

The China Medical Journal.

Vol. XLII.

JUNE, 1928

No. 6

INTRASPINAL INJECTION OF MERCUROCHROME IN A CASE OF LETHARGIC ENCEPHALITIS AND IN A CASE OF MENINGITIS

REPORT OF CASES

Z. BERCOVITZ, M.D., PH. D.

Cornelius Baker Memorial Hospital, American Presbyterian
Mission, Andong, Korea

Being isolated in the mountains of Korea we are not familiar with all the current literature on Mercurochrome and thus do not know if its use intraspinally has been reported. Being *in extremis* with two cases we have ventured its use because we were sure that in any event the patients would die and we were in hopes that we might do some good and possibly make a slight contribution to knowledge regarding mercurochrome. This report is made because we feel it shows to a certain extent that the intraspinal use of Mercurochrome has some possibilities and also certain definite limitations.

The first patient was a male Korean age 16. He was first seen on May 25, 1926. At that time the following history was obtained.

The complaint began about the first of March 1926, with headache as the main feature. The patient slept for about 25 days. Beginning about May 1st 1926 the patient has not been able to sleep at night and there has been much nausea, vertigo and at times vomiting. There is a slight cough. No further history could be obtained.—

Physical Examination. The patient is in bed in a semicomatose condition. He has a worried expression on his face. There is evident loss of weight. The pupils are irregular. The left pupil is fixed and larger than the right and there is no reaction to light. The right pupil reacts slightly to light. The patient at times sees double and at times answers correctly. He is able to distinguish the examining finger. The neck is rigid so that the body can be lifted by the occiput. There is a positive Kernig sign, Brudzenski, and Oppenheim on the left side but negative on the right. The scrotal reflex is present.

The patient is able to answer simple questions with single words. He shows a definite lack of desire to talk and requires much urging. He can show his teeth and can move his legs voluntarily but very slowly and evidently with some effort. The pulse is normal and the respirations not increased.

The patient does not look like an ordinary meningitis case.

Laboratory Examinations. Urine—entirely negative;

Stool—ascaris, trichuris, tenia.

Blood—Hemoglobin, 80%; W.B.C.—10,700.

Sputum—Negative.

Wasserman test—anticomplementary on that date—but negative later.

Working Diagnosis. 1. Encephalitis Lethargica
2. Associated spinal meningitis.

May 26th, 1926. The patient was given Santonin and Calomel and passed many ascaris by stool.

Spinal puncture was made and 20 cc. of clear fluid under greatly increased pressure were removed.

The spinal fluid when examined was found to contain 2 cells per c.mm. The Wasserman reaction was negative. The urine again was negative.

May 28th, 1926. The patient is semiconscious and does not respond to questions. There is increased rigidity of the neck. The abdomen is essentially negative although the patient cries out when it is palpated. The eye reactions are the same as before.

12.40 P.M. Spinal puncture was made and about 22cc. of clear white fluid were removed. The fluid was evidently under very high pressure and spurted out more than an inch beyond the end of the spinal puncture needle.

At this time 2cc. of 0.5% solution of mercurochrome were injected into the spinal column through the spinal puncture needle.

12.45 P.M. The patient complains of much pain in the left leg.

1:00 P.M. There is marked resemblance to Cheyne-Stokes respiration. The patient is very restless. The left pupil is larger than the right and there is no reaction to light. Examination of the spinal fluid removed showed it to contain 2 cells per c.mm, some albumin and sugar to the amount of 0.375 grams, per 100cc.

1:25 P.M. Patient complains of much pain in the left leg. There is marked decreased rigidity of the neck. There is absence of the knee reflex on the left side.

It is increased on the right. The Babinski is negative on both sides. There is no ankle clonus.

6:00 P. M. Knee reflexes are present and equal on both sides. There is no ankle clonus. The Kernig sign is only slightly positive on the right but strongly positive on the left. The left pupil is dilated and there is no reaction to light. The right pupil is smaller and there is a slight reaction. The patient cannot raise the upper left eyelid.

Abdominal and cremasteric reflexes present and equal both sides.

During the night the boy's clan came to the hospital and by force carried him to his home in the country. He was however returned by the police during the following day.

May 29th, 1926. 9:00 P. M. The patient answers questions rationally. He seems less restless than yesterday. The reflexes are all present and equal on both sides. The patient can voluntarily raise the left upper eyelid to expose about one-half of the pupil. The left pupil is dilated and fixed and there is no reaction to light. The right pupil is smaller and reacts well to light. The rigidity of the neck is less and it is possible to move the head through about one-half of the possible range of motion. The Kernig sign is still present.

May 30th, 1926. The child is not so sleepy. He responds to questions more rapidly and at all times rationally. At times he answers by nodding the head.

The left eyelid is raised voluntarily to expose about half of the pupil. The patient shows the teeth promptly and protrudes the tongue easily. There is no deviation of the tongue. Kernig reflex is positive on both sides.

May 31st, 1926. Patient's condition better. Rigidity of the neck markedly less. The knee reflexes are present but weak. There is good voluntary motion of the feet and legs. Good strength in the legs.

June 1st, 1926. Patient's condition is good, reflexes O. K.—He answers questions promptly and rationally. The rigidity of the neck is markedly less but still present. The Kernig sign is still present.

12:00 Noon Spinal puncture was made and 15 cc. of clear white fluid were removed and 5 cc. of 0.5% Mercurochrome injected.

The cells were 18 per c.mm. There was some albumin and sugar 0.750 grams per 100 cc. On this day the blood sugar was 0.375 grams per 100 cc.

6:00 P. M. Patient still appears to be sleeping but when an attempt is made to move the head he objects by removing the examining hand with his own hand. The Kernig reflex is negative on both

sides and no other reflexes can be obtained from the lower extremities. The left pupil is entirely dilated and there is no reaction to light. The right pupil is also inactive. Wasserman reaction of the spinal fluid on this day was negative.

June 2nd, 1926. Increased rigidity of the neck. The patient is still semicomatose but can be awakened sufficiently to answer questions. He can locate pain. Both pupils are dilated and there is no reaction to light. The reflexes below the umbilicus are entirely absent. Patient has to be catheterized.

June 3rd, 1926. Patient answers questions intelligently. The left pupil is dilated but not as completely as yesterday. There is no reaction to light. The right pupil is small and there is a slight reaction to light. Patient can distinguish objects accurately with his right eye but when the left eyelid is artificially lifted there is double vision. He can distinguish a finger with the left eye. Abdominal reflexes are absent below the umbilicus but the patient can accurately locate the touch of the examining needle for pain. There is no voluntary motion of the legs and all leg reflexes are absent.

June 5th, 1926. Condition is exactly the same as on the 3rd.

June 9th, 1926. Condition fairly good. Kernig reflex weakly positive. Pupils are the same size but in the left there is no reaction. Rigidity of the neck is marked. Patient can distinguish objects. There is double vision. There is retention of urine.

June 12th, 1926. Neck rigidity more than before. Pupils both large and do not react to light. Patient cannot distinguish objects. He is semicomatose and cannot be aroused. Patient died.

Following the first injection of mercurochrome there was an immediate sharp reaction as evidenced by a sharp rise in the pulse and respirations. It would appear that the sudden change in the pulse and respirations were medullary in origin because of the fact that along with the increase there was a type of respiration which closely resembled the Cheyne-stokes respiration. This did not occur following the second injection. The reaction following the second injection was only slight. Spinal puncture four days after the first injection showed that there was no grossly evident mercurochrome in the spinal fluid as shown by the lack of any color in the spinal fluid. The fluid was not tested chemically for mercury. Even though the assumption may be made that all the mercurochrome was gone from the spinal canal we cannot state whether any of it remained in chemical combination with the brain cells. It is well known that mercurochrome penetrates the tissues with which it comes in contact. It is also well known that the salts of mercury are strong protein precipitants.

Regardless of the nature of the reaction which may have occurred it is perfectly clear from the history of the case that following the first injection, the patient was definitely better than before the injection. This improvement was so definite and so prompt following the injection that we feel sure it was due to the injection.

Following the second injection the reaction of the pulse and respiration was markedly less than in the first instance. There was only a slight reaction. This may have been due to the injured brain cells being unable to react as a result of their poisoning the first time. It would appear from our results in this case that mercurochrome could possibly be cumulative in its end results especially in relation to the brain cells when injected directly into the spinal canal.

The second case was that of a boy age 7 who came into the hospital with the following history. On November 14th, 1926 the patient was suddenly taken sick with chill, fever, headache, cough. This lasted for a few days and then he seemed to get somewhat better. On November 22nd he again became sick with chills, fever, dyspnea. At that time he vomited and had much distress in the abdomen.

The patient was admitted to the hospital on November 24th and at that time the physical examination was as follows—The face appears troubled and the boy looks sick. The pulse is fast and there is much fever. Chest examination shows slight dulness in front and back on the right side and the breath sounds are diminished. There are no rales in the chest.

The boy was given castor oil and a mustard plaster was applied to his chest on the right side. He was also given aspirin and sodium bicarbonate.

November 25th, 1926—the patient looks better and seems brighter than at the time of admission. The patient is lying flat on his back with the head thrown backward. When turned on the side his head appears retracted. Patient complains of pain in the neck. This pain is present even though the patient is not touched. Examination shows the neck to be retracted and a marked tendency to rigidity. There is a slight motion of the head with the examining hand. The pupils regular, equal and react well to light.

Mouth:—Tonsils not inflamed. Tongue, tip red and thick, firm.
Chest:—entirely negative no rales, breath sounds come through well.
Abdomen; negative. Extremities:—voluntary motion. Reflexes all normal. Kernig sign is only very slightly positive. Patient cries out when the reflex is attempted.

Laboratory findings: Urine negative, Blood Wasserman (Kahn test)—negative, W.B.C.—29,800—Spinal fluid thick cream-like and on examination of stained smear of the fluid many polymorphonuclear cells and bodies resembling the meningococcus were found.

Working Diagnosis: Acute spinal meningitis.

November 26th, 1926: Marked increase in rigidity of the neck. Eyes react to light, Congestion of the face. The skin over the entire body seems to be very sensitive to touch. The Kernig sign is strongly positive and there is a marked ankle clonus.

Because of the inability to secure any serum the case was treated at this time by spinal puncture and drainage of the milky looking fluid and following that 2cc of 1% mercurochrome were injected. There was no reaction following the mercurochrome, the temperature, pulse and respirations remaining the same.

November 27th 1926: The pulse has increased to 90, the temperature 40 C (104F) and the patient appears very sick. When questioned he answers questions promptly and accurately. The Kernig's sign is stronger than yesterday. The liver is slightly palpable.

November 28th, 1926: Condition is the same. Spinal puncture was made again and this time only bloody fluid was obtained. This clotted readily. About 20 cc. of this bloody fluid were obtained—this being all that could be obtained.

December 1st, 1926: Neck rigidity is slightly decreased. Otherwise condition is the same. Up to this time the pulse respiration and temperature have varied only slightly.

December 3rd, 1926: Spinal puncture was again made and this time 20 cc of bloody fluid was obtained. Also at the time of spinal puncture 5cc of 1% mercurochrome solution were injected into the spinal column through the spinal puncture needle. Following this there was an increase in the pulse from 99 to 120 at the highest point. The respiration increased from 24 to 34 and the temperature remained the same. Condition not improved. Working diagnosis of Hemorrhagic Meningitis was made.

