greatly contracted (1 inch in diameter in one case, and 1½ inches in the second). The lips were scarcely recognizable as such, the rim of the mouth being lined with cicatricial tissue allowing of no change of form of the orifice. The tongue was not affected, but owing to the destruction of the nose the voice was peculiarly muffled. The bones, cartilages, and soft parts of the nose and the soft palate were completely destroyed, the nasal opening being a small, round, scar-lined hole. In both patients the eyes were destroyed. In the first patient the margins of the lids still remained, but the conjunctivae and eyeballs were covered with dense cicatricial tissue. In the second patient (see photograph) no trace of the lids remained, cicatricial tissue extending from the cheek up to the superciliary ridge. In both patients the tongue, pharynx, and epiglottis could be seen through the nasal orifice. Neither of these men was willing to stay in the hospital, nor to allow blood tests or smears from the secretions to be made. In neither of the cases were there evidences of disease of the extremities, and with the exception of the facial lesions the health of the men was good.

There is apparently a conflict of views between authorities regarding the nature of the disease, and its proper classification, the question
being whether gangosa is a stage of yaws or syphilis, or whether it is a disease *sui generis*. Careful study of these two cases could not be made, and no conclusion can be drawn except the fact that the disease does exist in south China. It may be noted, however, that the author has seen no cases in south China which resemble yaws. Of course this does not prove that yaws does not exist in south China. Furthermore, the extreme rarity of gangosa in a country where syphilis is so widespread and where the tertiary lesions are so destructive, seems to point against syphilis as a causative factor.

**THE INFLUENZA BACILLUS IN PARANASAL SINUS INFECTIONS.**

By S. J. Crow£, M.D., and W. S. Thacker Neville, M.D., F.R.C.S., Mukden.

There is some difference of opinion as to the nature of the organism primarily responsible for the influenzal epidemic of 1918-1919. Pfeiffer’s bacillus was found in a sufficient number of cases to raise the question as to whether it was the primary agent, or, like the streptococcus and pneumococcus, a secondary invader.

We were interested to determine whether or not this bacillus occurred more frequently in a series of infected nasal sinuses observed immediately following the epidemic, than in a series of such cases observed during a period when there was no epidemic. During the height of the epidemic in Baltimore, it was impossible, owing to the press of work and the scarcity of skilled help, to make bacteriological examinations of the infected sinuses. Within six weeks after the epidemic had subsided, however, one of us (Neville) undertook a careful bacteriological study of every case of maxillary sinus infection treated at the Johns Hopkins Hospital. We limited our study to the maxillary sinus, because this cavity is the one most frequently affected, and because the material for culture can be obtained from this situation with less risk of contamination than from the ethmoidal, frontal or sphenoidal cells.

We present for comparison two series of cases. The first series of seventy includes every case of accessory nasal sinus infection treated at the Johns Hopkins Hospital during the years 1912-1918, in which we

have a report on the cultures made from the antrum.* Of these 70 observations, made during a period when there was no epidemic of influenza, we have 15 cases in which the influenza bacillus was found in the antrum. The 30 cases of the second series were all observed during February, March, and April of 1919. In eight of these cases we found \textit{B. influenza} in the antrum. It is of interest that the percentage of cases in which the influenza bacillus was found in the antrum is about the same in each group.

The material for culture is obtained by a very simple method. A small piece of cotton on the end of a steel applicator is moistened with a 20 per cent solution of cocaine and 1:1000 adrenalin. The excess of cocaine is removed by pressing the cotton between two layers of gauze; this will insure against symptoms of cocaine poisoning. A small piece of cotton moistened with cocaine and adrenalin is also placed between the anterior end of the inferior turbinate and the septum, and both are left in place for ten or fifteen minutes. A curved trochar, a small rubber ear syringe, a nasal speculum and a finger bowl are then boiled for at least five minutes. The patient’s nose is cleansed of all visible discharge. The trochar is passed under the anterior end of the inferior turbinate into the antrum, and the stilette removed. The patient bends 90° forward, and often the pus will drop from the cannula. If not, air or a few drops of sterile salt solution are blown into the antrum with the rubber syringe, and the material returning through the cannula is caught in a sterile test-tube. It is important that enough adrenalin be used to make the procedure absolutely bloodless, for we have found, in agreement with Rivers, that a few drops of blood mixed with the material obtained for culture will inhibit the growth of the influenza bacillus.\footnote{It was formerly our custom to take cultures from infected sinuses (chiefly at operation) on cotton swabs. These swabs were sent to the regular bacteriological laboratory of the hospital but had often completely dried up before reaching the laboratory. This accounts for the comparatively small number in which we have a bacteriological report.}

The bacteriological technique employed is as follows: The material is plated immediately on agar containing defibrinated rabbit’s blood, and the plates are incubated at 37° C. for twenty-four hours. The various colonies are then examined in stained smears and transferred to blood-agar slants. After twenty-four hours the cultural characteristics of the streptococcus and pneumococcus are differentiated by Neufeld’s bile soluble test. The pneumococci are grouped according to the method of Avery, Chickering, Cole and Dochez.\footnote{The serum used was obtained from the Rockefeller Institute.} The serum

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bacillus grows freely on blood-agar but not at all on plain agar. This differentiates it from the micrococcus catarrhalis. This latter organism may be differentiated from other gram-negative cocci by the use of Hiss's serum sugar media, and the Elser and Huntoon classification.

In the first series of 70 cases observed during the period from 1912 to 1918, the influenza bacillus was found in the antrum in 15 cases (21 per cent). The streptococcus was found in 33 cases (47 per cent); in 10 of these the organism was haemolytic. The pneumococcus occurred 12 times (17 per cent). The staphylococcus was found in 16 cases (22 per cent), in one of which it was haemolytic; the proteus was found once; and the diphtheria bacillus twice.

In the second series of 30 cases observed during the three months immediately following the subsidence of the influenzal epidemic, the influenza bacillus was found in the antrum in eight cases (26 per cent). The streptococcus was again the predominating organism (14 cases, or 46 per cent); of these 14 cases, in four it was haemolytic. The following organisms were occasionally found: the haemolytic staphylococcus in four cases, the pneumococcus in three cases, the micrococcus catarrhalis in two cases, and a gram-negative diphtheroid bacillus in three cases. The diphtheria bacillus was found in one case, the bacillus lactis aerogenes once, and the proteus vulgaris in two cases.

The influenza bacillus was recovered from the antrum in pure culture in four cases. In four other cases it was found associated with other organisms: streptococcus haemolyticus, streptococcus mucosus, micrococcus catarrhalis, micrococcus tetragenus, and the staphylococcus albus. The haemolytic staphylococcus occurred four times, once in pure culture. The staphylococcus albus was found in eight cases, but was probably in each case a contamination from the nasal cavity.* The

*The healthy nasal cavity is apparently a normal habitat for the staphylococcus albus. We took cultures from the middle turbinate in seven individuals with clinically normal nasal cavities. A little mucus was obtained from the middle turbinate with a platinum loop and implanted on plates of rabbit blood-agar. We found: staphylococcus albus, 91 per cent; diphtheroids, 41 per cent; pneumococcus, Type-IV, 16 per cent; micrococcus catarrhalis, 8.9 per cent.

Park and Wright, in 1898, took cultures with a platinum loop from far back in the nose and showed that the nasal secretion has no bactericidal action. Of 36 examinations only six were sterile. The predominating organism was the staphylococcus.

Hasslauer, in 1902, made bacteriological examinations from the normal nasal cavities of 111 individuals. He found: staphylococcus in 25 per cent; pneumococcus in 20 per cent; streptococcus in 17 per cent; diphtheroid in 13 per cent.

He also investigated the bacteriological content of the nasal discharge in 78 cases with a coryza and found much the same varieties of organisms in both healthy and pathological nasal cavities. The only difference was that they were far more numerous in infected nasal cavities.
The Influenza Bacillus in Paranasal Sinus Infections.

pneumococcus was recovered in three cases (in two, Type III; and in one, Type IV), twice in pure culture, once mixed with a staphylococcus albus.

CONCLUSIONS.

1. The influenza bacillus was found in infected maxillary sinuses in practically the same percentage (21 per cent) in a series of cases observed during a period of six years when there was no epidemic, as in a second series observed immediately following the epidemic in Baltimore during the winter of 1918-1919 (26 per cent).

2. The influenza bacillus is not infrequently found in pure culture in the antrum.

3. Clinically B. influenzae is a pyogenic organism.

4. The predominating organism in all antrum infections is the streptococcus.

5. We infer from these observations that the influenza bacillus, like the streptococcus and pneumococcus, is a secondary invader, and not the primary cause of the disease known as influenza.

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The China Medical Journal.

THE NUTRITIVE VALUE OF SOY BEAN PRODUCTS.*

W. H. Adolph, Ph.D., and P. C. Kiang, M.D., Tsinan.

One of the problems of modern science is to find in sufficient quantity foods of high nutritive value, such as will provide for the repair of the tissues, and also promote growth and physiological well-being. The factors involved in a good food are not only concerned with the proper amount and ratios of protein, fats, carbohydrates, etc., but are also concerned with the availability of the groups of nutrients which it contains, and with the presence or absence in a given foodstuff of certain accessory substances essential to a perfect diet, the so-called vitamines. These have been the subject of much investigation, since the development of the vitamine theory by Funk1.

The recent world-shortage of food, and the demand for foods which are high in nutritive value, have turned the attention of dietitians to the possibilities of the soy bean as an article of food. An examination of its chemical composition (see Table I) shows that, from the chemical point of view at least, it is a distinctly well-balanced food. The soy bean, with a large number of soy bean products, has been one of the most important foods of Oriental peoples for centuries. The purpose of the present paper is to state the results of our investigation of the uses of the soy bean and its products in China, especially in regard to their nutritive values.

There have been already distinguished 280 varieties of the soy bean (Glycine hispida)2. The yellow variety (黃豆—Ito San) is the most common variety in China. The soy bean is principally known to the chemical world as the source of the urease discovered by Takeuchi3, and since applied in biochemical analysis. Following this discovery the literature of the soy bean has been voluminous, but no attempt can be made to review it fully here. A number of important investigations have been concerned specifically with the nutritive value of the soy bean. Street and Bailey4 report the existence of a number of valuable enzymes and a large content of galactans and pentosans. Osbourne and Mendel5,6 and Daniel and Nichols7, state that the yellow soy bean contains a high percentage of physiologically good protein, a considerable amount of energy-yielding fat and carbohydrate, and a sufficiency of fat-soluble A and water-soluble B vitamines. It is found, however, that there is a deficiency of the mineral constituents,

* A paper read at the Conference of the C.M.M.A. held in Peking, February, 1920.
calcium, sodium, and the chlorides (see Table III). This is an important point, indicating perhaps the principal deficiency of the soy bean as a food. It is recognized that the elements calcium, sodium, and chlorine are of exceptional importance in nutrition, this fact having been noticed particularly in places where the water used for drinking purposes is nearly free from lime and sodium chloride. McCollum and Simmonds assert that the "efficient utilization of food by growing animals is not possible when the diet is deficient in these elements." Apart from this, however, the interesting point remains that the soy bean seems to be the only seed, with one or two exceptions, which contains in itself a sufficiency of the dietary essentials or vitamins.

During the last few years, the soy bean has been used in the West in the feeding of infants, frequently with an admixture of some cereal for additional carbohydrate; it has also been given in summer diarrhoea. It is one of the recognized diabetic foods. One of the most satisfactory forms of artificial milk is made from soy beans. The bread used by the French army in the recent war was made principally from soy bean flour. There has been established in France, for a number of years, an industry for the production of a large variety of soy bean products. The oil, pressed or extracted from the bean, has long been used in the Far East, and during the last year or two has risen to be the leading article of export from China. Many investigations have shown the essential economic features of the soy bean. It yields more seed per acre, is more cheaply harvested than any other variety of bean, and only under exceptional conditions is it attacked by weevils. Each one of the by-products is valuable in the industries or for food.

**HISTORY OF SOY BEAN AS AN ARTICLE OF FOOD.**

The use of the soy bean in China dates back to the beginning of China's agricultural age under the Emperor Shen Nung (神農). It is mentioned in the Ben Tsao Gang Mu (本草綱目) written by Shen Nung in the year 2838 B.C. Tradition says that the manufacture of soy bean-curd originated in China in 164 B.C., during the reign of Han Wen Di (漢文帝), by a man named Liu An (劉安), the Duke of Hwai Nan (淮南). The colloquial name for soy bean-curd is *do fu* (豆腐), and the classical name, *li chi* (黎祁), probably meaning "the morning prayer." Its exact derivation, however, could not be traced. It is interesting to note that in China at the present day the bean-curd is made in the early hours of the morning and sold at daybreak.
Liu An was a great friend of the Buddhist monks, and it is quite probable that he invented this bean curd in order to provide a change or a delicacy to break the monotony of the monastic ration. As a matter of fact, the bean curd is a real delicacy if carefully made and well cooked. Chinese who are connoisseurs on the subject assert that when so prepared it has the taste of pig's brain. The foreigner eating Chinese food often eats carefully prepared bean-curd thinking it is pork. With sugar it produces a dish tasting like custard. Prepared with salt it resembles scrambled eggs.

The soy bean was introduced into France about the middle of the 18th century, but only in comparatively recent years was it introduced into America, England, and Germany.

Dietary Value of the Soy Bean.

The Chinese people make practically no use of dairy products, and the bulk of the people consume only very meagre amounts of meat. Yet in spite of this the nation has existed for centuries on what appears to be a remarkably well-balanced diet by the use of the soy bean. It should be pointed out that the soy bean contains little starch, and that from the nutritive point of view it is not a wheat substitute, but a substitute for meat or milk.

A number of interesting examples are found in China of the use of bean products as an agent for the promotion of growth. One of us has observed in Anking that dealers in birds employ bean-curd as the sole food for very young birds. The birds are taken away from their nests immediately after they are hatched, and are then fed on bean-curd to tide over the period till they are able to feed themselves. More interesting, possibly, is the diet of the true Buddhist monk. Consecrated from birth to the priesthood, he is carried through the period of childhood with its rapid growth on a rather heavy diet of bean-curd. His apparently normal growth seems to be paralleled by the experiments of Osbourne and Mendel on the promotion of growth in rats by both the water-soluble and fat-soluble vitamines contained in the soy bean. The country monastic diet is noted for its high content in soy bean products.

In scanning the questions concerning the diet of the Chinese, one is tempted to speculate as to the possible relationship between the protein diet of bean-curd and other soy bean products, and the subject of resistance to infection. Whether there is any such relationship remains still to be determined. The Chinese coolie is a case in point. In spite of the scanty intake of meat and the constant exposure to numerous
The Nutritive Value of Soy Bean Products.

sources of infection he still exhibits a wonderful resistance. The diet of the average coolie contains a surprisingly large amount of beans and bean products. Experiments with rats have shown that their resistance to snake venom is greater when they have been fed on a protein diet.

We are accustomed to point out that nature has solved many of her food problems by blind experimentation. The growing young are always fed on milk, eggs, larvæ, all containing a relatively large amount of protein. The Far East is full of examples where a kind of natural instinct has led to the incorporation of large amounts of protein food into a diet lacking in nitrogenous substances. In addition to the use of the soy bean in China, there stands out as an example the use of nuoc-mam, a protein food, in the rice diets of Indo-China. It is a common saying in some parts of China that bean milk is the poor man's milk, and bean-curd the poor man's meat. The full importance of bean-curd and other bean products in the diet of the Far East will only be made clear when the protein metabolism of the Oriental is better understood. Thus far it is known that it conforms to quite a different standard from that of the European. It is a further question to ask what are the racial characteristics, if any, which are traceable to the large use of a bean diet in China. It is commonly stated that a meat diet is characteristic of the most aggressive peoples of the world. Has the consumption by the Chinese of the vegetable protein of the soy bean instead of meat in any way affected the disposition of the people?

Bean milk is another product which in composition is not far different from cow's milk. In many places in China, bean milk is regarded as a nutritious drink. It is usually taken sweetened with sugar. Western countries employ a number of patented methods for removing the "beany taste" which may be objectionable to the Western consumer.

In prescribing a soy bean diet it is hardly necessary to suggest that the soy beans should be mixed with green vegetables. This is a suitable diet in those clinical syndromes which are due to lack of dietary essentials, and to diabetics who are unwilling to take the starvation treatment. The addition of the green vegetables directly fortifies the vitamins, and augments the content of calcium and sodium chloride.

MANUFACTURE OF SOY BEAN PRODUCTS IN CHINA.

It would be almost impossible to make a complete list of all the products manufactured from soy beans in China. The best known and most important are bean milk, bean curd, bean sauce (soy), and bean oil. In addition to this are the different forms of bean curd.
preparations, bean sprouts, and a large variety of sauces and condiments into which the soy bean enters as one of the constituents.

**BEAN MILK AND BEAN CURD.**

Bean milk is the colloidal solution from which the bean curd is coagulated. The soy beans are ground up with water, and strained. The resulting colloidal solution is the soy bean milk (豆漿), and has the same appearance as cow's milk. Its specific gravity is slightly greater than the latter. The beau residue which does not pass through the sieve is used as feed for hogs. On coagulation of this solution the soy bean curd (豆腐) separates; this is often called "Chinese cheese."

As far as is known to the authors, there are at present four agents employed in China to effect this coagulation: (1) lu (卤), the residue from the crystallization of salt; (2) gypsum (石膏); (3) swan giang (酸漿), the soured bean milk whey remaining from the previous coagulation of bean curd; and (4) vinegar (醋). The quantities of materials employed, and the details of manufacture vary, of course, in different parts of China. From the point of view of nutritive value, it is important to know whether the methods employed in making the various beau products bring about any change, beneficial or otherwise, in the mineral salt contents, especially the calcium, sodium, and chlorine. And it must also be determined whether the methods of preparation have any deleterious effects upon the vitamins. It is not probable that such is the case. Daniels and McClurg have studied the content of the antineuritic factor (water-soluble vitamin) in navy beans, soy beans, and cabbage, after exposure to heat and after treatment with alkali. They reported that the liquor from cooked beans still retained the water-soluble vitamin.

**COMPOSITION OF SOY BEAN AND ITS PRODUCTS.**

The following analyses are of products manufactured from the yellow soy bean (黄豆) common throughout Shantung. The products are as purchased on the streets of Tsinan. The average analysis of the soy bean itself is in agreement with the commonly accepted data on the yellow soy bean:

<table>
<thead>
<tr>
<th></th>
<th>Water</th>
<th>Protein</th>
<th>Fat</th>
<th>N-free extract</th>
<th>Fiber</th>
<th>Ash</th>
</tr>
</thead>
<tbody>
<tr>
<td>per cent.</td>
<td>6.43</td>
<td>39.30</td>
<td>18.70</td>
<td>24.80</td>
<td>5.82</td>
<td>4.95</td>
</tr>
</tbody>
</table>

**Table 1.**—Average Analysis of Soy Bean.
The Nutritive Value of Soy Bean Products.

The local variety of bean curd is made exclusively by the use of lu (卤) as a coagulating agent. In the following table a column is added to compare the analyses of bean curd with that of common cottage cheese.

**Table II.---Analyses of Soy Bean Curd.**

<table>
<thead>
<tr>
<th></th>
<th>Soy Bean Curd</th>
<th>Cottage Cheese</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sample A</td>
<td>Sample B</td>
</tr>
<tr>
<td>Water</td>
<td>80.90</td>
<td>82.83</td>
</tr>
<tr>
<td>Protein</td>
<td>10.22</td>
<td>10.00</td>
</tr>
<tr>
<td>Fat</td>
<td>3.66</td>
<td>3.67</td>
</tr>
<tr>
<td>N-free extract</td>
<td>4.13</td>
<td>2.70</td>
</tr>
<tr>
<td>Ash</td>
<td>1.09</td>
<td>.80</td>
</tr>
</tbody>
</table>

It was interesting to note in dealing with a large number of samples of bean curd that the water content of the bean curd manufactured by any one shop is quite constant. Our experience showed that it was constant within one or two per cent. If calculated on the basis of water-free content, the above analyses indicate that bean curd is somewhat richer in protein than the curd obtained from cow's milk, although it is lower in fat value.

The ash of soy bean curd was also analysed. A column is added in the Table below indicating the composition of the ash of the soy bean.

**Table III.---Analysis of Ash of Soy Bean Curd.**

<table>
<thead>
<tr>
<th></th>
<th>Ash of Soy Bean Curd</th>
<th>Ash of Soy Bean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>per cent.</td>
<td>per cent.</td>
</tr>
<tr>
<td>CaO</td>
<td>0.57</td>
<td>0.25</td>
</tr>
<tr>
<td>NgO</td>
<td>0.60</td>
<td>0.50</td>
</tr>
<tr>
<td>K2O</td>
<td>0.71</td>
<td>2.48</td>
</tr>
<tr>
<td>Na2O</td>
<td>0.33</td>
<td>0.19</td>
</tr>
<tr>
<td>P2O5</td>
<td>0.79</td>
<td>1.88</td>
</tr>
<tr>
<td>Cl</td>
<td>0.38</td>
<td>0.005</td>
</tr>
<tr>
<td>S</td>
<td>0.09</td>
<td>—</td>
</tr>
<tr>
<td>Fe</td>
<td>0.01</td>
<td>—</td>
</tr>
</tbody>
</table>

The important point in the above analysis is to note the higher figures for calcium, sodium, and chlorine in the ash of soy bean curd. The investigation of its nutritional value, referred to above, indicated that its short-coming lay in the low amounts of these important mineral constituents. It would seem, however, in the case of this particular one of the soy bean products, the bean curd prepared by coagulation with lu (卤), that not only has a refined preparation of protein been produced, but in its preparation have been added just those inorganic substances which help to bring it up to the rank of a food of high physiological value.
Analyses of soy bean milk as produced in China show an interesting comparison with the Western nutritional standard for cow’s milk. In the following Table are included analyses of the bean residue remaining from the preparation of the milk from the whole bean; and the bean milk whey, the liquor remaining after the coagulation of the curd.

