NERVOUS DISEASES IN CHINA. (A Second Report.)

ALFRED C. REED, M.D., Yale Hospital, Changsha.

It seems worth while to put on record certain cases of nervous diseases which have been under observation at the Yale Hospital since my report of two cases in the China Medical Journal of May 1914. The list is not complete but only representative. Of the two cases previously reported, one was a spinal accessory paralysis, and the other amyotrophic lateral sclerosis.

I. Amyotrophic Lateral Sclerosis. The case of this disease previously reported was observed to be unusual in that the sclerosis began certainly at the age of 14, and most probably at the age of 13. It was noted that Pott's disease of the spine had left a residual cervical and lumbo-dorsal anchylosis, and that there were active tuberculous lesions in the lungs. To quote from the earlier report, "The lesion of the third and fourth vertebrae was so severe as to cause a practical displacement of the articulation and a posture characteristic of cervical dislocation. With this, however, the cord apparently suffered no damage directly as myelitic symptoms did not appear. It is conceivable, but not demonstrable, that the tuberculous spinal disease lay at the origin of the motor tract disease and furnished an immediate exciting factor which, acting on a nervous system hereditarily predisposed, resulted in amyotrophic lateral sclerosis. The essential cause seems thus still to lie with the inheritance by the patient of a more or less indefinite lack of stable equilibrium of the motor neurones of the cord, brain stem and cortex." The age of the patient and a suggestive family history pointed strongly to a hereditary basis for the etiology. The Pott's disease was considered a possible exciting cause.

The etiological bearing of the tuberculous spinal disease is of sufficient importance to justify this repetition. Publication of the case history brought a most helpful and stimulating review of the subject of trauma as a cause of amyotrophic lateral sclerosis from Dr. Andrew H. Woods, who speaks with authority. Dr. Woods states that he has watched cases of active Pott's disease in which the motor symptoms completely overshadowed the sensory for many years. He considered in this case that the Pott's disease presented adequate evidence of being
Bottom Row reading from left to right:—Mr. Roger S. Greene, Dr. Robert C. Beebe, Dr. Simon Flexner, Dr. Yamada, Dr. Wm. Welch, Rev. Wallace Buttrick, Dr. Young, Dr. Frederick Gates.
very definitely the exciting factor. In a résumé of the subject from clinical literature and practice, (Journal Amer. Med. Assoc., June 24, 1911), Dr. Woods reached the conclusion that "a reasonable presumption exists that trauma is a proximate (evoking) cause of amyotrophic lateral sclerosis. If previously weakened cells and tracts exist in the spinal cord, severe concussion or over-innervation (strain) can become the last factor that shatters the structure. Possibly congenital defect will some day be shown to be the ultimate cause predisposing to the break-down". With this conclusion my case is in entire accord, and on Dr. Wood's opinion I would assign greater importance than in the first report to the Pott's disease as an acute exciting factor.

II. Myelitis. Case 1. Chronic Myelitis with unusual complications. (Reported in Boston Med. and Surg. Journal, October, 1914). The patient, a male Chinese, was admitted to the medical service on March 15, 1914 and discharged improved on April 5. His family and personal history were negative. For thirty years he had smoked opium with no impairment of health. The status praesens began about six months before admission when the patient suffered from a severe headache which apparently, however, had no relation to the later disease. For relief of the headache he consulted a Chinese practitioner who thrust a heated iron needle several times deeply into the lumbar region near the mid-line. At the last insertion the needle broke off, according to the patient's description, having become impacted between the lumbar vertebrae.

The patient was operated upon by a Japanese doctor four months before admission and two months after receipt of the injury. For a short time there was some improvement but then severe general pains developed especially in the lower extremities. At the time of admission to the hospital the acute pain had subsided. The symptoms were paralysis of the lower extremities, incontinence, dull and fairly continuous pain in the back and lower limbs, and inability to raise the head.

Physical examination showed a comparatively well-developed and well-nourished man who looked his age of 53 years. He was able to sit up with assistance. The head fell and rested on the right shoulder with the chin rotated to the right. He could not raise or rotate the head voluntarily. The right eye was inflamed and lachrymose. The pupils were irresponsive to light, the consensual reflex absent, and there was a slight lateral, slow nystagmus. The right side of the face showed a slight but distinct palsy which however allowed the eye to be closed and the forehead to be wrinkled. The tongue deviated to the right and was markedly tremulous.

On the left side of the neck were old scars and the post-cervical glands were enlarged. Over the chest was a slight superficial oedema. The thorax showed some pulmonary congestion. The lower extremities were in a state of spastic contracture and the patient could neither walk nor stand. Knee-jerks were present. Ankle clonus and Kernig's sign were elicited in each leg. Both legs were oedematous with the calves and thighs markedly atrophied. On the right leg were scars apparently of trophic ulcers. There was a small decubital ulcer over the sacrum with scattered patches of discolored skin over the sacrum and trochanters. Passive motion was painful and when at rest the patient suffered extreme pain at times in the lumbar region and lower extremities.

The upper extremities showed the lesions of a progressive muscular atrophy in the shoulder girdles, upper and fore-arms, and the hands. The interosseous, hypothenar and thenar atrophy in the left hand was well advanced. In the left arm
there were fibrillary contractures of the triceps and biceps. The general muscular irritability was increased throughout the body. The fingers were cyanosed and the capillary circulation poor. Articulation was slow, retarded, difficult, with thick expressionless enunciation. Temperature, pulse, and respiration remained normal, and there was no unusual feature in the blood, urine or stool. He suffered from urinary and fecal incontinence. The patient was given a bad prognosis and left the hospital with his condition becoming progressively worse.

Although no significant history was obtainable antedating the initial headache and lumbar needleling, too much reliance can not be placed on this negative feature. It is easily possible that the paralysis, atrophies and other manifestations may have been more or less advanced previous to the definite six months' history given. The Chinese patient is not prone to observe such conditions unless they are painful or seriously affect the use of his body. I have had a patient admitted for arthritis of the knee who on examination had an advanced progressive muscular atrophy which he had not noticed. The features of the case here reported, from a pathological standpoint seem to justify a diagnosis of an acute traumatic transverse myelitis which subsequently was extended into a sub-acute or chronic myelitis. This is supported by the history of the lumbar lesion, followed by a paraplegia attended by motor and sensory symptoms, and sphincteric disturbances. Chronic myelitis is commonly a sequel of an acute inflammation.

Co-existent with the myelitis were symptoms warranting a diagnosis of progressive muscular atrophy of the Aran-Duchenne type. It is a question whether the progressive muscular atrophy arose subsequently to the myelitis, or whether it was part of an amyotrophic lateral sclerosis with an intercurrent complication of myelitis. The presence of bulbar symptoms would rather indicate lesions implicating the entire motor system. Therefore in the absence of symptoms indicating the presence of some other system disease, it would seem that there was an amyotrophic lateral sclerosis complicated by a traumatic chronic myelitis. But this again leaves out of account the unilateral facial and spinal accessory paralysis which were flaccid and of the central type. I am not prepared to explain the relation of the various symptom complexes presented. The case will probably not come to autopsy as the patient is a member of the gentry.

Case 2. Myelitis following Pott's disease. The patient was a married Chinese woman of 48 years, admitted to the medical service on November 14, 1914, and discharged unimproved on December 7. Her family and personal history was negative. She had had no children. The menopause was at 45 years. She had never been ill until seven years before when she began to have pain in the lumbar region. Two years before admission the pain became more severe and contractures of the lower extremities appeared. The pain in the legs decreased as the paralysis increased. One year before admission numbness and anesthesia developed in the
lower extremities with a continuation of the severe pain in the dorso-lumbar region. The numbness later included the lower abdomen and the paralysis became absolute. There was no loss of sphincteric control.

Physical examination showed the patient to be a well-nourished and developed woman of rather thick-set build. No abnormalities were found beyond those noted in the history, except a marked kyphosis with great tenderness between the 8th and 11th dorsal vertebrae. The upper extremities were normal. The lower extremities were completely paralyzed. Sensation was lost below the knees but was intact on the thighs and abdomen. Knee-jerks were lost and the tendon reflexes had disappeared. The von Pirquet test gave a strongly positive reaction in 72 hours. The temperature rose irregularly to 37.6° C. The diagnosis seemed clearly one of tuberculous spinal caries with pressure myelitis.

III. Tabes Dorsalis. Case 1. Male Chinese admitted to medical service on September 25, 1914, discharged unimproved on October 11, 1914. Patient was a native of Liuyang, Hunan, and had never been out of the province. He was a coolie aged 33, unmarried, had never smoked opium. His father died from tuberculosis and his mother from some nervous disease. Had no brothers. One sister died from typhoid and another is living and well. No history of previous disease or injury except as noted. Until shortly before admission patient was a comparatively heavy drinker of alcoholic beverages. Ten years ago had a chancre and secondaries and a little later a bubo.

The chief symptoms on admission were unsteady ataxic gait and pain in the large joints, with occasional sharp piercing pains in the legs. These symptoms were first noted one year before admission and had become progressively worse. Movement of the extremities caused considerable pain. The patient complained of considerable numbness throughout the lower extremities. Bowel movements were normal, but urination was imperfectly controlled and occurred six to eight times daily.

The patient's general appearance was that of a well-nourished man of normal stature. The pupils were irregular, the right being under all conditions smaller than the left. Both reacted slowly to accommodation but were entirely insensitive to light, not contracting in the direct sun-light. The parotid and sub-maxillary glands were enlarged. Thoracic and abdominal organs were normal. Knee-jerks could not be elicited even with re-inforcement. Romberg's sign was present in exaggerated form. The gait was stamping, flail-like, and showed a characteristic irregular ataxia. The knees showed marked hyper-extensibility. Ankle clonus and the Babinski reaction were not present. The tongue was hemiatrophic and deviated to the right. Axillary, epitrochlear and inguinal glands were enlarged, the latter in regular packet formation. There were scars of old buboes in the left groin, and parchment-like, punched-out, shallow scars on both knees and shins.

The patient showed no improvement on a régime of mercury in small doses and potassium iodide to the limits of tolerance, combined with active and passive exercises, massage, stimulating baths and rest. The urine was normal except for excess of triple phosphate crystals. An ascaris infection was present. The temperature, pulse, respiration and blood were normal.

Diagnosis of tabes dorsalis rested on the association of lost knee-jerks, Romberg's sign, and the Argyll-Robertson pupil, with disturbance of micturition, lightning pains, and decreased sensation in the lower extremities. Important confirmatory evidence was found in the history and physical signs suggestive of lues. The relaxation of the knee joints was extreme, permitting marked hyper-extension. There was no
increase of synovial fluid and Charcot's joints were not present. Hemiatrophy of the tongue with a lesion is occasionally but rarely found in tabes. Its occurrence here is interesting because of its rarity. The contraction of the right pupil probably represented a tabetic lesion of the cervical cord which in turn involved the cervical sympathetic.

This is one of the only two cases of tabes dorsalis I have seen in Chinese. Dr. Gotteberg of the Norwegian Women's Hospital in Changsha reports one clearly defined case in her out-patient clinic. General paresis has not been observed. The fact remains unexplained that para-syphilitic conditions are so infrequent when the hereditary and acquired forms are so common and malignant. A limited experience seems to indicate a greater predilection of the luetic virus for the cardio-lieno-vascular system than for the nervous system. Comparatively frequent cases of myelitis and cerebral hemorrhage are seen which are secondary to luetic disease of the endocardium or arterial walls. But nervous lesions which are primarily of syphilitic origin have thus far been infrequent. Tertiary nervous lesions too have not been observed. A systematic investigation of the heart in a large number of Chinese students by Dr. Hume has shown an unsuspected proportion of endocardial and arterial lesions, with hyper-tension and arterial sclerosis. There is need of investigation of the relations between these findings, the common frequency of acute and chronic renal disease, and luetic predisposition or causation.

Case 2. The patient was a male Chinese aged 40, married, a native and resident of Kiangsu. By occupation he was a petty tradesman. His father, wife and two children had died from unknown cause. His mother was living in good health. He had neither brothers or sisters. At the age of 20 he suffered from gonorrhea and buboes, three years before admission he had an ulcer of the penis. Seven months previous to admission he first noted unsteadiness in his gait. This increased and was accompanied by numbness, prickling sensations and shooting pains in his legs.

Physical examination showed the organs of thorax and abdomen to be normal. Pupillary reflexes were difficult to observe because of extensive keratitic infiltration of the right cornea. Reaction to light and accommodation was present but the former was very sluggish. Knee-jerks could at no time be elicited. Tendon reflexes were negative. Babinski, Kernig and ankle clonus reactions were not obtained. Romberg's sign was present in exaggerated form. Static and motor ataxia was pronounced. The gait was flail-like, extremely irregular and nearly impossible to maintain. There was a slight disuse atrophy of the extremities and considerable relaxation of the large joints. Marked general adenopathy was noted. The patient stated that at the onset of his trouble seven months before he experienced severe knife-like shooting pains in the lower extremities especially below the knees, which came generally at night, lasted only a few minutes and were of irregular occurrence. From two to three months before he had experienced a girdle-like sense of constriction about the waist.

Laboratory examinations and clinical records were normal except that the Von Dungern modification of the Wasserman reaction gave a strongly positive result.
The diagnosis of tabes rested on the physical findings noted, even lacking an Argyll-Robertson pupil, together with the history and serologic evidence of lues. An interval of only three years intervened between the initial lesion and the onset of the posterior tract disease. Secondary symptoms were apparently so mild as not to impress him. The course of the tabes has been definitely progressive.

IV. Hemiplegia. Hemiplegias following cerebral hemorrhage have been remarkably frequent and a few cases have been seen which were apparently of embolic origin. One of the latter type was in a man of 36 years, a powerfully built farmer of large frame. No significant history was obtained. Venereal disease was positively denied nor was there evidence of venereal infection. The heart showed myocardial and valvular lesions with moderate enlargement. There was definite thickening of the palpable arteries and hyper-tension. The hemiplegia developed instantly and consisted of a complete paralysis of both left extremities, a left facial paralysis including the forehead and a deviation of the tongue to the right.

A more common form of hemiplegia is exemplified in the case of a man of 30 years, who sustained a sudden and complete paralysis involving the left arm and leg only. Five years before he had contracted lues which was imperfectly treated to the extent only of relieving the immediate symptoms.

V. Poliomyelitis. (a). Acute Anterior Poliomyelitis. Residual paralyses from acute anterior poliomyelitis are frequently seen but the acute attack is rarely observed; indeed, in many cases no record of it can be obtained as it is not connected with the sequence of paralysis. No history of epidemicity or contagion has been obtained. Most of these paralyses have been monoplegic but one case presented a typical involvement of all four extremities.

A case of particular interest was admitted to the service of my colleague, Dr. Hume, in July 1914. The patient, a boy of twelve years, presented a typical history of an acute attack of poliomyelitis at the age of four years. It left him with a residual paralysis of the third, fourth and sixth cranial nerves on both sides. He had also a marked thickening of speech indicating that the twelfth nerve had not escaped the motor cell invasion. No other nerves were affected. The condition was essentially a polio-encephalitis superior, with the twelfth nucleus included.

(b) Chronic Anterior Poliomyelitis. Case History. The patient, a male Chinese, was admitted to the medical service on November 7, 1914, and discharged unimproved on December 26, 1914. He was a farmer, married, aged 34. The father died at the age of 60, the cause being stated as gonorrhea. His mother died at 30 from tuberculosis. One brother was living and well. No sisters. There was no history obtainable of nervous disease, alcoholism or syphilis in the family. The patient had two healthy living sons. He was a moderate smoker and drinker. Venereal disease was absolutely denied. As a child he had measles and small-pox, but no other illness until the condition for which he sought
hospital relief. On admission, he complained of headache and numbness of the feet, with weakness of the arms and legs. This condition was first noted two months before admission. There was no interference with micturition or defecation.

Physical examination showed the organs of thorax and abdomen to be normal. The upper extremities were the seat of lesions typical of chronic anterior poliomyelitis or of progressive muscular atrophy of the Aran-Duchenne type. The atrophy was symmetrical, most marked in the muscles of the hands and forearms, and involved also the upper arms and shoulder girdles. There was considerable secondary contracture but the paralysis was essentially flaccid. Tendon reflexes were lost and no fibrillary tremors were present. The lower extremities showed a similar picture, most advanced in the feet and calves. Here too were moderate secondary contractures overlying a flaccid paralysis. Knee-jerks were absent, Ankle clonus, Babinski and Kernig reactions were negative. The tongue was normal. The throat was congested, the patient complaining of a constant sore throat which was not relieved by treatment. The pupils were somewhat narrowed and reacted sluggishly to light and accommodation. On accommodation, there was a slight, quick, lateral nystagmus. General and well-marked adenopathy was present including the left epitrochlear and the post-cervical glands. No anesthesia was present but the patient complained of coldness and numbness especially in the lower extremities. He could not stand alone for weakness. The grip was nearly gone. Clinical records were normal except that the urine showed a trace of albumen.

The clinical picture was distinctive and diagnosis rested on the comparatively rapid course, as compared with progressive muscular atrophy, the precedence of paralysis over wasting, symmetrical and contemporary involvement of the extremities, absence of fibrillary tremor and an essentially flaccid process. The disease is rare in western countries and the etiology is indefinite. Syphilis again has been implicated but a non-hereditary cause ought to find many victims in China as this case occurred in a farmer, a close type of a large proportion of the Chinese race.

(c). Acute Posterior Poliomyelitis. Two cases have been observed, one a distinctly marked acute posterior poliomyelitis (herpes zoster).

VI. Hysteria. The question of the prevalence of hysteria among the Chinese has brought conflicting reports from different observers. Jefferys' and Maxwell in their work on "The Diseases of China," (p. 254) state, "In the major form, hysteria is probably absent." In Changsha we see many cases of minor hysteria especially in women, and four cases of major hysteria have come to my attention.

Case 1. (Reported in Boston Med., & Surg., Journal Oct. 22, 1914). A Chinese man 25 years old, of good family and position, lived in Hunan Province at some distance from the capital. He was travelling one day to Changsha with considerable baggage, when he was beset by thieves who robbed him of everything but did him no personal violence. The nervous trauma left him dazed. He wandered into the city, and was found in a stupor on the street by the police. He could not be aroused and was brought thus to the hospital.
The patient was normal physically. He lay irresponsive and apparently in coma, with his back to the light, arms and legs rigidly flexed, and his eyes tightly closed. He was amenable to suggestion and one experience with rectal feeding led him with due encouragement to sit up and take his meals properly. Under a combination of suggestion and physical therapeutic measures he improved rapidly and left the hospital ten days after admission apparently normal.

Case 2. A young Chinese woman was admitted to the medical service of Dr. Hume with a syndrome of typical hysterical convulsive seizures, interspersed with wild motor outbreaks, and periods resembling the status epilepticus. Her family took her from the hospital before treatment was well begun.