December 14th, 1926: The condition of the patient is essentially the same. There has been no marked change either way. On this day spinal puncture was again made and as before about 20cc of bloody fluid was obtained. This clotted readily. Through the spinal puncture needle 5 cc of 1% Mercurochrome solution were injected. Following this injection there was absolutely no change in the pulse, respiration or temperature.

From this time on the patient continued about the same with some days better and other worse. The rigidity of the neck continued about the same and there was progressive emaciation because of a lack of desire for food and also some vomiting. The patient finally died on January 6th, 1927.

Discussion:

In the first case which was diagnosed as lethargic encephalitis the first injection of mercurochrome appeared to be beneficial to the patient. Following what seemed brilliant success we naturally wanted to know if any changes had taken place in the spinal fluid and so made the second spinal puncture. Without testing the fluid chemically for mercury we could not tell if any was present, but evidently there was no mercurochrome present. There were however changes in the spinal fluid. The second injection in this case was the evident cause for our failure and led us to believe that there must have been some permanent chemical combination of the salts of mercury with the sensitive and already damaged brain cells. If this followed the chemical rule of precipitation of protein by the mercurial salts the damage was undoubtedly permanent and thus the second injection of mercurochrome added the further damage which finally cost the patient's life.

In the second case the situation was different for we were dealing with an active meningitis and frank pus. Following the first spinal puncture each time we found only blood within the spinal canal. We therefore felt that we were dealing with the hemorrhagic type of meningitis. Repeated injections of mercurochrome in this case did not seem to influence the case either way. This was probably due to the presence of the blood in the spinal canal and also to the fact that we used such small doses of mercurochrome. Even though in the second case we made several injections of mercurochrome we are not prepared to recommend its repeated use in the ordinary case.

As a non-irritating germicide one intraspinal injection of mercurochrome may be made with a fair degree of safety and may be of some value. The first injection should be ample in order to eliminate having to repeat it.

Following this we injected some mercurochrome into the spinal column of a guinea pig. Four days after the injection the animal was killed and the spinal fluid found to be clear white but the dura and the brain tissues stained red from the mercurochrome.

Conclusions:

Intraspinal injection of mercurochrome was made in a case of lethargic encephalitis. The first injection was evidently beneficial to

the patient but the second injection was followed by definitely untoward symptoms. The effects of mercurochrome may be cumulative.

Intraspinal injection was made in a case of acute meningitis. No untoward results were noted after three injections.

It is futile to attempt to draw definite conditions from an isolated case no matter how clear the case may appear to be.

DISEASES PREVALENT IN KIULUNGKIANG, YUNNAN

CURTIS M. GALT B.S., M.D.

As a corollary to Dr. Watson's paper, "Notes on Medical Practice in Yunnanfu" in the November number of the C.M.J., I shall give a short summary of the diseases prevalent in this region. I offer no apology for the tardiness of this report, since the November number has just reached me, (Feb. 28) Most of you will not be able to find Kiulungkiang on your maps, but you can find Szemao, in the southern part of Yunnan, then if you will go south-west six days journey to the bank of the Mekong, you will find either Kiulungkiang, the Chinese name, or Chili, the official Post Office name, or Chiengrung or Keng Hung, the Tai name. The altitude is about fifteen hundred feet, the rice plain is surrounded by mountains some two to four thousand feet higher. The climate is not considered salubrious, the Chinese, for the most part, preferring to live elsewhere. Frost is never seen here, the winter months are quite chilly, with heavy fogs every morning. April and May are hot and dry, June, July, August and September usually constituting the rainy season.

The population is largely Tai, racially the same as the Siamese; there are a few Chinese, and a large number of mountain people, called Kaws.

In reading this report it should be borne in mind that ours is a comparatively new and small medical work, and so we do not say that this or that disease is not found here, but that we have not met it. And in fairness to the report it should be stated that a regrettably large number of different cases have been seen that neither our experience nor our library seemed to cover.

The opium habit is not common among the common Tai people, but among the upper class and especially among the Buddhist priests, is very common. And, while they may smoke, or chew, very little, they are so filled with the idea that the habit cannot be overcome, and so fearful of the terrible consequences of breaking it off that they are much harder to handle in this respect than the Chinese, who probably use three or four times as much.

Vesical calculus is quite common, this condition giving us more surgical cases than any other. The stones range from pea size, passed to the adherent prepuce and removed by a small incision, to a rock weighing 13 $\frac{3}{4}$ ounces.

Bronchial Asthma is very common among the Tai, though most of the cases seem never to become very acute. And one of our missionaries suffers considerably here, though entirely free in America.

Measles; this year there was an epidemic of Rubella. The natives say these epidemics occur every three or four years, and that the mortality is nil.

Scarlet Fever, Diphtheria, Mumps, Chicken Pox, and Whooping cough not seen.

The Tai seem never to have Lobar Pneumonia, though Broncho-pneumonia is fairly common.

I have never seen the slightest evidence of disease in a Tai tonsil, though the doctors in Siam do some tonsil work.

Tetanus, Epidemic Cerebro-spinal Meningitis, Typhus, Typhoid and Relapsing fever, not seen.

Amoebic Dysentery is fairly common.

Cholera and Plague not seen.

Small Pox. Three years ago a terrible epidemic ravaged this region. The death rate was high, and the complications were numerous and maiming, leaving many victims of blindness and ankylosis of elbow and ankle joints. Now nearly every one either has an acquired immunity or else has been vaccinated.

Malaria is the most common disease we have. There are no statistics available, but my impression is that every one in the country has one or more attacks every year. The sub-tertian form is common and results in many deaths.

Leprosy is very common, and until a month ago nothing was being done. We have now established a Leper Asylum, and during the first month have admitted twenty patients. They are coming faster than we can build houses for them.

Tuberculosis is present, but I believe is not very common.

Syphilis and Gonorrhoea are prevalent but not many come for treatment. No cases of Paresis or Locomotor Ataxia seen.

Rat Bite Fever, two cases.

Acute Rheumatic Fever and Chronic Arthritis not uncommon.

Cardio-vascular-renal disease, one case in three years.

Beriberi, one atypical case.

Malignant Disease, we have seen but one case, an epithelioma of the upper eyelid.

Anterior Poliomyelitis, Meningitis, Encephalitis Lethargica not seen.

Epilepsy is very common.

Goiter is fairly common among the Tai, one may almost say universal among the mountain Kaws.

Trachoma is present but seemingly not very wide spread. We have treated more cases of entropion than of acute trachoma.

Cataracts are quite numerous here, though Dr. Beach of Chiengrai Siam, says he has not seen a case there.

Intestinal parasites are extremely common, nearly every adult will admit that he is carrying around tape worms. Microscopically our school children showed 87% infestation with ascaris, and 40% with hook worm. We have found no cases where the hook worm eggs were very numerous, and real hook worm disease seems to be very rare.

COMPRESSED TABLETS

JOHN CAMERON, PH. C., F.C.S.

Member Pharmaceutical Society of Great Britain

Member American Pharmaceutical Association

Pharmacist, Peking Union Medical College, China

The use of compressed tablets in medicine is not new but according to American Medicine these were used by the Romans.

“Stamps have been found in England which have been shown to have been used by the Romans to stamp remedies for producing clearness of vision, or for doing away with dimness of sight. The object aimed at by the medicament was specified in the stamp. It is noteworthy that the stamps so far discovered were designed for remedies for ocular diseases. The preparations were hardened with gum or some viscid substance and were thus ready to be liquified at any time. Thus our supposedly very modern device of triturates or compressed tablets is only a revival of an ancient Roman custom.”

Historical: Compressed tablets as we know them today however were first made by Professor Brockeden in England in 1844. He was using a machine for the compression of lead which was to be used in pencils and the idea occurred to him that the same principle might be applied to the compression of drugs and chemicals. The first tablets he prepared were sodium bicarbonate and potassium bicarbonate. These tablets had a considerable sale in Britain and the United States for almost thirty years before Jacob Dunton of Philadelphia began to

compress a variety of formulas including quinine tablets. From 1872 onward there has been a gradual improvement in the machinery used for tablet making until today there are some power machines which turn out tablets at thirty thousand or more per hour.

In hospitals in China—especially where there are large out patient clinics—the use of compressed tablets is a great convenience and economy. During the past ten years, thanks largely to the suggestions of our friend Dr. Geo. Hadden, many hospitals in China today possess a small hand tablet machine of their own and compress the majority of their own tablets. There are many hospitals, however, which still continue to purchase their tablets in bulk from some of the wholesale manufacturing pharmaceutical houses in China or abroad. We would suggest to these hospitals that they seriously consider the advisability of having their own tablet machine if they are at all interested in running their clinics on the most economic basis.

THE "EUREKA"

We frequently receive communications regarding the price of a tablet machine and for the benefit of other hospitals we will give details of the cost of the "Eureka" hand tablet machine we purchased ourselves a few years ago.

Eureka Tablet Machine Purchase from :

F. J. Stoke's Machine Company,
Labor Road, at Cader Grove Station,
Philadelphia, Penn., U.S.A.

One machine with 3 sets of round punches and dies

Sizes : 7/32, 5/16 and 3/8 inch.

This machine complete with three dies and punches costs gold \$75.00 less 15%—\$63.75 F.O.B. in U.S.A. packing, shipping, and transport charges increase the initial cost to something like Mex. \$150.00. This was the actual laid down cost of our machine in Peking. Photogravures of this machine will be found in almost any pharmaceutical text book. We have found that this machine is capable of turning out one hundred tablets per minute. In larger institutions where electric power is available it may be found necessary to install one or other of the power tablet machines on the market. These machines are capable of turning out from 10,000 to 30,000 tablets per hour. We have recently installed a power tablet machine in this institution which, running at 65 revolutions per minute, is capable of compressing 10,000 tablets per hour. This machine cost us about \$600.00 and is much more complicated than the "Eureka" hand machine. In institutions where hundreds of thousands of tablets are required it is certainly economical to have a power machine installed.

To illustrate the economy which may be effected by compressing tablets rather than purchasing them in bulk from wholesale chemical houses we will take a few tablets at random from our long list and give the actual prices paid by ourselves for these tablets in bulk and the corresponding price of compressing the same tablets on our Eureka machine. It should be noted that these prices are taken from actual invoices.

TABLE I. *Price per 1000 Tablets*

TABLET	UNIT	FROM ABROAD	MADE IN PHARMACY
Soda. Bicarb.	0.3	Mex. \$ 0.95	Mex. \$ 0.50
Calcium Lactate.	0.3	2.40	1.80
Codeine Phosph.	0.03	24.40	20.00
Aspirin.	0.3	2.00	1.50
Soda Mint.	0.3	1.50	1.00
Veronal Sodium.	0.3	20.00	17.00
Potass. Chloras.	0.3	1.00	0.80
Cascara Sagrad.	0.3	3.00	2.10
Brown Mixture.	0.2	3.00	2.00
Ephedrine HCl.	0.03	50.00	30.00

It is interesting to note that there is a saving in every case listed.

TABLET MAKING

Compressed tablets should possess the following properties.