**Table IV.—Analyses of Bean Milk, etc.**

<table>
<thead>
<tr>
<th></th>
<th>Bean Milk</th>
<th>Cow’s Milk</th>
<th>Bean Milk</th>
<th>Whey</th>
<th>Bean Residue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>Water</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>90.71</td>
<td>95.29</td>
<td>87.0</td>
<td>97.09</td>
<td>97.79</td>
</tr>
<tr>
<td>Protein</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>4.22</td>
<td>2.67</td>
<td>3.3</td>
<td>1.03</td>
<td>0.60</td>
</tr>
<tr>
<td>Fat</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>1.87</td>
<td>1.30</td>
<td>4.0</td>
<td>0.23</td>
<td>0.47</td>
</tr>
<tr>
<td>N-free extract</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>2.80</td>
<td>0.48</td>
<td>5.0</td>
<td>1.26</td>
<td>0.80</td>
</tr>
<tr>
<td>Fiber</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>5.88</td>
</tr>
<tr>
<td>Ash</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td>0.40</td>
<td>0.26</td>
<td>0.7</td>
<td>0.39</td>
<td>0.34</td>
</tr>
</tbody>
</table>

On examining bean milk under the microscope, it is interesting to note the fine state of emulsion of the bean oil globules. Ladd has invented a machine for making a homogeneous emulsion of vegetable oils to be given in difficult cases of infant feeding. It would seem, however, that the Chinese soy bean milk contains an oil already emulsified.

**Clinical Uses of Soy Bean Diet.**

A paper of this kind inevitably raises questions concerning the effect which a soy bean diet has produced upon the metabolism of Oriental peoples, and as to the real value of the soy bean and its products in special clinical diets in China. The physiological chemist has recognized that the soy bean is unique, and at least interesting. On account of its higher content of base-forming elements as contrasted with meat, can we not give it in conditions of threatened acidosis? Because of its probable freedom from purine and pyrimidine bases, might it not be given in conditions of chronic gout? The high vitamin content of the soy bean suggests its use in the deficiency diseases, beriberi, scurvy, pellagra, and rickets. With reference to pellagra, Goldberger has emphasized the fact that the diet of those living in districts where this disease is common is lacking in sufficient amounts of certain foodstuffs, especially milk, eggs, meats, and the seeds of leguminous plants. The deficiency of the soy bean in sugar makes it an appropriate food in diabetes. The fine emulsion of bean oil globules, and the high protein and galactan content, should strongly commend it for infant feeding. It has already been mentioned that on account of its enzyme content, it is being employed in various procedures in the laboratory.
In regard to bean curd and bean milk it remains to be suggested that the manufacture of these products in China might be standardized in such manner that the traditional method of manufacture be changed into a scientific one, as has been done with the milk and cream industry in Europe and America. The most interesting subject from the chemical point of view will be to consider whether there can not be introduced some other coagulant for China to replace the lu (卤), gypsum, etc. Let some coagulant, or mixture of coagulants, be chosen that is practical, and that will simultaneously add to the bean curd just exactly those inorganic constituents of physiological value which are needed, and in the correct proportion.

SUMMARY.

The history and uses of the soy bean and its products in China have been reviewed, and the important relationship indicated which these food products bear to the Chinese dietary.

Soy bean curd is rich in protein, and contains those mineral constituents which are essential for growth.

Analyses are given of bean curd, bean milk, and the by-products obtained in their manufacture.

REFERENCES.

1. Funk: The Lancet, 2, 1266 (1911).

LOW PROTEIN DIETS IN THE TROPICS.—In tropical lands there are many peoples who live mainly upon cooked cultivated vegetal foods, with but little admixture of animal foods, and this is due to force of circumstances rather than to any desire of the peoples, who would be glad enough to eat animal food if it could be obtained. Among these peoples the protein in the food sinks to a very low amount with a markedly deteriorating influence on the race. . . . When the protein standard of a tropical dietary is very low, then the physique, the capacity for work, the health, and the resistance against disease are also lowered.—Castellani and Chalmers, Manual of Tropical Medicine.
The China Medical Journal.

Vol. XXXIV. MAY, 1920. No. 3

All medical papers and other literary communications intended for the Journal, and all books for review and magazines in exchange, should be addressed to the Editor, St. John’s University, Shanghai.

Changes of address of members of the Association, departures and arrivals, and all business communications should be sent to Dr. R. C. Beebe, 5 Quinsan Gardens, Shanghai.

Every member of the China Medical Missionary Association, who has paid his dues for the current year, is entitled to a copy of the CHINA MEDICAL JOURNAL for the year, postage free. To those not members the subscription to the JOURNAL is $5.00 Mex., per annum. In remitting by cheque, please specify Shanghai Currency. Payment should be made to the Treasurer of the Association, Dr. H. H. Morris, 4B Minghong Road, Shanghai, or to Dr. Beebe, 5 Quinsan Gardens, Shanghai.

Editorial.

In accordance with the custom which prescribes that the office of President of the China Medical Missionary Association shall not be held continuously by the representatives of any one nationality, Dr. Charles F. Johnson, of the American Presbyterian Mission, Tsinan, at the recent conference in Peking was elected President for the biennium, 1920-1922, in succession to Dr. Cecil J. Davenport, of the London Missionary Society, Shanghai.

Having arrived in China as long ago as 1889, Dr. Johnson is a missionary physician of long and varied experience. As a pioneer he helped to open the station of Ichowfu, in the southern part of the province of Shantung, and the medical work there was soon firmly established. The necessity of training young Chinese to assist in hospital work and otherwise to serve their own people, was early perceived by him, so that he has always taken a deep interest in medical education. He assisted Dr. Neal in teaching a class of medical students in 1892, and ever since has been connected, more or less closely, with medical teaching. He was on the Joint Mission Committee which started the Tsinan Medical School, now a department of the Shantung Christian University. As a member of its Medical Faculty he is Professor of Children’s Diseases, Obstetrics, and Hygiene.

In addition to professional acquirements it is important that a missionary physician in China should have a sound knowledge of
CHARLES F. JOHNSON, M.D., TSINAN, SHANTUNG,
PRESIDENT OF THE CHINA MEDICAL ASSOCIATION.
Editorial.

business methods, as his duties are so multifarious. The good business qualities of Dr. Johnson are appreciated highly by his colleagues. He has been a member of the Presbyterian China Council since 1911, and is chairman of the Shantung Mission Council and Executive Committee.

Now that the great War has receded into the past it does not seem probable that any novel or very important questions will arise within the next two years. The main task before us is to improve, quietly and steadily, the efficiency of our hospitals and to strengthen our work generally. Judging by his fine record we may be certain that Dr. Johnson will serve the Association faithfully and wisely in this forward, constructive movement.

Beyond all argument the recent Conference of the The Peking C. M. M. A., in Peking, was the best we have ever Conference. held. The attendance was very large; doubtless it was a heavy strain on the hospitality of friends in Peking and it demanded much careful thought and planning on the part of those in charge of the entertainment of visitors, but the emergency was met in the most delightful manner.

As to noteworthy features of the Conference, the papers on the present condition of hospitals in China and the means that should be taken to bring all to a high state of efficiency were excellent, and the subsequent discussion cogent and helpful. Our institutions were measured by an exacting standard and not a few were found wanting. It requires no little grace to give or receive adverse criticism in a genial spirit, but the proceedings were marked throughout by brotherly feeling and the evident desire of all to raise our medical work to the highest practical standard.

The sectional meetings were a great success. The papers presented were far more numerous than at previous conferences and there was more time for thoughtful discussion. The evening meetings were also well attended and the subjects considered were of practical importance.

In our judgment the most stirring testimony to the value of the conference was the impression it gave to several visitors, not at all biased in our favor, of the great and far-reaching influence
of the Association in all that concerns the welfare of the Chinese people. The knowledge that we possess so much influence should be both humbling and inspiring: humbling, because of shortcomings in the past, our present responsibilities, and the wonder if we shall "make good" in the future; inspiring, because we know that we can still do a great work for the Chinese people despite all our weakness and the difficulties of ways and means. Let us press onward with renewed courage and hope.

As part of the obligation which rests upon us as members of the medical profession in China, and in preparation for the next conference, we ought to proceed diligently with the investigation of the numerous problems in disease and preventive medicine which need to be solved for the benefit of the Chinese people. Careful examinations should also continue to be made to ascertain the physiological and anatomical differences, however slight they may be, which exist between the Chinese and other races, in order that normal physical standards may be formulated for the Chinese. These scientific inquiries concern us all, as there are very few physicians out here who are not in a favorable position for making useful, if not extremely valuable, contributions to medical science. It need scarcely be said that work of this kind should be its own incentive and its own reward. Several years ago, under the stimulating leadership of a former editor of the Journal, much enthusiasm was displayed in the search for the ova of intestinal and other parasites, and the desire has been recently expressed that the Journal should now endeavor to create similar enthusiasm for other investigations. One difficulty is that medical research in these days, to be of much value, usually demands very much time and painstaking labor; and unless undertaken in the truly scientific spirit enthusiasm quickly wanes, the task becomes tedious and is then soon abandoned. The work must be loved and pursued for its own sake and for the benefit it may bring to our fellow-men.

In this connection it may be well to remind ourselves of the distinctive features of the fruitful scientific spirit. According to Sir Michael Foster, the great physiologist, in the main these are three—truthfulness, alertness, and courage. (1) The seeker after
truth must himself be truthful—truthful with the truthfulness of Nature. (2) He must be alert of mind, ever on the watch, ready at once to lay hold of Nature’s hint, however small; to listen to her whisper, however low. (3) Scientific inquiry has need of the moral quality of courage—not so much the courage which helps a man to face a sudden difficulty, as the courage of patient endurance. To the objection that truthfulness, alertness, and courage are virtues belonging to almost everyone who has commanded or deserved success, Sir Michael answered: "That is exactly what I would desire to insist, that men of science have no peculiar virtues, no special powers. They are ordinary men; their characters are common, even commonplace. Science, as Huxley has said, is organized common sense, and men of science are common men, drilled in the ways of common sense."

The Research Committee appointed at the general meeting of the C. M. M. A. has met and agreed upon the following subjects for research to be carried on during the next two years: (1) height, weight and chest measurements of the Chinese; (2) incidence of diseases of ductless glands; (3) the pulse, respiration, and temperature; (4) the blood; (5) the relation of dentition and dental caries to age; (6) the urine; (7) the blood pressure. It is felt that all these subjects are of great importance and that it is desirable to collect data as widely as possible in the provinces of China, in order that accurate standards may be established for the Chinese race. Those willing to help in this research are requested to communicate with Dr. Allen C. Hutcheson, stating which of the subjects they wish to investigate.

In China nearly all parturient women still come under the care, such as it is, of the native midwives. Only when these are at their wits’ end are foreign physicians asked to render service. The compilation of comprehensive statistics on all matters relating to child-birth is therefore impracticable; but it should be possible to obtain some idea concerning the causes and frequency of difficult labors. For instance, in how many cases among Chinese women is pelvic deformity the cause of difficult parturition?

The two diseases which chiefly operate in causing pelvic deformity are rickets and osteomalacia. These are believed to be
similar diseases pathologically, with the important distinction that the former occurs in early life before the bones are completely ossified, and that the latter is a disease of adults producing softening of bones that have hardened and developed. Further, osteomalacia is a disease which occurs especially in women. Litzmann's statistics show that of 131 patients with the disease, 11 were males, 85 were pregnant or puerperal women, and 35 were non-pregnant women. It may be a serious complication of pregnancy. Among 72 osteomalacic women there were only 21 natural labors; in 16 cases it was necessary to perforate the foetal head, and in 40 cases Caesarean section was performed. The disease is rare in England and America, but is endemic in Italy, Austria, Switzerland and other portions of Europe, and is reported to be common in Kashmir. It is said that the disease seldom attacks women living under hygienic requirements; miserable, overworked, and underfed peasants living in damp and unhealthful surroundings, are the principal victims.

It is suggested by Dr. J. Preston Maxwell, of Peking, that osteomalacia should be taken as one of the subjects for discussion at the next Conference, in the Obstetric and Gynecological Section, as in Shansi quite a number of cases have been seen and the disease may not be very rare in other parts of China. A questionnaire will be sent out later; in the meantime those interested in this subject are asked to communicate with Dr. Maxwell so that he may be able to make the Conference discussion really valuable.

At a meeting of the Royal Society of Medicine in England, February 27, 1920, in the Section for the Study of Disease in Children, Dr. E. Mellanby read a paper on "Accessory Food Factors in Infant Feeding" (The Lancet, March 13, 1920), in which he referred particularly to the antirachitic factor. A number of specialists took part in the subsequent discussion, and the following statement was made referring to rickets in China.

Dr. J. Lawson Dick said that he had been carrying out observations with regard to rickets among the Jewish children in the East End of London. These children were fed on cow's milk, yet 80 per cent of them showed evidence of rickets. It occurred in breast-fed children, many of whom were kept at the breast for from 12-18 months, yet no one could say that there was likely to be lack of fat in the milk where Jewish mothers were concerned. On the other hand, there was
no rickets in China or India, where the children were kept for a very long time at the breast, so that even two successive children might be breast-fed synchronously. An aetiology which presupposed a deficiency in fat-soluble substance was contrary to clinical experience, for there was an abundance of fat in children who were prone to rickets. Geographical considerations revealed that rickets was confined to the temperate zone, which was also that of greatest industrial activity. He considered that it was difficult to exclude a sufficient amount of vitamins from the diet of children in this country, while in China and Japan, where they were fed largely on rice, there was no rickets. In experimental observations on dogs it was difficult to exclude the incidence of rickets, but he thought that the changes in the teeth, which had been ascribed to rickets in the experimental studies of Dr. Mellanby, were not the changes of true rickets. He urged that rickets should be studied with a greater breadth of view.

Is not the assertion too sweeping that in China and Japan there are no cases of rickets? In their work, "The Diseases of China," Jefferys and Maxwell state that bow-legs, knock-knees, square heads, beaded ribs, and the accompanying signs of rachitic malnutrition are frequently seen in Japan, and cases of rickets are said to occur in China though the disease is rare.

As to the causation of rickets the speakers at the meeting referred to were not at all in harmony. Can any light be thrown upon this subject by further careful study of the diseases of Chinese children, noting particularly the presence of conditions which in other lands are sometimes said to cause rickets, or at least predispose to it, yet which do not lead to the disease in China?

With the discovery that all the deadly scourges of the human race were due to micro-organisms it was confidently believed by many that we were within measurable distance of the complete conquest of all infectious diseases. Within fifty years, it was said, they could be banished from the earth and man would then enter into his rightful inheritance. Perhaps we are not quite so hopeful in these days. It is true that typhoid fever is less prevalent than it was, but tuberculosis, influenza and other diseases are holding their own and some even appear to be gathering strength. Then we perceive more clearly the difficulty of obtaining the united, scientific action of all nations in this crusade, and that without harmonious co-operation the efforts of separate nations are of little avail.

To induce China to set her house in hygienic order is the work undertaken by the Joint Council on Public Health Education, which is partly supported by our Association. By lectures,
lantern exhibitions, ingenious working models and other means, attempts have been made in various cities to teach the Chinese people the elements of sanitation. Undoubtedly much good has been accomplished; but it is to be feared that much of the seed sown has fallen by the wayside or on very stony ground, as most of the auditors were adults already fixed in their opinions and habits.

One of the more hopeful methods of reform is that outlined by Drs. Howard and Lennox in their paper on “Health Education in Schools of Higher Learning in China,” which appeared in the preceding number of this journal. It is best to instil right ideas into the minds of the young in the manner described, and we venture to think that simple teaching of this kind should begin as soon as it can be understood.

Mission schools should certainly welcome this movement, for it will tend to promote measures for the improvement of the public health and thus lessen the danger of epidemics arising and spreading from China to other parts of the world, and it will also do much to undermine superstitions which hinder not only sanitary but also moral and religious progress. In Wenchow last year there was an epidemic of cholera and it was believed by the people that malignant demons were making the city the object of their special spite. In order to propitiate these devils, thousands of dollars were spent on candles, crackers, temple offerings, etc., and over 10,000 men and boys escorted the principal idols through the main streets. Finally, a ship made of bamboos and paper was constructed into which the demons were persuaded to enter; at the propitious moment it was floated on the ebb tide and sent on its voyage down the river. Then the people rejoiced in the belief that their troublesome visitors had gone and there would be no more cases of cholera. This is but one instance of the superstition concerning disease which prevails all over China. What can scientific medicine do to combat infectious diseases without the willing co-operation of officials and people? A hopeful beginning has been made in Manchuria to withstand pneumonic plague, but the fight should be waged earnestly against all infectious diseases. The co-operation mentioned can best be secured by making the causation and prevention of disease a regular part of the instruction of the young. Very much will be gained all round when the people
really believe that infectious diseases are due to such very mundane demonstrable things as micro-organisms. It is hoped that all our members will actively support the work of the Joint Council on Public Health Education.

In Western lands the causation of infectious disease is so well and generally understood that many people are almost morbid in their anxiety to avoid all possible sources of contagion; indeed the fear sometimes becomes the definite ailment of nosophobia. The tuberculous, for instance, are often avoided as if they were lepers. But much of this fear is groundless. It is now taught that tuberculosis, in one form or another, is contracted in childhood by everyone, certainly by all those brought up in cities and towns; consequently, all who recover have acquired a degree of immunity to the disease. This should be sufficient to allay the fears of nervous men and women, as the very fact that they have reached adult life without developing the disease shows that the soil of their bodies is, so far, strongly hostile to the growth of the bacillus. Of course no one should be reckless; but with good food, proper hygienic surroundings and reasonable care, contact with consumptives need not be regarded with abject terror.

That inmates of a properly conducted sanitarium do not spread infection is proved by the results of a tuberculosis survey of the residents of Saranac Lake, N. Y., under the auspices of the Edward L. Trudeau Foundation. It bears out what progressive health officers and sanitarians have repeatedly urged, that there is a minimum of danger of infection of healthy adult residents of resorts frequented by tuberculous patients. The Saranac survey showed that indigenous morbidity and mortality from tuberculosis are low, only 0.3 of one per cent of the living cases being found among the native born, and 0.9 of one per cent among previously healthy residents. This result is in accord with investigations elsewhere and should be remembered in overcoming the unreasonable prejudices regarding the alleged dangers from proximity to a tuberculosis sanitarium.

The benefit derived by tuberculous patients from the pure mountain air of Kuling and the skilful treatment prescribed by its
experienced resident physicians has been very great; probably there is no other place in China so generally suitable for this class of patients. It is also extremely good for all who need rest, change, and other recuperative influences during the hot summer months, and none should be deterred from going there because of fears which have little or no foundation.

China Medical Missionary Association Conference,
Peking, February, 1920.

ADDRESS OF H. E. HSU SHIH-CHANG, PRESIDENT OF CHINA.

I have always held in esteem the China Medical Missionary Association which was formed over thirty years ago and which, with the gradual extension of its activities, has shown brilliant records. It is

TRANSLATION OF ADDRESS.

I have always held in esteem the China Medical Missionary Association which was formed over thirty years ago and which, with the gradual extension of its activities, has shown brilliant records. It is
indeed a great pleasure for me to meet you here to-day. Medical science was already developed in our country in ancient days. Without going too far back I would refer to the chapters concerning the records of Pien Ch'iu (扁 鹿) and Chong K'ong (倉 公) in Chinese history, and also those concerning the records of Kuo Yu (郭 玉) and Hwa To (華佗) in the Book “Hon Han” (後 漢). From these you will observe that the methods of treatment contained therein are similar to Western methods. It was merely due to scant attention being paid to the study of these methods in the succeeding generations that the science was almost lost. Considering that since its formation in Shanghai the China Medical Missionary Association has now branches in many of the chief centers of China, and as its purpose is to link all the foreign medical men and women to promote Western medicine for the benefit of the Chinese, to found medical schools and colleges, and to render the best books of medicine used in Europe and America into Chinese for enlightening Chinese students, the Association has indeed conferred unbounded blessings on us. Medical work falls within the scope of charity, and as you are all kind-hearted and devoted to missionary work the promotion of Western medicine is simply to abide by the will of God. I earnestly hope that your Association will enjoy prosperity and success so that with your benevolent help, plague and pestilence may be prevented, and the Chinese people all may live in happiness.

RESPONSE BY PRESIDENT OF THE C. M. M. A.

CECIL J. DAVENPORT, F.R.C.S., L.R.C.P., Shanghai.

Your Excellency:

On behalf of my colleagues, the members of the China Medical Missionary Association, I desire to express deep appreciation and sincere thanks for the honour and privilege which we to-day receive, through the gracious invitation you have extended to us.

We thank your Excellency for your most kind reception and for your hearty and sincere words of welcome and appreciation of the cause and work which we represent.

We can assure your Excellency that we have great love for China and her people, and that your country has no truer friends or well-wishers than the men and women who form this Association and who have devoted their lives and abilities to the healing and saving of the sick and suffering among the people of China.
Coming as we do, from all parts of this great country, many of us having spent ten, twenty, thirty, or more years in working for its welfare, we can sincerely say that the privileges and opportunities granted to us in the past have been highly valued; and the gracious manner in which your Excellency receives us to-day is, we believe, a proof that the work thus carried on amongst the people, and for the benefit of the sick and suffering, has not been in vain, but that it has been appreciated by the officials and rulers of the country,—a fact that affords us great gratification.

The strength of a nation is dependent on the health of its people. Recognizing the paramount importance of this fact, not only have we striven through our hospitals and dispensaries to heal and relieve the sick, but we have striven to investigate the causes of the peculiar kinds of diseases prevalent in China, to train doctors and nurses, to establish a terminology for Western medical terms in the Chinese language, to translate Western medical books into Chinese, to promote sanitation and public health and to disseminate literature on these matters, to put down the abuse of opium and strong drink, and the use of tobacco by minors,—hoping by these means to uplift men, women, and children both in body and in soul.

In times of famine, plague, and revolution, as well as in ordinary civil life, hundreds of thousands of all classes of the people, sick and wounded, have, year by year, been saved and blessed by this work.

We are well aware of the immense amount of benevolent work done by Chinese benevolent institutions and good men and women in this country. But the knowledge and skill of these are limited, and, as in all countries, over and above this, much help is needed.

We hope in the future to be permitted to continue our work in still greater measure and with still greater benefit.

We look forward to co-operate with local officials, local physicians, and organizations such as the National Medical Association of China, in striving still more effectively to promote the health of the people and cities.

We would venture to urge upon your administration the immense importance of instituting a Public Health Ministry to regulate and control public health matters for the welfare of the community, as is done so advantageousy now in Western lands. Also we would urge the necessity of establishing a Central Medical Council to regulate and standardize all medical practice, and the use and sale of drugs throughout the country.
We trust that the Central Government and provincial officials will still be pleased, in all ways possible, to support and further the efforts of the members of this Association along the lines herein indicated.

Trusting that your Excellency may be spared many years yet to guide this great country in ways of peace, prosperity, and righteousness, we once more offer you our sincere and grateful thanks for this most pleasing and enjoyable reception.

MESSAGE FROM THE GOVERNOR OF SHANSI.

To the China Medical Missionary Association:

It gives me the greatest pleasure to learn that a Conference of the China Medical Missionary Association will be held in Peking, February 21-28, 1920. This short message from me is just to congratulate the Association on the valuable work it has done in the past and the still better service we expect it to render to China now and in the future. Not being a medical man myself, I can simply say that I heartily hope the Conference will be a great success.