Case 3. A Chinese woman of 32 years, married and a domestic in the home of a missionary, began to complain of nausea. This increased and severe vomiting followed each attempt to take food. After the condition had gone on for several days attended with severe obstipation, she became very nervous and emotional, feared to eat, feared death, and finally was taken with an acute hysterical motor outbreak. A roomful of friends and relatives attempted to exorcise the devils who possessed her, and as she grew rapidly worse foreign assistance was called in. Physical examination showed an absolutely normal condition with a pulse of 66. The only abnormal features were the hyper-emotional tension and a complete anesthesia of the soft palate and pharynx. A hypnotic and a drastic purge were administered. The following day small doses of cocaine were given after regular meals. The condition yielded at once and has not recurred.

Case 4. This case can not be classed as a simple major hysteria. The patient was admitted to the hospital with typical symptoms of hysteria including motor outbreaks and extreme emotional excitement. He had a brother confined for several years in native fashion as a maniac. In the mission in which the patient was a colporteur, several cases of mental disease had developed within the year and these preyed on his mind. He believed himself to be insane and tried to copy the symptoms of the other cases. During six weeks under close observation, no positive indication of mental disease could be obtained. During this time under constant oversight and suggestion, the emotional condition improved and the periods of motor excitement practically disappeared. The patient finally however began to mutter nonsense at times and would often be unintelligible. During the last week definite mental symptoms appeared, including loss of power of attention, disconnected speech, periods of euphoria, illusions and hallucinations. The condition seemed to be developing into a frank dementia praecox.

VII. Neuritis. Two cases of Bell's palsy have been under treatment. Pressure neuritis is not uncommon, as for instance a case now in hospital of rotary-lateral curvature of the spine with neuritic symptoms from the lower dorsal nerves. Neuralgias are of frequent occurrence, one case in particular of occipito-cervical neuralgia is worthy of note.

Case 1. Multiple neuritis from arsenic. The patient was a 16 years old Chinese girl who took a large dose of crude arsenic with suicidal intent. The immediate effect was severe abdominal pain, with vomiting and profuse diarrhoea. One month later she was admitted to the hospital complaining of inability to walk and nearly constant pain and twitching in all four extremities. Physical examinations showed two groups of lesions. The first was a typical severe multiple neuritis, with motor and sensory disturbances, some wasting and lost reflexes.
The second group embodied a recurrent eruption which assumed two general types. One type was an acneiform eruption on the face and forehead coming in crops about 5 to 8 days apart. The other type consisted of maculo-erythematous scaling patches of irregular size and shape, and varying non-symmetrical distribution. The sites of preference were the chest, abdomen and small of the back. The condition of neuritis improved remarkably under treatment and the patient was well on the way to recovery when she left the hospital.

Case 2. Multiple neuritis from arsenic poisoning. The neuritis in this case, a man of 48 years, gave symptoms of general numbness, paraesthesias and partial paralysis of the extremities. Foot-drop was noticeable and the knee-jerk was absent. The particular features to be noted were the absence of skin lesions, and the involvement of the second and eighth nerves in the neuritis as evidenced by impaired vision and moderate deafness.

VIII. Migraine. Only one case of classical migraine has been observed. The patient was a Chinese woman of 33 years, married. For 14 years, following an abortion (her second and last pregnancy), she had suffered once or twice a month with attacks of severe prostrating hemicrania, lasting each time from 2 to 3 days. Very frequently the attacks were co-incident with the menses. The menstrual periods were very irregular and of short duration. The hemicrania was usually left-sided but occasionally appeared on the right. Sometimes there would be swelling of the corresponding side of the face. She had no other symptoms. Her father died from asthma, and her mother from dysentery. She had two sisters and one brother. Her mother and one sister suffered from a hemicrania similar to her own. Physical examination showed no abnormality except a decreased and retarded knee-jerk.

This case recalls one of a private patient in the United States who for twelve years had suffered from an exactly similar condition except that the paroxysms were more frequent. Her father and grandfather had had the same disorder. She received great benefit from regulation of diet, exercise, personal hygiene and a course of thyroid extract in small doses for a period of one year. The hereditary and intractable nature of migraine is again worthy of note.

IX. Miscellaneous Cases. Epilepsy in all forms is surprisingly frequent. It is usually congenital and accompanied by varying degrees of feeblemindedness or mental deterioration. In treatment most success has been had by pushing a mixed formula of bromides to the limit of toleration and then reducing to a small continued dose. With this, manual training in such occupations as basketry or needlework, has a stimulating and beneficial effect. There is room for much needed investigation of the conditions of feeblemindedness and backwardness, the moron type especially, among the Chinese, and of the establishment of a measuring scale of intelligence after the principle of the Binet-Simon system.

In the out-patient clinic I have seen one typical case of paralysis agitans. Progressive muscular atrophy furnishes an occasional in-
The China Medical Journal.

patient, and one case of Little's disease has been in the wards. There should be mentioned, too, the frequency of gastric neuroses and functional complaints. Study of these in their relation to the mental make-up of the Chinese, in relation to diet, and finally in relation to native medical practice will give valuable results.

BERIBERI IN THE PROVINCE OF FUKIEN.*


At first sight this may seem to be a simple subject, but in reality it is a most complicated one. It is not a mere question of the gathering of statistics, but rather one of the definition of what is a still obscure disease.

What is beriberi? For the purposes of this paper it is taken to be a disease whose characteristics are the following:—peripheral neuritis; oedema; and cardiac symptoms generally evidenced by rapidity and irregularity of action.

In the province of Fukien there are to be found the following classes of beriberi:

1. Imported cases of beriberi acquired in the Straits Settlements and Malaysia.
2. Typical cases of beriberi arising in Fukien itself.
3. Cases the exact nature of which is as yet obscure but which are probably incipient beriberi.

1. Imported Cases. These are by no means few in number in the areas from which the greater part of the emigration to the Straits takes place. As a rule, however, improvement has already commenced before the patient arrives home, though some only arrive home to die. The treatment of these cases differs but little from the treatment of those arising in Fukien itself and will be dealt with in a subsequent paragraph.

2. Typical Cases of Beriberi arising in Fukien itself. As far as the writer has been able to learn both from his own observations in the southern half of the province, and from the observations of medical missionaries in other parts, to whom he tenders his thanks for information supplied, beriberi is not a common disease in Fukien.

*A paper read at the Biennial Conference of the China Medical Association, held in Shanghai, February, 1915.
Beriberi in the Province of Fukien.

Sporadic cases undoubtedly occur all over the province, and by reason of their sporadic nature, probably some are missed or diagnosed as some other affection.

During the last 16 years there has been no epidemic of the disease in inland Fukien, though there have been several small outbreaks in the coast parts, especially in Amoy. This is as it should be, granting that the present theory of the causation of the disease is correct. And a very strong argument against the trouble being of an infective nature, is the fact that the writer has never been able to trace the least connection between a case arising in Fukien and an imported case.

In inland Fukien practically all the rice is grown, husked, and pounded locally; and there is no such thing as steam milling and polishing known. But in the coast ports there is an immense amount of steam milled and polished rice imported, and the probability is that the small epidemics in the coast ports have taken place on a diet of this rice. There is no doubt that one of the outbreaks in Amoy took place on it, and the cases which I am about to quote strongly bear out this theory of the causation of the disease.

About 14 cases which were typical have come under the writer’s care in inland Fukien. Of these, 12 were seen in their own homes, some of whom died, and some survived. Three of these had been feeding on imported rice, a small amount of which arrives inland; in the case of the others accurate information was impossible to obtain.

In two cases it was possible to investigate the cases thoroughly and details are given below.

1. S., a middle school boy of 19 years of age from the city of Chinchow, was admitted into the Yungchun hospital in June 1909. He was suffering from typical beriberi which had come on about ten days before. Several other boys were unwell, and from the description I have little doubt that it was the beginning of the same disease, but it was the end of the term and before they could be examined the school had broken up, the boys were away home, and the ones about whom enquiry was made were well again by that time. The diet of the school was carefully examined and it was proved that the cook had been buying exclusively Annam imported rice, highly polished.

This boy’s attack began with catarrhal diarrhoea and he made a rapid recovery at his home in the hills. He had a fortnight’s treatment with a mixture containing strychnine and digitalis.

2. A young woman of 26 was admitted during 1913 into the Yungchun hospital. She was suffering from acute beriberi, had been ill a month, and the oedema and heart affection were very marked. Shortly before her illness had begun she had had a child. There was no doubt about the diagnosis and as she came from a part of the country where I know that the pounding of rice is carried out very imperfectly, at first sight it was difficult to account for the disease. But on enquiry a remarkable fact came to light. She was the wife of the owner of a small water-pounding mill and not satisfied with the milling accomplished in the
ordinary way, had been in the habit of taking the rice for the household and repounding it several times in order, as she put it, to make it "perfectly white." This case had a tragic end. Under large doses of rice bran, and a heart tonic she was improving steadily, and the oedema was markedly better. The heart, however, was still weak and irritable, and she had been strictly forbidden to get up. Her mother-in-law, who was in hospital with her, thought that we were unnecessarily careful, and one day, immediately after I had left, compelled the patient to get up, with the result that she died of syncope.

III. Cases the exact nature of which is as yet obscure but which are probably incipient beriberi.

c. A typical case is the following which was under my observation from start to finish; H., aged 20, a medical student in the Yungchun hospital, acquired a mixed attack of dysentery of moderate severity. The amoebic portion was at once checked with emetine, and the case further treated with magnesium sulphate. Recovery took place after a fortnight's illness but there was a little tendency to catarrh of the bowel which persisted. About a month after his recovery, he complained to me that his legs were beginning to swell. The urine was normal, and knee-jerks were present, but poor. He was treated with tonics both general and cardiac for a couple of weeks, and steadily got worse, and began to complain of difficulty in walking. The knee-jerks were now found absent, there was slight footdrop, and the heart, though quite regular, was too quick, the pulse rate about 100. I took him off all medicine and put him on to a diet of unpounded rice and half an ounce of rice bran twice a day, with the striking result that he was perfectly well in a week, heart normal, oedema gone, and the footdrop well. The knee-jerks did not, however, return for another six weeks, at any rate to the normal.

This case gave the writer the clue to several other puzzling and troublesome cases. It is well known that cases of amoebic dysentery and severe malarial fever with bowel catarrh are occasionally followed by oedema of the legs and abdominal wall, and occasionally by a slight effusion into the abdomen. This oedema may be combined with tenderness of the calf or extensor muscles, and loss or impairment of the knee-jerk. The hearts is not markedly affected, and footdrop is absent or very slight.

These cases are often tedious, and it seems to be possible that they are cases of incipient beriberi. It may be that the supply of the essential contained in the pericarp is on the borderline, and the case is precipitated by the catarrh of the bowel and deficient absorption. A number of these cases at all events get well rapidly on an anti-beriberi diet such as described above.

Here is an old man of 68 in whom the condition supervenes after an attack of dysentery. He is placed on a diet of unpounded rice, and is well in a few days.

Two marked cases of this nature were under the writer's care some eight years ago, and recovered very slowly. They were in the days before emetine and anti-beriberi diet, and only serve as a contrast to those treated of late.
How are Beriberi cases to be treated?

Take for instance the case of the student before mentioned. As already stated he was placed on a diet of unpounded rice, no other change being made in his dietary. Unpounded rice is rice simply deprived of the outer husk, and cooked either wet or dry as the patient pleases. This is not difficult to eat though some dislike it. For several years the writer has had no rice on his own table which was not composed of pounded and unpounded in rice equal parts. The appearance, of course, is not so good, but as soon as one gets used to it, one learns to prefer the flavour. It requires slightly longer cooking.

In addition this patient had half an ounce of rice bran twice a day. This is not very pleasant to take in the form of the plain powder, and is more palatable in the form of a soup boiled with water and a little milk added; or in the form of bran cakes or biscuits, which are easily made, and which patients are very willing to take.

Where there is paralysis—as, for example, in this imported case from the Straits Settlements—massage and strychnine are of great use. The patient came in to hospital with both legs paralysed and atrophied, unable to stand or walk, and a history of six months' illness. He was placed on an anti-beriberi diet, with a tonic containing iron and strychnine, and massaged. In forty-eight hours he had begun to be able to move his toes, in a fortnight he was able to walk with aid, and in a couple of months he was well. These patients are strongly advised to stick to unpounded rice for at least six months after they are apparently well. When the heart is markedly affected, the patient should be kept strictly in the recumbent position until there is manifest improvement, and a cardiac tonic prescribed.

In addition to the above treatment, in one or two cases the addition of beans and milk to the diet was given a trial, but the Chinese do not take readily to variations of diet, and some flatly refuse to take milk. In conclusion the writer would urge further enquiry into these doubtful cases, and their experimental treatment by means of a modified diet, in which unpounded rice and rice bran should have a prominent place.

In the discussion which ensued after the reading of the paper, Dr. Andrew Woods, of Canton, made the following remarks:—

Beriberi is evidently a specific neuritis caused by a poison which has a selective affinity for the finer terminal filaments of motor and sensory nerves. Possibly, the special eud-organs of these nerves are chiefly affected. In a large number of cases recently examined in the
Canton Hospital he had found no tenderness of the larger nerve trunks, and no cases showed spinal cord involvement.

If the end-organs of motor and sensory nerves are the chief points of attack, it may be expected that the end-organs of the nerves of special sense will at times suffer. Certain cases still being studied in the Canton Hospital may prove that the retina, for example, is sometime attacked. A report, giving the results of the eye-examinations, will be made on this subject later.

The nerves most frequently involved are those of the legs; next, those of the forearms; then of the thighs, the arms, the belly, the chest, the face. The heart is frequently affected, probably through the pneumogastric nerves, though he knew of no post-mortem microscopic proof of this statement. In one of his cases the sphincter of the bladder was weak; in some others the vocal cords were paralyzed.

Much has yet to be learned as to the cause of beriberi. A constant relationship with polished rice seems clear, but the *modus operandi* is not. In Canton, of families buying the same rice at the same stores and eating the same amount of vegetables and meat, some get beriberi, some do not. The majority of new cases occur during the wet months of the year, and new-comers to Canton suffer more than old residents. Nearly all the patients are young. It is probable that some parasitic cause of the disease will be found, the polished rice being simply the carrier, as the absence of the protective coat renders the grain subject to parasitic attack. The chicken experiments reported from Manila need to be further studied, also the "sure-cures" by rice polishings.

Dr. Woods treats his cases by a red rice diet, all the substantial proteid and fat possible, haematinics, and symptomatic treatment for cardiac, respiratory, and other failing functions. Of course, rice polishings, or red rice, cannot be expected to renew the damaged nerve fibres. Nothing but nature's old-fashioned trophic work, will do that. The chief resource for strengthening atrophied muscles is the galvanic current which should be anodal when degeneration has gone so far that the ordinary cathodal current gets no response. Paradism is of use only in light cases.

Dr. Woods saw no especial benefit from using rice-polishings or the more costly preparations purporting to be derived from cereal "coats". Patients usually like red rice and whole cereals, beans, etc., and these contain the elements needed.
THE TREATMENT OF INFANTILE BERIBERI.

By Dr. José Albert.

(College of Medicine and Surgery, University of the Philippines).

Infantile beriberi is without doubt the most interesting problem of pediatrics and of general medicine in the Philippine Islands. It is responsible for that phenomenon, without parallel in the whole civilized world, in which infant mortality among breast-fed children is greater than the mortality among the artificially fed, thus giving the impression that human milk as a food is a scourge among infants, rather than the "magic liquor" which guarantees their lives. Because of its ravages among children under one year of age, 38 per cent of which are victims of this disease, infantile beriberi constitute the most formidable barrier to both economical and political aggrandizement of these Islands.

Since this disease was discovered, all efforts of therapeutics have been to suppress the cause, following the well-known maxim of healing pathogenically. Believing that this disease was a true intoxication, Professor Hirota of Japan has recommended the discontinuance of maternal feeding, which according to him is the "materia peccans," and the substitution of artificial feedings. In the treatment of this disease Hirota has established the two following principles:

First, that infantile beriberi is a true intoxication produced by the ingestion of beriberic milk.

Second, that the treatment of the disease by means of drugs is of little or no value at all. That the discontinuance of maternal feeding is the only and safe means of cure, provided that the disease is not too far advanced in which case it is no longer of any value.

According to the same author the improvement which follows the discontinuance of maternal feeding is a rapid one, occurring on the third day. The complete cure with the exception of the aphonia, which lasts for several weeks, takes place in the majority of cases during the first week.

Simple and ideal as this method of treatment looks, when put in practice it offers very serious inconveniences inherent in the sudden and untimely discontinuance of maternal feeding. To put the baby to a wet nurse is a wise procedure, but this offers a great expense which cannot be afforded by this kind of patient, for the great majority of

1 Read at the Annual Meeting of the Philippine Islands' Medical Association, Manila, November 4-7, 1914. Reprinted from the Philippine Journal of Science, January, 1915.
them belong to the poorer class. To substitute artificial feeding for breast feeding is to expose the infant to the dangers of gastro-intestinal and other nutritional disturbances which usually accompany artificial feeding. In addition, there is the difficulty or the impossibility of obtaining fresh milk or canned milk and other farinaceous food preparations because of pecuniary reasons as already mentioned.

In view of these inconveniences and believing that this disease is due to some deficiency in diet, Bréaudat of Indo-China in 1910, and Gabriel and Luis Guerrero of these Islands in 1911, fed the mothers of beriberic infants with rice polishings (tiqui-tiqui) and mongo—two well-known antiberiberic foodstuffs. By this method the mother is given daily about 60 grams of tiqui-tiqui and about 150 grams of mongo, prepared in different palatable ways so that its ingestion is made agreeable.

Only 18 cases have been treated by this method in the Philippine Islands. The method has two inconveniences: First, the tiqui-tiqui is very unpalatable and disagreeable to take, and secondly, breast feeding has to be discontinued for a period of from fifteen to forty-five days according to the method of Luis Guerrero. Because of these inconveniences Bréaudat’s method did not become widespread.

Following the theory of "avitaminosis" and drawing their conclusions from the prophylactic and curative actions of the extract of tiqui-tiqui on "polyneuritis gallinarum," Chamberlain and Vedder, of the United States Army Board for the study of tropical diseases, in February, 1912, recommended the use of the extract in the treatment of infantile beriberi without the discontinuance of the maternal feeding, thus avoiding the dangers of artificial feeding. The method of preparation of this extract is fully described in their paper. Five cubic centimeters of the extract thus prepared represent about 82 grams of rice polishings. The dose prescribed by them was 5 cubic centimeters of the extract a day, given in 20-drop doses every two hours while the child is awake.