1. The dose should be accurate.
2. The ingredients should be in a state of perfect subdivision.
3. Each tablet should be uniform in weight.
4. Each tablet should be uniform in appearance.
5. Each tablet should be rapidly soluble (if soluble substances were used).
6. Each tablet should disintegrate when immersed in tepid water (if insoluble substances were used).
7. Each tablet should be firm enough to prevent crumbling when stored in bottle or tin.

The making of a proper tablet is not such a simple matter as some medical men we have talked with imagine—it is not a case of mixing the various ingredients required and feeding this mixture into the machine—turning the handle and having the tablets punched out.

Most compressed tablets require a certain routine in their preparation which may be briefly described as follows:

The ingredients of the tablet should be thoroughly mixed, then moistened and forced through a No. 20 sieve to form granules, then the mass should be dried, forced through a sieve again. This dry granulation should be lubricated and then transferred to the tablet machine to be compressed.

The steps required in making a proper tablet are

- | | |
|--------------------------|-----------------|
| 1. Triturating (mixing). | 4. Sieving. |
| 2. Granulating. | 5. Lubricating. |
| 3. Drying. | 6. Compressing. |

The following commonly used chemicals which are all water soluble and usually met with in the crystalline form are exceptions to the usual rule in tablet making—they should be passed through a sieve, dried slightly and then compressed.

TABLE II

Ammonium Bromide,	Potassium Chlorate,
Ammonium Chloride,	Potassium Nitrate,
Ammonium Iodide,	Potassium Permanganate,
Chloral Hydrate,	Sodium Bromide,
Potassium Bicarbonate,	Sodium Chloride,
Potassium Bromide,	Sodium Sulphocarbolate
Potassium Iodide,	(crystal).

Where small quantities of special recipe tablets are required in a hurry it may be found advisable to use theobroma emulsion to granulate the ingredients of the tablet mass. For the benefit of hospitals who do not possess a copy of the 1923 B.P.C. we will quote the recipe for theobroma emulsion.

EMULSIO THEOBROMATIS, B. P. C.

Theobroma Emulsion

Oil of Theobroma.....	25.00	5 Ounces.
Hard Soap.....	2.50	½ Ounce.
Tragacanth, in Powder...	0.57	50 Grains.
Benzoic Acid.....	0.45	40 Grains.
Distilled Water to.....	100.00	20 Fl. Ounces.

Dissolve the soap in 25 (5 fluid ounces) of the water by the aid of heat, add the hot solution to the oil of theobroma, previously melted, and mix by agitation; then add the tragacanth, shake well, add the benzoic acid, and make up to 100 (20 fluid ounces) with distilled water. This emulsion is used in the preparation of certain compressed tablets. Where the presence of soap is considered undesirable, 15 (3 ounces) of gum acacia may be substituted for the soap.

The subject of tablet making is one which requires a great deal of experimentation and we would state from our own experience here that there are no short cuts in the preparing of good tablets. It would be impossible to give any set of rules which would be applicable to all tablets but as a guide we would suggest that the following publications be consulted.

1. B. P. C. 1923 P. 1461-1475.
51 Tablet Formulae listed in detail.
2. N. F. V. 1926 P. 231-236.
7 Tablet Formulae listed in detail.
3. Tablet Manufacture by Joseph. R. Wood.
Published by J. B. Lippincott Company,
P. 144-216—200 Tablet Formulae listed.

SYSTEMS OF WEIGHTS

Metric. We have used the metric system in weighing the various ingredients of the tablets we have made here and have found it very convenient, partly because all our prescriptions in this college are written in the metric system and because we prepare our tablet granulations for thousands or multiples of one thousand only.

Imperial. This system is advocated by many people because chemicals are usually purchased by the pound and one pound avoirdupois is equivalent to 7000 grains. If Hydrarg. Subchlor. (Calomel) one grain tablets are required, then to make 7000 of these will require one pound of calomel. If $\frac{1}{4}$ grain tablets are required then only $\frac{1}{4}$ lb. (4 Oz.) calomel will be used. A usual rule if the imperial system of weights is used is that "whatever number of grains enter into one tablet, the same number of pounds enter into 7000 tablets".

The Solubility of Compressed Tablets: It should always be borne in mind that compressed tablets—the majority of them at least—are intended to be quickly soluble or to disintegrate rapidly and it is advisable after making a batch of tablets to test out their disintegrating value by dropping one into a test tube filled with water and noting the time taken for the tablet to disintegrate. We have occasionally had tablets supplied from wholesale manufacturers which took hours to dissolve or disintegrate.

Husa¹ recently found that out of 20 samples of tablets which included the products of 13 different manufacturers some disintegrated in a few seconds while two kinds were not disintegrated in 48 hours.

REFERENCE:

1. Husa, W. J.—Jl. Am. Phar. Assoc. XVII. Jan. 1928. P. 38-41.

THE ORIGIN OF ENCEPHALITIS LETHARGICA

A. J. WATSON, M.B., B.S. Yunnanfu.

During 1917 v. ECONOMO in Vienna described and gave the name Encephalitis Lethargica to what appeared to be an entirely new disease.

Within two years with dramatic suddenness the disease appeared in France, England and in New York. In England the first cases were thought to be a form of Botulism and an investigation was immediately (i.e. in 1918) called for by the Local Government Board (now the Ministry of Health) and the Medical Research Committee. The report of this committee showed that the disease was not a form of Botulism nor due to food poisoning, but was apparently a disease *de novo*. At the B.M.A. conference last year (1927) which was 10 years after the first description, there was a discussion of the disease and it was again accepted as an entirely new one.

We remember attending autopsies at Newcastle in the earlier years, of patients who had died of the strange new malady, and the surprising feature was the absence of gross changes in the brain. Histological examination however showed evidence of a marked sub-acute inflammation in the basal nuclei and in the midbrain. The most constant lesions were found in the Substantia Nigra, the Corpus Striatum and in general upon those units which make up what is known as the proprioceptive system.

It has been shown also, that according as the brunt of the attack falls upon one part or another of the nuclei and connections of this great system, so the clinical symptoms necessarily show the bewildering differences which in the past led to the description of various "types" of the disease such as psychic form, choreic form, lethargic form, myoclonic form etc. While the midbrain lesions are the characteristic ones these have been found to a lesser extent in other parts of the nervous system, including the cord.

The infectious nature of the new disease was at once apparent and many of the epidemics have been carefully studied. Just as in the case of smallpox and diseases due to micro-organisms generally, successive epidemics showed variations in the severity of the symptoms suggestive of lessened or exalted degrees of virulence of the causative agent. It is reasonable then to conclude that the disease is caused by some living micro-organism.

What explanation can be given of the arrival of this disease in the twentieth century?

The modern mind is not disposed to accept off hand the idea of a disease "*sui generis*" It is pertinent to enquire as to who was the first individual to receive the organism and from whence it came. Are we to believe we have been witnesses of the arrival of a new phase in the evolution of micro-organisms, the birth of a new organism? We are naturally sceptical of such a thing and the idea of existing ultra microscopic organisms suddenly having found conditions such as to produce a favourable symbiotic union with say other members of the flora of the naso-pharyngeal mucous membrane and so been able to exert their effort on the nervous system does not explain why the union did not occur before in history.

On the other hand attempts have been made to trace Encephalitis Lethargica among historical records. Hippocrates and Celsus among the ancients and Sydenham at a later date are among those quoted as having described disorders characterised by fever, lethargy, and tremors. It must be admitted that the medical records of the past 200 years are lacking in the mention of a disease so unique in its clinical features as this one. This is the more noteworthy in that there were not wanting in Europe, during this period, keen and observant clinicians, and we cannot but feel that had an epidemic of any magnitude occurred it could not have escaped their attention.

But is this evidence final? Surely not, for Europe contains after all but a fraction of the worlds inhabitants. To-day we have a very imperfect knowledge of the diseases of the East with its teeming population and of reliable historical records there are almost none.

Such diseases as Kala-azar and Trypanosomiasis, to mention only two, would be unknown to the clinicians of Europe and we can well imagine that if a few sporadic cases, say of Kala-azar found their way to the clinic of Sydenham, that eminent medical would have almost certainly described it as a disease *de novo*. This would have held until such time as Europeans had penetrated into Africa or elsewhere far enough to encounter the disease *en masse*.

May it not so be with this 20th century "new" disease that in the past it has been and still is, endemic in certain areas. If this is true we would expect a high degree of immunity in those areas, possibly a large number of carriers and consequently little tendency to the occurrence of epidemics in these regions, although its extension to some virgin area light it up in epidemic form.

It is at least significant that Encephalitis Lethargica should be discovered during the world war. Never before in history have there been such movements in the world's population.

Large numbers of Indians and Chinese came to Gallipoli or France, and there was a most unusual contact between the dwellers of all five continents during the war years. Then if ever was the opportunity for the transference of disease from one country to another.

Now until an endemic area is discovered much of the foregoing is mere speculation.

However it is the purpose of this paper to call attention to cases of Encephalitis Lethargica occurring in the distant province of Yunnan, China, and to suggest that this is an endemic area.

The writer was transferred with his wife, Dr. Mary Watson, from the C.M.S. hospital at Pakhoi to the comparatively new Hospital at Yunnanfu early in 1926, and towards the latter part of the year began outpatient work. It was not until February 28th, 1927 that the first case was seen but by the end of the year there were 19, all showing what is now called post-encephalitic parkinsonianism and also one seen in the acute stage of Encephalitis Lethargica.

The total Hospital outpatient attendances (first visits) during 1927 was approximately 10,000.

It may be added that in the first quarter of 1928 only one case, No. 66, a Miao tribesman—was seen so the figures for 1927 were exceptional.

All of the cases except two children had the characteristic stolid expressionless face and some degree of muscular rigidity, involuntary movements of limbs and tremor. Many of them were salivating.

The worst case seen, a man named Cheng aged 30, had all four limbs in movement, the left hand had a bad traumatic ulceration due to the violence of the muscular movements. He had a pathetic look and was salivating badly. He had a four years history.

Another case from a distant village had typical parkinson mask and had slow monotonous speech as well as myoclonic movements. In three cases the 7th nerve was paralysed, in one of which the 9th and 12th were also involved. One in which the 7th was not affected had myoclonus of the pterygoid showing involvement of the nucleus of the mandibular branch of the 5th. The man had a singular statuesque appearance with mask like face, the lower jaw oscillating every 2 seconds as the right pterygoid contracted, then returning to the normal position. Most of the cases when questioned remembered having had a transient diplopia. All but two were male and the majority were between 13 and 33 years old. Two were tribespeople, (Miao) and the rest Chinese.

So far nothing has been adduced to support the contention that the disease is endemic, just that these cases were typical of what is by some called Chronic Encephalitis Lethargica and by others the sequelae of Acute Encephalitis Lethargica. It was the geographical distribution of the cases as much as the length of time the symptoms had existed which first compelled us to consider the disease as an endemic one.

A third point is the apparent absence of epidemics of any size. This of course as evidence is open to criticism in that there are no reliable means of knowing.

The city of Yunnanfu is situated on a plateau 6,400 ft. high and many of our hospital patients travel for days to see the foreign doctor. Travelling however is not easy as a glance at the map will indicate. The inhabitants of the province are not likely to move much beyond its confines.

In the north are snow capped mountain ridges, on the N.W. is Thibet. To the west an arduous journey connects with Burma. The most accessible road is to the east where Kweichow and Kwangsi may be reached and so the West River and Canton.