THE CHINESE GOVERNMENT AND MEDICAL EDUCATION.

At a joint meeting of the China Medical Missionary Association and the National Medical Missionary Association of China, presided over by Dr. Wu Lien-teh, President of the National Medical Association, Dr. S. Koh was introduced and, on behalf of the Ministry of Education, made the following statement concerning medical education.

LADIES AND GENTLEMEN:

It is a great privilege to be present at this Conference, to have the opportunity to meet many distinguished men of our profession and to be benefited by their discourse on many subjects of interest. I am instructed, as representative of the Ministry of Education, to make plain to the conference the Ministry's policy regarding medical education in China in the future.

The advancement of civilization, as we know, has invariably been accompanied by the development of science; and medicine, as one of its branches, was one of the earliest to develop. It is true of China, as it is of other parts of the world. The reason for this early development of medical science is because of its absolute necessity to the life of a people. It helps the sick and wounded and makes them fit again. Great is the respect paid to the medicine man in a savage tribe, whose authority and position are due, no doubt, to the belief in his
ability to cure or prevent disease. Indeed, good health is the most important and fundamental of human assets, for without it nobody is capable of accomplishing anything. No science, no civilization can be developed by any people if the general level of mental and bodily health is very low, and the future of such a community would inevitably be doomed.

The genesis of medical science in China is to be found in the period of ancient Chinese history. Progress was made as time went on. But it is regrettable that until these days this important study has not yet been wholly put on a scientific basis. The result is most glaring and unmistakable. Epidemics rage throughout the year and the number of consumptives is constantly on the increase. If such a condition is allowed to continue much longer, even our numerical strength will be greatly impaired, not to mention scientific development and the upbuilding of our civilization. It is therefore very clear that if we would prepare for the struggles of the present century, we must no longer neglect the cultivation of such a branch of scientific study as medicine.

We know that medicine is of all sciences the one that enjoys most popular support in other parts of the civilized world. This is in no way due to any partiality on the part of the people for this particular science. It is because people realize the important relation which exists between this science and the welfare, present and future, of the community. Now, contrast with this condition the situation in China. We have such a scarcity of scientifically trained doctors that most people scarcely know what they are like, not to say what they can do to help them. This insufficiency both in regard to the supply of scientifically trained doctors and the popular appreciation of their work indicates a lamentable state that must be soon corrected.

It has long been the policy of the Ministry of Education to give medical education its proper place in the educational system of China, and it hopes that better ideas regarding living and sanitation will be spread through its extension, resulting in a healthier and stronger nation. But impediments have been in the way, such as the great war in Europe and the disturbed condition of affairs in China, each of which had its share in making the present condition such as it is. The former interfered with the supply of materials, while the latter curtailed the supply of funds. Now that the great world-struggle is over, and there are also signs of peace and reunion in China, the Ministry of Education will certainly fall back on its cherished policy of providing for the country a system of medical education that will be sufficient,
as well as efficient, in meeting the demands made upon it. In outline, the policy is as follows:

1. To establish new medical schools, as soon as conditions will allow, on the basis of one medical school for each province.

2. To improve and extend such schools as are already established.

3. To encourage the study of medicine and to maintain for the scientifically trained doctors a high social status, so as to obtain a sufficient number for this important profession.

4. To cause to be organized at proper localities such institutions, or facilities for medical investigation, as will aid specialists in their research work.

5. To regulate the practice of doctors trained in the traditional way, with a view to the unification of the standards required of medical practitioners.

These are the measures, briefly stated, which the Ministry intends to take to strengthen the medical profession and to promote advancement of medical science in the future.

THE CHINESE GOVERNMENT AND DISSECTION IN CHINA.

At a meeting of the Anatomical and Anthropological Association of China during the Peking Conference of the C. M. M. A., Mr. S. P. Chen, official representative of the Board of Interior, made the following statement concerning the attitude of the Chinese Government towards autopsies and dissection in China.

To the Members of the Anatomical and Anthropological Association of China:

I have been directed by the Ministry of the Interior to attend this meeting, in response to a request of your Association, in order to take up the question of dissection with you.

I understand from some of your members who have had to do with the teaching of anatomy that considerable difficulty is experienced in obtaining a sufficient number of bodies for the purposes of dissection.

The question before us is this: "Who or what is responsible for this state of affairs and is there a remedy for it?"

A remedy must sooner or later be found if medical education is to make any progress in this country.
I see from your programme that I am down to define the attitude of the Government towards dissection. I must confess this is no easy matter; but, although we are not in a position to make any definite statements which can be supported by documentary evidence, it is possible, from what official documents there are and from the verbal replies given by responsible officials to inquiries on the subject, to see more or less clearly how official opinion is shaping in regard to it.

In April, 1914, His Excellency, Mr. Chu Ch'i Chien, the then Minister of the Interior, passed some by-laws dealing with the subject of post-mortem examinations and dissection, and caused some "Detailed regulations" to be drawn up and promulgated.* Although these by-laws and detailed regulations did not differentiate clearly between ordinary post-mortem examinations and dissection, there were some clauses under which it would be possible to practise dissection without offending against the law.

Reading through these regulations it would appear that the Government at that time appreciated the necessity of dissection in the education of medical students but desired to be on guard, as it were, against something—that something being apparently popular feeling.

I will not take up your time by enumerating these regulations in detail for I feel sure that those of you who are present and are interested in the subject of dissection must be acquainted with them. What appears to be the main point in them is that the Government authorities have no objection to the practice of dissection provided certain conditions are fulfilled—conditions over which the Government has no control.

What are these conditions? The main one is that the consent of relatives must first be obtained.

Those of us who have been a little time in this country know all too well what this means: the chances of obtaining the consent of relatives in a matter of this kind are so small that we might regard them as nil. So it amounts to this: under the above mentioned regulations, the only bodies that might be available for dissection are those of persons who have been executed for crime or have died in prison, and have no relatives whatsoever to claim them. I have made certain inquiries on this subject and have been informed that it is not often that relatives do not come forward to claim such bodies for burial. The real obstacle to much progress in the direction of procuring bodies for the purposes of dissection lies in the view which the Chinese people of the

The Chinese Government and Dissection in China.

present day take of such things. That there is this terrible dread of ordinary post-mortem examination—to say nothing of dissection—among the people in general can easily be ascertained by anyone who may choose to probe even very superficially into the matter. I can recall an instance in which no end of trouble was caused by a very, very insignificant post-mortem incision performed without the consent of the relatives of the deceased. What I have said shows you what the responsible government officials thought of the subject more than five years ago. To-day there are indications that the authorities fully appreciate the fact that dissection is essential to the progress of medical education in this country, and are, in spite of popular feeling, doing their utmost to facilitate the procuring of dead bodies for this purpose, as evidenced by the steps recently taken by the police authorities. I have been given to understand that in future less difficulty will be experienced in obtaining sufficient bodies to meet the needs of the medical schools in Peking.

There are, I am told, quite a number of homeless and destitute in the city, who have not only no relations of any kind but also no means of self-support and have therefore to be taken care of by the authorities. Refuges have been established for these poor individuals, and the sick among them are housed in one of these. It is possible, then, that these sick may be the source of subjects for dissection later.

Of course my remarks apply only to Peking, and not to other educational centres in China. Those in authority in the capital are favourably inclined towards the practice of dissection, but, as you all know, it does not follow that the provincial authorities will take one and the same view. Changes come slowly in this country, but come they will. The official attitude in Peking towards the needs of modern medical education has been very encouraging, so there is no reason why the same change for the better will not take place in those provinces in which modern medical schools have been established.

In conclusion, I might add that if you, or a sub-committee elected by you to deal with the matter, have any suggestions to bring forward for presentation to the Ministry of the Interior, I should be more than pleased to tender my services.

Progress in Dissection.—Thoroughly as the great artists of the Renaissance may have studied external anatomy, yet dissecting for teaching purposes was still hampered by the theologic idea of the sanctity of the human body and its resurrection, and people were naturally averse to the dissection of friends or relatives. The anatomy of the medical schools was still the anatomy of Galen. Andreas Vesalius (1514-64) released the subject from these trammels. There were plenty of dissectors and dissections before Vesalius, but he alone made anatomy what it is to-day—a living, working science. It was the effect of his strong and engaging personality that made dissecting not only viable, but respectable. His mind was too active, his spirit too keen and independent to feed long on the dust of ages. He even taught himself the difficult art, so essential to surgeon and gynecologist, of recognizing the palpable structures by an educated sense of touch. Garrison, History of Medicine.
REPORT OF COMMITTEE OF C. M. M. A. ON PRE-MEDICAL EDUCATION IN BIOLOGY, CHEMISTRY, AND PHYSICS.

The following notes were prepared by a committee appointed from among the Biology, Chemistry, and Physics teachers of China, in response to the desire of the C. M. M. A. Council on Medical Education for a set of specifications for a uniform requirement in the sciences for entrance to the standardized course in Medicine. A standard Premedical Course for China was defined by the Council to consist of a minimum of two years of college grade work. The accompanying syllabus therefore pre-supposes a Pre-medical Course of two years.

The committee which attempted to draw up the accompanying syllabus was faced at the outset with a number of difficulties. In the first place the extent to which genuine science teaching has been carried in China is meagre, and the number of men who have been teaching college grade science is so small, that it was difficult to discover anything which might be termed a common experience. The general absence of a scientific background in China was of course admitted. Our difficulties arose, not in deciding what courses should be given to premedical students, but in determining how to remedy this background defect. There is also wide variety of opinion as to what is meant by a standard middle school course.

In the absence of curriculum standards, laboratory standards, and because of the doubtful wisdom of standardizing a method for China when that method has still to be discovered, the committee thought best to prepare groups of concrete suggestions, rather than a hard and fast syllabus indicating hours per week and detailed specifications for laboratory instruction. The suggestions herewith define a minimum standard and indicate a quality of attainment. We are obviously compelled to leave to the individual initiative of the teacher the application of these suggestions to the background of his own students.

The question as to whether these pre-medical courses should be given in English or in Chinese is quite outside the province of this report. We would discourage the thought that the language employed affects in any way the standard to be required.

I. Syllabus of Pre-medical Course in Biology

1. Credits required: We recommend that the pre-medical work in biology cover 200 credit hours as a minimum, half of this being laboratory work. (One hour lecture work counts as one credit, two hours of laboratory work count as one credit.)
Report of Pre-Medical Committee.

2. **Aims of the work**: There are three general aims to be pursued: (1) accuracy, both in observing and in recording; (2) knowledge of general principles and the laws governing life processes; (3) familiarity with as large a number as possible of typical plants and animals, more stress being laid on animal life.

3. **Materials to be used**: While greater stress should be placed on the study of animal forms, yet some of the principles are best demonstrated in plant forms and these should have their proper place in the courses.

   Again, wherever a choice is possible, the animals selected for study should be those which have a close relationship to human welfare, or which exhibit structures for dissection similar to those later to be worked upon in the medical course, and which therefore offer a direct introduction to the medical work.

   While the number of plants chosen must be limited, yet they can be chosen for the definite purpose of illustrating a desired principle.

**FIRST COURSE.**

The aim of the first course is to give training in observing and in thinking, through acquiring an elementary knowledge of the gross structure of representative animals and plants, and of the inter-relationship of these forms. The power of living matter to adapt itself between man and the plants and animals about him should be constantly emphasized.

The following materials are suggested for this course:

**Animal Life:**

- Protoplasm, its nature, structure, and the foods used by it.
- The Protozoa, taking amoeba and paramecium as types.
- The Metazoa, and the beginning of the physiological division of labor.
- The Ascaris, its prevalence, life history, structure, and methods of prevention of infection.
- The Earthworm, a study of its reactions and mode of life.
- The Prawn, an elementary study of its appendages.
- The Insects, grasshopper (locust), silkworm, housefly, and mosquito; external structures, life histories, economic importance.
- The Fish, an introduction to the Vertebrates.
- The Amphibians and Reptiles, their natural history and their place in the evolution of vertebrate forms.
- The Frog—studies on digestion and absorption, blood and circulation, respiration, excretion, and the nervous system. These studies might well take as much as four or five weeks.
- Mammals, and Man as a Mammal, a comparison of the general gross structures of the various mammals with the corresponding ones of man. A lecture or so might be given here on Paleontology, using pictures if no fossils are available.

**Plant Life:**

The study of plants is included in this course for three reasons: (1) because certain principles are best demonstrated by them; (2) in order to avoid making the course too narrowly pre-medical; and (3) to afford further training for the students. All the training that is possible should be given to enable the students to overcome the ancestral habits of memorizing and to start habits of logical thinking and precision.

It is suggested that the following types at least be studied as laboratory types:

- Elodea, Yeast, Oscillatoria, Spirogyra, Vaucheria, Marchantia, Moss, Fern, Pine, and Geranium.

This series will furnish interesting material for evolutionary studies in structure and function. A further study of the functions of roots, stems, leaves,
flowers, and fruits in the higher plants will help to round out the student's knowledge.

Field Work:
Part of the laboratory work should be spent in field work, studying living plants and animals in their natural environment. Surveying of the hygienic conditions around the school will prove most helpful and instructive.

SECOND COURSE.

The work of this course should aim to continue the student’s training in accuracy in observing and recording his observations. It should also aim to give more facility in the use of the microscope and in dissecting. The students should gain a familiarity with such fundamentals as cell structure, fertilization, the chromosome hypotheses, polymorphism, parasitism, evolution, and the laws governing heredity. (Abbott’s General Biology gives much of this material in attractive form.)

Throughout the course there should be an exposition of the phylogenetic development of the various systems of organs; it is not too much to expect, for instance, the students to appreciate the steps in the development of the excretory systems in the annelids and the vertebrates.

Animal Life:
The materials for this course should be entirely animals. The forms studied, however, may in some cases be the same as those studies in the first course, but the work done on such forms should this time be more minute, covering points not touched in the earlier, more superficial study.
The following material is given as suggestive:
Porifera: Grantia.
The Flatworms: Taenia saginata and Fasciolopsis buskii. Topics: life histories of parasitic flatworms, economic importance, extent of infection, etc. Lower forms of excretory and nervous systems.
The Roundworms: Type common in your locality, Ascaris, Ankylostomum duodenale. Topics, as above. Examination of students’ feces for eggs.
The Insects: Bee, structure of, head, legs, sting, etc. Topics: economic importance of certain orders of insects; transmission of disease through the agency of insects.
The Mollusca: The Fresh-water Mussel.
Amphioxus: An introduction to the primitive vertebrates.
The Fish: Special study of the nervous system, circulation, and respiration.
The Prog: Nervous system, circulation, and respiration.
The Mammals: A careful dissection of the dog or the cat (or the rabbit if the other forms are hard to get). Topics: various systems of vertebrate organs. The dissection of the cat should occupy as much time as can be given to it.
General Topics: Alternation of generations, using the plant materials (as moss and fern) to compare with animal material (hydroids).
Vertebrate reproductive organs, amphibian material for showing transition from spermatids to sperms.
Mitosis: Ascaris furnishes good material for demonstration of mitosis.
Segmentation, using Starfish, or Sea Urchin eggs if available; if not, frogs’ eggs will serve.
II. Suggestions for Pre-medical Courses in Chemistry.

It is recommended that, in general, the work outlined below should occupy or represent a minimum of four semesters of intensive work in chemistry. The manner in which this time should be divided must naturally be left to the judgment of the instructor. At least one semester should be given to organic chemistry. The amount of time given to qualitative and quantitative analysis would depend upon the emphasis placed on these phases of the subject in General Inorganic Chemistry; or the quantitative work might occupy the last few weeks of the course in Qualitative Analysis.

General Inorganic Chemistry: This course should comprise lectures, and individual laboratory work accompanied by frequent informal conferences and recitations. The ratio of lecture work to laboratory work should not exceed the ratio 1:3. This should not be a course in "descriptive" chemistry, but emphasis should be placed upon fundamental principles and laws, including: law of mass action, equilibrium, dissociation, catalysis, osmotic pressure, general properties of solutions, colloids, neutralization, thermochemistry, periodic classification.

These subjects should all be presented as far as possible from the experimental side, i.e., in the laboratory. The lectures should supplement the laboratory work rather than the laboratory work supplement the lectures. Constant reference should be made to the applications to industry and every-day life. The course should be vitalized by introducing local problems. In the laboratory, emphasis should be placed on technique and manipulation. The "quantitative" element in science, with an idea of the principles of measurement should be included. The method of treatment in Alex. Smith's "General Chemistry for Colleges," and in "General Chemistry," by McPherson and Renderson, is suggested. The ground to be covered should be left to the instructor. The kind of instruction rather than the amount is important. The important non-metals should be studied as types. The metals should be touched upon, again as types taking a single group or an element that may have particular interest.

Qualitative Analysis: The course in Qualitative Analysis should be characterized largely by laboratory work, consisting of a study of the reactions of the metals, and the methods of separation, with the more common acid radicals. Emphasis should be placed on principles, rather than on technical analysis. The aim of this course should be to train students to think "chemistry" and to train them in inductive reasoning. The course should include lectures on analytic theory, and the laws of solutions, following in general the method of treatment in Steiglitz on "Qualitative Chemical Analysis."

Quantitative Analysis: The student should be made familiar with the correct use of the balance, and the method of gravimetric analysis. Special emphasis should be given to the preparation of standard and normal solutions, with their use in acidimetry and alkalimetry.

Organic Chemistry: The work in Organic Chemistry should be carried out by both lectures and laboratory. The course should include: classification of organic compounds, a study of types of compounds and typical organic reactions, a survey of the characteristics and relationships of the more important members of the aliphatic series followed by a briefer treatment of the compounds of the aromatic series. The relation of organic chemistry to medicine, pharmacy, and industry should be emphasized.

Naturally, a heavy emphasis should be placed upon the course in Organic Chemistry for students preparing for medicine. Stress should be laid not only upon principles, but in this course the student should have actual laboratory contact with the common organic compounds and with their synthesis and reactions.
III. Suggestions for Pre-medical Courses in Physics

(PARTY REPORT).

Purpose: The purpose of the pre-medical work in physics is two-fold: first, to give the student training in careful measurement and manipulation and in accurate reasoning and interpretation of results; second, to give a thorough grounding in the facts and principles of the sciences which are pre-requisite for the intelligent and successful pursuit of his subsequent medical studies.

Previous Training: It is assumed that when the student begins the subject of physics he already has a good knowledge of arithmetic and has had some training in algebra and geometry. A knowledge of plane trigonometry is essential for the more advanced work. Where it is possible to supervise the early training of the student, courses in manual training and shop work should be recommended as these will not only give valuable training in manual dexterity but will also give an insight into some of the fundamental mechanical principles.

Time Required: Since many of the facts which are matters of common knowledge to Western high school boys are totally foreign to the experience of Chinese students of similar grade, the minimum amount of time devoted to the subject should be distinctly longer than the minimum requirement of the best schools in the United States or England.

All too frequently the courses in physics offered in the middle school accomplish little in the way of real training. In general, a year and a half of very intensive work, or a correspondingly longer time of less concentrated instruction, is the minimum necessary for satisfactory results.

Medium of Instruction: This will be largely determined by local conditions and by the practice of the leading medical schools. The student who pursues his scientific studies in English has an immense advantage in the wealth of reference material which is available, and in case he is looking forward to a medical course in which the majority of the work is taught in English, it will be of inestimable advantage to him to have used that language in his pre-medical work.

Lectures and Recitations: The lectures should include as much as possible in the way of experimental demonstration. In the recitations considerable emphasis should be placed upon the solution and discussion of original problems in such a way as to develop the student's power to apply principles, not formulas, to specific cases. Of course where possible illustrations and applications should be chosen from the field of medicine; at the same time it should be clearly recognized that the number of possible applications of physics to medicine is almost infinite and that in many cases the previous training of the student has not given him a knowledge of the facts of physiology or medicine which is essential to the understanding of the "illustration." Moreover, since it is impossible to foresee along which lines the individual students will specialize, it is unwise to place undue stress on any one detail. If the student is thoroughly trained in the fundamental principles, he can probably be trusted to apply them to his subsequent work as required.

Laboratory Work: The amount of time devoted by the student to individual laboratory work should be not less than the amount spent in lectures and recitations. (By "individual laboratory work" is meant work in which the student performs the exercise himself. In some cases it is of advantage for two students to work together on one exercise, but when this is done care should be taken to insure that each student does his full share of the work.) In general, the laboratory exercises should be quantitative in character and a careful report should be prepared on each exercise. To develop initiative on the part of the student the laboratory instructions in the more advanced courses should be brief and suggestive rather than detailed and explicit.
General Suggestions, Text-books, etc.: While the individual teacher must work out the details of his own course to meet the needs and conditions of his particular school, a few further suggestions are offered.

Since a knowledge of mechanics is essential to an understanding of the other branches of physics, it should not be slighted even though the direct applications of it to the student's subsequent studies are not as apparent as, for example, in the case of light, electricity, and X-rays. The study of mechanics is of importance to the medical student, if for no other reason, in order that he may have an appreciation of the principles which underlie the design and operation of all instruments and apparatus.

From some points of view it is advisable to give the student a survey of the whole field of physics, using a text of the grade of Millikan and Gale's "A First Course in Physics," Black and Davis's "Practical Physics," before taking up the more detailed and advanced study. This plan has the advantage that the student can be given a series of laboratory exercises which acquaint him with the fundamental facts and methods of physics before taking up the more rigorous quantitative exercises which should be incorporated in the latter part of the work. Either of the laboratory manuals to accompany the above mentioned texts gives a satisfactory basis for the more elementary laboratory work. This should include a minimum of thirty exercises—not more than 3/5 of them in mechanics and heat. If time and equipment permit, the number of exercises may be much increased with profit.

At least the last year of work should be of a grade in advance of that required in a first class middle school or high school. Such books as Crew's "General Physics," Kimball's "College Physics," Carhart's "College Physics," Duff's "A Text-book of Physics," Watson's "General Physics," Millikan's "Mechanics, Molecular Physics, and Heat," and Millikan and Mills' "Electricity, Sound, and Light," Franklin and MacNutt's "General Physics," etc., are suitable text-books for this part of the course. The laboratory course of necessity must fit local conditions, but such manuals as those of Dayton C. Miller or of Ames and Bliss, as well as Watson's "Practical Physics" and the books by Millikan just mentioned, contain much suggestive material. A brief discussion of the theory of errors should be included. Though the laboratory work is much more rigorously quantitative than in the more elementary course, it should be so conducted that the student will realize that he is primarily performing exact exercises in physics, rather than merely taking a series of accurate measurements.