I have had the opportunity of using this extract in a great many cases of infantile beriberi, from the year 1912 to the present date, and I believe that this medicine is of immense value in the treatment of the disease in question and that it is excelled by no other drug known at the present time. My distinguished colleagues of this city, Doctors Calderon, Quintos, Luis and Manuel Guerrero, Valdes, Gabriel, and others, are of the same opinion.

Because of these astonishing results, both the committee for the investigation of infant mortality and the Segunda Asamblea Regional

---

de Medicos y Farmaceuticos have requested the Philippine Legislature to adopt measures so that this extract may be distributed freely to the poorer class. As a result of this request the Philippine Legislature in February, 1914, passed Bill No. 2376 providing the sum of 6,000 pesos for the preparation and free distribution of the extract of tiquiti-qui. The bill also provides that the Liga Nacional Filipina para la Proteccion de la Infancia will superintend the preparation and experimentation, will look after the free distribution of the extract among the poorer class, and will present a written report of the results of their experiments, through the Secretary of Public Instruction, at the beginning of each regular session.

Although the time that has elapsed since the first experiments were made is not long enough to permit us to draw definite conclusions, our opinion with regard to this extract is very favorable. The administration of the extract when given in time and in convenient doses is followed at once by marked improvement. At the end of twenty-four hours the vomiting, whining, restlessness, insomnia, dysphagia, polyphnea, and oliguria all disappear as if by magic. To the great surprise of the young physician the clinical syndromes change in aspect in a very short time, and at the end of three days one can say that the disease has disappeared, at least externally, leaving the aphonia which in its turn disappears by the end of the seventh or eighth week. (I have attended a case in which the aphonia lasted for about eight months.) If no improvement follows after twenty-four hours or if the case under treatment is of great severity, I obtain the desired effect by doubling the dose. It is better to give larger than smaller doses. The extract is inoffensive and entirely uninjurious, save for a slight diarrhoea which follows its administration. With the method of giving large doses to acute cases, we have in practice saved from sure death many cases of beriberi of the pernicious larval type, which formerly were believed to be hopeless and incurable.

The administration of the extract must be continued as long as the aphonia persists. So long as the voice has not recovered its normal pitch, the infant is constantly threatened by an acute attack which may terminate in death in a few hours. In cases of infantile beriberi without aphonia, it is wise to prolong the treatment at least three weeks after apparent cure, to avoid relapses which frequently occur. It is necessary to impress upon the mother the importance of prolonging the treatment, as it is the tendency, in private practice, to discontinue treatment as soon as the acute symptoms disappear.

8 One peso Philippine currency equals 50 cents United States currency.
The failure of the extract to effect a cure may be due to many causes:
1. Extreme severity of the case—a very advanced neuritis. Vedder and Clark, in their work on polyneuritis gallinarum, have shown that symptoms appear only when the anatomic lesions in the nerves are well advanced. It is the same with infantile beriberi. It is not infrequent that mothers bring their children when the disease is far advanced. Therefore it is necessary to give the extract early in the disease in order that the treatment be successful.
2. The extract proves ineffective also in cases associated with other infections, commonly pneumococcic in the form of bronchopneumonia, which is a frequent complication of infantile beriberi.
3. Another cause of failure of the extract is its poor quality. It has either an insufficient quantity of the active principle or an excess of alcohol which makes its ingestion disagreeable and injurious. Analyses made by the Bureau of Science of the extract prepared by the local drug stores revealed the fact that all the samples with the exception of one from one drug store were very deficient in the active principle. This was why treatment with extracts of tiqui-tiqui obtained from this drug store were the most successful.

The interpretation of the curative action of the extract of tiqui-tiqui is not a hard task. Hirota’s theory of intoxication can be discarded. It does not explain why the beriberic child treated with tiqui-tiqui extract improves and gets well even without discontinuing the maternal nursing. The extract has no antitoxic properties and, therefore, it cannot be said that it neutralizes the toxic action of the breast milk.

Knowing the prophylactic and curative actions of the extract in polyneuritis gallinarum, which is caused by a deficiency in the diet, we must admit that this extract supplies the beriberic infant with nutritive elements, probably the vitamins, in which the beriberic milk is found deficient.

According to Funk these vitamins play an important rôle in the metabolism as do the hormones, ferments, and internal secretions.

Bearing in mind that infantile beriberi under a clinical aspect is principally a vagotonia—an abnormal irritability of the vagus—it is logical to believe that the curative action of the extract is due to the fact that it supplies the vagus with the necessary vitamins for the normal performance of its functions. Using the words of Eppinger and Hess, we can say that the extract of tiqui-tiqui is a vagotrophic drug, like pilocarpin, which has a selective and specific action on the vagus nerve.
By supplying the vagus with its much-needed vitamins, its abnormal irritability, manifested by vomiting, by angina pectoris (whining and restlessness), and by polypnea because of its bronchial and pulmonary terminations, entirely disappears.

The failure of the extract to cure the aphony can be attributed to a very advanced degenerative neuritis of the recurrent branches of the vagus nerve, which are the first to be affected in all cases of dietetic deficiency as evidenced by the clinical fact that the aphonic form constitutes from 80 to 90 per cent of all cases of infantile beriberi.

THE HEALTH OF MARRIED WOMEN MISSIONARIES.

By Mrs. Mary Scharlitz, M.D., M.S. Lond.
Consulting Physician for Diseases of Women, Royal Free Hospital, London.

A resolution has recently been discussed by the Association to the effect that women missionaries shall not marry until they have been in their proposed field of service for at least a year. The proposed rule appears likely to be of real value. It is quite impossible for anyone to know how far the climate is likely to prove suitable, and should it prove that the worker is unable to maintain her health in the climate in which her future husband has to work, it is evident that much annoyance, disappointment, and even wreckage of health and happiness will ensue.

Undoubtedly the rule can be followed in the case of women who have gone out, unmarried and unbetrothed, to work as missionaries. If such a lady meets her destined husband in the field there is relatively little hardship, and there is much wisdom in asking them both to wait until the woman has had time to find out how far she is able to adapt herself to the climate. On the other hand, difficulty appears likely to arise when the couple meet at home, the woman never having been in the field. They may become engaged and wish to go out as bride and bridegroom, or the man may go to his mission station, or return to it, expecting his fiancée to follow him. In the two latter cases the woman arrives on the mission field as a bride, without any experience of the climate. How is she in this case to obey the rule of waiting the prescribed year? There may be no other European woman in the station, or at any rate there may be no suitable home in which she can live during the probationary period.

It would be interesting to know exactly what arrangement is proposed to meet this difficulty.

Before a woman who is intending to go to the mission field as a bride is accepted a full and careful examination ought to be made of her health. Great attention should be paid to family history and to personal history. It too often happens that the examinee looks on the examination as a lawful contest of wits, and not only puts the best interpretation that she can on her personal and family history, but also suppresses any information that she thinks might have an adverse effect on the doctor's verdict.

The detailed examination of the examinee's present state should include all the ordinary points, such as relation of height to weight, condition of skin, muscles, skeleton, eyes, ears, nose, throat, teeth, organs of circulation, respiration, and digestion, and, in addition, there should be a very careful examination of the bony pelvis and its contained organs. The external measurements should be carefully ascertained by means of callipers, and the internal organs should be investigated, usually through the rectum. Attention should also be paid to the hymeneal orifice, as much trouble is experienced in cases of dyspareunia. This detailed and careful examination is necessary, because it not infrequently happens that young married women are called upon to live and work in up-country stations far away from all skilled medical assistance. Should there be any condition likely to lead to difficulty in labour—for example, pelvic deformity, even of comparatively mild degree—its existence should be made known to the intending husband and wife, as well as to the society's medical examiner. It would probably be useful to have the report of the medical examiner made out in triplicate, one copy to be handed to the missionary, the others to be retained by the society and the society's medical adviser.

It would appear that a part of the doctor's duty is to give advice, to explain to the fiancée any facts connected with her health which call for special attention, and more particularly to insist that, in all cases in which it is possible, the first confinement shall take place in a town where competent medical assistance is procurable. At the same time useful advice may be given as to the necessary outfit of clothes, which should include a thin, fine woollen or silk garment, to be worn next the skin, and reaching from the neck to the knees. Suitable protection against mosquitoes and other insect pests should be indicated, also protection for the head by a pith or cork hat with a suitable puggaree, and protection for the eyes by dark blue or neutral tinted glasses with
lateral flanges. The medical adviser should further insist on all dental repairs that may be desirable, and also on the necessity for adequate protection against small-pox by vaccination and against typhoid by inoculation.

The society's medical adviser must explain to the prospective bride something of the enormous changes that marriage makes in a woman's physical position and general outlook on life. The unmarried woman is an individual responsible for maintaining her individual organism in health and efficiency; the married woman is responsible for something more than this. Upon her health and fitness depend in a large measure not only her husband's happiness, but his health and power for work. In addition to these responsibilities, the bride must be helped to realize that she is a potential mother, and that on her organic integrity and functional efficiency will depend the health and well-being of her offspring.

It might be thought that this little homily should be delivered by someone else, but in all probability the society's physician is the person best fitted for this duty, and it is absolutely necessary that someone should point out to the young woman the changes that are likely to occur in her health. He should point out to her that marriage usually causes a considerable diversion of nervous energy into new channels, and for a time digestion and the functions of the bowels are liable to be sluggish. The more thoughtful and the more conscientious the young woman, the more is she likely to be somewhat overwhelmed by the prospect of her new duties and new responsibilities and the more does she stand in need of kindly and sympathetic advice.

All young married women need this kind of help, and perhaps particularly with regard to the special duties of the married state. Some sort of a physiological standard should be suggested so that the husband and wife should live together in comfort and in harmony, not defrauding each other nor shirking the responsibilities and the difficulties of the married state. It is only too common at the present day to find young couples, and even good and well meaning young couples, who have no adequate knowledge of the objects of marriage, or of the duties entailed thereby. In some cases they even consider it praiseworthy that they should for a time refuse to accept the natural consequence of matrimony. They allege devotion to work, narrowness of means, and a scrupulous regard for the future, good education of their children as reasons why they should have none for a few years. This mistaken action on their part frequently leads to artificial restrictions and anticonceptive measures. Of the immorality of these proceedings
there can be no doubt, and curiously enough, even where no mechanical
or chemical damage is caused to the organs and tissues, some nervous
injury ensues, and when the husband and wife wish to become parents
their desire is too frequently disappointed. Nor does the evil end here,
for thwarted and disappointed function appears to react injuriously,
and is probably one of the causes why many childless wives become
neurasthenic and melancholy in middle life.

Another point in the care of the health of married women mission­
aries is to be found in the modifications of menstruation which are apt
to occur. Not infrequently the sudden change of climate and method
of life results in more or less long-continued amenorrhoea. A young
American missionary had no period for fourteen months after arrival
in Madras; she was not ill, nor was she anaemic, but her periods were
absent and her general health somewhat below par. She had felt the
parting from home very much, and it was not until after careful treat­
ment with electricity that her ovaries resumed their usual functions.
On the other hand, not infrequently the relaxing effect of a hot climate
causes a greater frequency or a greater abundance of the menstrual
flow. In most instances, both of the minus and of the plus condition
of the function, the normal will be reattained after a few months, and
drastic treatment is not indicated; attention to rest, to diet, and regula­
tion of the functions of stomach and bowels usually suffice.

Pregnancy. The young married woman should be taught how to
recognise the early signs and symptoms of pregnancy, partly in order
that she should take reasonable care of her own health and that of her
unborn child, and also in order that she should early seek medical
advice. The health sheet, which every missionary should have, finds
one of its most useful functions when the examinee becomes pregnant.
Should she be up-country, a considerable distance from any experienced
doctor, she can send a letter describing the signs and symptoms that
make her think herself pregnant, and enclose the health sheet, so that
the doctor she wishes to consult is able to judge what arrangements it
will be wise to make for the woman’s delivery. He will be guided by the
recorded measurements of the pelvis, and will be able to ascertain at what
time he ought to see his patient in order to judge of the relative size of
the child and the pelvis. If the woman is so fortunate as to live in the
same town or within easy reach of her doctor, a careful examination
will be made and the growth of the child will be watched during the
last two months of pregnancy, so that there may be no danger of a
10-lb. baby having to pass through a pelvis that is only adequate for
the transmission of one weighing 6 or 7 lbs.
The patient should send her urine for examination regularly once a month, so that the doctor may know whether it remains normal, what are the proportions of urea to water, what is the absolute quantity of urea excreted. He will also be able to detect the presence of abnormal constituents, such as albumin, sugar, and acetone. The presence of albumin does not necessarily indicate disease. It may be due to a vaginal discharge. Sugar is usually lactose, and is associated with incipient lactation, not with any of the causes of diabetes.

The pregnant woman must be advised as to the adjustment of diet to her condition, and probably, as a general rule, it will be found that English women have a tendency to eat too much meat, and to indulge too freely in strong soups and meat extracts. These articles of diet put more strain on the organs of excretion than they can well stand during pregnancy, and their evil effect is aggravated by a hot climate. It would therefore be better for pregnant women to eat liberally of bread-and-butter, milk, vegetables, and fruit, and to take but sparingly of meat.

Another important item in the advice that we ought to give to women missionaries during pregnancy concerns exercise. In trying climates, and more especially where extra exhaustion is caused by press of work and the care of little children, there is too little energy available for outdoor exercise. Luckily in most tropical climates life is lived almost entirely in the open air, a condition of things which goes far to compensate for disinclination to exercise and the exhausting effects of heat. It is, however, to be remembered that the tonic and stimulating effects of outdoor exercise are not entirely due either to the goodness of the air or to the muscular exertion, but largely to the physical effects of change of scene and interest. It is therefore very important that some change of employment, and if possible of scene, shall be enjoyed daily.

Sleep and rest are matters of the greatest importance and the daily siesta, copied from the custom of natives, is in no way a pandering to sloth and idleness. In all tropical and subtropical countries daily life and work begin even before the rising of the sun, and thus a day of sixteen or seventeen hours is the rule. The European woman who is bearing the double burden of pregnancy and ordinary work absolutely requires a couple of hours rest in the hottest part of the day. Her conscience should permit her to sleep if she should be so disposed, but if not sleepy the hours of retirement are specially valuable for the refreshment of the mind and spirit. We are all too easily tempted to forget spiritual necessities and to underrate the responsibility which we
have for providing for the nourishment, refreshment, and development of that part of us which is destined to live eternally.

In all cases of pregnancy the expectant mother should be informed as to the manner in which she is to provide for the welfare of her unborn child. Pre-natal influences determine very largely the welfare or misery of the individual, and the expectant mother should be helped to realize that on her well-being, on the nutrition of her body, and on the calm and cheerfulness of her spirit, depends in a large measure the welfare of her child.

The medical adviser of the pregnant woman must always remember the possible influence of the three great racial poisons, and should be watchful in protecting his patient and her child from their ravages. Missionaries and their wives might well be indignant that the doctor should think it necessary to protect them and their offspring from the evil influences of alcohol and of syphilis; tuberculosis they might admit is an unsought and an unmerited evil, but with regard to the other two, instructed and enlightened conscience would lead them to consider the barest suspicion of their existence as a disgrace. It must, however, be remembered that the treasure of divine grace is contained in earthen vessels, and that in some instances it is possible that the sins and follies of youth, long ago repented of and forgiven, may be latent through long years, and then awaken into new life and cause disaster. The wise physician will therefore make careful inquiry into the history of each case, both in the family and personal aspect. He will if necessary have the blood tested, especially in cases where there have been repeated apparently causeless abortions or premature births. The doctor who is tactful and discreet as well as competent will be able to do this without compromising anyone's good name, and will be prepared to administer the suitable remedy should any virus be present.

**LACTATION.**

Even in a tropical climate the rule should be for the mother to nurse her child. Lactation must be carefully watched, and it must be modified or interrupted should the mother's health make it desirable; but as a rule it is sufficiently well borne, and the advantage to the child is so great that it should be the rule and not the exception. The mother gains also by suckling her child, not only in the physiological involution of the uterus, in the checking of a tendency to too early repeated pregnancy, but also in the greater security of the child's health and consequent absence of anxiety that she enjoys.
LEAVE, HOLIDAYS, AND FURLough.

In all missionary societies it is the rule that missionaries shall have a month or six weeks' holiday in the country every year, and that one year in six shall be spent on furlough.

A missionary who has just returned from Corea has given it as his experience that, unless the circumstances are very unusual, no term of service should exceed five years. He would divide missionaries into classes with reference to furlough—some who apparently require no furlough; some who are absolutely exhausted and played out at the end of five years; and an intermediate class who are indeed needing their holiday, but who can work to the end of their term of service and start for their holiday able to enjoy it. He was, however, of opinion that, even in the case of those who believed that they could work on and whose health showed no obvious deterioration, the power of work was really lessened, that their work suffered more or less markedly if the holiday were delayed, and that, therefore, permission to work an extra year should rarely be given. If these considerations are just for missionaries in general, they are even more cogent in the case of married women missionaries. They have probably been bearing a threefold burden—climate, work, and family; it would be poor economy indeed, both for the society and the individual, if these ladies were not sent home without hesitation at the end of each term of service.

ARRIVAL AT HOME.

It is very desirable that the married woman missionary should see the medical officer of the society on her arrival. He would read her health sheet, talk to her, examine her, and advise her. In this interview it is extremely desirable that the doctor should remind the missionary that the object of furlough is the maintenance of health and regaining of energy that will fit her for a further term of service. The dedication of the life to the special service of God in the mission field is usually intended to be the dedication of the whole life and not merely of some portion of it; anything, therefore, which tends to unfit the missionary for service is a real, although an unintentional, disloyalty, and the acceptance by missionaries on furlough of any work or responsibility that interferes with their recuperation is to be deprecated. In this connexion it is necessary for the society also to exercise a wise care and discretion. In the eagerness of desire to kindle enthusiasm and to diffuse a knowledge of mission work, the organizing secretary is sometimes too anxious to get as much deputa-
tion and meeting work as possible out of the returned missionary. Individuals vary greatly in their capacity for this work, and while to one it is a pleasure and inspiration, to another it is a great ordeal and one that seriously interferes with health. As a general rule it may be taken that no returned missionary should be asked to take deputation work of any kind for the first three months after arrival; more especially is this necessary in the case of the wife and mother. It is difficult to realize the amount of wear and tear that a good housewife and mother has to undergo; the daily vigilance over family and household; the frequently recurring anxieties inseparable from family life in the tropics; and in some instances the annoyances inherent in the management of native servants and others, conspire to wear her out and to break down her nervous system. Such a woman requires all the available time of her furlough to build up her health and recover her strength so that she may be fit to return with her husband to the field. These, then, are the reasons why the medical adviser should carefully inquire into home circumstances, and as to how the wearied missionary proposes to spend her holiday. He should tactfully and sympathetically indicate that the object of her furlough is not that she should relieve some other over-burdened member of her family, nor that she should constitute herself sick nurse and guardian, but that she should in the first instance do her duty to her society, her husband, and herself.