Some years ago a French railway was built connecting Yunnanfu with the sea at Haiphong, a 3 days journey. The number of Chinese using this railway is not very large owing to the expense and to the strict Customs regulations. Of those travelling the majority are Cantonese. Of the patients under consideration one came from the lonely western part of Kweichow, one from Tali in the west of Yunnan, two were Miao tribesmen though of quite different tribes, one several days east and the other 3 days north, and all except 3 who belonged to the city of Yunnanfu came from different villages several days journey distant. Except those in the city no two of them were from the same place. They were all country people and usually replied that they had never been out of their own village or neighbourhood. Such was the tribesman to the north who had a 5 years history. His village is right away from any regular trade route and he had never been in Yunnanfu in his life until brought by a group of his friends to the hospital.

The second point was the duration of the symptoms for which of course there was only the testimony of the patient or his friends. One said he had a 12 year, one 8, one 7, one 6, one 5, two 4, and others 3 or less history.

Now those familiar with the average unlettered Chinese know how vague their estimates of time can be. But while this is true of days or weeks, as regards years the Chinese method of using a cycle of animal names enables the most illiterate to fix an important event

with some precision. In our outpatient clinic we rarely get a direct reply to the question "how old are you"? The answer is nearly always the name of the animal which presided over the year of their birth and important events are remembered in the same way. Interest centres on the two patients with the longest history which would place the onset in 1915 and 1919 respectively. The former man was examined by our staff of 3 doctors and maintained his 12 years statement consistently. He, however, as do so many outpatients, returned to his village and was not seen again.

The next case, one of 8 years duration was a man named Chan, age 28, who happened to live in Yunnanfu. He first came on April 22, 1927, and was a relatively mild case. He has a typical parkinson mask and tremor, also a continuous oscillating movement of the right forearm between extreme supination and pronation. As Belladonna has relieved him somewhat he has attended regularly.

By the kindness of Dr. J. Rock, an American explorer en route for the Tibet border we got a moving picture of this man, and at that time he gave Dr. Rock the same animal name of the year 1919.

The 7 year case was a boy living on the distant shore of a large lake near Yunnanfu. He exhibited mental symptoms (naughtiness rather than those of an average dementia) as well as the parkinsonian syndrome.

Now if we reject the idea of the disease being endemic and accept the "*sui generis*" idea with the initial focus in Europe we ought at least to expect the disease in spreading to China to have behaved as in England and U.S.A. and have caused more or less spectacular epidemics.

We can find no evidence of any such epidemics in Yunnan and foreign trained Chinese practitioners long resident here are ignorant of any such having occurred. The writer was from January 1924 to April 1926 in Pakhoi, a treaty port with free intercourse with Hongkong yet not a single case was met during that time.

If the disease has reached Yunnanfu via Indo-China it is surprising that not a single case has been met with among the colony of 3000 Cantonese in Yunnanfu. These travel far more freely than the Yunnanese and as for certain reasons a very friendly contact exists between them and the English Hospital we get many of them at our clinics.

In conclusion, while it is easy to follow why Encephalitis Lethargica spread so rapidly in 1918-19 when there was an exceptional traffic between Europe, America and the East it would be necessary to assume that the virus was wind borne in massive amounts in the manner of the pollen of coniferae to account sufficiently for the

appearance of the disease in places off all trade routes as here recorded. Such a hypothesis would be contrary to all our accepted ideas and be especially unwarranted in the case of a new organism.

The writer wishes to thank his colleagues, Dr. Hsueh, late of Peking, and Dr. Yew, late of Guys Hospital, for the use of the clinical records of seven of these cases.

HOSPITAL SOCIAL SERVICE IN DIAGNOSIS AND TREATMENT*

IDA PRUITT, B.A., B.S.

In the great pageant of mankind's progressive effort to control nature, one of the most dramatic features has been his increasing control of disease and of the other factors that kill, maim, and disable people. Through scientific knowledge he has pushed his inquiry of causes back ever farther toward origins, and with scientific methods he is constantly endeavoring to treat causes rather than effects, the sources of the disease rather than the symptoms. This has brought into being a system which substitutes a group of workers for the old time general practitioner, with each member of the group taking his or her own part in the process of delving for facts to show the cause of the disablement, and in applying methods to remove that cause.

This group of workers—bacteriologists, nurses, roentgenologists, pathologists, physiotherapists, parasitologists, social workers, doctors—have one thing in common, one interest that binds them together, which is the patient, the human being they are trying to restore to the full vigor of life.

A hospital is like a factory where the different parts of the machine are made in different parts of the building. Some of the workmen never see the finished whole, but from the gateman who first sees the patient as he comes to the Out-patient Department to the professor who makes the final diagnosis and outlines the treatment, the hospital-staff and employees all touch the course of the patient's journey through the hospital. But there is an assembly room, in every factory where the finished product is seen. The hospital factory has for its object to take disabled human beings and make them as nearly as possible full-functioning and able to take their own part in the world. At the same time all the causes of trouble are being more and more studied, and more and more methods applied. Where in this complicated scheme of things does Social Service come in?

*Contribution from Hospital Social Service, Peking Union Medical College.

All hospital activity outside of maintenance, can be divided into that concerned with, first making the diagnosis, and secondly carrying through the treatment. In a teaching hospital there is the added function of showing others how to diagnose and to treat.

It has been found that for a diagnosis to be made there are certain facts which must be known to the doctor that can not be secured in the consulting room. To secure some of these facts specimens are sent to the laboratories where specially trained people examine them with lenses and formulas. To secure others it is necessary to take pictures of the bones or the internal organs. But there are certain factors which have a bearing on the cause and course of a disorder which are to be learned only through a knowledge of what goes on in a patient's mind, the conditions under which he lives and works, and his setting in the community. A private physician has free access to a patient's home, sees his family, knows whether he is rich or poor, knows whether the mother is capable or otherwise, and often learns the inmost secrets of the patients' lives. But the hospital physician on entering the wards sees rows of beds occupied by rows of washed and scrubbed patients dressed in hospital clothes. He can have no knowledge of the conditions from which the patient comes and to which he must return, nor any clue to his mental attitude.

The diagnosis made, there must often be an adjustment made in the patient's mind or in his surroundings before the desired course of treatment can be carried through or even started.

The gathering of the information necessary to make this adjustment, the using of it in conjunction with the community resources and the medical situation to see through a given course of treatment, and finally, the getting a patient back to his place in society, is the work of the Social Service. These processes are, for convenience, divided into four, and illustrations are given in each.

I. Doctors have found that germs alone do not make all the illness and incapacity in the world. The cause of a patient's trouble is often in the mind and the cure of his ills is often found in the home or community. These phases of a patient's case are often as serious as though he had scarlet fever or a broken leg.

1. Li Liu Shih had been admitted on medical service with a provisional diagnosis of ulcer of the stomach. After the usual tests it was found that she was physically sound, and she was referred to the neurological service, who in turn asked the Social Service to see what it was in her life that was troubling her. The patient was interviewed on the ward, her husband was seen, and also the other wife at home

who had caused all the trouble. This is the story. She was a widow when asked by her husband to marry him. He had represented himself as a single man. The patient did not object to plurality of wives, but was an ambitious strong-minded woman who wanted to be the first of any possible wives, and she evidently did not think his income sufficient to care for more than one. One day after they had been married about two years a woman appeared who said that she was the first wife, married when she and her husband were children in the country. This other woman was younger than our patient and much less intelligent, but according to the customs of the country she expected our patient to call her elder sister, obey her, and wait on her, and do all the work. Our patient refused, insisted on being called elder sister herself, thus taking precedence, and tried to get work out of the other woman. There was constant bickering, made worse by straightened funds. This story reported to the doctor gave him the necessary information with which to make his diagnosis. The social problem was solved by getting our patient, the more intelligent wife, a job outside which kept her away from home during the day time, and in persuading the other woman to do the house work. In addition, the husband was advised to rule his home more firmly.

2. Yin Chung a boy of 17, was referred by the Department of Neurology for home study to help in the diagnosis. It was a question between syringomyelia and hysteria. The visitor found that the patient and his mother were being treated as servants (the patient's father having left the country) and held in very strict subjection by a tyrannical uncle. This information was used by the doctor in working out the case, and the social situation treated by getting him a resident job outside the home.

3. A boy of seventeen came to hospital choking and breathing hard. He was taken to Neurological clinic and a diagnosis of hysteria was made. The reason given by the lad for his condition was that his uncle beat him. To discover the real cause of the boy's breakdown and to find a basis for a plan for his future, the social worker visited his uncle, saw a cousin, and called on a merchant who came from the patient's native town and knew his family well. The information from these sources showed that the uncle was not cruel to the lad. He was merely impatient with him, and did not understand the utter impossibility of scolding or beating sense into a person who was born inadequate. All sources of information agreed that the lad was very stupid. In the simple environment in the country where he had lived until four months ago, helping another uncle work in the fields and in off seasons doing coarse masonry, he got along fairly well, but when this uncle brought him to Peking to learn a trade he could not adjust

himself. His uncle secured two different positions for him, from both of which he was returned within a month with the more or less frank statement that he was too stupid to learn anything. His uncle tried and failed to teach him to set a table and make a bed. With this information, the obvious course was to advise the uncle in town to send him back to the uncle in the country.

II. Having secured the information about the personality, family, and community, the next step is to work with the doctor, who has the medical information, in arranging the best possible treatment for the patient.

Many patients suffering from latent syphilis refuse to believe that treatment is necessary. Two such cases will show the need of the mental X-ray process to discover why they refuse treatment.

1. One came saying he was afraid of the lumbar-puncture. That was true, but not wholly true. He had never thought deeply about the possible after-effects of syphilis upon the central nervous system. He felt well, and considered himself well. He had just married a new wife and was very happy with her and his children. He was about forty years of age and agreed very readily that he wanted to spend the next twenty years of his life in full possession of his faculties rather than with a possible central nervous system lesion; and he at last agreed to the diagnostic lumbar-puncture. It was necessary for the Social Worker to know that the dominant note in his life was love of his family, and then to explain to him, in a way he could understand, the diagnostic value of the lumbar-puncture before he would cooperate in the necessary treatment.

2. The next man was totally different, a lusty young man in the first flush of his youth, to whom the age of sixty and lesions of the central nervous system seemed as remote as the North Star. He said he did not have time to attend the clinic. A suggestion that his job might depend on his taking the treatment gave him the necessary jolt, to make him think. The patient previously described had started the discussion by saying that he would rather be fired than to take the lumbar-puncture. This patient said that he had no money to pay for the treatment, and this point furnished a talking basis. The worker charted his income against his liabilities, and though the number of people dependent on him was quite large, still his income was very fair, and the five dollars asked of him did not seem too much to pay. Also to make it understandable, the worker had already given him a little description of the way the spirochetes work in third stage syphilis, the worker asked him if he would think twice about giving a five dollar bill to a bandit who had him bound and was ready to gouge out an eye

if the money was not paid. Of course "I would give it quick" was the answer. "Then what about the unseen bandits inside your body who may at any time attack both your eyes." He had his injection that morning. But the successful argument, used at the wrong time, would have been like giving castor oil to a patient with a stomachache before appendicitis is ruled out.