From the beginning the student should be made to feel that the text-books give only the barest introduction to the subject, and he should be especially guarded against the idea that the particular text-books used contain all that there is to know about physics. A number of standard texts and reference books should be available and the student should be taught to make intelligent and frequent use of them. He should be encouraged and required to interpret what he has learned from the text-book in terms of his every-day experience. The ideal text would be one written with a Chinese background, but, until such a book is published, the teacher, with the aid of his class, must supply this deficiency in "local color."

On behalf of the Committee,

(Signed) W. W. Stifler.

NOTE.—Professor John Witt, of the Manchurian Christian College, Moukden, presented a separate report on the Pre-medical Course in Physics.

IMPORTANCE OF SCIENTIFIC GROUNDING.—We are convinced that a thorough grounding in the fundamental sciences of physics, chemistry, and biology cannot be too much insisted on. The scientific quality of all the later professional education of the medical student will depend on his grasp of principles and the extent of his general scientific knowledge. Report of Royal Commission on University Education in London. 1914.
MEETING OF EXECUTIVE COMMITTEE, PEKING, FEBRUARY 27th, 1920.

The meeting was called to order by the newly elected President of the Association, Dr. C. F. Johnson. The other members present were: Drs. Houghton, McCracken, Pell, Shields, Thomson, and Morris.

The minutes of the meeting of February 21st were read, corrected, and then approved.

It was decided to bring to the attention of the editor and the committee on the Journal, the desirability of bringing out a separate number to contain the proceedings of the Conference, viz., President's address, committee proceedings, list of delegates, official minutes, etc.,—everything but the professional papers.

The treasurer was authorised to pay the travelling expenses of the committee appointed to consider the affairs of the Journal.

In pursuance of the motion passed by the Conference that the Executive Committee appoint a committee to investigate the sale of Red Cross supplies now offered in the United States the following committee was appointed:—Dr. S. Cochran, chairman; Dr. J. G. Vaughan, and Dr. H. Balme.

Dr. Agnes Murdoch, of Hwaiyuan, was appointed to serve for a term of two years as examiner for the Nurses' Association. It was reported that both Dr. Bash and Dr. Heath, whose names had been proposed before, were going on furlough and consequently would be unable to serve.

Dr. Houghton announced his appointment by the Council on Health Education as their representative on the Executive Committee. Dr. McCracken was selected as their representative by the Council on Medical Education. Dr. Shields was appointed from the Publication Committee.

There being no further business, the meeting adjourned.

A METHOD FOR LABELING SLIDES USED IN ROUTINE STOOL EXAMINATIONS.

By Frank G. Haughwout, of the Department of Parasitology, University of the Philippines.

When large numbers of stools are examined, either in the course of routine clinical laboratory work or in research, the problem of numbering the slides used sometimes presents difficulties that may lead to confusion in recording the results. Various workers are accustomed to identify their slides by attaching to one end an ordinary gummed
A Method for Labeling Slides.

A method for labeling slides is described. Labeling can be done by etching numbers or symbols on the glass with hydrofluoric acid, scratching it in with a diamond pencil, or writing on it with a wax pencil. All these methods are troublesome in one way or another. Pasted labels are apt to absorb moisture and come off in the solutions, or they may become so discolored from the staining solutions that the figures become undecipherable; hydrofluoric acid and the diamond pencil make a permanent record on the slide which may lead to confusion in another or the same series; figures written with a wax pencil are not always legible, they frequently come off in the solutions and, in a tropical laboratory where the temperature is constantly high, the lightest touch with the fingers transforms the record into a smudge.

No originality is claimed for the method which is here described. It is so simple and practical that it is difficult to believe that no other worker has thought of and applied it. Its essential feature is the ordinary wire paper clip used to hold sheets of paper together, and which may be purchased of almost any stationer. The record is made on paper labels measuring 2.5 by 2.5 centimeters.

One end of the paper clip is slightly bent so that it will slip easily over the edge of the slide and yet hold the paper label firmly. A stock of clips with bent ends may be kept on the work table.

In operation the number or symbol is written with a lead pencil near the lower margin of the label which is then folded at the middle, hung over the end of the slide, and secured with the paper clip. By this procedure about one centimeter of the label is exposed and the characters may be easily read through the loop of the clip. The slides may then be stacked in the Coplin's staining jars, and manipulated in the usual manner. The margin of paper folded over the edge of the slide is so narrow that it will not become stained in the solutions and the slides may be washed in running water without risk of losing the labels. Slight pressure with the laboratory towel will remove any drops of water that may adhere to the clip and label after such an operation. When treatment of the preparation is completed, the clip may be detached, the paper torn across the sharp margin of the slide and the numbered end permanently attached to the slide with gum or paste. When the preparation is finally discarded the label comes off in the cleaning process and the slide is left without blemish. The clips do not interfere either with the proper stacking of the slides in the grooves of the staining jar or with the placing of the cover.

I have employed this method in making hundreds of preparations by the usual "wet" methods and have, so far, found no drawbacks to it. The clips are so cheap that when they become rusty, as they do in the course of time, they may be thrown away without any qualms of conscience.
The China Medical Journal.

Japanese Medical Literature.

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

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

Jikwa Zasshi
(Journal of Pediatrics)
No. 212. January 20, 1918.


The methods employed are similar to those of Rose, Miyagawa, and Fuer­leborn, but differ in details.

A. Method applicable to routine clinical diagnosis. A piece of feces the size of the end of the thumb is mixed with one-third to one-fourth its volume of powdered charcoal, adding a few drops of water if necessary. This is wrapped in a piece of filter paper, folded like a powder paper. This is put in a Petri dish with the smooth surface of the paper upward, and kept in a warm, dark place for one to four days. The Petri dish is then tilted, 15 to 20 mls of sterile water is poured into it, and the paper containing the feces is turned over and so placed that the paper just comes into contact with the water. The dish is again covered and allowed to stand, and the embryos come out through the paper into the water. The water is then examined for embryos with a hand lens or microscope. The embryos, after one to two days' incubation, are small and hard to find with a lens, but are readily seen after three to four days' incubation.

The following are additional points to be observed: (1) The filter paper must not be torn, and must be moistened before being placed in the Petri dish to incubate. (2) The dish must not be agitated, otherwise the water may become turbid with fecal material and the embryos will be hard to find. (3) If mould develops after a few days it should be removed.

(4) After about ten days the filter paper becomes so softened that it is apt to break up.

(5) The addition of fresh water, after incubation, dilutes the poisonous sub­stances formed as a result of acid fermentation of the feces, so that the embryos are not injured by them.

(6) If no embryos can be found in the water on simple inspection it is centrifuged and the sediment examined. If still negative, fresh water is added and the feces again incubated. After four days they will be readily found, if present.

(7) If embryos are not found in the water, the paper should be turned over, the surface washed off and the washings examined.

B. Method for obtaining embryos for study. The feces are rubbed up in water to form a thin suspension. This is filtered through a sieve, and then allowed to sediment in a cylinder, when the eggs and other heavier particles of feces sink to the bottom. The supernatant turbid fluid is pipetted off, the sediment suspended in fresh water, and the process repeated. The sediment is finally mixed with powdered charcoal, and this is put on a piece of filter paper fitted to a glass funnel. The funnel is placed in a cylinder which is filled with water sufficient to reach the
tip of the filter paper. The water is drawn up by capillary attraction, and keeps the feces-charcoal mixture wet. It is then incubated for four to five days, after which the embryos may be found in clear water.

The author was able to secure live embryos from feces which had been mixed with charcoal and preserved with suitable precautions at room temperature for three months. By this method the author has also cultivated embryos of *Strongyloides intestinalis* and *Trichostrongylus orientalis*. The embryos are very similar to one another. He recommends the method as a useful diagnostic procedure when there is only a small number of eggs in the feces.

**Jikwa Zasshi**

(Journal of Pediatrics)

No. 213. February 20, 1918.


The blood showed a reduction in the number of red corpuscles with the presence of a few nucleated forms. The white corpuscles were moderately increased. There was a reduction in the number of lymphocytes, and also of the eosinophiles and mast cells, and a marked increase in the polymorphonuclear neutrophiles. There were also present meta-myelocytes (cells with neutrophile granules and nucleus of a horse-shoe shape), neutrophilic myelocytes, promyelocytes; myeloblasts and Rieder cells.

The myeloblasts were twice the size of a leucocyte, with a round, eccentrically placed nucleus, and reticular basic staining protoplasm which showed a few reddish granules when stained with Giemsa stain. The Rieder cells may be similarly described, except that they contain a convoluted nucleus.

(580) **DIABETES INSIPIDUS IN A BABY.** Pp. 16-26. S. Narigawa.

There was no disturbance of renal function nor of blood pressure. Under treatment, which consisted of injections of 0.29 mil of pituitary extract there was improvement. The volume of urine decreased and the concentration of sodium chloride increased.

(581) **CALMOTIN, A NEW HYPNOTIC.** Pp. 63-64. T. Sato.

The author studied the effect of this drug on frogs and rabbits. It caused a lowering of blood pressure, but is stated not to affect the vagus nerve nor the vasomotor center (?). The dose required to produce narcosis was in the frog, 0.12 mg. per gram of body weight; in the rabbit, 0.1 g. per kilo. It stops respiration in the frog in a dose of 0.16 mg. per gram of body weight; in the rabbit, in a dose of 1.0 g. per kilo. The lethal dose was 0.33 mg. per gram of body weight in the frog; 1.5 g. per kilo in the rabbit. These results lead the author to regard calmotin as superior to bromural.

**The Kitasato Archives of Experimental Medicine**

Vol. xi, No. 1. May, 1918.

(582) **CHOLERA VACCINE, SENSITIZED, ACTION OF.** Pp. 1-12. K. Shiga, R. Takano and S. Yabe. (German text.)

The article gives a comparative study of the immunizing power for rabbits and guinea-pigs of sensitized cholera vaccine, and ordinary heat-killed vaccine (thirty minutes at 56-58 °C). Both vaccines were carbolfied (0.5%).

After subcutaneous injection in rabbits of 2.0 mg. of these vaccines, no definite difference could be made out in the two series in agglutination titre or bacteriolysic activity of the serum (in vitro tests). After intravenous injection of sensitized vaccine, agglutinins and bacteriolysins appeared after one to two days, whereas
with heated vaccine they did not appear till after three days. The final titre of the serum, however, was equal in the two series.

The power of the two vaccines to produce an active immunity after intravenous injection of 0.25 and 0.5 mg. in guinea-pigs, was tested by subsequent intraperitoneal injection of 2 M. L. D. of culture (El Tor strain). The animals receiving sensitized vaccine frequently survived this dose of culture when given at an interval of three to six hours after the injection of vaccine, whereas the animals receiving heated vaccine showed no immunity until after twenty-four hours. After twenty-four and forty-eight hour intervals the animals immunized with sensitized vaccine survived two and four M. L. D. of culture more regularly than those immunized with heated vaccine. (There are many irregularities in these protocols.) After four days no difference in immunizing power was demonstrated.

This early immunity is regarded as an active cellular immunity, since antibodies could not be demonstrated in the serum till after two days.

The sensitized vaccine is regarded as superior to the heated non-sensitized vaccine, in that it excites an active immunity more rapidly.

(583) CHOLERA VACCINE, SENSITIZED; RESULTS OBTAINED BY THE USE OF.

The article gives the results obtained by the use of the sensitized cholera vaccine, described in the preceding article, during the epidemic of cholera in Tokyo in 1916.

The vaccine was first tested on fifteen persons in the institute. None showed any noteworthy reaction. The sera showed agglutinative and bacteriolytic power. In most cases 0.001 ml protected guinea-pigs from four M. L. D. of culture.

The vaccine was then prepared for general use. Two subcutaneous doses were given, of 2 mg. and 4 mg. respectively.

Of 3,055,946 inhabitants of Tokyo and the vicinity, 301,244 received sensitized vaccine. Of the vaccinated three contracted cholera (1 per 100,000); of the unvaccinated, 280 (or 27.7 per 100,000). The ratio of infection of the vaccinated to the non-vaccinated was about one to twenty-five.

Tables are presented to prove that the vaccinated proportion of the population was widely distributed and, on the average at least, as much exposed to the danger of the infection as were the non-vaccinated. The vaccination was begun at the onset of the epidemic, and so far as practicable those individuals were vaccinated whose occupation exposed them to special danger. Two of the three cases contracting the infection received but one dose.

Reactions after sensitized vaccine were very mild. Moderate local tenderness and lassitude were common. Only 1% of those vaccinated were incapacitated for work. No severe or alarming reactions occurred. In parallel series of cases the reactions were less severe than after heated non-sensitized vaccine. Tested on guinea-pigs, it was but 1/5 to 1/6 as toxic as the latter.

Contraindications are nephritis, advanced pregnancy, fever, and especially myocardial insufficiency, and beri-beri with oedema.

It is stated that heated non-sensitized vaccine was administered to 92,672 persons, but no details as to results are given.

(583a) SUBDURAL CAVITY: STUDY OF THE PROCESSES OF IMMUNIZATION IN.

The cerebrospinal fluid normally contains but 1/200 to 1/300 of the concentration of immune bodies present in the blood. If a quantity of immune serum is injected subdurally in rabbits, after twenty minutes the blood will contain the antibodies in the same concentration as that of a control animal which receives the same dose (per kilo) of immune serum intravenously.

If rabbits were given an intravenous injection of cholera immune serum they survived a subsequent subdural injection of cholera culture fatal to a control
rabbits. Under conditions of infection, therefore, appreciable quantities of antibodies can penetrate into the spinal fluid from the blood.

In human spinal fluid no complement is normally present. In guinea-pigs, after subdural injections of sensitized cholera bacilli, the organisms are dissolved as in the peritoneal cavity. As complement is essential for this reaction, it must have been present, or have passed from the blood into the spinal fluid after the injection.

As much as 1 ml per kilo can safely be injected subdurally in animals. Much larger amounts caused death in convulsions. At autopsy there was extreme congestion of lungs.

All pathogenic bacteria tested (cholera, glanders, anthrax, typhoid, dysentery, tubercle bacilli) were 10 to 100 times more virulent on subdural than on intravenous or intraperitoneal injection. Cholera toxin, tuberculin, and extract of anthrax bacilli were more toxic subdurally than intravenously.


Blood of infected animals, or emulsions made from their spleens, gradually lost their virulence if kept in glycerine. No immunity was obtained with glycerinated blood, but two injections of a total volume of 20-30 mils of a glycerinated emulsion of spleen, forty-five to sixty days old, protected calves from subsequent injections of infected blood.

The vaccine was killed by addition of 0.5% carbolic acid after sensitization and removal of serum by washing.

Subcutaneous injections of either heated, or sensitized vaccine produced serum after nine days immunity to two M. L. D. of culture.

Intravenous injections were followed by demonstrable antibody formation on seventh to ninth days; a little earlier after sensitized than after heated vaccine.

Full protection is not developed till after the tenth day.

In man the best results, as determined by antibody content of the serum, were obtained by two doses: first of 2 mg. and second of 4 mg.

In May 1917, following the discovery of infected rats in Yokohama, 5,570 persons were given sensitized vaccine in the above doses. Only slight reactions were noted, such as slight local tenderness and lassitude. No one vaccinated had to give up work. This is in striking contrast to the severe reactions that follow the use, in a considerable proportion of cases, of heated vaccine.

Fukuoka Ikwadaigaki Zashi
(Medizinische Zeitschrift herausgegeben von "Zashibu" der Med. Fakultät der Kaiserl. Universität Fukuoka, Kyūshū)
Vol. xi, No. 3. June 1918.


By preliminary injections in hens of (hen) tumor tissue of any sort, benign or malignant, transplantable or not, the author was able to make the animal refractory to subsequent implantations of two tumors readily transplantable in control hens. Injections of normal hen tissues produced a similar immunity in 70-80% of the hens. This immunity often disappears if repeated attempts at tumor inoculation are made.

A hen which has been successfully inoculated with a tumor is as susceptible as a control to a second implantation. A hen which has been unsuccessfully
inoculated, or in which a tumor has undergone spontaneous absorption, is usually immune. A spontaneous tumor confers no immunity to a tumor inoculation.

Young growing chickens were more susceptible to inoculations than sexually mature hens, and young well-nourished hens more so than old emaciated ones. Though most transplantable chicken tumors have originated in females, the two sexes were about equally susceptible to inoculations.

Hens immunized to tumor implantation retained the immunity after splenectomy.

Injections of tissues of other species conferred no tumor immunity.


**Tokyo Igakukai Zasshi**

(Mitteil d. med. Gesellsch. z. Tokio)

_Bd. xxxii, No. 17. September 5, 1918._

(588) **INTESTINES, RUPTURE OF, BY CONTUSION OF THE ABDOMINAL WALL, AN EXPERIMENTAL AND CLINICAL STUDY.** (Conclusion to article, abstr., No. 515.) Pp. 159-198. (German text.) T. Miyato.

Contains a detailed summary of twenty-one additional cases.

(589) **LEUKEMIA, BLOOD FINDINGS IN CASE OF.** Summary in German text. Pp. 1-4. Y. Yoshida.

Contains a summary of the clinical and autopsy findings in a case of acute leukemia in a man thirty-nine years of age. The onset was acute with fever, tonsillitis, petechial hemorrhages in the skin, gingivitis and bleeding from the gums. There was progressive anemia and increasing leucocytes with enlargement of the spleen and liver. Death occurred six weeks after the onset.

The blood, thirteen days before death, showed 2,380,000 r. b. c.; 122,000 w. b. c.; 6.0 g. Hb (Fleischl-Moeschrl); three days before death it showed 1,570,000 r. b. c.; 306,000 w. b. c.; 4.1 g. Hb. The more important findings in the differential count were: myeloblasts, 72%; of these, macro-myoeloblasts, 12%; micromyeloblasts 57%; myeloblasts with Pappenheim rods (Auer bodies) in their protoplasm, 2%; myelocytes 6% (various types); polymorphonuclear neutrophiles, 5.5%; lymphocytes, 2%; large mononuclears, 1.5%; nucleated red cells, 12%. The predominant cells were identified as myeloblasts by their staining reactions, and particularly by the oxydase reaction. The Pappenheim bodies were found almost exclusively in the macro-myoeloblasts.

The bone marrow was grayish-red in color and consisted largely of myeloblasts. The spleen, liver, thymus, and lymph glands were enlarged and infiltrated with myeloid tissue.

_Japanische Zeitschrift f. Krebsforschung_

_Vol. xii, No. 3. October, 1918._

(590) **ADENOFIBROMA OF THE WHITE RAT, STUDIES ON THE TRANSPLANTABILITY OF.** N. Umekara. Author's abstract in German text. Pp. 31-36. (Part I.)

The tumor was a benign adenofibroma of the breast, quite similar in structure to human tumors. The author carried it through fourteen generations without change in its biologic characteristics, save that in the later generations there was more connective tissue in the tumor and its transplantability progressively diminished from 90% successful attempts to none at all being successful.

Positive results were obtained by injection of tumor emulsion, and more constantly by implantation of tumor fragments. No growth followed injection of
tumor juice free from cells. No metastases, nor infiltration was observed, though the tumor might exceed in weight the rest of the animal. No relationship was observed between transplantability, and age or sex of the animal. Best results were obtained with well nourished and with pregnant animals.

No evidence of the development of an immunity was obtained, nor did a successful implantation protect an animal from a subsequent inoculation.

(591) **Chicken Sarcoma: Experimental studies on metastases of.** K. Tadenuma. Abstract in German text. P. 27.

The author found that repeated bleedings in chickens with sarcoma greatly increased the extent of the metastases as compared with untreated hens. Amputation of the wing bearing the tumor was often followed by appearance of numerous metastases. No explanation is offered.


_Fukuoka Ikwasaiagoku Zasshi_

(Medizinische Ztschr. herausgegeben von "Zasshibu" der Med. Fakultät der Kaiserl. Universität, Fukuoka, Kyushu)

Vol. vi, No. 5. December 1918.

(593) **Urea and non-protein N content of the Organs after Bilateral Ligation of the Ureters, after Nephrectomy, and after Experimental Toxic Nephritis in the Rabbit.** S. Iuda. Author's abstract in German text. Pp. 25-26.

Under normal conditions the urea was approximately uniformly distributed throughout all the organs and fluids. The non-protein N, on the contrary, while present in all, was in relatively larger amounts in the muscle, liver, kidney, intestine, lung, and heart; and in small amounts in the brain and blood.

If the secretion of urine was abolished, both urea and non-protein N accumulated, proportionally to the duration of the anuria, and the relative distribution of each in the various organs and fluids corresponded to that in the normal animal.

There was no detectable difference between the result of nephrectomy and ureteral ligation.

The ratio of urea to non-protein N, under normal conditions, showed irregular variations in the different organs; but if retention occurred the ratio became approximately the same in all; and the greater the retention the lower the figure expressing this ratio.

Where retention existed there was an increased water content in the intestine, kidney, lung, heart, and muscle, but not in brain and liver.

Autolysis of the liver of a rabbit, made uremic in any one of these three ways, was increased moderately above the normal.


The substances in red blood corpuscles which fix hämolysin in immune serum were easily destroyed by drying, heat, sunlight, by various solvents, protein precipitating agents, acids, alkalius and by protease.
Hospital Reports.

Report of the University Hospital of the Shantung Christian University, 1919.

Hospital Staff:—Drs. Harold Balme; W. McClure; W. Fleming; L. H. Braafadt; E. R. Wheeler; T. Stearns; J. B. Neal; R. T. Shields; T. Gillison.

The year 1918-1919 has been the busiest in the history of the hospital, and for the first time since the new building was opened in 1915 more than 1,000 patients have been admitted to the wards. This by no means represents all that might have been received, if accommodation had been sufficient, and during the spring months, when agricultural work is at its slackest and the country people have a little leisure to care for their chronic complaints, streams of patients made their way to the out-patient dispensary and were given admission tickets to the wards, not more than one-third of whom were able to wait for empty beds.

Detailed statistics are given at the end of the report shewing the character of the cases which have been treated in the wards during the year; in future years it is hoped that it may also be possible to include a similar record of out-patients. On another page there is a brief summary of some cases of peculiar interest which have occurred in the practice of the hospital within this same period.

Through the kindness of a friend, the whole of the southern front of the hospital has been screened in, thereby rendering the extensive verandahs both mosquito- and fly-proof. These verandahs are used, winter and summer, as open-air wards, and are increasingly valuable in a district where all forms of tuberculosis are so rife.

A munificent gift of £1,000 from the Society for the Propagation of the Gospel has made possible the purchase of a complete X-ray installation, which is on its way out from England, and the services of an expert radiologist have been secured.