Not infrequently the medical adviser will find that his patient is a worn and delicate woman with five or six little children, and that, thankful as she is to have the prospect of a better climate, she is somewhat nervous and doubtful of her power to cope with the active healthy little ones without the help of the servants to whom she naturally has been accustomed in the tropics. Native ayahs and bearers need a great deal of supervision, but they are, at any rate, hands and feet, and they are very generally kind and devoted to their little charges, but the English home of the returned missionary is frequently all too small, and the service leaves much to be desired; consequently, the children are much with their parents, and the tired mother spends a great part of her much-needed holiday in washing and dressing the children, in sewing for them, and even in wheeling the perambulator for one or two, while others hang on to her skirt. It would really appear as though some guild or association should be formed to afford help under such conditions. The parents would not like to part with their little ones, but it might perhaps be possible for young ladies gifted with missionary zeal to form themselves into a guild of help, the members of which would be available to
live with each missionary family and assist in the care of the children. An alternate scheme might be the collection of a special fund for increasing the missionaries' incomes during furlough, so as to enable them to make their own arrangements for such assistance as they found necessary.

Before the return to the field the married woman missionary should be seen by the society's medical adviser, who should be satisfied as to her fitness for return, and enter on the health sheet any observations that may be necessary.

**BERIBERI IN ZANZIBAR.** In a recent Health Report of the Zanzibar Protectorate (*Indian Medical Gazette*, July, 1915), it is pointed out that beriberi occurs among communities who are not confined to rice as a staple article of diet, such as the crews of ships, troops, prisoners and so on. Arnold, of St. Helena, cites the case of the Boer prisoners in St. Helena in 1901, among whom an epidemic of beriberi occurred. Rice formed no part of their dietary. Again, he met with an American whaling ship where out of a crew of thirty, eleven were found to be suffering from beriberi. The conclusion reached is that a train of symptoms, making up a disease picture synonymous with the beriberi of the Far East occurs in Zanzibar which is not dependent on rice, nor on a deficiency in the $P_2O_5$ content of the rice, but is dependent on an infection.

**BERIBERI ON GERMAN WAR VESSEL.** Many cases of beriberi were reported on the German steamer "Kronprinz Wilhelm," which was recently interned in an American port. Investigation showed that in the ordinary diet of the seamen the bases of lime were distinctly absent: fresh meat, white flour bread, boiled potatoes, butter, lard, and sugar having been the chief articles of diet. On the 255 days which made up the cruise of the vessel, the men subsisted on food containing an excess of acid-forming elements and a deficiency of alkaline ash. The fact is also significant that forty-seven of the sailors suffering from beriberi were dismissed from the ship's hospital within eight days after a change to a diet rich in alkaline ash.—*Journal of Tropical Medicine and Hygiene*, June 1, 1915.
CLINICAL NOTES.

BERIBERI.

In Shanghai most of the cases of beriberi we see are of the “dry” kind. The case depicted in Fig. 1. is of the “wet” variety. This patient had a general affection of the skin, most marked on the upper part of the body, which abruptly changed in appearance at the level of the waist; below this line the tissues were solid and boggy. The skin was everywhere dry and covered with dirty, irregular scales of epithelium. This was all much better marked above the waist line, particularly so upon the upper back, but we think it had not been so at first. The œdema had stretched the skin of the lower half of the body and made it appear smooth by comparison with the upper half, and no doubt the œdema caused it to shed most of its scales. The urine was normal and the kidneys acted fairly freely. The photograph was taken immediately on admission, and besides showing the œdema very nicely, it gives the typical expression of the facies of the beriberi patient who is suffering from cardiac dyspnoea. I have seldom seen a patient recover who showed this expression in beriberi. It is generally an indication of impending death, which may be expected within half a week, or less. This patient died of heart failure very soon after entering the hospital.

For comparison, a photograph is presented of a typical case of dry beriberi. The patient was totally unable to walk or support himself. Wet cases are easily able to do this.

W. H. Jefferys, M.D.

ST. LUKE'S HOSPITAL, SHANGHAI.

SEVERE INJURIES TO CERVICAL SPINE.

From the study of surgical text-books one would gather that severe injuries to the cervical spine, involving lesions of the cord in this region are invariably rapidly fatal; that this is not necessarily the case the following two histories bear out:

I. A man of 42 years was admitted to the hospital for the removal of a small rodent ulcer from the upper lip. The interest of the local condition was small compared to the very peculiar appearance of the patient himself. The notes on the case are as follows:

History: At the age of 9 years patient had a fall, striking the back of his neck. At this length of time it is difficult to get exact details but paralysis of the limbs apparently followed immediately on the fall.
FIG. 1. "WET" OR DROPSICAL BERIRERI (JEFFEYRYS.)
FIG. 11. "DRY" OR ATROPHIC BERIBERI (JEFFEYRYS.)
Clinical Notes.

Present condition: General health good, a fairly intelligent man. Trunk small, but not strikingly so. Arms, legs, hands, and feet all withered up and grotesquely contorted. No power in any of the limb muscles, except to some extent in the pectorals, and very slightly in the left deltoid (not enough to move arm away from body). Abdominal muscles are very weak. Intercostal muscles move little, if at all, in breathing. Chest is barrel-shaped. Respiration appears to be purely diaphragmatic. Sensation very much impaired all over limbs. Bladder and rectum are normal. The man is unable to raise himself off his bed but lifted into a sitting position can maintain his balance. He again requires assistance to lie down. His method of taking food is revolting. A small stool is placed in front of him on which the bowl of food is put and he then plunges his face into it and eats like an animal. Despite his condition he seems never to have suffered from any chest complaint.

II. A man aged 25 was admitted to the hospital three years ago for an old injury to the cervical spine.

History: Nine months before, he was carrying paper in heavy packages from a cart into a shop. He was accustomed to carry 90 lbs. weight, that is, two packages each of 45 lbs. weight, on his shoulders at one time. At the time of the accident he already had one package on his shoulders and the carter had lifted the second package to place on this when it slipped from his hands and came down with a jar on the back of the man's neck. The patient felt something "give" in his neck, and when he recovered his balance found his head fixed backwards with the occiput against the shoulders and the face looking upwards, and unable to move it from this position. Patient was taken to his home and a native "bone-setter" was called in who forced the head back into the normal position by the exercise of considerable strength. Patient then found that he could move his head but little and had a lump on the left side of the spine.

Condition on admission: Bony lump to left of cervical spine which is rigid. Body thin, legs and arms weak. Right arm much weaker than left; says right leg is weaker than left, no evidence of this. Can walk about two miles. No anaesthesia or hyperæsthesia.

Treatment: Offered laminectomy but after explaining the risks the operation was refused.

Patient returned to the hospital this year when the following changes in his condition were noted: More wasted. Great weakness of both legs and arms, no distinction between sides. Weakness has been progressive since his former stay in hospital and for past fortnight
The China Medical Journal.

has been unable to walk. Exaggerated knee-jerks and ankle clonus. Spastic gait. No pain. Patient was anxious for operation whatever risks were involved and I therefore consented to do a laminectomy. At the operation, on separating the muscles, the lesion was found to be a dislocation of 2nd and 3rd vertebrae backwards with rotation of the spines to the left; further, the spines themselves were fractured and involved in a mass of callus which formed the lump mentioned above. Spines and laminae of 2nd, 3rd, 4th, and 5th vertebrae removed, relieving the cord from all pressure. Theca not opened. Patient stood the operation well, but later developed pneumonia and died.

James L. Maxwell, M.D. (Lond.).

Annual Report, Tainan Hospital, Formosa.

TREATMENT OF ASCITES BY CALCIUM CHLORIDE.

Since coming to this station three years ago, we have noticed, every now and again, cases of ascites of which no definite pathological conditions were ascertained beyond the following facts:—(1) there was no great enlargement of the liver, sometimes it was somewhat smaller than normal: (2) there was in most cases no enlargement of the spleen, and when this had occurred, it was generally old and put down to chronic malaria: (3) no pain: (4) always indigestion: (5) patient always emaciated, sometimes very severely: (6) never general oedema, sometimes slight swelling of feet: (7) always slight icterus: (8) patients nearly always over 35 years of age: (9) the condition is rarely seen in women. No history of fever was given, and only in a few cases was syphilis recognised from lesions new or old, or from personal statements. The faeces were examined in many cases, though not over long periods, usually only once or twice, but no regular results were found: Asc. Lumbr. often present; Anky1. duod. or Schist. Jap. found in one or two cases. Tapping was always the first requisite and often the last also. Fluid varied greatly in sp. gr. and amount of albumen. Urine often with slight amount of albumen. Epistaxis not infrequent. Most gave a history of chronic indigestion with commencing fulness of abdomen, and within a month or six weeks had to present themselves to be relieved from the fluid. Thereafterappings were necessary every ten or fifteen days, 15-25 'chin' (fl) of fluid being the amount usually drawn off. A few cases, not more than about 5%, seemed to recover spontaneously after a few tappings. A larger number to our certain knowledge died. The greater part of
them simply passed out of ken after two or three months treatment without much benefit. Needless to say we tried many kinds of remedies, medical and otherwise, short of opening the abdomen and attempting to promote compensatory circulation through adhesions, but without much benefit. One or two cases seemed to get a good deal of benefit from the reinjection of about 20 cc. of the fluid into the abdominal wall or the thigh. A distinct increase in the number of such patients towards the end of last year, and the results of treatment of one of these cases have led us to take a much deeper interest in the matter. A short history of this patient will give the reason for writing these notes.

Mrs. A., aged 40, wife of native doctor, came in middle of last year complaining of abdominal ascites. Past history gave nothing of seeming importance beyond possible nephritic trouble over 20 years before. No syphilis, no opium or alcohol habit. Except for slight indigestion was in good health till 6 weeks ago, when abdomen commenced to swell. All kinds of native treatment carried out by husband and others, including severe needleling, but with no result. Treating her first as out-patient and then as in-patient, we tried all we could do with saline purges, medicaments of various kinds including Mercury and Pot. Iod. (which in no cases seemed to be of much benefit), and other measures, but without avail. She required tapping every 10 or 12 days regularly, and seemed to be sinking all the time. After the 15th or 16th tapping, she had a slight attack, seemingly of pneumonia, which vigorous treatment aborted. After 21 tappings with the removal of over 500 'chin' (7) of fluid, she seemed very low, indeed we should have sent her home but for the fact that there was no one at the hospital to take her. It struck us however that there might be some blood condition to account for this continued outpouring of fluid into the abdomen, and as a sort of despairing effort we prescribed Calcium Chloride and Glycerine. To make a long story short, she was not again tapped, but day by day seemed to grow out and fatten before our eyes. In 30 days she was sent home (i.e. last February) and our chief assistant and colporteur who saw her this month (August) reports that she is in excellent health, and no sign of the old trouble present.

If this were a solitary case it would hardly be worth reporting. But during the last eight months we have tried this same treatment on a number of similar cases of ascites, and with one or two exceptions, chiefly due, we think, to patients not reporting themselves, it seems to have been uniformly successful in curing or greatly relieving the condition. We give below, very shortly, two examples out of many:

B. male, 55., ascites (as above); tapped 9 times, no better: put on Calcium Chloride and Glycerine, no further tapping needed. After 4 months' treatment, patient was as well as before the trouble came on.

C. male, 46, tapped twice March 8, and 20, put on Calcium Chloride and Glycerine. Returns August 19, for tapping; only 8 'chin' (7) removable.

We fully admit that this report is only very partial. We have as yet but scratched the surface of the subject, and a sina qua non is the full examination of the blood conditions, before, during, and after the treatment. This we hope to carry out and report upon in the near
future. In the meantime, as it is unlikely that the condition is limited to this district, we ask that those who meet with it in other parts will not only give this method a trial, but will also give their aid in seeking out these blood and other conditions. The routine prescription we use is as follows:—

By
Calcii Chloridi ................ gr. x.
Glycerini ................ m. xl.
Misturae Albæ ................ ad. fl. oz. ½.

Sig. t. i. d. ........................... M.

J. H. Lee Paterson, M.B., Ch.B.

THE LABORATORY.

CONCENTRATION OF HELMINTH OVA FROM FACES. In 1909, Dr. Bass, in the U. S. Public Health Bulletin (No. 32), described a method of concentrating the ova in faces so that in one preparation there are as many ova as would be found in a large number of slides prepared in the ordinary manner. The principle of the technic is ingenious and useful but as described it seems unnecessarily laborious. We believe that the essential points of it are preserved in the following somewhat shortened form which we are now using in Hope Hospital, Hwaiyuan.

A portion of the faces the size of a walnut, or somewhat smaller, is mixed with 30-50 cc. of water and strained through a sieve, 90 meshes to the inch. The faces and water are then centrifuged in successive portions, the supernatant fluid being
poured off each time and more of the mixture added until all has been centrifuged, which will require three to five centrifugings. The water from the last centrifuging being poured off, the tube is filled up with calcium chloride solution (calcium chloride, 42.5 gm. water 100 cc.). The contents of the tube are well mixed and again centrifuged. This time the ova float on the top of the fluid and are drawn off by pipetting the top layer of about 1 cm., and transferring to another tube which is filled with water. They are now given a final centrifuging and are thrown to the bottom of the tube whence they may be drawn off by a fine pipette and transferred to a slide. At each centrifuging, fifteen to thirty turns of the handle of an ordinary hand centrifuge are sufficient. The whole process can be readily completed in well under ten minutes. Time is saved by putting through two specimens at once or as many as there are arms to the centrifuge. It is our practice to have the work done by the laboratory orderly up to the point of pipetting off the top layer of the heavy calcium chloride solution; from then on the examination is performed by a laboratory student, with occasional checking up by myself.

The preparations thus obtained contain only a very small fraction of the material that occupies the field in one made in the usual manner, but the eggs, if present at all, are found in immensely larger number. Often practically nothing is left on the slide but ova. The search of such a specimen is so much less fatiguing to the eye than is the old method of examining the whole faeces that, if it is once tried, one is not likely to return to the older technic. The moderate time occupied in centrifuging the specimen is saved over and over again when it comes to the search under the microscope, the method is undoubtedly more efficient and the relief to the eye is most grateful.

Recently, as a matter of comparison, I had a specimen examined by both methods; a slide of concentrated faeces showed 83 ova, while not one was found in a slide prepared after the usual fashion.

At first I was a little apprehensive lest there should be occasional errors, the ova from one patient clinging to the glassware and being carried over on to the slide prepared from another patient's faeces. As a matter of fact we have never thus far failed to find hookworm in the faeces of a patient after a course of beta-naphthol when the laboratory had given a positive report on the case.

We have been using this method for several months making a routine examination of the faeces of all our ward patients. Of the last 144 patients examined, 45.8% had Uncinaria; 75.7% Ascaris; and 33.3% Trichocephalus. Of the 144 cases, eighteen were admitted to be treated for Hookworm and should be eliminated from the calculation. Making this allowance, 38% of the ordinary run of our patients have Uncinaria.

HOPF HOSPITAL, HWAYUAN.

SAMUEL COCHRAN, M.D.

NEW METHODS OF STAINING MALARIAL PARASITES. Dr. Von Ezdorf, Public Health Service, New Orleans, has made some interesting observations on his method of obtaining the malarial parasite index of a given community. (Public Health Reports, Vol. XXVIII, No. 52, December 26, 1913.) He has found that he can secure blood smears from school children most expeditiously and with the least difficulty. At times he has tried house to house canvasses, and public lectures, but as a rule these people are not so willing to "give a drop of blood".

His method of procedure is as follows: two smears are made from each child, a thin smear, and a thick one. His thin smear is similar to what we all have been accustomed to use, but there are certain advantages in the thick smear. The blood is more concentrated, thus making a prolonged search for the parasite unnecessary. The time usually required for a careful search is from five to ten minutes, the routine for the thin smear being twenty to thirty minutes. A good thick smear is one that will show an average of twenty-five to thirty leucocytes to
The China Medical Journal.

each field. After the parasite is found in the thick smear, the thin smear allows of more careful study and diagnosis.

The thick smear is made by the blunt, rounded end of a steel writing pen, the sharp end being stuck into a cork. A large drop of blood is secured on the clean glass slide, and the smear is made by a circular movement of the pen. The resultant circular smear should be about 3/4 inch in diameter.

Dr. Von Ezdorf uses a watery solution of the Giemsa stain, made as follows (after first fixing specimen in methyl alcohol):

- 0.1 per cent watery solution of eosin ... ... ... 5 cc.
- 0.1 per cent watery solution of azur ii ... ... ... 5 cc.
- Distilled water ... ... ... ... ... ... ... ... ... ... ... ... ... ... ... ... ... 40 cc.

This gives a good polychrome stain, showing the parasite blue, with the chromatin deep red. It also stains the leucocytes so that a differential count can be made.

The object of this paper, however, is to give our experience with a new method of staining the malarial parasite, which seems to us destined to supersede all other methods. It was devised by Major Frederick F. Russell, M. D. Canal Zone (Journ. Amer. Med. Assoc. June, 1915.). The underlying principle of this method is to combine the advantages of the methyl alcohol stains of Wright, Leishman, and others, with the recognized good points of Manson's Borax Methylene Blue stain, since it is well known that Wright's and Leishman's stains give a beautiful picture of the malarial chromatin, but they fail to bring out the cytoplasm with the distinctness of Manson's stain.

The procedure is as written below:

1. Fix and stain for two minutes in Wright's, or some other methyl alcohol stain. (Use air tight Coplin Jar with about 50 cc of stain, so as not to get precipitation due to the evaporation of the alcohol. The perpendicular position of the slide also makes precipitation less likely. The stain can be used repeatedly.)

2. Without washing, transfer to a glass of tap water for from three to five minutes.

3. Without washing, transfer to a dilute solution of Manson's stain for from twenty to forty seconds, preferably twenty. (Seven drops of the concentrated stain added to 50 cc of tap water gives the proper dilution.)

4. Wash and dry quickly, and examine.

(Manson's concentrated stain is made as follows: Add 5 grams of borax to 100 cc of boiling water, and then add 2 grams of methylene blue powder, medicinally pure. This solution will keep well, but the dilute solution should be made up each day.)

Since reading Major Russell's article, we have made a number of unusually satisfactory stains of the malarial parasite in our laboratory, both of the tertian and quartan varieties, and we have been especially struck with the beautifully clear differential stains given to all classes of leucocytes.

If uniform results are to be secured, the directions must be followed exactly, and the Wright's, or other methyl alcohol stain, must be in good condition. The Burroughs Wellcome & Co. tabloid stains give most excellent results. The slide must not be allowed to remain too long in the methylene blue solution, or the red cells will be too dark. Even less than twenty seconds does very well.