Babies suffering from malnutrition offer perhaps the best example of the need for information from the family and home before treatment can be started. It has been found so often by doctors that the carefully prepared diet list has not been followed, or that the baby leaving the hospital in good condition returns all too soon, as undernourished as before. As it is not germs or disease that is making the baby ill, the cause must be looked for in the home. They may be so poor that they cannot even feed the child the usual staple diet. They may be able to provide the ordinary food for the family, but have nothing for the extras. They may be wealthy and the child a spoiled youngster, eating what he pleases when he pleases. There may be an old grandmother in the family who raised only two out of ten children, but considers herself, nevertheless, a perfect authority on how children should be fed. The mother may be so busy with the cares of a large family that she can not pay special attention to any one child, and so the weakling gets neglected. These are few of the many causes that have been found to account for cases of poorly nourished children.

3. A child of two went to live in the family of a professional man. His wife was a very capable home manager; the right food in sufficient quantity was supplied to the children, but the two-year old did not thrive. After being there for a couple of months she had gained no weight. When taken away and put in another home, she gained at the rate of two pounds a week. We found the trouble to be that the mother in the first home was so busy with her household and outside duties that she left the direct care of the children to the amahs. These amahs did not notice any one child especially. The lusty ones got their food and the weaker ones went hungry.

4. Mrs. Wang brought her baby to clinic because she has not enough milk for it. On examination the baby was found to be normal, and the mother normal, though both were thin. A few questions brought out the fact that the mother was not getting enough to eat, which was the reason her milk had failed. She was then turned over to the Social Service worker who found out how many there were in the family, the total income, and so learned that it was impossible for them to buy the extra nourishing food that was necessary to bring the milk. They lived on "pang tze mien and hsien tsai" (corn pone and salt vegetable). The situation was discussed with the doctor, because

it was a question whether to supplement the baby's food or the mother's, and it seemed to all of us much better sense to enable the mother to feed the baby than to do so ourselves, so it was arranged to send in two helpings a day of stewed vegetables and meat to the mother. The mother is now getting fat and the baby has plenty.

5. Mrs. Kuei's baby was four months old when she had to come into the hospital for a hysterectomy. Her husband was a rickshaw coolie and could manage to provide for the older boy of ten, but not for the baby, and he obviously could not pay for any outside care. The baby was placed in the Hostel and fed on Klim. Since the mother has recovered and gone back home taking the baby with her, Social Service is still giving Klim, and will continue to do so until the baby is old enough to eat ordinary food.

6. The amah brought baby Chang to the clinic. She was so undernourished and the amah so stupid that the case was turned over to the Social Service worker for investigation. It was found that patient's mother died when she was born, and that now she and her crippled brother were being cared for by this one amah who did the house work besides. Patient's father was a man of sixty and he had a grown and married son. But the sister-in-law could not take the patient. The baby was not receiving the proper care from the amah. So arrangements were made and the patient was sent to the Hostel. Her eldest brother of forty or the father of sixty comes in every month to pay for her keep, and the family supplies her clothing.

7. A lad of about eight was brought to the clinic by his mother, an ex-slave girl and a rather simple minded person and by Mrs. T'ang, his mother's former owner. He was underweight and unhealthy looking. The teachers at school were afraid that he had tuberculosis and would not let him go to school without a certificate from the doctor. It was found on examination that there was nothing pathological, but that the child needed more nourishment and rest. The mistress told a tale of the father being very bad tempered and frightening the child. The father was an artist and very clever, and ashamed of having a stupid child. Home visits were made. There was the problem of gaining the father's confidence and his cooperation in giving to the child what was needed to make him develop and so realise the ideal the father had for him. On the doctor's advice the father was urged to keep the child at home afternoons, that he might rest, and to see that he got things to eat in the intervals between the stated meals for the adults. This is the kind of case that takes time. It is not in a day that a self-willed man can change his attitude toward anything upon which he has made up his mind.

The care of the tuberculous takes in all three processes: the adjustment of the patient's personal attitude, the re-arrangement of the family, and use of the community resources. There are also many general problems which must be solved before the patients can have treatment, of which the following case is a good example.

8. Ma Li Shih. The Obstetrical Department sent for us to see a patient in the Out-patient examining room. She was near term in pregnancy and showing symptoms of grave kidney disturbance, she had had slight convulsions and the doctor wanted her to be admitted to the hospital, but she said that was impossible on account of a small child at home. It was found in the course of the interview that there were four distinct problems to be met. The patient was alone in the city with a small daughter of three with whom she was living in her provincial, Kansu Club. She and her husband had left Kansu at the time of the Moslem revolt, and had lost a great deal of property and some relatives at the time of the great earthquake. They had gone to Hankow to collect money due them, but as they found difficulty in doing so, it had been decided that the wife should come to Peking to collect debts here while the husband stayed to finish his business in Hankow. As this was her third pregnancy no trouble was anticipated. The husband kept one child with him and the patient had brought another with her. After a long search she had at last located the debtor and was to see him the very next day. The family were Moslems and could eat only pork-free foods. The four problems then were:—1. Lack of money for hospital fee. 2. Care of the child while mother was in the hospital. 3. Meeting the debtor. 4. Arranging for Moslem diet. The patient was assured, after a visit to the dietitian, that the hospital provided Moslem food. At the admitting office a free bed was arranged for her. The worker promised to see the debtor and bring him to the hospital ward. The patient then thought that perhaps the man and the woman who kept the Kansu club would be willing to look after the child if they were told about the mother's condition. The worker promised to go immediately on the outside errands, and the patient was admitted to the ward. The worker saw the club people and the debtor that very day, and the next day brought both the child and the debtor to see the patient. In due time the son was born, and the patient returned to the club. Later with money collected from the debtor, she rented a small home and became one of the boarding mothers for the department.

III. The third general division of processes is that of making the necessary adjustments so that a given course of treatment may be carried through.

1. A very dramatic case was that of Li Teh Shan, a man of thirty five who was on the ward recovering from typhoid. The medical department referred him to the Social Service because he wanted to leave the hospital and it was felt that it would most certainly be dangerous for him to leave at that time. On investigation it was found that he had a visit from a cousin who told him that his wife was very ill and they feared for her life. The story was that when last at home he and his wife had quarrelled. She thought he had another woman here in Peking. He had promised to go home on a certain date, but on that date he came to the hospital. He sent home word, but she, disbelieving, sent her mother to verify the report. The old woman asked for him at the admitting office by one name, whereas he had registered by his other name. So the old lady took home the word that he was not in the hospital, and the wife immediately became violently ill. The cousin then came to town and found the patient through his fellow workmen. After many conferences the patient was persuaded to stay, several of his friends having come to see him, and having promised to see his wife and testify that he was really in the hospital.

Less dramatic, but as useful, is the follow-up into the homes, the removal of the many petty and sometimes major misconceptions, the supply of initiative and perseverance for a long course of treatment, such as is needed for trachoma, tuberculosis, post operative cases, kala azar, nephritis, and cardiac disease. These patients must live for a longer or a shorter time according to some definite plan outlined by the doctor and necessitated by their condition. It may be that they should go to another hospital, to a sanatorium, to their own homes or to a boarding home. There may be the actual arrangements to make to get a patient into another hospital, the application for his entrance and the appointment for his actual admission. Even more than that, there is the question of getting the patient himself and his family to agree to the plan. Patients and families very often have definite ideas of what they want to do, and what they do not want to do, not always unreasonable. Sometimes they have very good reasons, and sometimes in view of the added information they can give us of the patient's personality and the home conditions, we agree with their conclusions. On the other hand it sometimes happens that when we give them the knowledge we possess of the way in which that disease works and the condition of the patient, the family and the patient come to our way of thinking. All this takes time, but, even more, it takes training, training in getting information, training in seeing what is in a patient's mind. When a patient comes in with a cough, any of us can say that there is something wrong with part

of his breathing apparatus, but it takes long training to be able to say what is the real trouble—in this case to distinguish the chest signs which tell where the disease is located and how severe it is. So it takes long training and experience to see what is in the mind of the family and patient, as well as to understand the actual physical condition under which he lives. Arguments are useless unless they fit into the patient's original mental pattern. Just as medicine is useless unless it is adopted to relieve the disease which the patient has. When a worker argues with a patient, the wrong social medicine is being given, or being given prematurely before the examination is complete.

It is also the job of Social Service to assume the responsibility of seeing that the patients continue whatever treatment is inaugurated, and to continue this guidance until the patient is discharged as cured by the doctor, and to do this without being reminded by the doctor or patient. The plan and purpose of case work, however we subdivide its duties, is in the last analysis to have *one group of the hospital staff primarily interested in the patient as a whole, who will take the responsibility of making sure that all the forces that can be brought to bear for the patient's well-being are used.* This entails being sure that the patient is always attached firmly to a service. (This is specially important in the Out-patient Department where patients frequently get bogged between services, and are lost before a full examination has been made.) The Social Service must also make sure that the patient understands the doctors' plans and recommendations, and that these plans are carried out. Herein lies a great bulk of case work.

IV. The fourth process is to finish the general reclamation that medical machinery has started, to take the last steps in getting the patient back into a place in society.

1. A boy of fourteen came to the hospital suffering from phosphorus necrosis of the jaw. He had been working in a match factory. The left upper jaw was removed. When he was ready to be discharged from the hospital, he still needed care, and was sent to the Hostel. Whenever it was suggested that he might go back home, he would weep. From his own story and through the Y. M. C. A. worker who sent him, some idea of his background was gained. His father was dead. His mother sewed and washed for the soldiers, and was not a good mother to him. An uncle came to see him once, and seemed fond of him, but was a country coolie who could do nothing for him. A job as kitchen boy was found for the patient, but he did not prove good at that. He had always seemed to take an interest in machinery, and so when there was a vacancy in the machine

shop, he was put in as a typewriter repair mechanic. He has done very well there, his wages have been raised, and he now has a small bank account. He is about sixteen, goes to the servants night school and practises writing every noon in the Social Service Office.

2. Chang Teh Fu. This patient had a mixed tumor of the parotid as large as his head. When asked why he did not enter the hospital to have it removed he said that he could not afford to pay his hospital bill, and that he was the sole support of his mother with no margin on which to keep her while he was not working. He was a rickshaw coolie and they spent each day what he earned. A free bed was arranged for him in the hospital. A ticket to one of the millet stations was secured for his mother, the rent was paid and money was given for vegetables and incidentals. This was done while the patient was in the hospital, and kept up after he left until he was strong enough to pull a rickshaw again. He is now pulling a contract rickshaw which nets him more than pulling by the trip, and he has bought his own rickshaw. A sum of eleven dollars, covering a period of three months, was spent on him by the Social Service.

3. Wen Chi had heart trouble and it was suspected that the recurring failures in compensation were due to the conditions under which he lived. He was referred for a change of work, as his recorded occupation was that of policeman. On investigation we found that though on the police force, his particular job was to record the night court cases. The hours were fairly short and the work very light, lighter than any we could find him. He was however, worrying, for although he was on the pay-roll at \$14.00 a month, a really respectable sum, the government was not paying any bills and he was actually getting only his board and lodging. That gave him nothing with which to support his wife and three children, and a baby had just died of starvation. The members of the family were all very thin the first time we saw them. As the patient was living in the police court, and no better provision could be found for him, it seemed best to break up the family temporarily. A job for the wife was found as resident maid in a family, the eldest daughter was found a job as nursery help in another family where she could go to school half the day, the little boy went to live with his father at police headquarters, and the little girl was sent to live with the grandparents in the country. The grandparents had no financial margin, and three dollars a month board for the child was sent to them. While the family was getting its start, the department helped with this child's board for several months, but when the mother had a sufficient raise in her wages she took over this responsibility. The family are now getting on independently, and the patient's health is much better.