In the domestic department of the hospital, a long-needed improvement is now being made, in the erection of a new kitchen, to be fitted up on sanitary lines.

In connection with the Nurses' Training School, the chief event of the past year has been the graduation of the first class of nurses who successfully passed the school's examinations. The ceremony was held in the Assembly Hall of the School of Medicine on April 30th, one of
the leading provincial officials and the British Consul being the chief
speakers, and a large and representative audience being present.

Of the six graduates (five women nurses and one man) who
received their diplomas on that occasion, two are remaining in the
hospital in charge of wards, the remainder taking similar positions in
other mission hospitals.

Thirty-two probationer nurses (twelve women and twenty men)
remain in training, under the leadership of our four foreign nurses.
The Training School has now been registered under the Nurses' 
Association of China and the course of study has been extended to
four years.

Although still in its infancy, the new nursing profession of China
is shewing signs of real vitality and promise, and it is encouraging to
notice the gradual growth of new ideals of social and humanitarian
service on the part of the educated classes. There is still much ground
to be covered, but it is probably no exaggeration to say there is no
work that is more needed, or which holds out greater hope of per­
manent service to China, than the careful and thorough training of
Christian Chinese nurses.

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Report of Pakhoi Leper and General Hospital, 1919.

Physician in Charge:—C. G. S. Baronsfeather, M.A., M.D.,
LL.D.

To the great regret of all who know him and who can appreciate the
value of the work he has done in extremely difficult circumstances, Dr.
Baronsfeather has been compelled to send in his resignation owing to
ill-health.

In this report, which is unusually interesting, he writes in an
informal manner of his experiences as a missionary physician. He tells
the story that a gentleman on writing to a bookseller in Canton for
some of the latest fiction was sent a missionary report—a joke which is
giving a good deal of amusement to our non-missionary friends—and he
hopes that what he has written will not be regarded as coming under
this description. His mind can be at ease on this point; undeniably he
presents the truth as seen from his particular standpoint. But while it
is necessary that the missionary optimist should curb his soaring
imagination when writing public reports, the pessimist also should
exercise restraint. Frankly, we think Dr. Baronsfeather is too
despondent concerning missionary work. In the circumstances we
would not allude to this, were it not that we are dealing with a public
The China Medical Journal.

report. To anyone not familiar with the Chinese this report is likely to give the impression that spiritual work among them is almost hopeless. Further, very many missionaries are considered to have departed from the true faith, Americans being the most heretical. The churches and theological colleges at home are also said to be in a bad way.

Even according to the report, however, there is a brighter side. The Chinese authorities have presented Dr. Baronsfeather with a very handsome tablet with the inscription "Fellow Officials recognize Virtue," in grateful recognition of the skill and kindness shown by him in the treatment of their wounded soldiers during the past two years. Nearly 20,000 patients have been treated in the hospital and dispensaries and remarkable conversions have occurred, the converts standing firm whatever their sorrows and difficulties may be. The sufferings of 115 lepers are being ameliorated and all are surrounded by helpful Christian influences. All this work cannot be unfruitful. It is not possible to estimate spiritual results with precision; but it is certain that much good has been accomplished and that Dr. Baronsfeather will be remembered for years to come in the district where he has labored so long and faithfully. We hope that change of climate and rest will bring speedy restoration to health.


Hospital Staff:—Drs. Peake and Lei.

As this is the Fifty-first Annual Report it opens with an historical survey of the work of the hospital during the last half century. It is interesting to note, however, that in Tientsin, army doctors preceded medical missionaries in opening a hospital for the treatment of sick and injured Chinese. Dr. Peake writes: "Among the reports and papers in my possession relating to medical work carried on by British doctors for the benefit of the people of Tientsin, is one very old and faded document entitled, 'Report on a Hospital at Tientsin for the Treatment of Sick Chinese; established by the British Army of Occupation, January 11th, 1861.' Was it not in 1860 that the Taku forts were taken, and a British force located in Tientsin? And yet very soon after their occupation of the place, we find the army authorities establishing medical work for the benefit of the people with whom they were supposed to be in a state of war!"

After the army went away it was not possible to maintain the institution. In 1868 the London Mission Hospital was opened. Since
1879 the mission has sent its own physicians to take charge of the hospital, Dr. Mackenzie being the first appointed. He won the goodwill and support of the famous Viceroy, Li Hung-chang, by his skilful treatment of Lady Li, and by the demonstration of his surgical skill in the presence of the Viceroy and numerous other high officials. He gained a great reputation and patients flocked to him in large numbers, so that the work became firmly established. The hospital buildings are now forty years old and have long since seen their best days. Appeals are being made for funds to build and equip new institutions and it is hoped there will be a generous response.

During 1919 the work has been very heavy. In-patients and dispensary patients have increased greatly in number, as well as the major surgical operations. Popular medical tracts are now distributed to patients who can read and who appear to take an intelligent interest in their conditions.

"Bad accidents are of frequent occurrence. These are brought in from the street, from workshops using foreign machinery, and from the railway. The Chinese, especially those who come from the country, do not yet seem to have learnt to pay sufficient respect to the modern locomotive. Cases with mangled limbs, requiring immediate amputation, are not infrequent, and considering the terrible shock which they have sustained, the loss of blood, and the added strain of a major operation, it is quite remarkable how such cases will often pull through. I need hardly say that these severely injured cases are already thoroughly septic when they are brought in. The wounds are infected, and every effort must be made to disinfect them. We have been much impressed with the value, in this respect, of tincture of iodine, if the cases are brought in early enough. Even where joint-cavities have been opened, or the skull fractured and the brain exposed, a free use of the tincture will often give most gratifying results."

As the writer of the report says, the London Mission Hospital in its long history has had its "ups and downs"; but it has rendered long and faithful service both to Chinese and foreigners, and we confidently expect it will do a still more important work in the future, especially when the new buildings are erected and suitably equipped.

Report of Peking Union Medical College Hospital, 1918-1919.

Hospital Staff:—Drs. F. E. Dilley; John H. Korns; H. Jocelyn Smyly; Wm. G. Lennox; Ernest M. Johnstone; J. Heng Liu; W. S. New; A. M. Dunlap; J. Hua Liu; T. M. Li; E. T. Hsieh; Edgar T.
As usual, the annual report of this hospital is well compiled and printed. The year under review, considered as a whole, is said to mark a transition stage in the life of the institution. Those of the staff on duty in Peking were chiefly new members. Numerous internal changes broke up the routine of former years. The working capacity of the hospital was increased by providing equipped laboratories and technicians. While to external view the institution remains the same, there has been a metamorphosis within.

The diseases of the patients in the various departments are carefully analysed and the various tables, charts, and graphs are most instructive. The treatment of tuberculosis is considered to be the most discouraging problem.

Much information concerning the management of a hospital is given. The system of recording and filing, with the peculiar difficulty of registering Chinese names, is well described and should be serviceable to other hospitals which have not yet adopted any particular system.

As to the spiritual welfare of the patients, religious services have been held regularly, but it is found that new ideas can be conveyed more effectively through the means of personal persuasion than by public addresses. During the year fifty-four patients expressed their desire to become Christians. Of these, twenty-three are soldiers and nine are merchants. Efforts are being made to connect them with local churches.

The social work has not been fully developed. The dearth of organized charities among the Chinese makes wise and discriminating help more difficult than in Western lands.

In the Nurses Training School men of better education than formerly are applying for admission. Thirteen have been admitted during the course of the year.

Chinese women who have graduated from local training schools are now being used to care for private patients regardless of whether the patients are men or women. It is the first time that locally trained Chinese women have nursed men patients. Under careful supervision the experiment is working well. This is particularly gratifying, because it paves the way for work in the new hospital, where only women will be accepted for general nursing.

A copy of this report will be sent to all who apply for it.
Report of General Hospital, Changchow, Ku., 1918-1919.

Hospital Staff:—Drs. W. B. Russell, Y. T. Liu, Y. W. Bee.

This hospital, opened less than two years ago, has not only survived the perils attending a new work but has outgrown the present accommodation. Funds have already been obtained to a considerable amount for the erection of new hospital buildings to replace the present Chinese houses used for hospital purposes. Reference is made in the report to epidemics of influenza and cholera which prevailed in the city during the year. It is noted that all cases of cholera which were brought to the hospital soon after the beginning of the attack recovered, whereas many of those which came later died. The treatment consisted of intravenous injection or hypodermoclysis, of normal saline solution, with other indicated remedies. In the surgical department a large number of major operations were performed, not a few being abdominal. In the city there is still much opposition based on superstition and prejudice to be overcome, and the Chinese have yet to understand that the same care in diagnosis and treatment is given to the medical as to the surgical cases. As the report indicates, however, the work is steadily progressing.

Report of Temple Hill Hospital, Chefoo, 1919.

Hospital Staff:—Drs. Oscar F. Hills (on furlough); Robert W. Dunlap; Herman Bryan; C. H. Ling.

The year's work shows an encouraging growth over that of previous years. Interesting items concerning the various activities of the institution are given. Although the receipts from patients have increased nearly 50%, the expenses of the institution still exceed the income, and it is the generous support of the China Medical Board which alone saves it from facing a deficit. It would be most encouraging if this first-class hospital, which provides everything necessary for the cleanliness, comfort, and proper professional treatment of the patients and charges only very modest fees, could show us how to make a missionary hospital self-sustaining. Perhaps this is an unattainable ideal. The Nurses Training School reports that seven nurses—four men and three women—were graduated during the year, and there are now in training nineteen men and five women.

Wukingfu and Shanghang Medical Report, 1918-1919.

Dr. W. Chalmers Dale reports that the past year's work in Wukingfu and neighboring districts has been uneventful, apart from the
The China Medical Journal.

epidemic of influenza near the end of 1918. This was widespread, but fortunately very mild. Towards the end of the outbreak there were a good many cases of pneumonia, mostly in children, several of whom died. A few adults were also attacked, but nearly all of them recovered. As a result of this epidemic, the number of patients shows an increase over last year.

The people of Hopo, especially the Christians, are exceedingly anxious and determined that a proper hospital shall be built. Several suitable sites have been examined. The best of these has been bought by a wealthy man connected with the Church. He has promised that he will sell this land to us for a hospital whenever we want it, at the same very reasonable price he has just paid for it. The people have been told fully and clearly that the building of a hospital is dependent on the support they now give to the dispensary. It is hoped that the project will be realized in the very near future.

The work generally has been much as in previous years. Eye diseases and digestive troubles form the main part. A good number of patients come with bone diseases; these cases nearly always respond excellently to treatment consisting of the radical removal of all the diseased tissue. Usually this leads to a return to complete health after years of illness due to continued suppuration and absorption of poisons into the system.

In pulmonary tuberculosis, the effects of treatment leave much to be desired. The patients nearly always come with the disease far advanced and no drugs seem capable of arresting its progress.

The evangelistic side of the work has been faithfully carried on by a blind evangelist with assistance from the hospital and Theological College students.

As regards Shanghang, the building of the wards has now been completed, and, though we have had to borrow some money at present from the general funds, this is covered by promises received from the Chinese, and will be gradually repaid. The work continues to grow and to prosper under the able care of Dr. Tsen.

NEW HOSPITAL IN SOOCHOW.—The corner-stone of Soochow's new hospital was laid on May 29, 1920, in the presence of a large assemblage of people, both foreign and Chinese. Exclusive of heating and plumbing, the construction now in hand will cost $130,000. More staff residences are to be built and much equipment bought. A total of $200,000 will be spent. The Board of Missions of the Methodist Episcopal Church, South, is giving $80,000 of this, the China Medical Board of the Rockefeller Foundation is giving $50,000; $70,000 will be raised in China. Some $20,000 of the last is already in hand, and the balance will be subscribed in the near future.

There will be a staff of five American doctors and five trained nurses. Each doctor will be a specialist in his own department.
Notes from Hospital Reports.

TINCTURE OF IODINE IN SEPTIC WOUNDS.

A man was brought in with his knee-joint cut widely open. He had been in a fight and had received this ugly wound from a violent stroke with a Chinese vegetable knife. The weapon had cut through the knee-cap, thus exposing the joint. Now an infected knee-joint is a most serious condition, and often results in the loss of the whole limb, the leg having to be amputated to save the patient's life. Frequently the joint must be kept open, drainage tubes being inserted, and it must constantly be irrigated with antiseptic fluids, in order to attempt disinfection. But in this particular case, as the patient had been brought in early, tincture of iodine was swabbed freely into and around the joint, and then the whole wound closed up. This primary suture (both of the keen-cap and soft parts) was followed by primary union, and a good, useful, moveable joint was the result.—Report of London Mission Hospital, Tientsin, 1919.

BETTER THAN AN ARTIFICIAL LEG.

Although this year our work returned more or less to the normal and we had few wounded soldiers, still they did come occasionally. One came in who had lost his leg, and he asked me if I would take a leg off a thief he and his comrades had captured and put it on to him. I told him solemnly that I had heard of such an operation being performed in America, but that it required at least three doctors, and as I was alone I did not feel justified in attempting it. I gathered from him that if I killed the thief in the process it did not much matter as the latter would probably soon die anyway. One cannot really complain that the Chinese have a low opinion of Western surgery after that.—Pakhoi Hospital Report, 1919.

MULTIPLE FALSE NEUROMATA (VON RECKLINGHAUSEN'S DISEASE?).

3756. Male, age 21. Admitted with series of swellings along course of right ulnar nerve, the first of which had appeared at age of three. Mostly naevoid in character, with distended veins supplying them. Tenderness on pressure. No abnormalities of sensation in region supplied by nerve. On excision, tumours proved to be naevo-fibromatous on section.

3761. Male, aged 29. Innumerable subcutaneous tumours all over body, especially in lumbar and gluteal regions, mostly projecting from surface. Not tender on pressure, and not confined to distribution of nerves. Marked pigmentation of skin in area where tumours are most prevalent. Excised tumours mostly fibro-lipomatous in character.—Report of University Hospital, Tsinan, 1919.

CHOLERA IN CHANGCHOW, KU., 1919.

We were fortunate in curing all cases of cholera which reached the hospital soon after the beginning of the attack, by giving intravenous or hypodermoclysis of normal saline along with other indicated remedies. Quite a number of patients, however, were brought in late and some of them died in spite of all our efforts with the saline, etc. In treating these cases in our general hospital we used the same prophylactic precautions as when we have cases of typhoid fever, so that among our 35 employees in the hospital only one contracted the disease. This was an amah who, contrary to instructions, had eaten food which had been contaminated by flies. No patient contracted it from any other patient in the hospital.—Report of General Hospital, Changchow, 1919.
As evidencing the heavy infantile mortality which undoubtedly exists in China, the following two cases may be of interest:

1. Female, aged 44. Has had seven children and two miscarriages. The first child died of measles at age of 9; the second, of convulsions when a few days old; the third, of diarrhoea at 7 months; the fourth, of diarrhoea at 1 year; the fifth, of severe cough at 1 year; the sixth, of severe cough at 4 years; the seventh is also dead, cause unknown. The mother was a very healthy woman, with no sign of tuberculosis or syphilis, the wife of a lawyer.

2. Female, aged 55. Admitted to hospital for scirrhus mammae. Otherwise quite healthy. Husband said to have been an opium-smoker. Has had ten children, as follows:

The first child died at age of 4 years (cause unknown); the second, lived to age of 20 years; the third is still alive and healthy; the fourth died of "convulsions" at age of 6; the fifth and sixth died of diarrhoea when a few months old; the seventh is alive and well; the eighth died in infancy of convulsions; the ninth died a few days after birth (cause unknown); the tenth is alive and well.—Report of University Hospital, Tsinan, 1919.

By the end of April the temperature had risen to 90° F., and as my little girl, aged six years, was dressing she was grumbling at all the clothes she had to put on. Suddenly she exclaimed, "I wish Adam and Eve had not sinned, and then we wouldn't have to wear clothes." Funny customers children, but their simple faith sometimes shames their elders.—Pakhoi Hospital Report, 1919.

Case 3395. Male, aged 18. This was a typical case of mitral stenosis and regurgitation, with lack of compensation and general anasarca, but unlike the great majority of cardiac cases met in north China (where the presence of acute rheumatic fever is often denied) a very clear history of antecedent rheumatism was obtained. The patient made a good recovery.—Report of University Hospital, Tsinan, 1919.

Talking of the materialistic traits in the Chinese character, in March we had a striking instance of it when a motor launch, crowded with soldiers, overturned. Do you suppose all the boatmen round rushed to the rescue? I don't think! They started to bargain with the officers and after due discussion it was arranged...
Notes from Hospital Reports.

that $1 per head would be paid for each soldier saved, and $2 for each rifle saved. Labour is cheap and plentiful here, rifles are not. Quite a number of the soldiers had disappeared by this time to rise no more, but a number of rifles were secured. —Pakhoi Hospital Report, 1919.

**Trichomonas Intestinal Infection: Hepatic Abscess.**

3596. Male, aged 49. Patient admitted with history of abdominal pain and swelling for three months. Had had severe attack of dysentery, but this had been subsequent to other symptoms. Physical examination demonstrated presence of a typical hepatic abscess, which was subsequently incised and drained; but neither in the pus from the liver nor in the feces was any trace of amebae found, the stools, however, being full of *Trichomonas intestinalis*. The patient made an uneventful recovery.—Report of University Hospital, Tsinan, 1919.

**Fatal Toxaemia from Sting of Insect.**

Case 3291. Male, aged 48. Brought to hospital with history of having been stung by some insect five days previously.


Patient died a few hours after admission.—Report of University Hospital, Tsinan, 1919.

**Perhaps the Later Storm Jogged Patient’s Memory.**

On the 10th of March, 1919, we had a thunderstorm, a most unusual event at that time of the year. Next morning a man was carried in paralysed, having been struck by lightning. Naturally we concluded the injury had happened the day before, and went for the usual remedies; later we ascertained it had occurred six months before! By a curious coincidence, he recovered almost completely under electric treatment.—Pakhoi Hospital Report, 1919.

**Development of Central Mission Hospitals.**

The English Presbyterian Mission has appointed a special medical committee to arrange for a more adequate staff, better buildings, and better equipment for its mission hospitals in China. This committee has decided that at present it is not possible to supply all the hospitals with up-to-date X-ray plant, nor the more seldom used special surgical instruments, nor to equip an efficient, if small, pathological laboratory, nor provide the necessary buildings to make each hospital a complete and efficient unit. It has therefore chosen three hospitals in the three centres of Formosa, Swatow, and Amoy, and these are to be developed and made more worthy of the work they are attempting to do.—Report of Chinchew General Hospital, 1919.

**Superstition and Infant Mortality.**

In Changteh if a child cries very much immediately after birth, the Chinese midwives say it has a feng bao (風癱) and believe that to let the devil out at once is the best way to relieve the child. The feng bao is supposed to be in the roof of the mouth, and is opened by the midwife taking her silver hair-pin and scratching the part until it bleeds, after which Chinese ink is rubbed into the wound. Practically all babies in the district are treated in this manner and four-fifths of their number die within ten days. Death is preceded by convulsions.—Dr. Toolef, Changteh, Hunan.
The Intracutaneous Tuberculin Test.—At the Berlin University Polyclinic for Diseases of the Lungs, F. Klopstock (Berl. klin. Woch., August 4th, 1919) has applied the intracutaneous tuberculin test to fifty cases suspected of tuberculosis. He gave four simultaneous injections in the carefully cleaned skin of the forearm, the strengths of the solution being \( \frac{1}{1000} \), \( \frac{1}{100} \), and \( \frac{1}{10} \) mg. of tuberculin and \( \frac{1}{10} \) mg. of glycerin- bouillon in 0.1 mil of fluid. This fourth injection was given as a control. A comparison of the intracutaneous with the subcutaneous test (the subcutaneous injection being given after the intracutaneous injections) showed that the reactions did not run parallel. In some cases reacting violently to the intracutaneous test a positive reaction to the subcutaneous test was obtained only when 5 mg. and 10 mg. were given. In other cases a subcutaneous injection of only 0.5 mg. was sufficient to give a positive reaction, whereas a positive reaction to the intracutaneous test was obtained only with the maximum dose, \( \frac{1}{10} \) mg. But the intracutaneous test was undoubtedly the more sensitive, and in no case of a positive reaction to other tuberculin tests did the intracutaneous test fail to be positive also. On the other hand, there were three of the fifty cases in which the subcutaneous injection of 10 mg. of tuberculin failed to raise the temperature, whereas the intracutaneous test was definitely positive. The author found the intracutaneous test of no value in distinguishing between latent and active tuberculosis, but he considers it superior to the cutaneous test in many respects.

Is Hæmolysed Blood Toxic?—In the Brit. Jour. of Exper. Path., February, 1920, Professor W. M. Bayliss discusses this question and brings forward evidence to show that hæmolysis in itself is harmless. The practical importance of the matter lies in the common belief that “the serious results of transfusion of blood into a patient whose blood hæmolyses the corpuscles of that introduced” are due to the hæmolysis. The experiments which gave rise to the belief that hæmolysed blood is toxic were performed on rabbits. Professor Bayliss points out that rabbits are not suitable animals for such experiments owing to their aptitude to intra-vascular clotting. In the cat and dog homologous hæmolysed blood is, with very rare exceptions, innocuous. The ill-effects occasionally noted in blood transfusions are “an aspect of the action of foreign serum protein analogous to that responsible for anaphylactic shock.” It is shown in the paper that hæmoglobin dissolved in plasma can act as an oxygen carrier.

Deficiency Diseases and Leprosy.—At a meeting of the Royal Society of Medicine in England on February 24, 1920, A. S. Dutton read a paper on “Some Deficiency Diseases and Leprosy.” Having spoken of the connexion between beri-beri and scurvy and deficiency in the diet, he considered leprosy, and referred to Sir Jonathan Hutchinson’s investigations. This observer appeared to have been con-
Medical and Surgical Notes—Internal Medicine.

vinced that the food supply has a considerable effect in its production and noted that it never developed in the United States, with the exception of parts of California, attributing this to the circumstance that it is almost the only country where colonisation took place without an initial stage of considerable hardship, and that a good variety in foods was practically always available. Though leprosy was considered to be due to the *Bacillus lepra* it was remarkable how closely the nervous symptoms of *beri-beri* resembled those of *lepra anaesthetica*. The numbness, anaesthesia, loss of power in the legs, arms, and hands, as well as other symptoms, were very similar, and might in both diseases result in muscular atrophy with foot-drop and wrist-drop. Each was also particularly prevalent in the Far East. *Lepra anaesthetica* could occur without association with *lepra tuberculosa*, and be present for a considerable time before the latter eventually made its appearance, and Hutchinson had said that the tuberculous variety never occurred before the anaesthetic kind was in evidence. This appeared to support the food theory. The speaker did not suggest that leprosy was caused by the taking in of bacilli in fish, but there seemed to be the likelihood that when the food-supply mainly consisted of it a deficiency in diet occurred. Salting modified the flavour of the fish, and, according to Liebig, one-third of the nutritive value of meat was lost during the process, and some such change might reasonably be expected in the case of fish. Hutchinson showed that in Iceland and Norway, where leprosy is common, it prevailed more generally on the sea-coast or near lakes and rivers where fish is consumed. It was likely that leprosy might eventually be recognised as partly a deficiency disease, sometimes owing to a predisposition caused by a diet mainly composed of fish, and sometimes to a dietary deficient in various necessary elements. The theory of contagion was not generally accepted, though the case of Father Damien appeared to favour it.