Major Russell closes his article with the words: "The whole point of the method, so far as the malarial parasite is concerned, is that an intensive cytoplasmic stain is added to the excellent chromatin stain obtained by the Wright's, Leishman's, MacNeil's, and other methyl alcohol stains, making the parasites much more distinct, and more easily and quickly recognized in the routine examination of many slides."

R. V. Taylor, Jr., M.D.

Baptist Hospital, Yangchow.
THE MORPHINE EVIL IN CHINA

Indignation against those engaged in the nefarious traffic and pity for the victims of it, must be the feelings of all well-wishers to China as they read the letters sent to the North-China Daily News describing the manner in which the use of morphine is being fastened upon the Chinese in Manchuria, Shantung and other places.

The best and most enlightened of the Chinese have been struggling hard for a long time, and with some measure of success, to rid their country of opium smoking and its attendant evils. In 1914 the quantity of opium imported was only 997,066 lbs. as compared with 2,418,400 lbs. the previous year. And since January, 1909, the importation of morphine and morphine appliances, except in certain specified cases, has been prohibited.

Nevertheless, the importation of morphine is still carried on and is the basis of a most lucrative trade. According to the correspondents the trade is almost exclusively in the hands of the Japanese and has the full approval of the Japanese government. During the year 1913, six and a quarter tons of morphine were imported into Japan, and re-exported from Japan to Korea and China. The profits on this amount are estimated to be £840,000. As there has been no denial of these public allegations, their correctness may be assumed. Well, there are more ways than one of cursed a country. The easiest and most speedy is to lead a people to accomplish voluntarily its own destruction, the method advised by Balaam, the double-minded prophet of Old Testament times,
Apparently, this is the course that is being taken among the Chinese in the districts mentioned, and there is great danger of the destructive evil spreading.

But the Japanese are not alone to blame. Of the 6½ tons of morphine imported in 1913, one firm of British manufacturing chemists of Battersea, near London, supplied the Japanese with 2½ tons, and two tons were sent by other British firms of Glasgow and Edinburgh. German firms sent 1 3/4 tons. No wonder idealists and reformers are disheartened in these days by what is being done in Christian lands.

However, the fight against evil must be waged, in spite of all discouragements, and the question arises, as medical missionaries of the Christian religion whose one aim is to help the Chinese people, what can we do to protect and save them? Their own government is either supine or unable to suppress the traffic. The Japanese government is said to sanction it. Other governments are not likely at the present time to interfere. Various suggestions may be offered such as the more vigorous education of the Chinese as to the dangers of morphine, refusal by medical missionaries to deal with the British firms engaged in this traffic, and the passing of a resolution on the subject at our next Conference. But these measures seem so weak and partial that we hope our Association will consider the matter and devise a thoroughly effective plan of campaign against an evil which in time, if not checked, may so develop as to bring disaster to the whole nation.

THE PREVALENCE OF BERIBERI.

The careful and wide study of Beriberi among the rice-eating natives of the Philippine Islands shows that in its mild forms, and in infants, it is a disease far more prevalent than was formerly supposed. As the diet and social habits of the Chinese are very similar to those of the Filipinos, and they also prefer the polished to unpolished rice, it would be interesting to know, for the light it might possibly throw on the etiology of the disease, if the mild and infantile cases of beriberi in this country are anywhere as common, outside of prisons and other public institutions, as in the Phillipines.
At the last annual meeting of the Philippine Islands Medical Association, the President, Dr. N. M. Saleeby, in his address on this subject stated that he considered the prevalence of beriberi to constitute the most important medico-economic problem of the Philippine Islands. Dispensary experience had shown him the widespread distribution of subacute, chronic, and recurrent beriberi. In 1907 he examined in one day 64 patients at the dispensary and detected 40 cases with cardiac affections. Within the next few months new and acute cases of beriberi were definitely diagnosed. This latter finding explains the etiology of the cardiac affections noted above. Emphasis is laid on the fact that mild or light symptoms of beriberi, particularly when edema is not marked, often pass unnoticed by the general practitioner. Earlier observations are corroborated for the coincidence of beriberi and the puerperium after uneventful delivery; the mother may be partially paralyzed. In some cases the paralysis amounted to complete paraplegia, but the majority presented partial paralysis, accompanied by a group of symptoms generally referred to as polyneuritis. The new-born child of such mothers is affected; even subacute attacks, combined with deficiency of milk, suffice to produce the disease in the child. Weaned infants and children of all ages are as apt to contract the disease as adults. Diagnosis of mild cases in children is difficult, and treatment should be encouraged on grounds of suspicion alone.

From data available and from his own experience Doctor Saleeby then reasserted the extensive existence of beriberi in mild form, which though benign in itself considerably lowers the vitality of the individual, reduces his capacity for labor, and puts him at a great disadvantage in combating tuberculosis and other diseases. Further, in certain states of reduced vitality—as in the puerperium and infancy and during famine and hard times—this benign beriberi becomes fatal, spreads rapidly, and does more harm than tuberculosis or any other affection.

In conclusion, he urged the Government control of the milling of rice and the elaboration of the diet of the Filipino through education, and by the increased production of potatoes, beans, cattle, goats, and swine.
THE CHINA MEDICAL BOARD IN MUKDEN.

The members of the China Medical Board have arrived in China and are now perfecting the plans for the development and maintenance in various provincial centres of medical schools for the education of Chinese students. It is intended also to aid hospitals, establish medical scholarships and fellowships, open nurses' training schools for Chinese girls, and in other ways do all that is possible to strengthen and extend the foundations of medical practice and nursing in this country. Dr. Wallace Buttrick, of the ministerial profession, as a member of the Southern Educational Board has done much to promote the moral and social welfare of a large section of the people in the Southern States. He will act as Director of the China Medical Board in the United States. Mr. Roger S. Greene, Resident Director in China, was formerly the American Consul-General in Hankow. During the stormy days of the Revolution of 1911, he completely won the confidence and esteem, not only of his own people, but also of all the foreigners in the district. Dr. W. H. Welch, of Johns Hopkins University, and Dr. Simon Flexner of the Rockefeller Institute, New York City, have such world-wide reputations as to need no introduction to our medical readers. Dr. F. L. Gates is another member of the party.

During their journey north to Peking and other places, the party visited the Medical School and Hospital of the South Manchurian Railway, Mukden, accompanied by Dr. C. W. Young, the Dean of the Union Medical College, Peking.

The thoroughly modern buildings of this Japanese institution have been recently completed and equipped at a cost of Yen 800,000. The hospital has a staff of thirty-one doctors, three pharmacists and seventy-five trained nurses. The nurses are all women. The total number of people connected with the hospital is one hundred and sixty-six. The yearly cost of maintenance is Yen 150,000. The receipts from patients and physicians' fees amount to Yen 60,000 a year. All the members of the staff are Japanese as are most of the patients. The doctors connected give all their time to the hospital, and fees for consultations go into the hospital receipts.
The medical school building is arranged in a double quad­range. One court is used as a range for the animals used for experimental and teaching purposes, and the other as a flower garden. Class rooms, amphitheatres, laboratories, etc., are conveniently arranged for the different departments of instruction. There is a well lighted dissecting room with some thirty tables. During the visit two cadavers were in use and there was a fairly ample supply in storage.

In the medical school are twenty-nine full professors who give all their time to the college work, three assistant professors, and eight lecturers. Both Japanese and Chinese students are received. The registration shows:

- Senior year, Japanese students, 11; Chinese, none.
- Junior year, ,, 17; ,, 4.
- Sophomore year, ,, 38; ,, 10.
- Freshman year, ,, 30; ,, 23.

The entrance requirements are graduation from a middle school or its equivalent, with a knowledge of Japanese, and of English or German. Chinese students are given two years preparatory work for the medical course. The Japanese students pay a yearly fee of Yen 30.00. The Chinese students pay no school fees and their support is borne by the Chinese government.

The plant and equipment, thoroughly modern and complete, are probably the best that can now be found in China. From appearances it is evident that the Japanese are doing very good work, and one cannot but admire their enlightened policy in this direction. From different parts of the world, China is now receiving, almost free of cost and trouble, the best the world can give in medicine, and when this is combined on the spiritual side with the work of the missionary societies, as it will be in the medical centres founded or strengthened by the Rockefeller Foundation, surely a brighter day will dawn for the people of this great country.
UNION MEDICAL COLLEGE, PEKING

By an agreement signed at New York on June 2, 1915, the London Missionary Society agreed to transfer to the China Medical Board the property now being used by the Union Medical College at Peking, including the Men's and Women's Hospitals, dispensary and residence compounds. Later, the China Medical Board agreed to assume the financial responsibility for the College from July 1, 1915, and in accordance with this decision the Board is now paying the salaries of the whole staff of the College.

The plans for the new organization of the College have not yet been fully carried out. Most of the members of the new board of trustees have, however, already been designated. They include a representative from each of the six missionary societies interested and seven members chosen by the China Medical Board, among whom is Dr. John R. Mott. The three members of the China Medical Board who are now in China, Dr. Wallace Buttrick, Dr. William H. Welch, and Dr. Simon Flexner, are also to be among the trustees of the College. It is probable that the new board of trustees will not be formally organized and in a position to take over the management of the College until early in the coming year. Meanwhile the institution is being conducted as before by the existing board of managers and the faculty.

THE NATIONAL MEDICAL ASSOCIATION OF CHINA

BY THE HONORARY SECRETARY.

For many years the output of western trained Chinese medical practitioners has increased steadily. Thanks to the zeal of medical missionaries, modern medicine has penetrated even the most inland places, and their assistants may now be seen almost everywhere spreading the benefits of medical science among the poor folk of China. More ambitious students have proceeded to Europe and America, taken the full course of medical study, done post-graduate work and returned to their fatherland to join their foreign colleagues in impressing the masses with the marked superiority of modern over ancient methods in the treatment and prevention of disease. Progress has been slow and at times not very encouraging, partly because of the innate conservatism of the Chinese people and partly because, as in other spheres of work, there has been no proper organisation or co-operation. The terrible outbreak of pneumatic plague in Manchuria of 1910-11 taught our officials and people a severe lesson, and helped to enhance the prestige of western methods of prevention of disease. Since that time more attention has been paid by all concerned to sanitary affairs and the establishment of isolation
hospitals for infectious diseases. The visits of President Charles W. Elliot on behalf of the Carnegie Endowment for International Peace in 1911-12, and of the China Medical Commission of the Rockefeller Foundation headed by President Judson in 1914, and the publication of their subsequent reports have helped to rouse the more educated classes to a realisation of the urgent need of introducing western methods in the treatment of disease. The decision of the Rockefeller Foundation in appointing Mr. Roger Greene as Resident Director in China to superintend the work of the China Medical Board will no doubt hasten this work.

The holding of the Biennial Conference of the China Missionary Medical Association in Shanghai in January 1915, therefore afforded a splendid opportunity for Chinese doctors to meet together and discuss a matter which had been present in the minds of many for several years, namely, the foundation of a Medical Association of Chinese practitioners. Over twenty Chinese doctors who were in Shanghai on February 5th, attended, including Drs. F. C. Yen of Changsha, Wu Lien Teh of Harbin, Ida Kahn of Nanchang, Mary Stone of Kiukiang, Liyuen Tsao of Nanking, E. S. Tyau and others of Shanghai. As a result the National Medical Association of China (中華醫學會) was inaugurated, and a committee consisting of Drs. F. C. Yen (President), Wu Lien Teh (Secretary), E. S. Tyau (Treasurer) Liyuen Tsao, C. Voonping Yui and T. K. M. Siao was formed to draft the Constitution and By-Laws of the Association. Since the above date much work has been accomplished, the Constitution and By-Laws have been drawn up, and members numbering nearly one hundred, including graduates from the best known universities of the world, have been admitted. The first number of the Association’s official organ called the National Medical Journal of China (中華醫學雜誌) will make its appearance in English and Chinese next October, and arrangements are being made to hold a Conference of Chinese practitioners in Shanghai about the time of the Chinese New Year (possibly beginning with Feb. 6th, 1916).

I have been asked to write this article so as to draw the attention of colleagues, who are members of the China Missionary Medical Association, and request them to make known to their Chinese assistants the existence of this sister Association so that they may join and help in strengthening the hands of those promoting the welfare of medical science in China. We have already published a Directory of Chinese practitioners, a copy of which may be obtained from Dr. F. C. Yen of Changsha for 50 cents (Mex.). Every additional member is an encouragement, not only to medical science in this country but also to the member himself, for he will feel his interests guarded by a strong organisation. The full Constitution and By-Laws have already been printed and may be obtained from Dr. E. S. Tyau, 12 Seward Road, Shanghai, who will be glad to supply further information if required. To enlighten those who may desire to know the objects of the Association and the conditions of membership, I append the following:

The objects of the National Medical Association of China are:

1. To promote goodwill and union among Chinese practitioners of western medicine.
2. To maintain the honour and the interests of the medical profession.
3. To expedite the spread of modern medical science in China and to arouse interest in Public Health and Preventive Medicine among the people.
4. To co-ordinate and co-operate with the existing medical forces in China, Chinese and foreign, in the working out of the above objects.
There shall be three kinds of members:—

1. Regular Members. The following are eligible—
   a. Graduates in medicine of foreign universities or colleges recognised by their respective governments.
   b. Graduates of medical colleges in China who have a good reading and writing knowledge of at least one western language. Such colleges must be first recognised by the Association as acceptable.

2. Associate Members. The following are eligible—
   Graduates of medical colleges in China who have no knowledge of a western language. Such colleges must also be recognised by the Association as acceptable. Associate Members shall enjoy the same rights and privileges as Regular Members, except that they are not eligible as officers of the Association. Associate Members may become Regular Members on the recommendation of at least two Regular Members and after the approval of the Executive Committee of the Association.

3. Honorary Members.
   Honorary memberships may be conferred upon distinguished individuals and members of the profession of all nationalities who have rendered some signal service to China. These shall be proposed by the Executive Committee and approved by a voting majority of two-thirds members.

Wu Lien-teh.


Very few cases of serious illness have occurred amongst the members of the foreign community during the past year.

In April there was one case of typhoid fever. The patient, a male, made an uneventful recovery. The course of this disease was somewhat modified, and this, I believe, was due to the fact that the patient had been inoculated eight months previously. Except for one or two occasional cases, this port seems to be free of typhoid.

During the period under consideration several cases of Amoebic Dysentery have occurred, all of which quickly responded to hypodermic injections of Emetine Hydrochloride. Two cases occurred in women well advanced in pregnancy but no ill effects were observed. Both cases went to full term.

Among the Chinese is to be recorded a mild epidemic of Smallpox, which broke out towards the end of April and lasted till the beginning of June. While a severe epidemic of this disease was raging in the Wuhan district in the early months of the year Ichang was free from the disease. No figures can be given as to the number of those affected or the number of fatal cases. The number of natives asking
for vaccination is on the increase, but many do not come until the spring is well advanced. As a rule we do not vaccinate after the end of March.

Tetanus. During the twelve years that have elapsed since the opening of the Rankine Memorial Hospital no cases of this disease were recorded until November 1913. Since that date there have been four cases in hospital; two of which recovered and two of which died. Recovery took place in cases one and two, and death supervened in cases three and four. Cases one and two were treated with injections of a 15% solution of magnesium sulphate; no tetanus antitoxin was used. Case three, treated with antitoxin and magnesium sulphate, died a week after the onset of symptoms. Case four, treated with antitoxin alone, died twenty-six hours after the appearance of symptoms.

Ankylostomiasis. Cases of profound anaemia due to Ankylostoma Duodenale are very numerous. It is, however, difficult to get many of these patients into hospital for treatment. Hospital cases, treated with Beta-Naphtol followed by iron and arsenic do well.

Asthma. This disease has been seen more frequently in our out-patient department during the past two years than formerly. The question suggests itself, has the prohibition of the use of opium anything to do with this increase?

T. CHALMERS BORTHWICK, M.B., Ch.B.,
Medical Officer.

Ichang, September 1914.

REPORT OF FUKIEN BRANCH OF C. M. M. A.

Three meetings were held by the Fukien Branch of the C. M. M. A. at Kuliang, on August 9th, 16th, and 23rd respectively. Twenty-four physicians were present at Kuliang this year, and the average attendance at the meetings was twenty-two. The papers were exceptionally fine, and the discussions interesting and instructive. A number of pathological specimens were exhibited and later presented to the Foochow Union Medical College.

The program was as follows:

The Committee on Social Service connected with the Eddy Evangelistic Campaign, sent lantern lectures, pamphlets, and tracts on Tuberculosis, Plague, and Sanitation to various parts of the province. Much interest has been aroused by this campaign. Plague prophylactic inoculations have increased in some places, the officials offering to provide the serum for free inoculations.

Officers for the year were elected as follows:—

Dr. H. M. Churchill, President; Dr. G. Wilkinson, Vice-President; Dr. Lena Hatfield, Secretary-Treasurer; Dr. J. H. Montgomery, Dr. Mary Shire, and Dr. J. H. Lamb, as the Executive Committee.

HEALTH AND HOSPITALS IN HONGKONG.

A Report on the Blue-book of Hongkong, prepared by Mr. Claud Severn, Colonial Secretary, has been received at the Colonial Office and presented to Parliament. From this it appears that at the Census taken on May 20, 1911, the Chinese population amounted to 444,664 and the non-Chinese civil community numbered 12,075, making a total of 456,739, of whom 104,287 reside in the New Territories and in New Kowloon. The estimated total population at the middle of 1913 was 489,114, but this included the New Territories, and as the birth and death figures do not include those from this area (with the exception of New Kowloon) the population for the purposes of calculating these rates is estimated at 398,520, of whom 21,740 were non-Chinese. The general birth-rate for the year was 11.7 per 1,000 among the Chinese community, and 15.8 per 1,000 among the non-Chinese. The general death rate was 21.75 per 1,000 among the Chinese community and 10.9 among the non-Chinese. The number of deaths from malaria (290) showed a considerable decrease on the previous year (432). The deaths from plague numbered (386) as compared with 1,768 in 1912. Smallpox deaths numbered 84, all Chinese but two. There were 2,537 deaths from respiratory diseases among the Chinese, as compared with 2,317 in 1912. Pulmonary tuberculosis and phthisis claimed 885 Chinese victims, while other forms of tuberculosis represented an additional 384 deaths, making a total 1,269 or 15.5 per cent. of the total deaths among that community. Beri-beri was responsible for 339 deaths as compared with 231 during 1912, and 320 in 1911.