4. Tsang Chia Jung has a paralysis of recurrent laryngeal nerve which makes it necessary for him to wear a tracheotomy tube, and this necessitates his living near enough the hospital to attend the Ear Nose Throat Clinic the remainder of his days. The paralysis was caused by a gunshot wound in the war of 1924 when the patient was a member of Wu Pei Fu's army. This army's headquarters acknowledged responsibility for him, as long as they were in town, by paying him a sum monthly. The patient's family are farmers in Honan, and, though self-supporting could not support him in idleness. The patient's own qualifications for a job were slight. He had never done anything but farming and soldiering. He had no education and very slight mentality. On the credit side, he was of a good disposition, faithful, and willing. Between admissions, through a long course of many hospital treatments in which it was attempted to transplant nerves, stitch cords, etc., the patient stayed at the Hostel, and did odd jobs as they could be found. Most jobs involved too much dust or exertion, but at last that of box-carrying mail messenger in the P.U.M.C. was secured for him, and now he can be an independent unit of society, living in his own room, and eating his own food.

5. Wu Kuo Chung crawled into the Out-patient Department on his hands and knees, waving two malodorous stumps in the air. He was referred to the Social Service for some means to make him less obnoxious to the other patients for it was hot weather. A bath and a shave was given to him in K basement, and a new suit of clothes from the Social Service. It was found that he was a beggar. His father was a cobbler living in a village outside Peking. The patient had been apprenticed to his father, but preferred to play, so ran away to Peking to live by his wits. As his feet were frozen during the winter, he went home, but his father refused to keep him, put him on a donkey, and brought him back to Peking where he had been begging ever since.

While conservative surgical treatment was being tried the patient was kept in the Hostel, but it was soon found that amputation was necessary. After the amputation he was again in the Hostel until his wooden feet were completed. An attempt was then made to get him into a shoemakers shop, but the shoemaker considered him a boarder and not an apprentice, thinking that the patient could not grip with his knees sufficiently to make shoes. He was next tried out in the gauze room of the P.U.M.C., but it was found that he was carrying home gauze and odd bits of material in the hollow of his wooden legs, so he was discharged.

Efforts had been made from time to time to find his father, and to get him to take the boy back. Now that the boy was able to walk and

was fat and well, the father was willing to be found and take him back. He was told that there was no reason why the boy should not work at his old trade.

From time to time the patient comes back to have some slight repair done to his wooden legs, and always reports progress in his work. About a year after he left the hospital one of the workers saw him sitting by the side of a small street working so hard on the mending of a shoe that he did not pay any attention to the passing of the rickshaw. By his side was a portable cobbler's outfit.

6. Wang Tze Shun. This patient was a farmer owning a small amount of land, and life was going smoothly until he developed an eye condition that threatened to blind him. He went to an old woman who stuck a needle into his eye which then collapsed. When his second eye became affected he sold his land and started out to find a cure. By the time he reached this hospital, his money was all gone and his eye practically so. The doctors did what they could but had to tell him that he would be permanently blind. The Social Service then made arrangements with the Pin Min Yang Chi Yuan, a city poor house, where he was taken in.

7. Baby Hsueh. Baby Hsueh's aunt came to Peking as a wet nurse, but before coming she exchanged her own baby boy with her sister-in-law's baby girl which she brought to Peking, planning to give the girl away or place it in a foundling home when the baby to whom she was to be foster mother should be born. The employer, an educated woman, could not bear to have the baby thrown out, so boarded it herself in the home of a rickshaw coolie. The child did poorly, and became covered with sores, so she took it away. She next tried placing it in a foundling home, but she heard stories of the mistreatment there, and, when she went to see the baby, found it undernourished and its eyes inflamed. The employer there upon brought the baby to the P.U.M.C., when we kept it in the ward until it was well again, and then placed it in one of our own boarding homes, the employer paying part of the expenses. When the investigation was complete, the baby was taken over by the Home Finding Society, who kept it until they found a suitable home where it was adopted.

The foregoing cases have illustrated the methods and functions of the social service. The equipment of social service is workers with cultural background, training, good social judgement, and poise. They supply to the hospital information and resourcefulness, and to the patient needed funds, and understanding of medical treatment, initiative, and perseverance, and a knowledge of the hospital and city resources.

THE PRACTICE OF MIDWIFERY IN MANY LANDS

II. INDIA

In this article we continue the series showing how the midwifery question is handled in different countries. Our notes on the problem in India have been supplied to us by Dr. Edith M. Brown, the distinguished Principal of the Punjab Medical School for women, which is incorporated with the Women's Christian Medical College, Ludhiana—Editor.

Dr. Edith Brown writes:—

We have in India a two years course of training for a class of women called "Nurse Dais." They must be able to read and write and must be between twenty and thirty-eight years of age; of good health and good character and good disposition. They are taught the conduct of normal midwifery, including asepsis; the recognition of abnormal midwifery, which they are expected to refer to the doctor if it is at all possible, but, of course, in distant villages intelligent women do actually often treat successfully abnormal cases. They are given careful instruction on the dummy. They also learn first aid,—the doing of simple surgical dressings and vaginal treatments, and the preparing of patients for operations and the handing of obstetrical instruments to the doctor.

In some cases the work is very successful and the women have done a great deal of good. In other cases having a little knowledge they are tempted to do too much, but in India it is at present impossible to supply women doctors or women with a full nurses and midwives training, so that this class of women is a necessity. I should think it would be the same in China.

We do also have classes for the training of indigenous dais who are not able to read and write, but all that they are taught is cleanliness and dangers of interference, and something of the recognition of abnormal cases. I believe that these instructions make them less dangerous than they would be without them.

Dr. Brown has kindly sent us the regulations with regard to the training of dais (midwives) which we append herewith.

THE TRAINING OF DAIS

(i) *Nurse Dais*.—A certain number of stipends are offered by local bodies for the training of women as nurse dais. The following are the conditions under which these are granted:—

- (1) Candidates must be women of respectable character, of any religious creed, and between the ages of 20 and 40.
 - (2) The period of training will extend over two years, of which the first three months will be on probation. On the completion of three months' probation the stipend-holders will be required to execute a bond agreeing to serve the local bodies providing the stipend for a period of two years, provided appointments are offered.
 - (3) The training will take place at a Zenana Hospital approved by the Inspector-General of Civil Hospitals, Punjab; the stipend-holder being for the period of training entirely under the jurisdiction of the Medical Officer-in-charge of such a hospital.
 - (4) Stipends will be given at Rs. 15 per mensem with free quarters, but the women will receive only Rs. 14 per mensem, the balance Re. 1 being retained as a guarantee of good faith and satisfactory conduct while under training. The total amount deducted *plus* an extra Re. 1 will be paid to them when they have qualified.
 - (5) At the end of the first year the stipend-holders will be examined in elementary nursing and hygiene and at the end of the second year in midwifery and nursing according to the syllabus. If successful, they will receive certificates for the same.
 - (6) They will then be required to serve in a Hospital approved by the Inspector-General of Civil Hospitals, Punjab, for a period of two years (attending on women only). During this time they will receive pay at the rate of Rs. 20 per mensem and free quarters.
 - (7) At the end of that time they will be free either to continue in service or to engage in private practice.
- (ii) (a) *Resident Dais*.—The course lasts for two years and admissions are made on 1st April or 1st October. Occasional privilege leave is given during the period of study.
- (b) *Course of study*.—Dais are given instruction in the work of an out-door dispensary, *i.e.*, the treatment of simple wounds; giving of douches, enemas, bandaging, and in sick cooking, etc. Instruction is given in Midwifery for nine months of the year. The dais also have an opportunity of doing a small amount of Sick Nursing in the Memorial Hospital.
- (c) *Scholarships*.—Stipends are provided at the rate of Rs. 7 per month.

(d) *Board and residence.*—Dais make their own board arrangements. Residence is provided, but dais may also live in their own homes in the city.

(e) *Admission.*—Dais on admission must produce a certificate of character and ability from a responsible person. Dais living in the city must bring a certificate from the Mirmahala.

(f) *Examinations.*—Dais enter for the examination given by the Punjab Central Midwives Board.

(iii) *Indigenous (Hereditary) Dais.*—A class is held for dais living and practising in Ludhiana City. The class is held three times a week during nine months of the year. Dais attending the class receive a scholarship of annas 4 for each class attended. They also receive annas 8 for each obstetrical case done under the supervision of their teachers. When trained, dais receive a certificate from the Punjab Central Midwives Board after passing the prescribed qualification test.

PRELIMINARY REPORT ON SODIUM NITRITE THERAPY IN SEASICKNESS

J. FRANK PEARCY, PH.D., AND DANIEL B. HAYDEN, M.D.,
Chicago

During a study of the effects of blood pressure on the labyrinthine function, we were impressed by the depressant effect of sodium nitrite on the vestibular responses. The results of these studies are in process of preparation for publication. In these studies it was shown that by lowering normal blood pressure to between 95 and 105 mm. of mercury the nystagmus after rotation was greatly diminished, and past pointing was also much diminished and even disappeared entirely in some instances.

Believing that seasickness is due mostly, if not completely, to overstimulation of the vestibule, we felt that the nitrites offered a direct attack at the long sought but never attained cure for the terrible malady of the ocean voyage. Consequently, as one of us (D. B. H.) was about to cross the Atlantic, we decided to put the theory to the test. Fate was against us on the trip across for no one suffered mal de mer. On the return trip there were sixteen suffering from seasickness. They were all given one of the usual treatments; namely, subcutaneous injections of epinephrine hydrochloride. For our test the patients were divided into two groups, eight to serve as controls and eight to have nitrite treatment. The groups were chosen with the effort to have them as equal in symptomatology as possible. The members of the control group were prostrated on the average two days, and there was not much variation from that period. The members of the other group were given from 3 to 5 grains (0.2 to 0.3 Gm.) of sodium nitrite every two hours until they experienced relief. The average period of time before the members of this group were free from ocular nystagmus, vertigo, ataxia and nausea, and were comfortable on deck and able to eat meals was four hours! These persons did not suffer from any recurrence of symptoms.

Billings Hospital, University of Chicago—122 South Michigan Avenue.

J. A. M. A. April 14, 1928.

Editorials

THE BIENNIAL CONFERENCE

In our last issue we mentioned the difficulty of obtaining suitable accommodation in Shanghai for the forthcoming Conference. We are glad to say that this difficulty has now been overcome and that through the kindness of the Committee of the Union Church we have been able to engage the Church buildings for the meetings. For the general meetings, exhibition and some of the sectional meetings ample space will thus be provided and owing to the close proximity of the Church to the Missions Building, it will be possible to provide space for the other sections there.

Living accommodation for Members and delegates can be easily arranged within a short walking distance of the Church.

While this is not perhaps an entirely ideal arrangement we believe that it will very amply meet the need and the central situation of the meeting place will undoubtedly be appreciated by our visitors.

The dates of the meetings will be from Thursday Feb. 7th to Wednesday, Feb. 13th inclusive, with a reception for Members on the evening of the 6th.