Having considered the possible means of infection by the *Bacillus lepra*, he said that the discovery of this bacillus had at first led Hutchinson to believe that the etiology required no further investigation, but later he became aware that this was not the case. It now seemed possible to arrive at conclusive more likely to be accepted—namely, that leprosy is largely predisposed to by defective feeding and by defective personal hygiene, sanitation, housing, and environment, the bacilli then gaining access to the body, with the possible subsequent addition of the whole chain of tuberculous manifestations. The question of prevention seemed to resolve itself into the need of conforming to customs and habits found efficient in England and elsewhere, particularly in regard to food and hygiene, with, in addition, the isolation of those infected with the bacillus.—*The Lancet, March 6, 1920.*

The Etiology of Scurvy.—With the bacteriologic hypothesis left without tenable scientific confirmation, with McCollum's theory that chronic constipation is a decisive factor abandoned, and with an abundance of experimental evidence in favor of the view that dietary deficiencies play the decisive part in the genesis of scurvy, the current studies on antiscorbutics are placed on a more stable foundation. The essential identity of the disease in animals and in man has been generally accepted.—*Jour. Amer. Med. Assoc., April 24, 1920.*
Surgery.

**inguinal hernia.**—Torek of New York (Ann. Surg., 1919, 70) reviews the 598 cases of hernia operated upon by him according to his own method. There were only two recurrences, a rate equal to one-third of one per cent. Of these two recurrences, one, a syphilitic subject, developed gangrene of the abdominal wall; the other was operated upon by a house-surgeon in Torek’s absence. The author makes a great point of separating the vas deferens and the blood-vessels of the cord from one another as well as from the sac. This allows one to see the vas coming out from the bottom of the opening in the transversalis fascia and the vessels coming out at the top, whilst the ligatured sac falls back between the two. Separation of vas and vessels is perpetuated by bringing the latter out at the external angle of the wound, inserting two or three sutures uniting the internal oblique and transversalis muscles to Poupart’s ligament, and then bringing out the vas. The rationale of the separation of the vas deferens from the vessels of the cord lies in the observed fact that the hernial sac insinuates itself between the two. If, therefore, the whole cord is displaced either forwards or backwards as in the ordinary Bassini and Ferguson operations, the possibility of recurrence is not disposed of. Torek’s method of introducing sutures between these two structures prevents any insinuation of a peritoneal diverticulum between them. The only place where recurrence can take place is in the lower angle (in the form, that is, of a direct hernia). This point is selected for the insertion of the silver sutures, which he used to employ in the whole length of the wound, but now reserves for the inner two or three sutures where greatest tension is. Torek’s operation is ably planned, and the results, as may be judged by the figures given above, are better than most.

**treatment of abscess of liver.**—Of fifteen cases of abscess of the liver, four of the early cases were treated by open operation and drainage by tube. Two of these were drained through incisions in the epigastrum, the exposed area of liver being packed round with gauze and the abscess opened by sinus forceps; the other two cases were treated by drainage through the chest wall. After localizing the abscess by means of a glass syringe (20 mils) and needle, the needle was left in situ and two and one-half inches of the tenth rib were excised in the axillary line. The diaphragm was incised below the level of the pleura, the edges being sutured to the intercostal muscles. After packing gauze round the area of liver exposed, a pair of sinus forceps was passed into the abscess cavity guided by the needle. A drainage tube was then passed into the abscess and sutured to the chest wall. One of these cases died suddenly during the night following the operation.

The remaining eleven cases were all treated by aspiration with an ordinary 20 mil glass syringe and needle with a fairly large bore, which was passed in various directions into the liver until the abscess was found.

After aspiration every patient was given a course of hypodermic injections of emetine hydrochloride, one grain daily for one week and then on alternate days until 12 or 14 grains had been given. When-
ever possible each patient was given one grain of emetine a few hours before operation, so that the first serum to flush the walls of the abscess should be carrying emetine.

The action of emetine in these cases of liver abscess appears to be as specific in its action as that of quinine in malaria. In addition to the fifteen cases of proved liver abscess the writer saw seven or eight cases of hepatitis following dysentery, some of which were probably in an early suppurative stage and which cleared up rapidly with emetine.

Fourteen out of the fifteen cases recovered completely. One case died as already described. In the writer's opinion the majority of these cases can be treated successfully by aspiration with an ordinary 20 mil glass serum syringe. It does not appear to be necessary even to withdraw all the pus. Once the tension in the abscess cavity is relieved, the emetine-carrying plasma can pass through the walls of the abscess cavity and exert its lethal effect on the army of amebae present there. After aspiration the temperature usually drops to normal at once, the liver rapidly diminishes in size, and convalescence is rapid. Talbot, Brit. Med. Journ., September 20, 1919.

Obstetrics and Gynecology.

The Diagnosis of Early Ectopic Gestation.—Heaney (American Journal of Obstetrics, July, 1919) claims that the history supplies the diagnosis in 95 per cent of these cases. He believes that the text-books are misleading in some respects. To emphasize the pain in these cases is like dwelling upon the emaciation in cancer of the uterus. Many patients have not the least pain prior to rupture. Amenorrhea likewise is too prominently mentioned in the books. Irregular intermittent bleeding over a considerable period is very suspicious, and every woman with symptoms suggesting a threatened, imminent, or incomplete abortion should be regarded as possibly having an ectopic pregnancy. The passage of a deciduial cast is another feature over-emphasized in some text-books, as also are the enlargement of the uterus and the presence of breast signs or nausea. The writer advocates exploratory posterior colpotomy in doubtful cases.

Influenza in Pregnancy.—In his thesis, which is based on the study of cases in the maternity department of the Lariboisière Hospital, Grillet (Journ. de méd. et de chir. prat., January 10th, 1920) records his experience of cases of pregnancy complicated by influenza in the epidemic of 1918-19. Four cases of pregnancy of less than six months' duration complicated by severe influenza all resulted in abortion about a week after the onset of the disease, and ended fatally within forty-eight hours. Thirty-seven cases occurred in women whose pregnancy was of more than six months' duration. In two cases death took place before delivery. In fifteen cases complicated by pneumonia or broncho-pneumonia there was premature delivery and expulsion of a dead fetus, and, with three exceptions, rapid aggravation of the mother's condition and death. In twenty-five cases there was expulsion of a living fetus, but in only nine cases did the mother and child survive.
In no case did uterine infection take place. Labour was rapid in all, and the influenzal infection was the cause of death. Twenty-two cases occurred in women at term; 50 per cent of the mothers died; the prognosis as regards the child varied according to the case. When influenza developed at the time of delivery the child was born healthy, but death occurred in utero if the influenza manifested itself a few days before birth. These cases show that influenza complicated by bronchopneumonia is very liable to be interrupted by abortion or premature labour, and that the prognosis of this complication is very grave.

CANCER OF UTERUS COMPLICATING PREGNANCY.—In the Lettsomian Lectures delivered before the Medical Society of London, February to March, 1920, by Herbert E. Spencer, M.D., F.R.C.P., on "Tumours complicating Pregnancy, Labour, and the Puerperium," (The Lancet, March 6, 1920) he concludes by stating that the chief modes of operative treatment which have been employed for cancer complicating pregnancy are by high amputation, vaginal hysterectomy, extended vaginal hysterectomy, abdominal hysterectomy, extended abdominal hysterectomy, and combined abdominal and vaginal hysterectomy.

In the course of the last ten years great advance has been made in the treatment of cancer of the cervix by radium, mesothorium, and X rays, and for the last five years in several of the chief clinics of Europe, operation has been almost entirely abandoned in favour of radiation treatment. This method of treatment would seem to entail some risk to the fetus, and he is not aware that it has been employed during the course of pregnancy. The patients are on the average younger, and therefore presumably stronger than non-pregnant patients, but the disease is apt to be more malignant in the young. The glands are, however, comparatively rarely affected.

Treatment during Early Pregnancy.

(a) "Operable" cases should be operated on at once. The opinion once held that cancer complicating pregnancy was inevitably fatal can no longer be maintained. The best results have been obtained by the extended abdominal hysterectomy, Wertheim's results having been unequalled by any other method. In view of the fact that the glands are rarely affected, vaginal hysterectomy (preferably performed with the cautery) may be employed in feeble or fat patients, as it has a much lower mortality than the abdominal operation, and amputation of the cervix may be performed in early cases of squamous carcinoma, in which there is a desire to preserve the life of the child and the fertility of the mother. During labour or abortion the same operations may be performed if the case is not infected; if infected, the whole womb should be removed.

(b) "Inoperable" cases. If the case is not accompanied by bleeding or infection the patient should be kept at rest and Porro's operation with the serre-œud be performed when the pregnancy is advanced. During labour or abortion the case should be treated on general principles with a view of preventing infection, and subsequently treated during the puerperium with the cautery, radium, and X rays.

Treatment during Late Pregnancy.

(a) "Operable" cases should be treated by Caesarean section, followed by extended abdominal hysterectomy. If the patient is in
fair condition the operation is indicated equally on the ground of science and humanity. If the patient is feeble or the growth infected it might be preferable to remove the cervix by the cautery and then remove the child by the vagina or by the abdomen, and apply radium after, or without, the removal of the uterus. This procedure would probably be safer to the mother than the performance of abdominal Caesarean section and the removal of the uterus (or the cervix after amputation) by the vagina, but would involve some increased risk to the child. Vaginal Caesarean section entails too great a risk of implantation of cancer cells; and no case is recorded in which it has been followed by cure.

During labour the risk to the patient is greatly increased. In the early stages of labour Caesarean section, followed by the extended abdominal hysterectomy, will usually be the best treatment. But if the labour be advanced and the growth not extensive it may be safer to deliver the patient per vías naturales, and afterwards at an early period of the puerperium to treat the diseases by one of the methods mentioned. It is noteworthy that five of the seven advanced cases "cured" were operated on after delivery.

(b) "Inoperable" cases should be treated by Porro's operation with the use of the serre-nœud. It has the advantage over the conservative Caesarean section that it removes the placental site from the risk of infection, and over Caesarean hysterectomy with intraperitoneal stump that, in case of infection, discharges will readily escape by the side of the wire, which can be placed at any height above the growth, provided the placental site be removed. In the case of a dead or putrid child it would be possible by the Porro method to close the peritoneal wound above and around the uterus before the body of the organ was opened or amputated.

During the puerperium the treatment does not differ essentially from the treatment of cases of cancer in the unimpregnated.

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**Tropical Diseases.**

**Relapsing Fever in Szechwan.**—No case of relapsing fever was recorded in China until 1904. Far from being rare, however, it would appear to ravage every province in which laboratories and a medical organization exist to identify it. It is quite common among the poorer classes; very few cases occur among the better classes. In the spring the fever becomes epidemic; it decreases through the summer, and as the winter advances it becomes almost extinct. These variations are coincident with those in the number of lice infesting the poor among the population. As mosquitoes, fleas, and bugs are ubiquitous and affect all classes alike, it is improbable that they are transmitting agents. The mortality is very high. Prophylaxis consists in exterminating the louse, an impossibility until some remedy is found for the extreme poverty at present prevailing among a very large class of the people.—Jouveau-Dubreuil, *Bull. de la Soc. de Path. Exot.*, January, 1920.

**Dengue and Sand-fly Fever.**—Megaw (*Indian Med. Gaz.*, July, 1919) holds that though at first sight dengue and sand-fly fever seem to be quite distinct from
each other, yet the evidence is by no means convincing, and none of the points of distinction hitherto put forward serves definitely to separate them as two diseases. He would have them all called dengue, merely adding the terms three-day fever or seven-day fever to denote the particular type. Those who consider sand-fly fever as being different from dengue lay stress on the absence of a rash and the absence of a secondary rise of temperature, but it must be admitted that in many outbreaks of undoubted dengue numbers of the cases show neither rash nor secondary fever. If it be invariably true that the *culex* and *stegomyia* mosquitoes are the insect carriers of dengue, and the *phlebotomus* the sole carrier of sand-fly fever, then the diseases must be considered distinct, but he thinks that much more experimental work on the mode of conveyance of the diseases by insects must be done before this can be definitely accepted.

Parasitology.

The Chlorotic Form of Trichocerphalasis.—G. Mouriquand and Bertoye (*Paris med.*, December 20, 1919) record a case in a girl, aged 13, who was brought to hospital for persistent diarrhoea and increasing pallor. Numerous ascarides had been found by the mother in the stools, which were twelve to fifteen in number a day and haemorrhagic. Examination of the blood showed red cells, 3,100,000, leucocytes 26,600, haemoglobin 20 per cent. Differential count: Polymorphonuclears, 52 per cent; eosinophils, 11 per cent; moderate sized mononuclears and lymphocytes, 32 per cent; large mononuclears, 4 per cent; myelocytes, 1 per cent. Ova of ascarides and trichocephali were found in the stools, but disappeared after treatment by santonin and thymol. Death was due to cerebral thrombosis. At the autopsy thirty ascarides were found in the small intestine and thousands of trichocephali and three ascarides in the large intestine.

Resistance to Desiccation of Intermediate Host of Schistosoma japonicum.—William W. Cort, of the Union Medical College, Peking, has made an interesting examination of snails infected with the cercarie of *S. japonicum* and comes to the following conclusions: (1) The resistance to desiccation of *Blandfordia nosophora*, the intermediate host of the Japanese blood fluke, *S. japonicum*, is limited to about three months. (2) Desiccation unfavourably affects the cercarie within the snail, and infected snails succumb more quickly than uninfected. (3) Individuals of *Blandfordia nosophora*, will voluntarily leave the water and become dry under unfavourable conditions. (4) Measures for the control of Japanese schistosomiasis by draining the breeding places of *Blandfordia nosophora*, would be fully effective only if these places were kept dry at least three months.—*Journ. Parasite*, December, 1919.

Round Worm Infection Clinically Simulating Pneumonia.—McKibben (*Boston Med. and Surg. Journ.*, December 4, 1919) records a case of a boy, aged two, who when first seen presented the typical picture of pneumonia—pulse 160, respirations 60, and temperature 104° F. For a week or two he had been passing stringy
mucus, and during the last two days had developed a cough and coryza. Examination failed to give any positive physical signs. Three and a half months previously he had filled his mouth with some dirt from around a heavily fertilized shrub, and a week before being seen he passed a dead worm of the *Ascaris lumbricoides* variety. The severe toxaemia suggested a possibility of convulsions, and he was given a tablespoonful of castor oil followed in an hour by $\frac{3}{8}$ grains of santonin. Six hours later he passed a wriggling pinkish mass closely resembling earthworms, followed in two hours by a similar mass of *Ascaris lumbricoides*, totaling 78 in all, and varying in length from $1\frac{1}{2}$ to 11 inches. One worm came upwards through the mouth. Many more were flushed out by intestinal lavage with four quarts of salt solution. The castor oil and santonin treatment was repeated morning and night for the next two days, bringing away a total of 370 worms, not counting those under $1\frac{1}{2}$ inches in length. Blood examination showed no leucocytosis, but a marked eosinophilia of 40 per cent. The treatment was continued bi-weekly for a month, two to five worms resulting each time, after which occasional treatment showed that there were no more, and the boy soon regained perfect health.

**Helminths in Female Genital Organs.**—Tschamer reports a case in which two living specimens of the oxyuris were found in the right tube after total hysterectomy. As the tube was slit, one of the helminths crawled to the mouth of the tube, the other to the fimbriated end and both dropped off. The longest was 12 mm. in length. No ova of the oxyuris could be detected anywhere in the excised mass, but it had been rinsed, and possibly some may have been present at first. The woman had been recently treated with santonin on account of discomfort from itching at the anus and genitals and in the nose. The pinworms probably had found their way from the anus through the vulva and uterus into the tube, but there did not seem to be any pathologic condition for which they could be held responsible. Tschamer reviews the literature on helminths in the internal genitals; it is evidently a very rare occurrence. He was not able to find any previous record of the penetration of the helminths or ova beyond the vagina and cervix except that Marro reported in 1901 a case in which oxyuris ova were found in a cyst on an ovary.—*Zentral. f. Gyn.* Leipzig, December, 1919.

**Keeping Cholera Vibrios Alive for Examination.**—To portions of a stool artificially infected with cholera vibrios equal quantities of glycerine (40, 50 and 60 %), of sodium chloride solution (0.5-3.0%) and of ox bile (50, 75 and 100%) were added and the mixtures stood at room temperature, 32°C. While from the glycerine specimens no vibrios could be cultivated after the 4th day, from the sodium chloride samples (0.5-5%) and from all the bile specimens vibrios could be grown after as long as 5 weeks.

The method of keeping cholera vibrios alive in stool specimens which the authors tested, was the addition of glycerine, of sodium chloride, and of ox bile. By infecting stools with diminishing numbers of cholera vibrios it appeared that pure ox bile had a better conserving effect than 1% sodium chloride when the vibrios were present in very small numbers.—*Phil. Jour. Sci.*, September, 1918.
Public Health Education.

Public Health Work in the Orient.—In the East religious prejudices and superstitions, and in India the caste system, greatly retard the progress of hygiene and sanitation. The extreme poverty of millions of the people is also an almost insurmountable hindrance. The following excerpt from an article by H. N. Jenks entitled "Public Health Work in India" (Amer. Journ. Public Health, November, 1919) shows the difficulties which the sanitarian encounters in India and, apart from the caste system, the difficulties met with in China are very similar.

India is essentially an agricultural country. Outside of three large cities, Bombay, Calcutta, and Madras, with populations of approximately 1,000,000 for Bombay and Calcutta, and 500,000 for Madras; and apart from a score of cities whose population is in the neighborhood of 250,000, the great mass of the people live on farms and in scattered villages. It is, moreover, "hardly an exaggeration to say that these people are engaged in a ceaseless struggle for existence. The recurrence of famines, even under the excellent systems of irrigation and transportation introduced by the British, is but a testimony to the fact that there is always a delicate balance between the needs of the individual coolie and the food supply that he is able to procure.

Under such conditions it is of no advantage to the cause of sanitation to tell the average Indian that "Public health is purchasable"; for even if interested in making such a purchase, the Indian lacks the money with which to do it. Evidently, therefore, the great bulk of the sanitary work that awaits accomplishment must be done through government agencies. Until the economic status of the masses is raised, expenditures on the part of the individual for even the sanitary arrangements about the house and for such material as contributes to personal hygiene are out of the question. Until the coolie laborer can afford two blankets, he will use the cast-off blanket of a relative who has just died of smallpox or cholera; until a sanitary privy becomes a financial possibility, education alone will not deter the Hindu from observing the code of Manu which permits defecation on the ground at a distance from the mud hut equal to the flight of an arrow. In effect, until the Indian earns enough rupees per month above those required to buy dal and rice for himself and family, he cannot afford, even though caste prejudice were removed, to cover the floor of his hut with anything but cow-dung, which he has but to obtain from an adjoining shed where the family cow is kept.

It is not to be wondered at, therefore, that, coupled with an inherent mysticism and habits of caste that expose the physical organism to the inroads of disease from every quarter, the general economic poverty of the masses should have resulted in a pronounced apathy towards all sanitary improvement, and a frame of mind tinged so deeply with fatalism. So powerful is this influence that in the days before inoculation became compulsory for plague, whole sections of a community would be almost entirely swept away rather than accept the relative immunity conferred by the serum upon other less fanatical classes. It is not uncommon to hear the story told that a Hindu, considering himself wronged by another, will simply lie down and die to spite him. However true this may be in practice, it is certain that in the treatment of patients against their will, this possibility is often weighed against the chances of death without treatment.

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The ignorance of the average Indian and his passive resistance towards any innovation which affects his habits and customs are, as might be expected, yielding to the enlightened thought and improved material surroundings introduced by European civilization. Knowledge of the world gained by the educated Hindus both in Indian colleges and through foreign travel is contributing slowly to the breaking down of caste prejudice among the influential classes. Similarly, among the people at large, nothing has served so well towards removing the distinctions of caste as the introduction of modern means of transportation in India. Travelling by train in that country has been brought within the means of the very poorest; consequently an enormous volume of traffic is encountered on all railways in India and particularly on those that pass through any of the sacred cities of the land. The fact that the great majority of Indians now make their pilgrimages by railway has greatly increased the opportunities for the rapid spread of infectious diseases, and gives rise to new problems in the control of the great epidemics that are so frequently the sequel to a great
festival. Apart from this result, however, the establishment of rapid lines of communication, promoting the intermingling of people from distant provinces, has had a most salutary effect in preparing the Indian mind to accept innovations in many other forms, including those found by sanitarians to be necessary to the furtherance of the cause of public health.

Finally, in addition to the slow process of education, the immediate and tangible benefits following the introduction of clean water supplies, drainage and sewerage systems and rat-proof bazaars, and the establishment of hospitals and public dispensaries, have claimed the attention and appreciation of the most ignorant and apathetic. It is still true that, given a city tap furnishing safe water and a contaminated well a few feet away, certain castes as the Murjadis of the Bhata class, who are enjoined to drink water from wells alone, will refuse to draw water from the city tap— at least until the well is filled up by the health authorities—yet through the example of the more enlightened classes and by tact and infinite patience on the part of the administrative staff of the health department, the desired results may be attained. In most routine work where once coercion was needed, constant vigilance is now sufficient. If will be a long time, however, before the average Indian will of his own accord keep himself and his surroundings clean.

In concluding the present discussion it may be said that the effects of the sanitarian’s work upon the peoples of India are at one and the same time his chief reason for enthusiasm and for despair. Considering the almost limitless field for his efforts and the beneficial results that appear when insanitary conditions are relieved ever so slightly, he is constrained to feel encouraged. On the other hand, it seems at times a well-nigh hopeless undertaking to attempt to make any real progress in view of the sheer magnitude of the task. Just as the time-factor is all-important in the self-purification of streams, so also will it require much time for the public health officer and sanitary engineer to instil in the minds of India’s 350,000,000 people our modern ideas of sanitation and cleanliness.

THE MISSIONARY DOCTOR IN CHINA.

Past Achievements and Future Outlook.