There can be a very little doubt that the Chinese quarters generally are still in an overcrowded condition, and although the incidence of plague was light during 1913 there is reason to fear that the colony may not continue to be so fortunate. The Sanitary Department are
Health and Hospitals in Hongkong.

continuing their efforts to keep down the number of rats and to exclude them as far as possible from dwellings, while the scavenging service is also being strengthened with a view to reducing still further the available food supply of the rat population. The mean shade temperature for the year at Kowloon (108 feet above mean sea level) was 71.9° the same as in 1912 and the ten preceding years. The hottest month was July, with a mean temperature of 82.8° and the coldest January, with a mean temperature of 59.2°. The temperature at the high levels of the Peak district is from 3° to 8° less than at Kowloon. The total rainfall for the year was 83.73 inches as compared with an average of 80.85 inches during the ten preceding years.

The policy of the Government in controlling the importation and sale of morphine, compounds of opium, and cocaine was vigilantly maintained throughout the year, and the use of these drugs in the colony is now exclusively confined to medical purposes.

To avoid the complete seclusion from friends and relatives which removal of Chinese plague patients to the Kennedy Town, Infectious Diseases Hospital entailed, four district plague hospitals are now maintained by the Chinese in various parts of the colony. These are under the management of the Chinese Public Dispensaries Committee, which body also controls the eight dispensaries in existence, including one on a hulk in Causeway Bay for the boat population. The whole cost of maintenance is defrayed by voluntary subscription. These institutions provide the Chinese with the services of doctors whose certificates will be accepted by the Registrar of Deaths, and with the services of interpreters who can assist the inmates of houses where cases of infectious disease have occurred. Coolies are engaged and ambulances and vans are provided in order to remove cases of infectious diseases to the Infectious Diseases Hospital and dead bodies to the mortuary. The dispensaries also receive sick infants and send them to one or other of the convents and arrange for the burial of dead infants. Free advice and medicine are given and patients are attended at their houses.

The new Kwong Wa Hospital for Chinese in the Kowloon Peninsula was opened in the autumn of 1911; it occupies a site of three acres, and will ultimately provide accommodation for 210 patients. The Hongkong University is composed of three faculties: (1) medicine, (2) arts, and (3) engineering, and the medical faculty offers great facilities for the practice of medicine. The anatomical laboratories were the gift of a Cantonese gentleman, Mr. Ng Li-hing. There is a large staff of instructors in medicine, and all the principal doctors of Hongkong give lectures at the University.
The China Medical Journal

Medical and Surgical Progress.

Surgery.

Under the charge of J. C. McCracken, M.D., Shanghai.

TETANUS (Grundmann, Berliner klinische Wochenschrift, February, 1915).—The main point is to recognize the first symptoms, including slight difficulty in swallowing, sweating, starting at noises, bright light or sudden draughts, and dizziness, or twitching or stiffening of the muscles when they are tapped. The pulse was about 100 throughout the disease. Antitetanus serum was injected as soon as possible; the tetanus patient was kept in a quiet, dark room. Every hour some light digestible nourishment was given.

The wound was left at rest, as any attempt to resect the tissues at this late stage merely opens up new blood and lymph vessel paths for toxins and bacteria. The tetanus toxin is absorbed so rapidly that any operation usually comes too late. In some cases a splinter of wood or scrap of cloth or straw was left in the wound and was spontaneously expelled later. He merely dressed the wound with iodoform, after cleansing with hydrogen dioxide, and injected around the wound 80 or 100 antitetanus serum units to catch the toxin as it spread, repeating this for several days. An intravenous injection of the serum was made daily also to neutralize the toxin in the blood, supplemented the first and third day by lumbar intraspinal injection of the same amount. He never witnessed any signs of anaphylaxis even when a total of 150 units had thus been administered for several days in succession.

Most of the deaths from tetanus are due to the excessive accumulation of waste products in the muscles from their intense and prolonged contraction. This is combated best with magnesium sulphate, and he uses this freely. He never witnessed any disturbance in breathing or any respiratory paralysis, although he makes a practice of injecting subcutaneously, three or four times a day, 20 cc. of a 10 or 15 per cent. solution until the muscular contractions and rigidity have subsided. It is necessary to begin with tentative doses, not over 5 cc., and increase them until slight general anaesthesia is induced. A dose of 5 cc. of a 5 per cent. solution of calcium chloride or 1 mg. of physostigmin is used as needed. He never ventured to inject the magnesium sulphate into a vein or into the spine. The antitetanus serum treatment is kept up for from four to seven days.

In conclusion, he warns that a tent cloth or blanket should be thrown over straw before a wounded person is laid on it. Also that the wounded lying next to one with tetanus should be given a preventive injection of serum. He had two cases of tetanus develop in a crowded ward sixteen and twenty days after the men had entered it.

APPENDICITIS AND ASCARIDES.

M. Lassalle (Archives de Méd. des Enfants, Aug. 1915.)—CASE 1.

A healthy boy, aged 10 years, suffered from fever, dyspnoea and pain in the chest. There was right lobar pneumonia. Three days later a brother, aged 7, who occupied the same room was also found to be suffering from pneumonia, apparently due to contagion. The elder patient, apart from the symptoms of pneumonia, suffered from severe pain in the right hypo-
Surgery.

Chondrium. On examination this was found to be much increased by pressure over the cæcum at McBurney's point. Although palpation elicited some gurgling no induration could be felt, there was no increased resistance of the abdominal wall and the patient had not vomited. He was constipated and the stools could not be examined. Suspecting the presence of ascarides, the writer ordered a powder containing calomel and santonin. When seen two days later the patient had vomited a large ascaris and passed another by the bowel. The symptoms of appendicitis had disappeared, and those of pneumonia rapidly improved. A vermifuge was also given to the younger brother in spite of the absence of abdominal symptoms, but without result. He suffered a more severe attack of pneumonia, but recovered.

Case 2.—A delicate boy, aged 11 years, had right pneumonia. Two days after the onset he complained of severe pain in the abdomen which was increased by pressure over McBurney's point. The resistance of the abdominal wall was increased and rectal examination was rendered difficult by increased tension of the bowel. No mass could be detected in the vicinity of the cæcum. The patient had vomited once or twice. He was treated by calomel and santonin and next day he vomited an ascaris, but no parasites were found in the stools. The abdominal pain had ceased, the pulmonary condition improved and he was soon convalescent.

Ascarides should always be looked for when the symptoms suggestive of appendicitis are not typical, especially in districts where these parasites are common. The relations of the symptoms caused by the worm to pneumonia are not peculiar to that disease but are directly related to one of its principal symptoms—the increase of temperature. The ascaris is normally an inhabitant of the small intestine where it usually remains without doing much damage till it is expelled. Under the stimulus of a temperature approaching 104° it becomes more lively and is apt to migrate to the cæcum where its movements, and probably erosion of the mucous membrane, provoke the pain. Unless expelled by appropriate treatment, perforation of the intestinal wall in the vicinity of the cæcum may occur with more or less localized peritonitis.

Chief Intestinal Lesions encountered in One Thousand Consecutive Autopsies in Manila (Crowell, Philippine Journal of Science, September, 1914).—Excluding intestinal parasites and tumours and the lesions in bubonic plague, intestinal lesions were seen in 292 cases. Asiatic cholera stood first numerically. Second was intestinal tuberculosis, and attention has been drawn to the possibility of the occurrence of dysenteric symptoms in this condition and to the perforation of intestinal ulcers in three cases. Typhoid was present more frequently than either entamoebic or bacillary colitis, and these typhoid cases showed a high percentage of perforations (30 per cent.) and haemorrhages (12 per cent.), all of the cases being among Orientals. Entamoebic and bacillary colitis have been encountered with less frequency; liver abscesses occurred in 29 per cent. of the entamoebic cases, and in two cases the intestines had perforated. Bacillary colitis was present more frequently in children than in adults. Nine cases of duodenal ulcers were encountered, six of which had perforated, and fifteen cases of peptic ulcer of the stomach occurred in
the same series. Severe anaemia and symptoms referable to the gall-bladder were prominent in some of the cases of duodenal ulcer. Un-classified, probably non-specific, inflammatory lesions of the intestines, especially in infants, occupy an important place.

Internal Medicine.


CEREBRO-SPINAL MENINGITIS. One of the minor results of the great war has been that a large number of cases of cerebro-spinal meningitis have occurred where troops or recruits have been gathered together and consequently many of the acutest minds in the profession have been directed to a study of this disease.

It has been borne in upon the mind of the practitioner at home that the disease is protean in its features and especially in its mode of onset. He finds himself faced with manifestations of it that defy the knowledge he has got from text-books and teachers. It is not so much that his eyes are closed to the possibility of cases arising in his own practice as that he scarcely knows what to look for.*

This difficulty of diagnosis is illustrated by the fact that in three recent epidemics in England the disease was inaccurately diagnosed as sunstroke, enteric fever, pneumonia, sore-throat and influenza. In view of these facts it has seemed well to provide for the readers of the China Medical Journal a résumé of the recent advances that have been made, and to sound a note of warning. The disease must be constantly kept in mind and must be looked for.

*This paragraph (like most of those which constitute this résumé) is practically a verbatim quotation from one of the writers whose works are referred to at the end of this article. For the convenience of the reader the quotation marks have been omitted.

Etiology. The diplococcus intracellularis meningitidis (Weichselbaumii) is generally believed to be the causative agent, though E. C. Hort and his colleagues have suggested that this diplococcus may be merely a "late non-infective phase in the life history of the true infective agent" which may be the filter-passing organism which they have found in the blood, cerebro-spinal fluid and urine of many cases. Like the gono-coccus this is a gram-negative diplococcus and may be found inside or outside the cells; neither coccus is very viable away from the mucus membrane which is its seat of election, and both are liable to spread through the bloodstream to a second seat of election viz. the meninges or the synovial membrane of a joint. It does not long survive exposure to cold, dryness or direct sunlight and so infection is not spread by air, dust or fomites generally.

Care must be taken to distinguish it from the micro-coccus catarrhalis which is also a gram-negative diplococcus and is frequently found in the pharynx.

Pathology. According to Lundie the course of the disease may be divided into three stages:

Stage I. Catarrhal. A stage of purely local infection, a pharyngitis, which may have had the way prepared for it by some more robust micro-organism.

Stage II. Septicaemic. A stage of general infection of the blood-

Stage III. Meningo-encephalitis. A stage in which a direct effect is produced on the encephalon, which is affected chiefly by the toxins produced in the blood-stream.
stream* during which the diplococcus can be grown in culture from the blood or may even be found in blood films. During this stage there is a toxic action on the nervous system with excretion or escape of albumin into the cerebrospinal fluid which is thus transformed into a suitable culture medium for the invading organism. This leads to

**Stage III. Meningeal.** The stage in which there is a break down of the defences of the meninges, which become inflamed.

**Symptoms.** According to the symptoms met with and the course of the disease various types of cerebro-spinal meningitis have been described. Four varieties will be distinguished here, viz., typical, mild, fulminant and chronic cases.

**TYPE A. "TYPICAL".**

In a typical case the symptoms may be divided into three stages corresponding to the pathological processes going on in the body.

**Stage I. Catarrhal.** In a series of 170 cases the symptom which stands out predominant is an initial nasopharyngitis. Every patient has admitted to suffering from this. In practice attention is called to the existence of an abnormal throat condition by the huskiness of the voice and a complaint of dry cough. On looking at the throat the uvula is generally seen to be edematous and flabby, with the venous radi- cles standing out distended and tortuous. The anterior pillars of the fauces are reddened as is also the posterior pharyngeal wall. In this stage as there are no symptoms that occasion any alarm the condition is looked upon as a pharyngitis that may be complicated with laryngitis.

**Stage II. Septicaemic.** This consists in the addition of the symptoms of toxic absorption to those of Stage I:—Headache, pains in the back and limbs, nausea, vomiting. Fever (100°, 102°, 104°). Moderately accelerated pulse (the frequency of the pulse is apt to vary much from hour to hour and from day to day).

Flushed face and possibly conjunctival congestion.

Rigidity of the neck and retraction of the head. (Quite early it may be noted that the patient chooses to lie on his side and is uncomfortable if placed on his back)

Irritability of the nervous system, hyperaesthesia, intolerance of light and sound, exaggerated reflexes, **tache cérébrale**.

There may be exacerbations of great restlessness, so that it may be impossible to keep the patient in bed.

**Stage III. Meningeal.** At this stage the symptoms of nervous irritation give place to those of depression and stupor often sets in. The patient ceases to complain of light and sound but the headache is frequently complained of. The pupils are dilated and there is often strabismus or optic neuritis. There may be deafness and either incontinence or retention of faeces and urine. The reflexes may disappear and Kernig’s sign* can be elicited.

The pulse and respiration are slow.

* Kernig’s sign may be sought for in two ways:

(a) By raising the shoulders from the bed so that the body is bent at the hips: the legs will be drawn up into a position of flexion at the knee.

(b) By raising the fully extended leg with the body lying flat on the bed: as the hip becomes more and more flexed, the knee cannot be kept extended nearly as long as it can in health.
there may be cyanosis, and there is usually delirium, either maniacal or of the low muttering type.

Spots are not very common. Death may be due to exhaustion or respiratory failure or coma.

**TYPE B.** "MILD."

These are the cases in which many or even most of the symptoms associated with the recognised type of the disease may be absent, or so slight, or of such short duration, as to escape notice. There may be merely malaise, headache, pains in the back and limbs, slight fever and stiffness of the neck.

**TYPE C. FULMINANT.**

The earliest recorded example of the fulminant cases is as follows:—"The child . . . went out to his father to the reapers. And he said unto his father My head, my head. . . . and when (the servant) had taken him, and brought him to his mother, he sat on her knees till noon, and then died". (Quoted by Horder from II Kings iv).

A case has been recently described by Osler in which a healthy young man was attacked at 4 p.m. with pain in the head, dizziness and vomiting. At 6 p.m. he had convulsions. At 10 p.m. the temperature was 105°, the pupils were pinpoint, purpura was beginning to show itself, he was unconscious and the head was retracted. Shortly after 4 a.m. he died, the duration of the illness being little over twelve hours.

**TYPE D. CHRONIC.**

A certain percentage of the "typical" cases become chronic. The temperature falls, the headache and all distressing symptoms disappear, the appetite remains good, but there is frequent vomiting, and gradual wasting sets in. These cases usually die in about three or four mouths.

**Diagnosis.** In the first stage a diagnosis can only be made by the examination of cultures obtained from the pharynx. A special form of swab has been designed with a view to obtaining smears from the posterior pharynx free from contamination with buccal organisms.

In the second and third stages a safe clinical diagnosis would rest upon the concurrence of fever, headache, vomiting with stiffness of the neck, Kernig’s sign, tache cérébrale and a polymorphonuclear leucocytosis.

**a. Fever.** The temperature chart shows no constant type. The temperature usually rises suddenly and may attain a fairly high degree (103° or 104°) early in the onset. It may rise much higher and remain high, the patient dying of hyperpyrexia; it may resemble that of the second week of typhoid; it may show, at first or later, daily intermissions.

**b. Headache.** This is apt to be very intense. It is often localised to the occiput and shows little or no response to ordinary palliative drugs. It may be present along with delirium: Jenner emphasized the diagnostic value of this—which does not occur in typhoid fever.

**c. Vomiting.** If this occurs not merely at the onset of a fever, but continues for several days thereafter it is very suggestive of meningitis.

**d. Stiffness of the neck.** "Too much importance cannot be attributed to this sign which should be searched for early rather than allowed to attract attention after it has become a marked feature."
beneath the patients occiput and endeavour to bring the chin nearer the sternum in every case in which cerebro-spinal fever is suspected.

c. Kernig’s sign is nearly or quite equal to neck rigidity in its importance as a diagnostic sign.

d. Tache cérébrale was invariably present in a series of cases reported by Hobhouse.

e. Tache cérébrale was invariablv present in a series of cases reported by Hobhouse. 3

f. The polymorphonuclear leucocytosis is of value in that it enables one to exclude (inter alia) typhoid and paratyphoid fevers as well as tuberculous meningitis. A common figure in a case of ordinary severity is 20,000 to 25,000 per cubic millimetre.

In many cases, however, the diagnosis will be uncertain till confirmed by the results of lumbar puncture which should be practised in every suspicious case.* This raises the question “What constitutes a ‘suspicious’ case?” and to this many answers have been given:—'Headache, vomiting, retraction of head and retention of urine are very suspicious' 2 'An ingravescent headache, absolutely intolerable to the patient, is a very good reason for lumbar puncture at epidemic seasons.' 10 Other symptoms, fever vomiting, retraction, etc. may or may not be present. Again, the combination of either rash or vomiting or squint or rigidity with a clinical picture otherwise resembling influenza is very strongly suggestive of the need for lumbar puncture. 3

The following table shows a comparison between the state of the cerebro-spinal fluid in health and in cerebro-spinal fever.

CEREBRO-SPINAL FLUID.

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>*In health.</td>
</tr>
<tr>
<td>Mere trace.</td>
<td>Usually increased.</td>
</tr>
<tr>
<td>Gran-negative diplococci</td>
<td></td>
</tr>
<tr>
<td>Many polymorphonuclears</td>
<td></td>
</tr>
<tr>
<td>Trans yellow at once.</td>
<td></td>
</tr>
<tr>
<td>Few cells.</td>
<td></td>
</tr>
<tr>
<td>Granulomatous film.</td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td></td>
</tr>
</tbody>
</table>
| 2% to 1% | *In cerebrospinal fever.
| 2% (Globulin). | |
| 5% | |
| 1:1000 penicillin | |
| 0.2% Dextrose | |

Treatment. Prophylaxis. In order to prevent the occurrence of an epidemic of cerebro-spinal fever one must be constantly on the look out for the first case—which may be only catarrhal. One must examine those who have been in contact with this case so as to discover "carriers," i.e. people who show no symptom of the disease but reveal the presence of the meningococcus in the pharynx. Carriers often exist in large numbers (2% to 3% during an epidemic and .25% between epidemics) and may easily spread the disease in a severe form.*

* In a recent epidemic of cerebro-spinal fever a clerk in the office where these deaths were registered took the infection and died. He had no direct contact with anyone suffering from this disease and so must undoubtedly have been infected by some carrier who had come to register a death.
The disinfection of a carrier is carried out on the same lines as the treatment of a catarrhal case. In the catarrhal stage treatment must be directed to the removal of the meningococcus from its site on the pharynx. Many prescriptions have been recommended for this purpose, e.g., Sophian in a recent Texas epidemic found that hydrogen peroxide 7% with Argyrol 9%, used as a spray, destroyed the meningococcus quicker than any other measure—but the latest English workers have found that nothing is more effective than the use of a 1:1000 solution of potassium permanganate as a nasal and oral spray.

The treatment of the second and third stages may well be considered together for it has been conclusively shown that once the disease is established the sooner that Flexner's serum is introduced into the spinal canal the better is the prognosis. By this method of treatment the mortality has been reduced from 72% to 24%.