Further details will be published later as settled but in the meanwhile we trust that as many Members as possibly can will reserve these dates and arrange to come to the Conference.

Kindly note the following changes of personnel in the list of officers of Sections

Obstetrics and Gynecology.	Dr. Z. T. Wang also of Margaret Williamson Hospital in place of Dr. S. R. Parsons.
Public Health.	Dr. S. M. Woo in place of Dr. J. B. Grant.

DEFICIENCY DISEASES

As our knowledge increases, the problem of so called deficiency diseases seems to get more complicated. We do not wish to appear to throw doubt on the reality of these but to call attention to the fact that the trouble is no means confined to the deficiency of a single element as appeared likely a few years ago.

It seemed at one time pretty well proved that Beri-beri was solely due to deficiency of intake of Vitamin B, that Rickets was due to insufficiency of Calcium and Phosphorus, that Endemic Goitre was

due to a mere lack of Iodine, and so on. More and more however it seems certain than any such simple explanations are entirely inadequate.

In the reviews of *Current Medical Literature* we publish the conclusions of a very detailed investigation into the causes of Beri-beri in Burma. This, with a growing amount of evidence from other sources, suggests that something more than Vitamin lack is responsible for this disease. The relation of sunlight and exercise to feeding experiments on dogs prove that the prevention of Rickets is not a matter solely concerned with the nature of the diet, while McCarrison's latest work on Goitre which we reviewed in our last issue and which crowns his very remarkable series of researches on this subject makes it clear that there is another element as well as Iodine deficiency to be considered in Endemic Thyroid Enlargement.

These facts are worth keeping in mind for they affect not only theories of causation but methods of treatment, and with the great prevalence of certain deficiency diseases in China this is a matter of no small importance.

THE MIDWIFERY QUESTION

We are particularly glad to be able to give some details of the method in which this problem is handled in India in this issue of the Journal. The names of Dr. Edith Brown and of the well known Ludhiana School are familiar to all who have taken any interest in medical work for women in India and we greatly appreciate Dr. Brown's kindness in sending us her views on this important matter.

The problem in India is not very different from the problem as it exists in China. There too is a nation of ancient civilisation but which in medical matters has not kept pace with modern advance. The bulk of the population is as yet untouched by scientific medicine and the numbers of properly qualified doctors and nurses are small and totally inadequate to meet the needs of the country. One advantage, however, that India has over China is that the profession of medicine is already Government controlled and rules defining the activities of midwives can be enforced.

We trust that before long this may also be the case in China and a heavy responsibility lies with the leaders of the medical profession in this country as regards the advice they give the Government in the matter of fixing standards, neither so low as to hinder progress nor so high as to check the provision of midwives in adequate numbers.

ENCEPHALITIS LETHARGICA

We are glad to publish in the current issue a further contribution from Dr. Watson on Encephalitis Lethargica in Yunnan. The facts that he brings out bearing on the distribution and length of time the disease has been present in Yunnan are full of interest. Whatever the outcome of the present discussion may be, one thing is clear. That our knowledge of diseases in China is for the most part very scanty. A little more organisation in the matter of research might soon remedy this, but that little more is essential if we are to be able to arrive at any full knowledge of the distribution of diseases in this land. Another point that might well be again emphasized is the great danger of coming to hasty conclusions in regard to either the frequency or absence of diseases in China until our information is much more adequate.

MEDICAL MISSIONS AND THE JERUSALEM MEETING

Through the kindness of Rev. E. C. Lobenstine we are able in this issue to give the findings of the Jerusalem Meeting with regard to Medical Missions. It would be difficult to have, in a short paper, a more satisfactory summary of the aims, position and needs of medical missionary work and the Conference is to be heartily congratulated on its findings.

This is particularly the case in view of the refusal of the organisers of the Conference to give to Medical Missions their proper place in the programme of the meetings. We ourselves took up the matter when the arrangements for the Conference were being made but met with a polite but very firm refusal as regards giving the medical side any position at all in the meetings. What has happened since we do not know but at any rate the outcome has been eminently satisfactory.

There is no other branch of the Mission work which so closely follows the steps of the divine Founder of missionary enterprise as does that of Medical Missions and there is no branch which has been so consistently pushed to the background or boycotted as this has been. We trust that, for the cause of Missions in general, a brighter day is now dawning in regard to our medical missionary service.

China Medical Association Section**MINUTES OF THE EXECUTIVE COMMITTEE**

A meeting of the Executive Committee was held in the offices on Wednesday, 25th. April at 9 A.M.

Present: Drs. Morris (in chair), W. S. New, Gordon Thompson, Tyau and Maxwell.

Apologies for absence were received from Dr. Robertson and Dr. H. W. Miller.

The meeting was opened with prayer.

Before dealing with items on the Agenda the Chairman made reference to the deaths of Dr. R. C. Beebe former Executive Secretary of the Association and Dr. J. H. McCartney one of its senior members which had occurred since the Executive Committee last met. The following Minutes were adopted:—

Dr. R. C. Beebe:

That the Executive Committee has learned with sorrow of the death of Dr. R. C. Beebe at Clifton Springs on 13th. March.

Dr. Beebe was one of the senior members of the China Medical Missionary Association and assisted at its formation in 1887. He was President of the Association in 1899-1901 and became its first full-time Executive Secretary in 1915, which post he held until failing health compelled his retirement in 1923.

Dr. Beebe will be remembered for the splendid service which he did for medical missions and for medical educational work in China, for his indefatigable work as Executive Secretary of the Association at a time when the rapid expansion of the Association called especially for a man of special tact and wisdom, but perhaps most of all for the strength and beauty of his Christian character in the years when he was laid aside by ever-increasing physical disability and suffering. In the words of his friend and colleague—Dr. Beebe's whole life was a constant strength and inspiration to others, in his earlier years by his active service, in the later years by his sufferings patiently and nobly borne.

The Committee desires to extend its deepest sympathy to Mrs. Beebe and family in the loss that they have sustained.

Dr. J. H. McCartney:

That the Executive Committee has learned with sorrow of the death of Dr. J. H. McCartney on 20th. March at Chungking.

Dr. McCartney came to China in 1890 in the service of the Methodist Episcopal Church and was stationed at Chungking in the far west province of Szechwan. A man of great professional ability and energy he was widely known and beloved throughout the whole province. Eventually he resigned from the Mission but continued his hospital and other work and was among the first to return to Chungking after the troubles of last year.

Dr. McCartney's sudden death came as a painful surprise to his many friends and the Committee extends its deepest sympathy to his widow and family, which includes in its number another well-known member of the Association.

Minutes of Last Meeting:

The Minutes of the meeting of March 1st. were adopted.

Referendum:

The Secretary reported on the voting of the Referendum on the amalgamation of the Journals to date as follows :—

For :	277	Returned cards :	4
Against :	8	Declined to vote :	1
Qualified approval :	4	Spoilt :	4
Total :	298		

The Secretary further reported an interview with Dr. Wu Lien Teh, Editor of the Journal of the National Medical Association, whom he saw on his way through Shanghai. Dr. Wu suggested that in some quarters there was still a lack of enthusiasm for the proposed amalgamation and thought it might be impossible to consummate it before the beginning of next year.

I. H. T.

The Secretary reported the findings of the sub-committee on the I.H.T. as follows :

“THAT we understand that the proposal for an I.H.T. is already viewed with favour by a number of the Mission Boards but that they cannot see their way to support this proposal until a clear scheme is put before them from the field.

THAT we therefore recommend that the W.M.M.S. be asked to send Dr. George Hadden out again for another two year period with the definite understanding that he spends his time mainly in organising an appeal to the various Mission Boards, through their Councils and Committees on the field to take their full share in the establishment and upkeep of an Institute for Hospital Technology. The detailed requirements for such an Institute should be discussed by him with the Executive Committee and approved by it as soon as possible after his arrival.

THAT while Dr. Hadden is organising this appeal, he might also be able to give time to placing those requiring technician training in hospitals where such training can already be given and so meet to some slight extent the immediate urgent needs.”

The Report was adopted and the Secretary was instructed to write to the W.M.M.S. and to Dr. Hadden.

Biennial Conference:

The question of accommodation for the Conference was considered in view of the difficulty of finding a suitable place in Shanghai at the Chinese New Year. The Secretary pointed out that there was some

feeling in favour of holding the Conference immediately after Xmas when it might be possible to secure one of the Schools, but it was generally felt that the necessity which this implied of meeting within a day or two of Christmas would make it very difficult for visiting doctors to come.

The question of obtaining the Union Church buildings for the meetings was raised and the Secretary was instructed to explore this possibility.

The Secretary reported the findings of the Conference Committee with regard to the order of meetings. With one slight change, these were approved as follows:—

8.30— 8.50 A.M.	Devotional exercises.
9.00—10.15 A.M.	General Business &c.
10.30—12.00 noon	Combined meeting of all sections for discussion of some subject of general medical interest. Each of the first five sections to have a day.
1.30— 4.00 P.M.	(except Saturday) Sectional meetings. Demonstrations. Clinical meetings at Hospitals.
Saturday afternoon:	Recreations and excursions.

Three evening public lectures during the period of the meetings.

Letter from Dr. F. C. Yen:

The Secretary reported the receipt of a letter from Dr. F. C. Yen copies of which had been sent to the members of the Executive Committee.

After some discussion it was agreed that the points raised in this letter were of so much importance that the Committee desired to have the opportunity of discussing them personally with Dr. Yen when he next visited Shanghai, probably about the middle of May. The Secretary was instructed to arrange for an Executive Committee meeting at that time.

Registration of Medical Practitioners:

The Secretary reported the receipt of a letter from Dr. Noel Davis, Commissioner of Public Health, *re* The Registration of Medical Practitioners in the International Settlement. The Secretary was instructed to reply to Dr. Noel Davis thanking him for the letter, expressing the Committee's approval on behalf of the Association of the suggested measures and expressing its willingness to nominate a member of the Association on the proposed Medical Board.

Missionary Section

**MEDICAL DEPARTMENT BULLETIN NO. 19
MARCH, 1928**

TO OUR MEDICAL MISSIONARIES

E. M. DODD, M.D.,
New York*The Medical Missionary at this Hour.*

It is a pet thesis of mine, as probably of many others, that the medical missionary has a special opportunity toward the changing thought of the awakening, hitherto retarded, countries at this day and hour. One of the characteristics of the student groups, and of other relatively small but disproportionately influential leading groups in the Far East, especially perhaps China, is the exalting of science and the scientific method to the exclusion of other values and other approaches in life. One can readily see how this is to be expected as the pendulum swings violently away from the old and the traditional in the effort to be modern. It is a tendency which holds great promise and hope. It is a tendency which also holds great danger. The danger lies in the tendency to an exaggerated conception of or extreme emphasis on science and certain not-necessarily resulting accompaniments. The trend therefore often is to a cold, mechanistic, materialistic attitude, and away from a dynamic, personalized universe. Of course, as usual, all this applies far more to some regions than others. And it is not forgetting that the bulk of our contacts are still with the unlettered and untutored—the unsophisticated people.

Believing thoroughly as I do in the truly scientific method, and believing also as I do in the supremacy of spiritual values, I covet for the full-statured medical missionary a great role of interpreter and reconciler. The unsophisticated always look to him with respect. The sophisticated and the critical also recognize his scientific training. Whatever else they may or may not think about him they realize that he is no stranger to the scientific method. They recognize that in one field of scientific knowledge, (in so far as one can separate the art and the science of medicine), he speaks with a certain degree of weight. And this respect for him carries over into other areas of thought.