By Dr. George E. Vincent, President of the Rockefeller Foundation.

The missionaries in China in 1914 had established three hundred and fifty foreign-trained nurses in the field. They had during the years established firmly the foundations not only of hospital and dispensary service, but the foundations that are indispensable to the establishment of medical education.

A medical missionary in China has a rather varied job. In most hospitals he looks after all the medical work, keeps all the books and is expected to turn his hand to everything. When there is some prominent Chinese taken ill, he must render service. He is daily called upon to do all sorts of things, so there is nothing surprising in his being called upon to train medical students.

It is quite astonishing to see what they accomplished. They found good pupils and these pupils were selected and sifted in various ways. Some of the best of them were chosen to come to this country and receive further education. Gradually, through these primitive and pioneer methods, if you please, Chinese surgeons and physicians were trained.
As one goes about in China now, one finds a great many of these Chinese who have rendered important service and who in these hospitals give significant service. This was pioneer work. During the last few years the medical missionaries have been developing institutions, have been getting teachers and securing places where they can have hospitals, and all the credit belongs to these pioneers, to these men and women who have devoted themselves so loyally to the building up of this system.

CHINA MEDICAL BOARD CO-OPERATION.

The work of the China Medical Board is an attempt to co-operate with these missionary organizations, with these men and women who have done the work, are prepared to do the work and whose successors are going on prepared to carry this work through the decades that are before us.

China presents an alluring field for service. I am convinced that in China there is one of the finest chances to live a large, rich and satisfying life that there is anywhere. We should not think of going to China as a "sacrifice." I have no use for a person who is always talking about the great sacrifices he is making. I say to myself, "Here is a petty soul." When I find people who are all on fire with their work, whose imaginations have been swept and stirred so they cannot be happy except in doing this work, then I say, "Here are the people who have the genuine call."

Professional isolation has been one of the difficulties, but now that difficulty is being lessened. Within the next few years in China there will be as fine an opportunity for graduate students as can be found anywhere in the world on a similar scale.

Then there is the necessity for maintaining hospitals at a high level, because the hospital is a most essential part of medical education. One of the difficulties here is that we turn out thousands and thousands of medical students, and only 20 per cent of the doctors of the United States to-day have an opportunity to come in contact with diagnostic laboratories and work in hospitals. Eighty per cent of them are practising in isolation from the resources of modern medicine.

The time is coming when every medical student in China can go to the medical center for a short course. In Peking there is a course being established, and later I hope in Shanghai it will be possible for them to resort to access to laboratories, all the latest resources and clinics, which will be given by men and women distinguished in medicine. And there will be summer schools of medicine, graduate
schools of medicine that can be offered anywhere. Life of a professional character in China should not be represented as a desolate waste and isolation. There is going to be a splendid chance to keep abreast of the times.

MISSIONARY PIONEERS IN SOCIALIZED MEDICINE.

One of the great dangers of all our professions in the danger which comes from individualism rather than a devotion to social service. In this day we are making new phrases. We are prefixing the word "social" to everything. We have social economics, social philosophy, and we are doing the same thing in medicine; we speak of social medicine. It means a medicine administered by those who think of themselves as social functionaries and not as private individuals who are seeking successful individual careers by means of practising an art which brings them a revenue. Of course these men who practise an individual art and who gain a livelihood from it have always rendered a large amount of social service. There is no physician and surgeon who does not devote a part of his time to gratuitous service in some form or other, but the man I am speaking of is one who receives a fixed salary and gives his services to some group or constituency to whom he is responsible.

Do you realize it is the medical missionary who has set the type and who is the prototype of socialized medicine? It is the medical missionary who gives himself freely and gladly and without thought of additional personal revenue to the service of those who come to the dispensary and to those who are students in the medical schools. There are many people who react from the old individual form of service and who perform this new type of social service, so we find men and women going into public health, into preventive medicine and into service in this and in other countries.

There is no finer opportunity, no more inspiring appeal than this appeal to service in the foreign field, because this appeal need not involve that sacrifice, that most difficult sacrifice for a professionally trained person, the sacrifice of growth and keeping abreast of one's profession. The outlook in China is most encouraging for medical education, the outlook for hospitals and centers where medicine can be taught, where graduate work can be carried on and research work; and, most important of all, one's largest responsibility to one's fellow men can be realized in a sane, tangible, concrete way.

I heard a little story about Dr. Grenfell which has always been a source of inspiration to me. He was working on the shores of Labrador
and once he was carried out to sea on an ice floe. The ice carried him to and fro and in every direction, but finally the wind changed and the ice came back. He was describing his work in Philadelphia one day, and after it was over a lady said, "Dr. Grenfell, how beautiful it is for you to sacrifice yourself in this way in Labrador."

Dr. Grenfell said, "You don't understand. I am having the time of my life in Labrador." There spoke the true man. There spoke every inch the man so carried away by his task, the man who so lost himself in those with whom he lived and served that he thought of his work only as the work which gave him an opportunity to have the time of his life.

I believe these days present the greatest, most inspiring opportunities that have ever come to young men and women in the United States of America and I believe this is a time when one calls upon them not for the sacrifice of dearly regarded petty, personal, narrow interests, but when one opens up to them great, glorious, satisfying, joyous service and says to them, "Come into these fields which give you an opportunity to have the time of your lives."

**China's Greatest Need—Christian Idealism.**

Remember that the greatest need of China, however great that need may be, is not, after all, for highly trained scientists, although they are essential; it is not, after all, for the greatest technical skill, although that is absolutely necessary if the great end is to be attained; but the great need of China is scientific knowledge and technical skill, dominated by idealistic loyalty to the highest and noblest things in human life, and that idealism that is most enduring, that could be most counted upon, that is less likely to fail, is an idealism based upon a deep and abiding religious conviction which sees in skill and in knowledge the means by which one may make himself count in that great ongoing process which we believe expresses the Almighty Will of this universe, while in our hearts as we serve is the love of Him who had so great an ideal of self that He did not sacrifice Himself.

No. I like to think of Christ not as sacrificing Himself, but as realizing the largest, the most divine, the most inspiring conception of personality that has ever been revealed to men; a personality so large that it conceived and embraced and had made vividly its own the welfare of all mankind for this and all ages.

Medical education in China is a guarantee of splendid opportunity, is a call to inspiring service, and I hope for many young men and young women that they will find in China, and in other fields, an opportunity to have in a deep and rich and full sense the time of their lives.—*The Christian Advocate*, March 4, 1920.
THE BLIND IN CHINA.

There are no figures available as to the number of the blind in China, but on the basis of statistics given in the Indian Census we are probably within the mark in estimating the total number in China at one million. The Chinese Government does practically nothing for them. The vast majority of the blind—men and women and boys and girls—are left to swell the large army of beggars which infest every Chinese city, and to drag out a miserable and often a vicious existence.

Some sixteen schools have been opened in different parts of China and are doing excellent work; but it is appalling to think that out of the 1,000,000 blind people in China not more than six or seven hundred have been brought under Christian instruction.

In 1913 a conference of workers for the blind in the Mandarin-speaking provinces of China was called by the British and Foreign Bible Society and the American Bible Society. Its object was to consider the question of a Union Braille system for use in the whole Mandarin-speaking area. The outcome of this conference was a system which has since been used with success in some twelve or thirteen provinces, either in schools for the blind, or for individual pupils taught by missionaries or Chinese Christians. Realizing that only a very small proportion of the blind in China would ever be able to enter schools for the blind, this system was especially prepared with a view to making home teaching of the blind by untrained teachers as easy as possible. Very encouraging results have been obtained.

A careful inquiry is to be made into the manual work that is now being performed by the blind in Western institutions. Methods of teaching and the adaptation of these methods to the Chinese will also be the subject of inquiry. It is most important that the blind shall become self-supporting and independent as far as possible.

A vigorous campaign will be conducted as to the cause of blindness; treatment of simple diseases of the eye; the necessity of cleanliness, etc. The literature already in existence will be revised and fresh tracts will be issued, whilst it is hoped to arrange for lantern lectures and special talks in schools and for general audiences. As soon as funds permit pictorial posters will be issued for wide distribution showing how carelessness and dirt may result in blindness. Three hundred dollars Mex. will pay for 10,000 colored posters, size 15 × 21 inches. A most useful publicity work can be carried on in this way.

Some of the institutions already in existence are most inadequately supplied with funds and material essential to the work. The buildings are poor and congested and there is urgent need for better accommodation and for more assistance to make the work effective.—From Report of China Continuation Committee.

This book is written in such a clear and interesting style and the directions given are so thoroughly in accordance with the best obstetrical practice that, as stated in the preface by the reviser, it has long ranked as a medical classic, and for nearly a generation has been a friend in need to many a general practitioner and many a resident obstetric officer in hospital. In this edition—the sixth—it has been revised by Dr. Oldfield, who has sought to preserve the salient features and distinctive qualities, while stating the advances in treatment which in his judgement are commendable. In particular, he advises that Caesarean section should be done more frequently in contracted pelvis, and also in ante-partum haemorrhage. In the chapter on haemorrhage after delivery, reference is made to the use of gum solution to replace fluid in the blood-vessels. The reviser remarks that gum solution (suggested by Bayliss after proving its value on exsanguined animals) is said to have the same lasting effect on the circulation as blood, but he thinks this is doubtful, particularly in severe cases and when some hours have elapsed after the haemorrhage. After trying it in two cases he found that it had no advantage over saline solution. This should be considered in connection with the discussion between Professor Bayliss and Sir Leonard Rogers as to the use of gum solution in cholera, of which an abstract is given in this number of the Journal (ante, pp. 250, 251).

In not a few text-books on obstetrics the learner finds many things that he may do; he is not always told which is the best and the reasons for so deciding. In this work he will find very clear and firm guidance, just what the practitioner needs in emergencies.


This text-book is not merely a compilation on old and familiar lines of the teachings and methods of others, but a really original work written by two operators of large experience.

Since the first edition appeared in 1911 considerable advances have been made in gynaecological surgery and Drs. Berkeley and Bonney have found it necessary to make great alterations and to add considerably to the volume. The chapters dealing with the plastic surgery of the vagina, for instance, have been practically rewritten, and the chapter devoted to myomectomy has been enlarged so as to incorporate the increased experience of the authors.

The surgical treatment of displacements of the genital canal has very full consideration and a section has been added describing in detail, with many carefully prepared illustrations, the mechanism by which the canal is normally supported, in order that the choice of the procedure to be adopted in each individual case may be founded on a knowledge of what particular structures are at fault. In some text-books the various conditions falling under the head of "Prolapse" or "Prolapse of the Uterus" are ill-described and scarcely at all classified. The authors describe and illustrate "the seven clinical varieties of displacement and their operative treatment." Referring to the yielding of all the supporting segments of the genital canal, they write:

"The retroverted vagina is accompanied by the whole uterus, the base of the bladder, the anterior rectal wall, and the utero-rectal pouch of peritoneum. This deformity is styled 'complete prolapse or procidentia of the uterus' but the terms are bad because they perpetuate the false idea that the uterus is the primary factor in displacement, whereas it is entirely secondary to that of the vagina and
in fact the latter turns inside out much more readily when the uterus has been removed. It follows that the worst possible course a surgeon can pursue is to remove the uterus. Unfortunately, owing to the persistence of the false conception already mentioned, this operation is still carried out."

Considerable space is devoted to the subject of post-operative treatment and complications; and the authors have set an excellent example in giving a specimen of a nursing chart used by themselves in all cases of abdominal section, which helps to emphasize the fact that a surgical operation, however brilliant it may be in its execution, is after all only a means to an end and not the end itself.

We have no words of adverse criticism to offer and can confidently recommend the work to surgeons in China who, in far away inland hospitals, are sometimes called upon to do operations which in big centres of medical activities are handed over to specialists.—A. G. P.


As many medical missionaries are now called upon to perform the duties of health officers—so far as such duties can be exercised in a Chinese city,—it is advisable that all should know the nature and range of this service. The present work should be very helpful in this direction. To quote the words of the preface, it contains the information which the average health officer must have in order to discharge his duties. It describes the various activities in which a health officer engages; his relations to boards of health, physicians, social agencies, and the public; his qualifications and methods of work; the various diseases and unsanitary conditions with which he deals; and the scientific principles on which the specialty of preventive medicine is founded. The illustrations are original and very good; with a few changes they could easily be adopted for public health lectures to Chinese audiences. While the book is designed primarily for health officers, its simple language and untechnical form will commend it to all who are interested in public health work.


"Seek ye first a knowledge of syphilis" in all its manifestations and all clinical "knowledge shall be added unto you" represents a truth insisted upon by the late Sir William Osier. Dr. Hazen’s book may certainly be recommended to anyone seeking to obey this precept.

The chapters on the early and late cutaneous lesions are—as one would expect from such an author—particularly good. Seventy-five pages are given to this part of the subject, and the text is illustrated with an abundance of photographs. The classification of syphilitic cutaneous lesions followed is that adopted by the American Dermatological Association (on the recommendation of Dr. G. H. Fox), and in each case the main points on which to base a differential diagnosis are clearly set forth.

Most of the other sections are also excellent; emphasis is properly laid on the frequent occurrence of primary sores on the tonsil—the author finds them there in one-seventh of his "extra-genital" cases—and a series of illustrations shows the different types of primary sore met with.

In the chapter on cardio-vascular lesions attention is drawn to the relief afforded by arsphenamine to patients suffering from painful aneurisms. "The more I see of anti-syphilitic treatment in aneurism the more enthusiastic I become over the temporary relief."

The endocrine glands, of course, are carefully dealt with, and so are the organs of special senses. In fact, one may say generally, that the whole subject of syphilis is adequately covered, except the nervous system which in this connection is really more important than the vascular system. This part, not written by Dr. Hagen, should be strengthened in the next edition.—G. W. D.
It is a disappointment to the surgeon and may mislead him seriously when skiagraphs are unsatisfactory. What is usually the cause of this faulty work? According to the author of the Systematic Development of X-ray Plates and Films, few radiographers pay sufficient attention to the X-ray film or plate, and even many of the so-called experts produce pictures which, considered from a purely photographic point of view, can be classed only as amateurish. The radiographer should be just as painstaking in the developing of his pictures as the professional photographer, and unless he is willing to adopt a method which will eliminate the element of chance, he can never hope for uniformity of results. In the present volume the whole of the photographic part of radiography is fully described in non-technical language and instructions are given which, if carefully followed, should lead to the production of radiograms satisfactory alike to the radiographer and to the surgeon. Special stress is laid upon the "tank" or stand method of development, which is said to be the best method for the worker whose knowledge of photography is limited. There are good illustrations showing the results of both faulty and correct methods. All radiographers not satisfied with their work may find this book will do much to extricate them from their difficulties.

The author and his collaborators are to be congratulated upon their success in writing on the subject of the after-treatment of surgical patients. The two volumes are most interesting and thoroughly up-to-date; they are well illustrated with over two hundred original drawings and pictures. In the more than eighty chapters, practically every surgical disease is covered.

"Surgical after-treatment has been considered as beginning when the last suture is tied, and lasting until the patient is restored to normal health." All the operations and procedures necessary to bring this normal condition about are fully considered. The chapter on the treatment of wounds is full of interest and brings in the best that has been learned in the war zone.

In the chapter on the post-operative treatment by radium and Roentgen rays of malignant disease the importance of this kind of treatment is emphasized and all surgeons are urged to give it a thorough trial.

Much that is found in works on general surgery is also to be found in these volumes, but the after-treatment of all surgical conditions is covered with a wealth of detail that will be a source of much satisfaction to the young surgeon and to the physician who must do surgical work. The volumes are well worth the price.—J. C. M.
by courteous, but absolutely evasive answers. . . . If any important advance is to be made, the help must come from both sides. While the East must give its long clinical experience of these drugs, the West must help with its chemical and pharmacological knowledge in order that reliable and standardized preparations may be obtained.” Of the drugs indigenous to India and China, it would be an interesting study to compare the virtues ascribed to them by the native practitioners of each country. Some Indian prescriptions are given at the end of the book. In India, as in China, medicines are often referred to as being cold or hot, and it is said that the cold remedies as employed by Indian physicians, correspond in Western therapeutics with astringents, while the hot medicines are mostly aromatics. Turning to another point, it is very remarkable, considering the huge size of the Indian army, that in giving anthropometric statistics of height and weight, the author has to fall back on the standards of Great Britain, as “unfortunately there are no special Indian observations.”

The volume is a mine of information concerning the use of drugs, and all other methods employed for the treatment of disease.


Medical practitioners in China are only too familiar with the difficulties arising from religion, custom, prejudice, and superstition, of sanitary work in the East, and are ready to receive help in overcoming them, particularly from those who by reason of birth and education are peculiarly well-qualified to advise. In an introductory note to this volume on Personal Hygiene it is said: “There is no use in preaching sanitary doctrines which ignore the custom of early marriage, the joint family system, the all-pervading scheme of untouchability and superstitions, the conditions of the Indian’s retail trade in food-stuffs, the floor, the cow-dung, the ants, the eating leaf, the broomstick, the butter-milk, the tropical heat, the scavenger, etc.” Naturally, expectations are raised that the author will show us a better way than we have been following in trying to educate Oriental peoples in sanitary matters without conflicting unduly with their prejudices. But the author keeps to the beaten track. In his opinion, “If every individual observe his own laws of health this public health in the aggregate will be saved the many Gordian knots that Sanitary Reform is beset with, and the task of the sanitary runs smooth down the gradient.” Quite so; therefore, the author confines his work to the instruction of the individual. Beyond a seeming inclination towards vegetarianism, the teaching runs on the usual lines, and is to be commended. In the book which the author promises on “Public Health and Hygiene,” we hope that he will really meet the difficulties mentioned in the introductory note, and make an “unofficial contribution” to the literature of Sanitary Science with special reference to the practical needs and conditions of Indian climate and social life.


This is a most useful handbook, especially for senior students of medicine. The subject matter is very clearly written and arranged. There are introductory chapters on the physiology and types of fever, the typhoid state, delirium, the general treatment of fever, theories of immunity and vaccine treatment. Scattered through the volume are notes and tables which add not a little to its value. In this edition every article has been carefully revised and the volume concludes with a section devoted to the more notable medical disorders brought into prominence by the war. The illustrations are good and serve the purpose of elucidating the text. The book, first published in 1894, is now in its sixth edition, sufficient proof that it is appreciated very highly by those for whom it is written.


The object of this large and well-illustrated monograph is expressed in its title. At first sight the text seems formidable and abstruse, such as specialists
only will be tempted to read; but once a start has been made even the ordinary practitioner will be interested and find much that is practically helpful.

The first chapter gives a clear description of the origin and development of the nose and adjacent parts, and an explanation of the occurrence of hare-lip and other deformities. In succeeding chapters the anatomy of each part of the "definitive nose" is very fully described, the numerous accompanying illustrations admirably elucidating the text. Each chapter concludes with instructive observations on the diseases and other abnormal conditions of the part described, which are well worth the careful consideration of the surgeon and pathologist. The remarks concerning diseases of the sphenoidal sinus are particularly good. There is a concluding chapter on the physiology of the olfactory region. For the anatomist, embryologist and for specialists in diseases of the nose, ear, eye, and throat, the volume contains much that is of great interest and value.


It is the purpose of the authors to give in outline the chief ways in which the various problems of ophthalmic surgery have been attacked and to leave the operator to adapt some one of them to his varying requirements. At the same time the authors' own choice of operation is indicated. For instance, in the chapter on "Cataract" there is first a clear description of the anatomy and development of the lens. This is followed by a brief but interesting history and description, beginning with couching, of the various operations for cataract. Next, each stage of a cataract operation is discussed in detail and the reasons are given for or against the different operative details recommended so that the surgeon is able to form a clear judgement of his own as to the best method to adopt in any particular case. Special operations or modifications of the more usual operations are also given. The numerous illustrations are largely diagrammatic as the authors hold that in this way, and in no other, is it possible to accentuate properly the important points of the operations. Despite its moderate size, this volume is one of the best on ophthalmic surgery, and will be particularly helpful to the surgeon unable to consult with colleagues of greater experience.


It is said that when unseasoned troops take the field, at least ten per cent are found to be incapacitated for active service by preventable foot injuries, a loss almost equaling the casualties following an engagement with the enemy. This little book is written primarily for the instruction of army and navy officers whose duty it is to see that the men under them are able to march well; the information it contains, however, is valuable to all who are interested in preventing and remedying disorders of the feet, especially those which are due to ill-fitting, uncomfortable shoes.

Index of Terms used in Lectures in Biology. By Parker M. Bayne, M.A. Published by the West China Union University. Printed at the Canadian Methodist Missionary Press, Chengtu.

This Index of Terms was compiled by Professor Bayne of Chengtu for his book, Lectures on Biology, which consists of lectures delivered before the students of the West China Union University. The index is fairly comprehensive, covering some 40 odd pages; but the work of the Joint Terminology Committee on Anatomy, Embryology, Histology, and Chemistry (having the sanction of the Chinese Government), has already put many of Professor Bayne's terms out of date. During the next three or four years while terms are in the melting pot, the same difficulty will probably have to be faced by other authors writing in Chinese on scientific subjects. However, Professor Bayne's list is indispensable to those who intend using his book and should prove helpful to other students in biology as well.—T. G.
Book Reviews.


Shortly after this book was received for review there appeared in a native newspaper an account of a Chinese who was walking to his home in the county at night when suddenly there appeared before him an apparition. A chill came over him and he bolted for his life. Upon reaching his home he fainted at the door. His relatives hearing the noise opened the door, found the frightened man and immediately took him inside. They put him to bed at once, and he told them of the awful sight he had seen. Several young men were sufficiently brave to venture forth to have a look at the "ghost." They came to the place where it had appeared and found a—Pirate Cigarette advertising signboard.

Naturally, this put us unto a sceptical mood concerning the reliability of all ghost stories. Nevertheless, we enjoyed reading Mr. Wickwar's weird, blood-curdling tales of ghosts, vampires, demons, and all the other powers of darkness, and we are glad he has given us full measure by adding a few stories of his own. It is with local pride that we find foreigners in Shanghai have had ghostly experiences. The apparition of an English reporter, it is reported, once appeared to Sir Edmund Hornby in Shanghai, when he was judge of the Supreme Consular Court of China and Japan. The limitations of space restrain us from telling more.

The author presents his material, much of it drawn from letters and manuscripts of an original and hitherto private nature, with impartiality, leaving the reader to form his own judgment.