As regards the injection of this serum the following points must be noted:

1. The serum should be at blood-heat. (The unopened tubes of serum may be immersed in hot water).

2. The serum should be introduced by gravity. (On no account must a serum syringe be used to force it in).

3. The amount of serum introduced must be less than the amount of cerebro-spinal fluid which has been withdrawn by lumbar puncture; but, with this proviso, as much as 30 cc. should, if possible, be introduced every 24-48 hours.

If no anti-meningococcic serum is available (as must be the case in many parts of Chiuia), lumbar puncture should be performed and the spinal meninges washed out with normal saline solution.

Very good results have been recorded from the intramuscular injection of soamin, in doses of five grains on each of the first two days and thereafter as required, but Batten sounds a note of warning:— Soamin, being rich in arsenic, is liable to give rise to optic atrophy and other disturbances of the nervous system.

As the disease has already appeared in China in epidemic form, may it not be that some of us are passing by sporadic cases? A heavy responsibility rests upon us if in any doubtful case we refrain from performing lumbar puncture.

8. Local Government Board Memorandum (Dr. Newsholme), 1915.
Common Organisms in Heated Milk.—In the *Johns Hopkins Hospital Bulletin*, July 1915, Dr. Shippen describes his experiments to identify the most common organisms in heated milk, to ascertain roughly the temperatures at which they are recovered, and to observe what relation they bear to the reactions of the milk in which they occur. He reaches the following conclusions:

1. In milk heated to 60 and 65°C. for 15 minutes, *Streptococcus lactis*, *Bact. troilii* and the spore-bearers survive. They can be recovered from peptonized as well as from normally clotted milk, but their cultural activities do not completely explain the reactions of the milk in which they are found.

2. Other non-spore-bearing organisms are encountered occasionally in milk heated to 60°C. Their scarcity makes it seem possible that they play an unimportant rôle in the reactions of heated milk. They were not encountered in milk heated to 65°C.

3. No gas-producing aerobes were isolated from milk heated to 60°C.

4. From milk heated to 70 and 85°C. only the aerobic spore-bearers were recovered by the common method of plating. The cultural activities of this group do not explain the reactions seen in milk heated to these temperatures.

5. *Bact. Welchii* assumes the power of growth in milk under aerobic conditions when transferred to this medium with the common aerobic spore-bearers or with *Bact. troilii*. Under these circumstances its reactions overwhelm those of the bacteria with which it grows.

6. When the organisms employed are heated 60°C. *Streptococcus lactis* inhibits the action produced upon milk by *Bact. welchii* in the presence of *Bact. troilii* and the aerobic spore-bearers, provided these are not markedly in excess.

7. *Streptococcus lactis* fails to inhibit this reaction when the aerobic spore-bearers are present in vast numbers, or when no heat is applied.

8. It does so after heating to 65°C. only in the presence of a slowly acting strain of *Bact. welchii*.

9. The reactions observed in milk heated at temperatures ranging from 60 to 85°C. may be simulated, in the presence of *Bact. welchii*, by the growth of the aerobes commonly surviving the temperatures considered, after the application of the desired degree of heat.

The Fattening of Children.—Prof. Engel, in the *Berlin Klin. Woch.* March, 1914, states that the chief difficulty encountered in the fattening of thin children is the poorness of their appetites, even a tempting variety of food being distasteful when given in the necessary quantities. The food must not only be acceptable, but it must also not clog the appetite. In most cases cream alone will ensure the desired gain of weight if given on the writer’s principles. It must not be given in small quantities during the day, but in one dose in the evening. In this way the child’s appetite for the ordinary meals is not spoilt. These are run somewhat together, so that the last is given between 5 and 6 in the evening, no effort being made to stuff the child at these meals. Two
to three hours after the last meal, the cream is given in bed. Beginning with a wine-glassful, the child takes rapidly increasing quantities, half-a-litre or more being ultimately taken without the slightest difficulty. As half-a-litre of a 15 per cent. suspension of cream represents 800 to 900 calories, and as a healthy boy of 10, weighing 30 kilos, requires only 1250 calories when at rest, the value of this meal of cream is obvious. It is necessary, of course, for the child to eat as much as before at the ordinary meals. Although 1250 calories are sufficient for a boy of 10 at rest, an addition of 30 to 50 per cent. is necessary when he is up and about.

This effect of exercise is obvious enough to be a truism, but it is often neglected. It may be advisable to keep the child in bed altogether at first, and later to limit the period out of bed to 3 to 5 hours. The first 2 meals in the day may be taken in bed, the patient then getting up and going to bed again for 2 or 3 hours after the mid-day meal. In practice it is often difficult to limit the movements of a nervous, restless child, who wants change and employment, especially when a quiet and darkened room cannot be reserved for him. In difficult cases the writer does not hesitate to give, during the first few days, tablets of bromural, containing 0.3 gm., twice to three times a day. When these precautions, superintended by a tactful nurse, prove futile, it may be advisable to remove the child to a special hospital. Arsenic, in the form of Fowler's solution, is a useful supplement to the treatment already described.

Ophthalmology

UROTROPIN IN SEPTIC INFLAMMATIONS OF CORNEA AND CONJUNCTIVA. In The Indian Medical Gazette, June 1915, Dr. Kirkpatrick writes: "It is well known that urotropin is excreted in many of the body secretions if taken in fair sized doses, and the fact that it is found in the cerebro-spinal fluid would lead one to suppose that it might possibly be contained in the ciliary secretion; this view, however, is not correct, as Captain Cross, the acting chemical examiner at Madras, was unable to detect any of the drug in some specimens he was kind enough to examine for me, of aqueous humour obtained previous to cataract extraction from the anterior chambers of patients who had been dosed with urotropin. The clinical results of treatment by the drug in cases of septic infections of the iris, cornea and conjunctiva were sufficiently good to lead me to believe that if not excreted by the ciliary body it was undoubtedly so by the lachrymal gland, and this belief is confirmed by Major Miller, the chemical examiner, finding it in the tears of a patient with a septic ulcer of the cornea who was under urotropin treatment.

The first patient on whom the treatment was tried was seen by me five days after a cataract extraction had been performed. The edges of the corneal wound were much infiltrated and partly sloughing, the anterior chamber was half full of pus and the pupil was blocked by exudate, vision was reduced to perception of hand movements. He was put on urotropin 15 grains every four hours and given a subconjunctival injection of cyanide of mercury with
atropin and irrigations in addition. He cleared up in a very striking manner and in four weeks' time had a quite useful eye, with a vision of 6/36 when corrected. I am convinced that had it not been for the use of urotropin he would have lost the eye.

A second case was that of a man who suffered from gonorrheal ophthalmia. The right eye had been attacked three weeks previous to my seeing him and the left was infected a few days later. When first seen the right cornea had sloughed completely whilst there was an ulcer on the left with a prolapsed iris. The bulbar conjunctiva of each eye was very chemosed and the palpebral excessively papillary with a profuse purulent gonorrheal discharge. His general condition was bad. He was given the usual treatment with the addition of 15 grains of urotropin three times a day, and I was much struck by the rapidity of his improvement. In 12 days the conjunctivæ were nearly normal. Unfortunately, after three weeks' treatment he insisted on going home, his left eye being then practically well with fair vision but in danger from the large anterior synechia.

I have treated several cases of hypopyon keratitis with urotropin given in doses of 15 grains thrice daily, and am quite sure that it has hastened the cure of the disease. It will often be found sufficient to use urotropin with atropin and a paracentesis will only be occasionally necessary. I have no doubt that hexamethylene-tetramine is excreted also in the nasal secretions, as I have found it a specific for the acute type of infectious cold. It seems to act best when the cold is about 24 hours old, so that formalin inhalation, ammoniated tincture of quinine, etc., still have their uses during the first few hours. I have not found patients complain of any discomfort when taking 45 grains a day, but when taking 15 grains every two hours myself I found it gave rise to considerable irritability of the bladder which passed off about four hours after taking the last dose. The exceedingly heavy cold from which I suffered on this occasion was completely cured in 24 hours."

Some Aspects of the Ciliary Body in Health and Disease. H. Percy Dunn, F. R. C. S., in The Lancet, May 1915, points out that toxins in the aqueous derived from the blood act as irritants upon the tissues of the uveal tract as is evident in the irido-cyclitis of syphilis, gonorrheal rheumatism, etc. The toxic condition of the blood in the perverted metabolism due to hypothyroidism also has its ocular manifestations, such as serous irido-cyclitis or keratitis punctata. Many of these cases were formerly regarded as being of rheumatic origin. In the irido-cyclitis associated with the acute parenchymatous keratitis of inherited syphilis the constitutional signs are those of metabolic toxaemia, of depressed vitality arising from hypothyroidism. Consequently, in all such cases the administration of thyroid extract should be combined with the local treatment and this yields results which can be obtained in no other way.

This is a handy volume containing a concise and up-to-date summary of the chief points of tropical diseases. The tables and chapters on Trypanosomes, Filariae, Fleas, Flies, Rats, Snakes, Mosquitoes, with notes on the seven commonest carriers of malaria, form a most useful feature. For convenience of reference the arrangement of the subject matter is alphabetical throughout. Under "Cholera" the author refers to the simple method of testing the specific gravity of the blood at the bedside, introduced by G. Ducan Whyte of Swatow, and mentions Bishop's claim that just as good success is obtained by intraperitoneal injections of the hypertonic solution as by the intravenous method. In the next edition note should be made of the prevalence of Sandfly Fever in the north of China (vide Bolt's paper in the CHINA MEDICAL JOURNAL, March, 1915), and of the possibility that the sandfly is the carrier of Kala-azar rather than a species of Cimex. As local names for diseases should be confined strictly to those found in one particular locality and nowhere else, perhaps the use of the term "Undulant Fever" is better than that of "Malta Fever."

In this edition the matter has been carefully revised and brought up to date. The volume is intended primarily for medical students, but active practitioners will also find it very useful in enabling them to take a rapid survey of the most recent advances in our knowledge of tropical diseases and thus bridge the interval between the editions of their favorite text-book on the subject.

E. M. M


This interesting monograph considers the various phases of blood-vessel surgery with particular attention to recent developments. The modern method of blood-vessel suturing has five distinct fields aside from the older methods of ligation. (1) The treatment of wounded blood-vessels. Here direct suture can be used, or, if much of the vessel has been injured, a segment of vein from the patient's own body can be sutured in the defective part. (2) Excision of malignant tumors,
formerly considered inoperable because of the involvement of a large blood-vessel. (3) The treatment of aneurisms in the same way as after trauma of blood-vessels, although the suturing is not likely to be quite as satisfactory as after trauma. (4) Transfusion of blood. (5) Reversal of circulation.

Much of Horsley's descriptive text bearing on transfusion has been superseded by the careful work of Lewisohn and Weil on the citrated blood method of transfusion. And Stetton's recent experiments seem to settle very definitely the question as to the value of reversal of circulation. As Horsley himself holds that the practical utility of reversal of circulation is doubtful, he will probably be inclined to accept readily Stetton's conclusions as to the futility of such an operation. The book is interesting and of particular value to those called upon to perform blood-vessel surgery.

J. C. McC.
as to the surgeon. Every man should have a copy at his immediate command. They fill a long felt vacancy in the practical consideration of so many topics'”.

E. M. M.

Our Exchanges.


The contents of this number of the Journal are of the usual high standard of scientific interest. In a paper on “Cholera Carriers in Relation to Cholera Control,” Major E. L. Munson states that during a cholera epidemic, of nearly 30,000 persons not cholera suspects but systematically examined, almost exactly 1.75 per cent. of the population of Manila were found to be harboring the cholera infection, and in some places the proportion was even greater. It is evident, therefore, that to effectively combat an epidemic the use of laboratory facilities in the making of bacteriological diagnosis on a large scale is absolutely essential. He also points out that the quarantine period of five days will suffice only for the control of the majority of cases. Schöbl in his “Observations Concerning Cholera Carriers,” as the result of many examinations concludes that vibrionuria is not a common occurrence in Cholera Asiatica. Ruediger has one paper on “The Occurrence of B. Coli Communis in the Peripheral Blood of Man During Life,” and another on the “Preparation of Tetanus Antitoxin”. Calderon and Woodward give their experience of “Caesarean Section in the Philippine Islands,” and Thornburgh reports a case of “Adenocarcinoma of the Cæcum, complicated by Intussusception”. Wharton writes on “The Development of the Eggs of Ascaris Lumbricoides”. In emetine mercuric iodide and emetine bismuthous iodide, Du Mez thinks we have a remedy which can be administered frequently in fairly large doses, with little trouble, and which will bring emetine in contact with the entamebae for a longer time than is true with the forms of emetine in which it is administered at present. The paper on “The Treatment of Infantile Beriberi,” by Albert, is of so much interest in connection with our own discussion of Beriberi, that the Journal has taken the liberty of reprinting it. The record of the Eleventh Annual Meeting of the Philippine Islands Medical Association, held in 1914, completes this valuable number.

The Gazette is almost as useful to readers in China as to those in India. In the first paper, "The Treatment of Ankylostomiasis," Major Clayton Lane compares the effects and cost of the principal anthelminitics, Eucalyptol, Betanaphthol, Thymol, and Oil of Chenopodium. In "Studies in Malaria," Captain Stott experimented with Salvarsan in typical cases of malignant and benign malarial fevers and concludes that it will never replace quinine in general treatment, though it may be useful in cases of persistent malaria resisting quinine by mouth and syringe. Major Maddock gives a "Report and Statistics of a Cholera Epidemic," in which the epidemic was checked by treating the well water with potassium permanganate, and the mortality rate lowered by the internal administration of this drug. There is a paper on "Shrapnel Wounds of the Knee-Joint," by Captain C. Newton-Davis, and Major Mackie presents "Notes on a Small Outbreak of Cerebro-Spinal Fever." The notes on "Current Topics" are interesting and cover a wide range of subjects.


Perhaps the most important papers in the Bulletin are those relating to the discovery of the bacillus of typhus exanthematicus, by Dr. Plotz, its discoverer, and by Drs. Olitsky, and Baehr. In the discussion which followed the reading of these papers, the transmission of the disease by lice was the principal question raised. Dr. Moss describes "An attempt to Immunize Calves against Tuberculosis by Feeding the Milk of Vaccinated Cows." Drs. Miller and Fairbank write on the "Complement Fixation in Thyroid Diseases," and Dr. Sandrock on "The Relations of Splanchnoptosis to Gastric Acidity." An historical article on "Two Physician Economists," Sir William Petty (1623-1687) and François Quesnay, (1694-1774), is followed by one more practical on "Common Organisms in Heated Milk," by Dr. Shippen. There is a short note on "The Blood and the Blood Vessels in Hemophilia and other Hemorrhagic Diseases;" and also one on the "Experimental Removal of the Pineal Body" by a new method, in which it is stated that in thirty puppies pinealectomised there was absolutely no evidence of any precocity, either sexual, somatic or mental. The Bulletin is necessary to all close students of internal medicine.
The China Medical Journal.


This is a weekly illustrated paper which discusses all the social problems of our western civilization. It is of particular value to the physician as he is necessarily deeply interested in whatever is done to promote the social and economic welfare of the poor.

The C. M. A. Lantern Slide Bureau.

Inquiries from many parts of the country have been sent to the Council on Public Health asking for lantern slides on health subjects. In making this further announcement of its plans, the Council on Public Health asks members to bear in mind that there are available at the present time: (1) only a limited amount of money as working capital; (2) only a few suitable lantern slides in Chinese setting; and (3) only part of a man's time exclusively devoted to building up new lantern slide lectures. Should this announcement prove disappointing, it should be remembered that the Council's ability to serve is determined not by its willingness but by the resources at its command.

Provinces. At the present time it can only attempt to serve those living in the provinces of Kiangsu, Chekiang and Anhui.

Deposit. Those desiring to use the slides of the Bureau will first make a deposit of fifty dollars to cover breakage, upkeep, loss of slides and insurance. At the end of the year the balance will be returned to the sender if so requested, or applied toward the deposit for the following year. It is hoped that only a small fraction of this deposit will actually have to be used each year.

Rental. There will be a rental charge of five dollars for two weeks from the date of the receipt of the slides. To facilitate promptness in returning the slides, overtime will be charged at the rate of five dollars per week, with a limit of one month from the date of receipt. This overtime money will automatically be deducted from the original deposit. Rental money is to accompany requests for the use of slides.

Shipping. The slides will be sent out from 4 Quinsan Gardens by double register parcels post, and are to be returned to that address in the same way, sender in each instance paying postage. Arrangements have been made whereby the slides may be shipped duty free.

Subjects. At least four subjects will be available:
- Tuberculosis (mostly in foreign setting).
- Sanitation of a Chinese City.
- "Flies kill People."
- Plague.

Additional subjects are in process of preparation at the present time and may be ready when the Bureau opens. Manuscript in both English and Chinese will accompany each lecture sent out.
Notes and Comments.

TIME. In order to give ample time to make the necessary arrangements beforehand, the date of actual sending through the mails has been set forward to January 1, 1916. The deposit for one year will be reckoned from this date. Requests for slides will be filled in the order of their receipt.

Duplicate sets. Those wishing to buy slides for their own use will be assisted in every way possible. When a lecture has been prepared by Dr. Barlow, duplicate sets will be furnished at cost, plus a nominal sum which goes into the funds of the Bureau. As most of the slides are being made abroad, two months must be allowed from the time the order is forwarded from Shanghai. Lists of slides on each subject prepared will be sent on application after January 1, 1916.

Letters. All communications regarding these lantern slides should be addressed to the C. M. M. A. Lantern Slide Bureau, 4 Quinsan Gardens, Shanghai.

W. W. Peter, M.D., Secretary,
Council on Public Health, C. M. M. A.

Note.—This statement, following a conference called by Dr. Barlow, takes precedence in any points of difference between it and the preliminary notice appearing on pp. 341-342, September issue of China Medical Journal.

Notes and Comments.

The Fight against Opium in China.—The report of the American Consul General at Shanghai on the status of the traffic in opium in the Chinese republic shows that there has been a sharp reduction in the importation of the drug since 1910. The half century annual receipts of from about 6,666,000 to 10,666,000 pounds had dropped in that year to about 4,714,400. In 1914 importations were only 997,066 pounds compared with 2,418,400 pounds the previous year. An interesting fact is that while the amount of opium imported has decreased, the value has increased. The receipts in 1914, valued at $20,913,006, were higher than for any year since the curtailing of receipts began, except in 1903, when 7,797,066 pounds were imported valued at $24,545,300. The statistics show that since 1863 a total of 403,886,933 pounds of opium, valued at $919,979,011 have been received. There are still 585 opium shops in the Shanghai international settlement, although it is estimated that all of them will be closed within two years.

Hospital Self-support.—In an interesting discussion in the Baptist Missionary Review on ways to make Mission Hospitals self-supporting, several plans are described that are in use in various places. One, the thinnest end of the wedge, is to have a box on the prescribing table, into which patients are invited to drop their contributions, however small, if they are so inclined. Another plan is to put a mark against certain ingredients in the prescription. When the patient takes this to the dispensary he is told that the medicines that are not marked will be supplied free, but that for those that are marked a small charge will be made. If he is cured by the free medicines, good and well; if not, he is pretty sure to bring the money with him next time. A plan that is adopted by some missionaries is to
lay in a large stock of proprietary medicines, like malt and cod liver oil, and to sell them at a profit. One doctor has made Rs. 800 a year in this way. Another plan is to make everything free to everybody, but "to honey the rich into giving money in large sums." It need hardly be added that whatever plan is adopted care is everywhere taken that no sick person is refused treatment because too poor to pay for it.

_Health of Missionaries._—A lady physician writing in _Medical Missions in India_ expresses the opinion that break-downs in health among missionaries, and also among members of the Indian Civil Service, are undoubtedly more frequent than they were years ago. What the cause is she cannot say. It may be that the work is harder, or the climate worse, or the nerves of missionaries are deteriorating. The suggestion is hazarded that in the old days missionary weaklings were killed off at once—the writer does not state how this was done—so did not live to break down, and the story is recalled of the committee which reported as one of the needs of its particular field that more graves for missionaries were wanted.

_Should the Sick Missionary be Sent Home?_—One point made by the writer of the article referred to in the preceding paragraph deserves careful consideration by those who have to weigh the chances whether it is better to keep a valuable missionary in the field notwithstanding ill-health or to send him home never to return. "Nowadays," it is said, "no sooner is tubercle diagnosed than the one idea is to get the person safely home and be rid of all responsibility, utterly ignoring the fact that the patient's chances of life are often quite as good or better in the mission field. Who would have passed Henry Martyn? and did not he in India out-live all his family who remained comfortably at home, to finally die from other causes?"

_Young China and Western Science._—One day recently Yu Hwang, (the supreme god according to the Taoists,) descended to his judgment hall, when Tai Pai Hsiug appeared before him with a petition to the effect that in this lower world there was a certain individual who was unfilial to his parents, disregarded the gods, oppressed the poor and robbed the rich, breaking all laws. Yu Hwang was very angry and immediately summoned the god of thunder to bring the criminal to his bar. In a little while the god of thunder returned, trembling, and almost unable to speak. He reported that he did not know what kind of charm the culprit possessed, but his axe and his halbert were alike ineffective against him. Yu Hwang next requested some one to volunteer to fetch him, and a subordinate spirit undertook to go. He also returned without success. He said that he had launched his thunderbolts repeatedly at the criminal without effect. On investigation it was found that the person in question, who was a young man, had made a study of the new Western learning and carried a lightning rod up his back. To threaten him with thunder-bolts was labour in vain. Yu Hwang sighed and said that men nowadays were getting too clever for the gods.—_From the Chinese._

_The Doctor's Side of It._—The following tribute to the medical profession appeared in "Judge," a humorous American weekly. Medical missionaries are sheltered from disagreeable criticism to a very great extent, but we can sympathize with those who have to bear it.
Laugh, if you like, at the doctor's mistakes—
And I reckon we all make a few—
He's giving the universe more than he takes,
Which is more than the most of us do!

Feather your arrows with humorous chaff
And tip them with satire and bile,
But don't ask your target to join in the laugh—
He's entirely too busy to smile!

For General Practitioner, Army of Health,
Is fighting the terrors you fear,
While you are discussing his "ill-gotten wealth."
(Most likely, a thousand a year.)

He's saving you sickness and giving you strength,
And it's easy to laugh when you're strong;
But one of your terrors may get you at length
And alter a pitch in your song!

Then you will remember the jests you have made,
And scorn his assistance, no doubt.
Or will you entreat him to fly to your aid
With the skill you have jested about?

---

**Nurses' Association of China**

Miss L. Lenhart, Editorial Secretary.

**Annual Conference, Peking, 1915.**

The Nurses' Association of China met for its annual conference in Peking from September 1st to 6th, 1915. It was in every way the best conference the Association has had. There were fifty nurses in attendance, and the membership was increased by forty-two. The weather was most favorable, so that the pleasant excursions to interesting places planned by the Peking nurses, were thoroughly enjoyed.

The conference opened on Wednesday afternoon with a devotional service led by Dr. Cormack of the Union Medical College, Peking. Immediately afterward a reception was given to the delegates and their friends. A number of distinguished persons were present, who cordially welcomed the members of the Association to Peking. Among them were Sir John Jordan, Dr. Wu Lien Teh, Surgeon General Hsu Hua Ching, and Mr. Roger S. Green of the China Medical Board of the Rockefeller Foundation. Miss Powell, speaking for the Peking nurses, welcomed the visitors, and Miss Hope-Bell, president of the Association, responded.

On Thursday morning the real business of the conference began. Three papers were read at this session: "Social Life, Recreation, and Care of Nurses in Training," by Miss Powell; "Discipline for
Women Nurses,” by Miss Baldwin of Foochow; and “Discipline for Men Nurses,” by Miss Tomlinson of Anking.* In the afternoon there was a meeting with Chinese nurses. An address was made by Miss Tippett of Shansi, and a paper by Mrs. Lyon of Tientsin was read. Tea was served at the close of this session and after tea the guests were taken to see the Llama and Confucian Temples.

On Thursday evening a meeting was held jointly with the Peking Medical Association. The papers were: “A Scheme for District Nursing,” by Mrs. Lyon; and “Methods of Teaching Men Nurses,” by Miss Hope-Bell of Hankow. Doctors and nurses took part in the discussion which followed. Admiral Tsai came to this meeting with a greeting from President Yuan Shih Kai.

On Friday morning two papers were read:—“Hospital Economies and Prevention of Waste,” by Miss Booth of Hankow; and “Nursing Requisites as made on the Native Streets,” by Miss Sawyer of Shantung. The exhibit of native made supplies to illustrate this paper was one of the most interesting and instructive parts of the conference. The afternoon papers, read on the steps of the Temple of Heaven, were as follows: “Evangelistic Opportunities of a Superintendent,” by Miss Tippett; and “Humor and Pathos of Nursing in China” by Miss Clark of Shanghai. This session was followed by a picnic supper in the grounds of the Temple of Agriculture.

On Saturday morning there was but one paper, “Social Service,” by Miss Gage of Changsha. The rest of the time was taken up by the “Question Drawer.” The subjects covered by the questions were equally divided, half of them relating to the training of nurses, and half to the care of the hospital and its supplies.

On Saturday afternoon there was a trip by automobile to the Summer Palace and to Ching Hwa College.

The final session on Monday morning was given over to business and the election of officers. Some additions were made to the constitution. An attempt to establish regulations for the salaries of Chinese graduate nurses was unsuccessful, owing to the difference in the cost of living in the various parts of China. Mrs. Lyon reported the completion of her translation of a work on Midwifery for Nurses. The secretary reported that the examinations of nurses were successfully carried out this year, for the first time. A list of the questions will be printed later. It was decided to hold the next conference in Shanghai, the first week in September, 1916.

---

**Nurses’ Association of China.**

The full Report of the recent Conference of the Nurses’ Association is now ready, and may be obtained on application to Miss Hope Bell, London Mission, Hankow. Price, (prepaid and including postage,) to members of the Nurses’ Association, 60 cents; to non-members, 70 cents. Please write clearly name and full postal address, and remit in 3-cent Chinese stamps.
The following officers were elected:

President ........... Miss Powell.
Vice-president ........... Miss Greig.
General Secretary ........... Miss Batty.
Assistant Secretary ........... Miss Ogden.
Treasurer ........... Miss Chisholm.
Editorial Secretary ........... Miss Lenhart.
Translator ........... Mrs. Lyons.

Correspondence.

Correspondents are requested to write on one side of the paper only, and always to send their real names and addresses. The Journal does not hold itself responsible for the opinions or assertions of correspondents; nor can it undertake to return unused MSS.

Ulcus Tropicum.

To the Editor of the Journal.

Dear Sir:—As one who has not been long in China I would like to know what form of treatment is generally regarded as the most successful for Ulcus Tropicum. I have tried several methods and find that the Protargol treatment (Castellani and Chalmers, Tropical Diseases, 2nd ed., p. 1567), gives best results. All the cases so treated are doing nicely. One ulcer, 2.5 cm. in diameter, healed in less than three weeks. I would be pleased to see reports of the Protargol treatment, or of any other method. Yours sincerely,

W. H. B... Chungchow, Sze.

Artificial Limbs.

To the Editor of the Journal.

Dear Sir:—In reply to Dr. Brubaker's request for information concerning the manufacture and sale of artificial limbs in the East, the "Hospital Supply Co." of Tokyo, Japan, supply them and issue a special catalogue giving descriptions and prices.

Yours truly,

A. B.

Shanghai.

To the Editor of the Journal.

Dear Sir:—With regard to artificial limbs, at the last Medical Conference Dr. Cole informed us that his hospital cook in his leisure time carved wooden legs very well and cheaply. Perhaps one may be permitted to express the hope that the quality of the meat in the district had nothing to do with the development of this talent. Further, in the February number of "Mercy and Truth," the very interesting missionary paper published by the Church Missionary Society, Dr. Curtis, in describing the medical work in Funingfu writes: "The leg is off and replaced by a wooden and brass one made in Funingfu, the second we have had made this year. They are a great success. The feet are nicely shaped, and when stockings and shoes are put on, it would be hard to say which is the patient's own leg." In the same paper, Dr. Baronsfeather of Pakhoi also writes: "Wooden legs are made locally costing four pence each; they are quite neat and presentable." With good wooden legs as cheap as that, the person who needs one and goes without, has not a leg to stand on, in more senses than one.

Yours truly,

Wun Lim.

Public Health Campaign in Siangtan.

The following letter describing the recent Public Health Campaign in Siangtan in the province of Hunan was sent by Dr. F. J. Tooker to a friend in Shanghai.

Dear —:—We were glad to have the exhibit with us for a number of rea-
The China Medical Journal.

It gave us an opportunity to get acquainted with some of our fellow-citizens whom we were very glad to know. The Mayor of the city gave the idea of a friendly reception, and the head of the Middle School assisted with the preparations. The Chamber of Commerce also cooperated. The largest temple in town is the property of the Guild of the five northern provinces. One of our Mission teachers being a Shantung man and a member of this Guild, we were fortunate enough to secure this temple for the exhibit. The ushers were furnished by the Middle School and the Boys' School of the Presbyterian Mission, and on the day for women by scholars of two of the Government Schools and two Mission Schools. Tickets of entrance were distributed daily. On Tuesday the seats for the lecture were reserved especially for the gentry, and the police official appointed by the Mayor opened the exhibit. Wednesday and Friday were for the business men, and the President of the Merchants' Guild addressed the meeting on Wednesday. Thursday was reserved for students. One of the teachers in the Government Schools also gave an address on Hygiene. On Saturday, Women's Day, many ladies attended in chairs, and several Girls' Schools marched in a body to the exhibit. The meetings were addressed by the principal of one of the Government Schools, by the wife of one of the evangelists in town, and by a trained nurse—one of the graduates of Dr. Stone's Hospital in Kiukiang, who happened to be in town nursing a case.

It is impossible to state the numbers attending these exhibits—no count was made—not to estimate the amount of good done. Thousands got ideas of the relation of health and disease which were new to them and will take a livelier interest in matters of hygiene in the future. Thousands of tracts on hygiene were given away. A considerable quantity of health literature was bought.

A few weeks later some of the lantern slides and other material of the exhibit were taken to Li Ling Hsien about sixty miles away, and a day given to a Health Campaign there. Of the morning meeting was presided over by the Mayor, who also gave an excellent address. In the afternoon the Chairman of the Merchants' Guild was in the chair, and another meeting for women and pupils in the girls' schools was held. Several boys who had marched in the morning meeting, marching in uniform with their band. The Government School, came from a distance of thirty li and had to stay over night in quarters provided by the Mayor. Two lectures, illustrated with the stereopticon were also given.

Very sincerely yours,

F. J. Tooker

[Most of the daily lectures were given by Dr. Vauderburgh and Dr. F. J. Tooker. Ed.]

---

Sawdust and Urine.

To the Editor of the Journal.

Dear Sir,—The following communication is a reply to various questions concerning the use of sawdust for sanitary purposes, a matter which I brought to the attention of the members of the Association at the Medical Conference held last February.

"Sanitation is a purely agricultural and biological question; it is not an engineering or a chemical problem." The average public urinal is a stinking advertisement of inefficiency. Even the private house urinal, made of glazed pottery with running water available, often confesses its inability to do away with smell by the presence of naphthalene balls.

And yet experience has demonstrated a simple method which is available anywhere.

The writer had the method brought to his notice by a small book entitled "Essays on Rural Hygiene" (Longmans, Green & Co. 1903 Third Edition), by Dr. George Vivian Poore, late Consulting Physician to University College Hospital, London.

The method consists in the use of ordinary sawdust, unmedicated, and derived from any wood whatever. It may be best to describe the installation in Trinity College, Ningpo, and to draw attention to the fact that it has been used for some seven years by over one hundred boys, masters and servants.

It consists of a cement trough, 16 feet X 4 feet in superficial area, and the depth of sawdust is about a foot; as the walls of the trough are only 2 feet high, even small boys can direct their urine into the sawdust. There is a slight slope to the floor of the trough, and the filtrate is allowed to pass through an escape hole at one end, where an open drain of cement carries off the effluent into a garden bed.

It is most important to realize that this effluent, in consequence of the biological changes which have taken place in the sawdust, is without smell and absolutely innocuous. Pure urine if poured on to grass would kill, but this filtrate is of an entirely different char-
Correspondence.

A coolie is supposed to dig up the sawdust several times daily to hasten evaporation, but it may be regarded as extremely unlikely that he will do so, unless constantly watched.

Nevertheless, the Principal of the College expressed himself to the effect that he had never smelled anything obnoxious, a marked contrast to methods used in the past. The length of time during which the same mass of sawdust may be used will vary, but the writer's experience is that six months is quite an ordinary period, and from experimental work on the subject he believes that if care were taken far longer periods would be possible, as the box of sawdust which was on exhibit at the C. M. M. A. Conference at Shanghai in February 1915 had already been used for six months, and had no appreciable odour.

Some idea of the practical value of the method may be gained from the fact that a well known London physiologist and his assistant, too busy to leave their laboratory at midday, used to urinate into a bag of sawdust suspended in their office, and no visitor ever realized the fact.

Dr. Vivian Poore states that he never discovered the limit of sawdust for dealing satisfactorily with urine. Urine consisting of (say) 4% solids is filtered by the sawdust, and the filtrate has no tendency to putrefy; the change of urea into ammonium carbonate takes place in the presence of certain organisms, and other salts including phosphates are precipitated. The sawdust retains the salts of greater manurial value and ultimately becomes of a dark brown colour; on stirring up the sawdust in actual use free ammonia is always released. The sawdust trough should be open to the air on all sides, but sheltered from rains, in order to work best. The optimum temperature has not been stated, but the method has been tried both in temperate and tropical climates, with great success. As large an evaporating surface as possible is desirable when large quantities of urine are being dealt with.

Some loudly recommend the septic tank system for disposal of fæces. Moses, some thousands of years ago, shewed a better way to the Israelites by enforcing the return of all excreta to the superficial layer of soil. Now just as the oxidation and nitrification of organic matter in the soil is a biological question, pure and simple, so here in China, with many of us sanitarily responsible for institutions, the writer would beg that men should note what Mathews Duncan said of Hunter: "He knew more of nature and of its powers and revered it and trusted it more than his contemporaries." Others may be willing to try this sawdust method which has made the disposal of urine a simple matter.

ARTHUR F. COLE.

NOTICE.

Shanghai Museum.

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

ARTHUR STANLEY, Curator.
PERSONALIA

BIRTHS

Hiltner.—On August 25, 1915, to Dr. and Mrs. Walter G. Hiltner, Nan­king, a son (Arthur William).

Anderson.—At Chefoo, on October 4, 1915, to Dr. and Mrs. John A. Anderson, C. I. M., Taichowfu, Che., a daughter.

MARRIAGE


ARRIVALS.

Among the new arrivals on the field are Dr. J. Winter Brown, A. P. M for Weihsien, S'tung; Dr. A. A. Metcalf, for Women’s Medical School, Peking; Dr. A. A. Sassen, Yale Mission, Changsha; Dr. O. G. Nelson, M. E. M. S., Huchowfu, Che., who all reached Shanghai on September 19, 1915.

On September 19, 1915, Dr. J. H. Snoke, of the Reformed Church Mission, Amoy, returned from furlough.

Dr. E. H. Hume, Yale Mission, Changsha, arrived Shanghai, on September 15, 1915, after a brief visit to the states.

Dr. Fullerton, of St. Elizabeth’s Hospital, American Church Mission, Shanghai, returned from furlough on September 18, 1915.

On October 13th, 1915, Dr. John McWillie and family, of American Church Mission, Wuchang, arrived in Shanghai, having travelled from the States via Manila and Hongkong.

DEPARTURES

On July 2, 1915, Dr. F. E. Dilley of American Presbyterian Mission, Peking.

On September 17, 1915, Dr. G. F. Alsop, of American Church Mission Shanghai, and Dr. Shepler, per “S.S. Tenyo Maru,” for San Francisco.

On September 10, 1915, Dr. Agnes M. Edmonds, Methodist Episcopal Mission, Chungking, Sze., and Dr. and Mrs. A. C. Reed of Yale Mission, Changsha.

Dr. A. C. Price and Mr. Brown, both of the Shantung Road Hospital, have left by the F. and O. Steamship “Nore,” to serve their country. Dr. Price has already been recommended for medical service, and Mr. Brown, as an expert chemist, will find ample opportunities to help. Dr. Price is the fourth member of the staff of the London Missionary Society, from China, to enlist in the medical service, the other three, now at the front, being Dr. Peake, Tientsin, Dr. Bragg, of North China, and Dr. Stenhouse, of the Union Medical College, Peking, the latter being a son-in-law of Dr. Hopkyn Rees, Shanghai.—N.-C. Daily News.

Fifty-eight sons of past and present members of the China Inland Mission have been called out or volunteered for the war. Five are medical men.

Dr. A. C. Bryson who reached England on July 3, 1915 was at once given a Commission in the R. A. M. C., and left for France on the 24th. The Officer commanding the Unit to which he is attached is Colonel Brogden, who will be remembered by many as having been in China some years ago with the Cameron’s. They go to take over a casualty clearing station.—N.-C. Daily News.

Dr. Arthur F. Cole, of Church Missionary Society, Ningpo, in a letter dated September 14th, 1915, reports that on reaching England he was at once accepted for military service and appointed to a casualty clearing station in France.