Whether it would be wise to put a book of this kind into the hands of the Chinese, it is hard to say. Nearly all of them firmly believe in ghosts and demons, and that they have the power to do great harm. It is one thing to read ghost stories when we know, or believe, we are quite safe from supernatural, malevolent influences; it would not dispose to serenity of mind for Chinese to read that "foreign devils" also have their ghosts. However, for all afraid of ghosts and demons, whether foreigners or Chinese, the advice which John Selden gave to an acquaintance tormented by two devils in his head, is very good: "he was not to disorder himself neither with over-eating nor drinking, but eat very little supper, and say his prayers when he went to bed." Those who will observe these simple precautions may read the book with pleasure and profit.


The China Year Book has now reached the tenth year of its existence and has become almost indispensable to all who are interested in the welfare of the Chinese people, for it gives a survey by competent writers of the conditions observed in China during each year, which it is difficult to obtain elsewhere. Such a survey meets an important need at the time it is issued; with the preceding volumes it also remains of permanent value for reference, as constituting annuals of missionary progress in China. The volume just issued is well up to the standard of previous years. Professor Remer gives a very clear account of the conditions of China since the world war; Mr. N. R. Shaw writes most instructively on Chinese commerce and industries; there are two articles on the Student Movement by Chinese writers; Mr. C. H. Sparham has a chapter on the outlook of churches and missions; and so we might go on mentioning the numerous articles on religious, medical, educational, political, commercial, and social subjects including the excellent article on the Boy Scout Movement in China by Mr. G. S. Foster Kemp. As the editor remarks in the preface, "the different articles when taken together make an inspiring picture. They reveal again the great virility and strength of the Chinese people and the hold that Christianity has already gained upon them. They show the constant, and often bold advance of the Christian forces." Those who doubtfully ask what missionaries are doing in China should be made to read this Year Book, and even missionaries will be heartened when they turn aside for a moment from the contemplation of their own work and consider the progress of Christian missions as a whole.
Correspondence.

The Treatment of Wounds.
To the Editor, C. M. J.

Dear Sir,—I send you a few lines on experiences I had in France in the treatment of wounds.

Salt Pack. A man with a crushed compound fracture of the humerus and with much laceration of skin, was brought to me on a motor lorry on the day of the injury. Under chloroform the parts were painted with iodine, then the edges of the wound were carefully cut away, and as much injured tissue as possible was removed that could be spared; the parts were then carefully sponged and cleaned up, and packed with sterile gauze. In the gauze were several salt tablets of ordinary table salt. The arm was put up on a modified Thomas splint, with the wound left so that it could be attended to when necessary. Next day all the gauze was soaked with lymph; only the top layer was changed leaving the packing undisturbed. Some days later the packing was removed and the wound treated as a clean one and closed up. This patient had no abnormal temperature and did very well. Of course he was given anti-tetanus serum as a routine procedure.

Carrol-Dakin Solution. This was used for many wounds that were septic, and especially where free drainage was impossible; the limb was put up on a splint, and the wound and adjacent parts supported on perforated zinc. After careful and thorough cleansing, small tubing was inserted, the end of each tube being tied and several holes were made near the end so as to make it a kind of hose. The tubes were placed well down in all the pockets, and were long enough to project about six inches. The ends of the tubes were connected with a branched tube of glass. Once every two hours eusol was injected into this glass tube and the lotion flowed into each rubber tube; the entrance was then clipped to retain the fluid. In this way the wound had a small dose of eusol, After a few days, a smear was taken from the wound and examined for bacteria. If there were only one, two, or three to a field, the wound was closed. This method gave some splendid results.

Spirit and Bipp. I find this method of treating wounds is most serviceable in China. To clean up a foul wound or abscess, first paint all round with iodine, then clean the cavity with spirit. A good way is to take a bandage wet with spirit and pull it through the wound. This avoids the spreading of septic material, and the wet bandage is used only once. In gun-shot wounds, after excising as much of the damaged tissue as seems advisable, pull the piece of bandage steadily through. After thorough cleaning with spirit, apply freely Bipp (Bismuth, Iodform, and Paraffin Paste); do not leave too much of the paste in the wound to be poisonous; and if the paste is too thick it prevents healing. Apply a spirit dressing (gauze wrung out of spirit) and wool. When changed, the dressing is generally odorless and there is a slight yellow discharge. If the treatment is done thoroughly the results are splendid. For example, last week I opened an abscess of the breast. The skin was painted with iodine, the abscess opened and cleaned thoroughly with spirit (a long piece of bandage being used to avoid the use of using soiled swabs), smeared with Bipp, and sterile gauze wrung out of spirit applied. When the dressing was changed after six days the wound was dry, a mere cut. If drainage is wanted, a slip of rubber glove is most serviceable.

Yours truly,
E. F. Wills.
Siaokan, near Hankow, April 10, 1920.

Treatment of Boils, Carbuncles, etc.
To the Editor C. M. J.

Dear Sir,—Now that the extreme heat of summer is approaching when so many foreigners in the interior of China suffer from boils or carbuncles, may I draw the attention of readers to a letter which appears in The Lancet, March 13, 1920, strongly recommending the use of dilute...
Correspondence.

sulphuric acid in the treatment of this condition and of staphylococcic infection generally. The writer states that he has had some very severe cases to deal with which have resisted all ordinary remedies, including injections with serum, but have yielded completely to the sulphuric acid treatment, and then adds: 'Only three weeks ago I had a most inveterate case of acne sent to me of 20 years' standing, which had been treated by all the ordinary means and for the last few years by repeated injections of serum without any benefit. I put this patient at once on 30-minim doses of dilute sulphuric acid (made by adding 3 fluid ounces of the strong acid to 29 fluid ounces of water) and the result has been a complete cure in three weeks. This particular patient was covered over the whole body from head to foot with pustules and was a splendid example of the power of this simple remedy when given internally and in sufficient doses (i.e., m. xx to m xxx) also of the right strength.

"As I said in my former communication to your journal, smaller doses of a weaker strength of the acid are of no use whatever. The 30-minim dose, diluted with a wineglassful of water is, in my experience of over 40 years, always well tolerated, and has, without exception, always proved successful. My son, who has returned from active service in India, tells me it is being used by some of the medical officers there with the best results. I feel that in all cases of suppuration it should at least be tried."

In the China Medical Journal, 1915, p. 280, there is also an interesting reference to the value of this treatment.

Yours sincerely,

Furunculosis.

Migration of Ascaris Larvæ through the Lungs.

To the Editor. C. M. J.

Dear Sir:—It has now been proved that ascaris infection occurs as a result of the ingestion of the eggs, and that the larvæ after migrating through the lungs return to the alimentary tract, settle down in the intestine if the animal is a suitable host, and there develop to maturity. During the invasion of the lungs by the worms, Stewart found that rats and mice commonly died from pneumonia. Ransom and Foster (China Medical Journal, 1919, p. 437) found that guinea-pigs, rabbits, goats, sheep, and pigs also developed pneumonia in consequence of this migration. It is therefore more than probable that pneumonia in human beings, particularly in children, may be sometimes due to the same cause. The report of the following case may therefore be of interest.

Case No. 27343. A male child three years of age came to the dispensary suffering with pneumonia of both lungs. I examined the stool myself and found it negative. The usual treatment for pneumonia was prescribed and the patient's parents were urged to bring him into the hospital, which they declined to do.

November 15th. The patient returned to the dispensary complaining of abdominal pain. The suggestion being sufficient inducement, I again examined the stools for parasites and found non-fertile ascaris ova. Instead of ordering santouine, I put the patient on a strictly milk diet and requested them to bring him again in two days.

November 17th. The patient returned and the examination of the stool showed fertile ascaris ova. Santonine being given the patient passed three rather small-sized ascarides.

The case may not be significant, but it surely seems to point to migration of ascaris larvae by the lung route; more especially since the pneumonia, according to the parents, cleared up four days after the first visit to the dispensary.

Yours sincerely,

C. H. Barlow.

* See report of case by McKibben of "Roundworm Infection Clinically Simulating Pneumonia," Vide ante, p. 322.—Ed.

Medical Missionary Exhibit in London.

To Dr. R. C. Beebe.

Exec. Secretary, C. M. M. A.

Dear Dr. Beebe: The Student Christian Movement is proposing in January 1921 to hold a Conference of Students, somewhat similar to the Conference at Liverpool in 1922 and previous Missionary Conferences of that kind. This time they are not describing it as a Missionary Conference, as they wish to deal with the whole question of the relationship between Christendom and the East, and to consider the work of the government servant, trader, etc., as well as that of the missionary.

In connection with the Conference they are arranging to hold an Exhibit.
The China Medical Journal.

One of the Sections of this is to deal with the medical work of Missionary Societies. There will in all likelihood be quite a large proportion of medical students, both men and women, present at the Conference. This Exhibit will therefore have no small value as a recruiting agency if it can present the work of medical missions in an attractive and appealing way.

At their request the British Advisory Board on Medical Missions has appointed a small Committee to organise this Medical Exhibit. I think I need not labour the importance of this work. It may have far-reaching effects, and we are most anxious that the Exhibit should be a worthy one, though it may not be possible to make it very large.

I am writing on behalf of this Committee to doctors in the Mission Field asking them whether they can kindly send us some photos of their buildings or plant, any interesting microscopical slides, lantern slides of a professional nature, negatives or other such material likely to be of interest to medical students, and we shall be most grateful if you can see your way to help us by your advice and suggestions. If you are able to lend us any articles, we will of course return them, but if you could send any which you do not wish to have back we should like to make them the nucleus of a collection in this country, which might be of great value in missionary propaganda work among the Profession.

Yours truly,
(Signed) H. H. Wirhr.
Chairman of the Medical Exhibit,
Student Christian Movement,
3 Tudor Street, Blackfriars, E. C. 4,
12th April, 1920.


To the Editor, C. M. J.

Dear Sir:—We have in our library an incomplete set of the China Medical Journal and are anxious to get, if practicable, the missing numbers either by exchange or purchase. I shall be deeply indebted to you if you can give me assistance in this matter.

Our present list of wants is as follows:

Vol. XX Nos. 1, 2, 3, 4.
Vol. XXI Nos. 1, 2, 3.
Vol. XXII No. 5.
Vol. XXIV Nos. 1, 2, 3, 4, 5, 6.
Vol. XXV Nos. 1, 2, 3, 4, 5, 6.
Vol. XXVI Nos. 1, 2, 3, 4, 5, 6.
Vol. XXVII Nos. 1, 2, 3, 4, 5, 6.
Vol. XXVIII Nos. 1, 2, 3, 4, 5, 6, 7.
Vol. XXIX No. 1.

I should be very glad to send in exchange copies of The Journal of Parasitology if desired. Perhaps you will have opportunity in some way to post this list of wants. For evident reasons I am desirous of getting a complete set of this publication in our library.

Yours sincerely,

HENRY B. WARD.
University of Illinois,
Department of Zoology, Urbana, Ill.

* * * Dr. Ward’s numerous friends in China will be very glad if he obtains the volumes he requires as he is very much interested in the work of our Association.

—ED.

Chinese Doctors and the Prescribing of Opium and Morphine.

To the Editor C. M. J.

DEAR SIR:—I am applied to by graduates of my hospital who are out in practice to know what I can do for them in the way of obtaining opium or one of its derivatives for them to use in their practice. I understand that only graduates of recognized medical colleges can order opium from abroad, purchase it locally, or write prescriptions for it; and that all other foreign-trained Chinese physicians, even though they are men of good moral character, are debarred from the exercise of the same right. I may say that all my students, and all who have been fully trained in this hospital were in full church membership before they were admitted to the hospital to learn medicine, surely sufficient proof of their good character, so the discrimination is rather hard.

But I wish to know if nothing can be done by the C. M. M. A. to enable such Chinese practitioners to purchase opium and morphine. There must be a few thousands of them scattered about China.

One writer has made a reasonable suggestion, viz., that the authorities who control this matter might very well fix the amount each practitioner might purchase per annum, and permit him to purchase this amount.

Yours sincerely,

NORMAN B. STEWART.
Wukingfu, April 27, 1920.

* The Customs Regulations seem to be stricter than our correspondent supposes: no Chinese doctor, whether a graduate of a recognized medical college or not, is permitted either to buy...
opium or morphine from abroad, or to purchase it from foreign physicians or druggists in China. So far as the medical profession is concerned, foreign doctors only have this permission.

The following is an extract from Customs Regulation No. 693.

"On and after the 1st December, 1910, the manufacture in China by Chinese and foreigners of cocaine, morphia, and of syringes, needles, and such-like instruments for its use, is absolutely prohibited, and the importation of the same into China by Chinese and foreigners is likewise prohibited.—except in the case of the duly qualified foreign medical practitioners, foreign chemists and druggists, civil hospitals established by government in any province, military and naval hospitals and surgeons, and medical colleges of any kind complying with the following conditions."—(Nat. Med. Journ., September, 1916.)

Foreign druggists must not compound the prescriptions for opium or morphine written by Chinese doctors, as the former have to sign the following guarantee:

FOREIGN DRUGGIST'S GUARANTEE.

I hereby declare and guarantee that the morphia instruments which I now apply for permission to import under bond, namely, ...... ounces of morphia instruments valued at ...... and arriving from ...... by post ...... rail to my address, will be used exclusively in the compounding of the prescriptions of duly qualified foreign medical practitioners or sold in small quantities only on the requisition of a duly qualified foreign medical practitioner.

Signature of Druggist.

Nor can Chinese doctors obtain morphine from foreign doctors as the latter have to give the following guarantee that this drug will be used by them only in private practice or in a specified hospital.

FOREIGN MEDICAL PRACTITIONER'S GUARANTEE.

I hereby declare and guarantee that the morphia instruments which I now apply for permission to import under bond, namely, ...... ounces of morphia instruments valued at ...... and arriving from ...... by post ...... rail to my address, will be used for medicinal purposes only in my private practice in the .......... Hospital.

Signature of Medical Practitioner.

The opium evil is certainly very serious in China and every possible precaution should be taken to prevent the illegitimate sale and use of opium and its derivatives; but it does seem a hardship that properly qualified Chinese practitioners are debarred from the right of prescribing drugs useful for the alleviation of pain and the relief or cure of disease. All we can suggest is that at the next biennial conference of the C. M. M. A., it might join with the National Medical Association of China in petitioning the Chinese Government to give Chinese doctors the right to prescribe opium or morphine for their patients. Whether the term "Chinese doctors" should be construed to mean none but those who have graduated from a recognized medical college in China or abroad, or should include those who have been trained by a missionary doctor in his own hospital, is a question for the Conference to decide.—Ed.
BIRTH.

Cadbury.—At Canton Christian College, Canton, on March 11, 1920, to Dr. and Mrs. Wm. W. Cadbury, a daughter (Emma).

MARRIAGES.

The wedding took place on May 11, 1920, at the home of Mrs. J. B. Fearn, 30 Route Pichon, Shanghai, of E. C. Peters and Dr. Ethel M. Polk. The ceremony was performed by the Rev. E. W. B. Nance. Dr. Polk is a niece of Dr. Margaret H. Polk of Shanghai, and has been engaged in medical work at Soochow.

Friends of Roger S. Greene, resident director in China of the China Medical Board of the Rockefeller Foundation, have received the announcement of his marriage to Miss Kate Brown, daughter of Mr. William T. Brown of Worcester, Mass., on May 8, 1920.

In Memory of Dr. Logan, of Changteh.—At General Feng’s suggestion, a three days’ Memorial Service was held at the Camp, which was attended the first day, January 6, 1920, by military officials, the gentry, and literary representatives throughout the city. On the 7th, the student body, and on the 8th, farmers, workmen, merchants, etc., filled the house to do honor to their friend.

On the first day, General Feng presided. The story of Dr. Logan’s life and work was told by the officials and others who had benefited by his devoted services. Each of the following days similar testimonies were given of Dr. Logan’s splendid services, and of his strong Christian influence throughout this region.—Chinese Christian Intelligencer, March, 1920.

The Influence of Christianity.—The tragic death of Dr. Logan, who was shot by a demented relative of General Feng’s wife, together with subsequent events produced a profound impression and influence on the soldiers and civilian population of Changteh. Everyone looked for international complications similar to those which have followed acts of violence against foreigners in the past. To the amazement of everyone neither Mrs. Logan nor the U. S. Consulate took any steps to secure vengeance or even reparation for the act, but Mrs. Logan personally interested herself in visiting and securing kindly treatment for the unfortunate lunatic. Here was an example of Christian living which deeply moved all who heard of the incident and the number was large, for the news traveled far. Especially among the troops of the Sixteenth Mixed Brigade was the influence most felt. It proved to be the turning point in the lives of many men who had long been under the influence of Christianity, and Mr. Warren, of the Wesleyan Methodist Mission, Changsha, had the privilege of baptising 781 men and officers during the three weeks he was in Changteh and vicinity.—Chinese Christian Intelligencer.

Dr. Way Sung New, head surgeon of the Union Medical College, Peking, has resigned his position to join his brother in private practice at Shanghai. He will leave Peking on May 15.

American Red Cross Supplies for Mission Hospitals.—A half million dollars worth of hospital supplies consisting of laboratory equipment, surgical equipment and instruments, bandages, medicines, dressings, cotton, sweaters, flannels, etc., intended for use in Siberia has been sent to the Central Committee of the American Red Cross in Shanghai for distribution to mission hospitals in China. The materials will be distributed without charge. A large force of clerks is now engaged in classifying and sorting the materials which occupy three floors of a large godown in Shanghai. Superintendents of mission hospitals in China of any and all creeds are urged to communicate their needs without delay to W. A. B. Nichols, Central Committee, American Red Cross, 18b Kiangse Road, Shanghai.—Millard’s Review, May 22, 1920.

Moukden Medical School.—At the annual meeting of the Edinburgh Medical Missionary Society, January 22, 1920, Dr. D. Christie, C.M.G., of Mouk-
News and Comment.

MEDICAL WORK IN KULING.—The Hospital has secured the services of Dr. W. H. Venable who takes the place of the late Mrs. Berkin who was called to her reward several years ago. Dr. and Mrs. Venable are uniting in their efforts to relieve the sick. Dr. Yen King-tauen ably assists them in the dispensary. The Woman's Hospital is also in a flourishing condition. There are thirty or forty in-patients, but there are more in the summer and autumn. Among these are preachers who come to this place which is a fine sanitarium. Mr. Hiung preaches in the Hospital every day, the patients joining in the services.—Chinese Christian Intelligencer, March, 1920.

HOSPITAL EXTENSION IN TZELIUTSING, SZE.—One of the most important events in this part of Szechwan in many years has just been consummated in the opening of the women's wing of the hospital in Tzeliutsing. The building was completed last year and the official opening was held during the first week in March. The addition makes a fairly complete establishment for the Mission Hospital, and 150 patients can now be easily accommodated in the whole plant. It is too big for the present staff, but reinforcements are hoped for in the near future, when a greater work can be easily done. The building is modern and up-to-date, and now, when completed, is the finest of its kind west of Hankow. The institution is capable of undertaking every kind of medical work, and should be a boon to the constituency which it serves. The men's wards and the administration building were completed two years ago, and have been in use ever since.

TASKS OF THE MEDICAL MISSIONARY.—That there is little or no anti-foreign feeling of consequence in Mienchow, Sze., would seem to be indicated by the liberal response that the people of the place have made to an appeal from the hospital for financial assistance. The officials and military were particularly friendly, and many people whom the foreigner had never met put their names down for subscriptions when canvassed. Of course, there was the usual toll of bad dollars, but after all there might have been more of them.—N. C. Daily News.

CHOLERA IN FORMOSA.—The cholera epidemic in Formosa is rapidly spreading despite the efforts of the authorities to stamp out the pestilence. Indications point to a further spread of the disease, and the Home Department authorities called together the representatives of the Nippon Yuseki Kaisha, and Osaka Shosen Kaisha at the department offices recently. A conference on the sanitary measures to check the spread of the epidemic were discussed.—N. C. Daily News, May 29, 1920.

CEREBRO-SPINAL MENINGITIS IN KASHING.—The epidemic of spinal meningitis in the country districts has claimed many victims, mostly children under ten years of age. Death comes often after a few days, sometimes only hours. Without treatment perhaps 99% of the cases are fatal; with the best that drainage and injection can do with those brought in, scarcely 25% recover. The supply of coffins in small towns is exhausted. The country people have paraded with large offerings of "devil money" to appease the disease demon. The fees paid to actual living doctors seem only a trifle compared to the enormous sums remitted to the spirit world.—N. C. Daily News, April 15, 1920.

CEREBRO-SPINAL MENINGITIS IN ANKING.—During March-April, 1920, cerebro-spinal meningitis was epidemic in Anking. The cases were so numerous that the supply of serum was insufficient. The disease was most prevalent amongst young adults and children, though some elderly persons were also treated. About 70 per cent of those treated recovered and there is every reason to believe that with a better supply of serum the percentage of recoveries would have been much higher.

BALME-STAUFFER REPORT ON MISSION HOSPITALS.—The following is an extract from a letter written by Major Robert L. Dickinson, who was connected during the war with the United States Public Health Service, referring to the survey of Mission hospitals in China made by Dr. Balme and Mr. Stauffer.
"I want to congratulate you on a piece of work such as no other country has done. I know, for I tried to do it during the war, having the power and the staff and the statisticians and the draughtsmen on the general staff. It should appear in the most conspicuous journals in America and in England."

AN HEROIC ACT OF FILIAL PIETY ANALYSED.—The President of China has lately made a grant of $1,200 to erect a stone arch in Yangchow in commemoration of a deed of filial piety whereby, according to the official account, a daughter cut out her liver and made broth of it for her dying father, which restored his failing strength and saved his life.

The hospital report is somewhat different. About a year ago the woman was brought to the clinic just after her operation. The story she told tallied with the President's version above, and the doctor was eager to examine a wound made by one who had such a clear knowledge of anatomy that she could unerringly eviscerate her own liver. On examination he discovered a small wound, about 1½ in. in length, inflicted by a knife, which had indeed entered the abdominal cavity. But the organ extracted must have been an imaginary one, as the patient quickly recovered after being sewed up, and left the hospital in a few days.—N. C Daily News.

AGAINST FOOT-BINDING.—The Heavenly Feet Organization is the name of an anti-foot-binding society just reported from China. Every Sunday services are held in the district in which the Society is organized against foot-binding. Songs against it are being sung, and the students in boys' schools are urged to take the pledge, "I will not marry a woman with unnatural feet".—The Missionary Herald.

WANTED.—Male graduate nurses required for the Moukden Mission Hospital (in connection with the Moukden Medical College) to take charge respectively of Medical Wards, Surgical Wards, and Operating Theatre under supervision. Candidates must hold certificates of the Nursing Association of China—be Mandarin-speaking, and hold satisfactory recommendations. They must be Christian and be willing to take part in the spiritual work of the hospital. Applications with certificates and recommendations should be sent to the Manager, Moukden Hospital, Moukden.