Starting with this credential—this recognition—in the eyes of the aspiring, would-be-modern groups, he has at least two great contributions to make.

On the one hand he can show that the scientific approach can be compatible with a vital belief, scientifically unproved, and unprovable, in unseen things. He can be winsomely persuasive toward an abiding and guiding spiritual faith. He can show that believing as he does in the scientific search for light on and control of large and growing areas of life, he values still more highly those spiritual meanings and implications of life. As Dr. Merrill said at one of our June Conferences, "Go to science for the facts of life; but go to religion for the meaning of life." After all, as always, it is the individual life that counts most. And we none of us have to go very far afield to think of medical men and women, past and present, whose lives have meant and are meaning just this sort of thing to restless, critical, groping people about them. And again and again, in varying degrees of excellence and imperfection, there shines out from such people a quality which interprets and reconciles far more than written statement or spoken argument. If they can be convincingly seen as both honestly and creditably scientific and honestly and winningly religious they have achieved nobly. In this day and hour in these lands, when the old moorings are slipping and the new landmarks are befogged, there is here a notable contribution to be made by our medical missionary company.

Then, too, there is a second great contribution to make. It is nothing less than thro' the motive, so frequently recorded in the life of Jesus, of compassion,—and an intelligent compassion, which makes science its servant and instrument. There is such danger in these abruptly changing countries that the over-exaltation of science, or the worship of material advance, or the cynicism of national and international politics, will spread to "hard-boiled" attitudes in the intimate and the daily in human relationships. And there are schools of medical attitude in Europe, if not elsewhere, reaching out to the Orient, which, though highly scientific, are surprisingly callous to the individual patient. Just here the medical missionary comes in with a philosophy whose driving power is a compassion for suffering people, seeking to serve however he may. And what a galaxy of examples he has as allies all down the years in non-missionary medical history,—examples above any form of reproach—of men who sought truth and thus labored and sacrificed for the purpose of serving humanity;—Pasteur with his abounding sympathy for the tragic sufferers with hydrophobia; Trudeau, when he said that in his work sympathy as a mere emotion disappeared but remained as a mighty driving force for incessant labor; Bruce when he braved the African jungles and the sleeping sickness, for the sake of human beings; and finally, almost supreme in medical history, Reed, Carrol and Lazear, when in their epochal work on yellow fever, they combined splendidly applied science with complete self sacrifice, in

order that this scourge might be lifted from human kind; these and many more were all striving to relieve suffering and save life. They were genuine scientists; and they qualified with Rabbi Ben Ezra. The medical missionaries who have fought plague and typhus and cholera, using the last work of science, and at the same time giving *themselves* in the fight, cannot fail to leave their impress somewhere and somehow. No finer exponent exists of the true use and the place of science as a part of all truth than the doctor who single-heartedly seeks for, and bows to, the truths of science, and then dominates and commands them for the help of needy folk.

JERUSALEM MEETING

FINDINGS OF THE COMMISSION ON MEDICAL MISSIONS

I. *The Place of Medical Missions.*

The ministry of healing was part of the work of the Lord Jesus who, revealing the attitude of the Father toward us, entered into fellowship with suffering men and women and exercised His power for their relief. Of Him it is written "He went about doing good and healing all manner of sickness" and "Himself took our infirmities and bare our diseases."

As the Christian Church, animated by the same spirit of Divine compassion, seeks to follow in His footsteps, it should attempt, wherever needed, to carry on effectively the ministry of healing. Work done in this spirit is spiritual work.

In the missionary enterprise the medical work should be regarded as, in itself, an expression of the Spirit of the Master, and should not be thought of only as a pioneer of Evangelism or as merely a philanthropic agency.

In view of the teaching of the scripture as to the place of the Church in healing, there ought to be closer co-operation than often exists in this work, between the medical profession and the ministers of the Christian Church.

II. *The Medical Missionary.*

It follows that for carrying on such work the most important single factor is the personality of those who engage in it. They should be persons who have a vital experience of Christ, who share His compassion for the suffering, and for His sake desire to serve them.

Along with this is the need of the best possible medical training; not only that they may be able to make the most worthy contribution to the relief of the suffering, but to meet the demands of work in countries where they will be thrown so largely on their own resources.

III. *Present need.*

While there is a call for more mission hospitals, the greatest need at the present time is that existing mission hospitals should have more and better equipment and increased staff in order that the work may be more effective and not inferior to any other work in the countries concerned. Lack of proper equipment and staff not only cripple the work but have a discouraging effect upon the workers, lessening their initiative, lowering their professional ability and decreasing the power of the Christian witness. Without sufficient staff there is not possible that absence of hurry which is essential for the personal contacts which are of such vital importance.

There is a serious shortage of medical missionaries in all fields where medical mission work is being carried on. For lack of doctors, hospitals, within the last few years, have had to be temporarily or permanently closed, others have been understaffed and expansion has been hindered. This might be avoided in some cases by closer co-operation of Missions working in the same area.

IV. *Relation to the Indigenous Churches.*

With a view to the indigenous churches taking over the ministry of healing as part of their work provision must be made :—

1. For first class training for doctors and nurses, and for giving to them in mission hospitals opportunities for gaining experience in doing conscientious work of the highest medical standard in the Spirit of Christ, in order to enable them to assume full responsibility as superintendents of hospitals.
2. For the indigenous church to share in the administration of mission hospitals through membership on hospital committees.
3. For encouraging the local churches to venture on new efforts either alone or in union with others or in co-operation with the Mission.

V. *Self Support.*

While self-support is desirable and has been attained by some Mission Hospitals, the attaining of it ought not to be laid as a burden on all. The effort to obtain money may injure the spirit of the work and hinder the poor from seeking relief.

VI. *Rural Needs and Preventive Medical Work.*

In view of the rural areas being less well supplied with medical relief there is a call to extend work in the villages; Mission Boards should consider whether the time has not come when some Mission Hospitals should be moved from cities to rural areas.

In view of the waste of life, especially infant life, due to preventable diseases, there is urgent need of devoting far more attention to preventive medicine and welfare work. Hitherto Medical Missions have been almost wholly engaged in curative work.

VII. *Further Investigation.*

Christian Medical Associations in various countries are urged to investigate the general needs also in regard to research work in their respective countries, the needs in regard to any specially prevalent diseases such as tuberculosis, sleeping sickness, leprosy, etc., and the need of an extension of medical services into congested industrial areas and to make the conditions known through their National Christian Councils.

ADDRESS BY DR. C. FRIMODT-MULLER

In the morning session on the 4th. of April, Dr. C. Frimodt-Muller, of India, made the following statement on medical missions:—

“Our Lord used a great proportion of His time to heal the sick. There must be a special reason for this, and the question arises why did Jesus heal?”

“He did it not in order to attract people, nor to get an opportunity to speak to them, least of all in order to do miracles.

“When John the Baptist was in doubt whether Christ was really the One whom God had sent, Jesus would never have answered that “the blind receive their sight and the lame walk,” if He had not meant that the act of healing did, in an essential way, reveal Him as the One whom the Father had sent.

“The Lord saw very little spiritual results of His healing. When He in spite of this continued to heal to the extent He did, the reason was His compassion and mercy, and that He was so permeated with the love of the Father that He could not but heal those who asked Him for help. The motive of His healing was to reveal the attitude of God towards men, the attitude and mind of the Father with whom He said He was one.

“Medical Missions and the work of Christian doctors should be a sincere attempt to walk in the footsteps of our Master approaching people with the same intention and in the same manner as the Lord

did, thereby revealing the attitude of God towards men. The act of healing was to the Lord an essential part of His work in proclaiming that "the Kingdom of God is nigh." The ministry of healing should be an essential part of the work of the Church.

"The Lord did not heal everyone. At the Pool of Bethesda we read that there were a multitude of sick, but we hear that He healed only one of them. Medical Mission work must never attempt to take the place of medical relief to the people of the land which it is the duty of the Government to provide, but the Church of Christ should never be without facilities for healing.

"Medical Missions should not be established with the sole object of getting hold of people, as the Lord never used the act of healing in that way. Medical mission work must never be misused in any way as a means to force upon sick people a religious teaching they have no desire to listen to. The Lord did not speak with everyone He healed about the belief in the Son of Man, but He could not but heal the sick. People have thought and spoken of medical missions as a philanthropic agency, a pioneer agency, and an evangelistic agency, as a means of reaching certain classes, for instance Moslems, women in Zenanas and frontier tribes. It is true that they have first opened certain lands and have made the work of the evangelist easier, that they have won the friendship of hostile people and tribes and opened the doors of Zenanas. But Medical Mission work is not a mere agency, but an essential part of the Christian message and the motive for healing the sick is a God-given compassion, such as was in the heart of Christ. Our plea is that in the thinking of Christians the ministry of healing should take that place.

"We heard the other morning that the Gospel should on the Mission fields not only be presented, but "passed on." There can be little doubt that just in the present world situation we have in the act of healing a most forcible way of 'passing on' the message, if the medical missionaries and the doctors belonging to the indigenous churches are able to approach the sick in the spirit of Christ.

"It cannot be a mere coincidence that the opening of the doors of the non-Christian world to the entrance of the Gospel, about the years 1850 to 1880, practically coincides with the great discoveries of modern surgery and medicine, which placed in the hands of the Church a power of healing never seen since the days of our Lord; and that, just at the moment when the World's Christian Student Movement sent out hundreds and hundreds of young men and women, this power of healing was then at hand, to be used by them in the proclamation of the Kingdom of God. When the Lord opened up the great non-Christian

world and sent out His messengers, He gave at the same time to His Church the new power of healing, and He gave it in order that it should be used.

“Though the ministry of healing had its place in the early church and down to the mediaeval time, in several European countries the Church has, during the last centuries, handed over practically the whole act of healing through hospitals and medical institutions to the State. In these countries the Church begins to regret it, and to remedy its mistake.

“The situation on the mission fields is in this respect a critical one. If the sending countries begin now to close their Mission hospitals and retract their efforts of healing, the same mistake will be repeated in all the indigenous churches, of leaving wholly to the State the ministry of healing, which should be an essential part of the work of the Church. It is during the next generation that the indigenous churches must prepare themselves to take over the medical mission work. If it is not done during the next 50 to 100 years, the ministry of healing will never be regained in the life of these churches.

“The question before us is, will the indigenous churches ever be capable of taking over the present mission hospitals? This does not mean that the indigenous churches may not find new ways of carrying out the ministry of healing in addition to the mission hospitals. We believe that if the churches are to take over the work, a certain condition must be fulfilled in the present mission hospitals. The condition is that they must be thoroughly equipped and efficiently staffed, in the best possible way. The present situation demands medical missionaries better prepared than ever before. With the possible exception of one field, there is still a call for an increased number of medical missionaries from the West, to adequately staff the present hospitals. With a few exceptions, the urgent need is consolidation of the medical mission work already established. If thus equipped and staffed, the mission hospitals will then be able to do first class work, inferior to none in the countries in which they operate, not only on account of their efficient medical work, but also on account of the Spirit of Christ in which their work is done. The result will then be, as we already see to some measure, that the hospitals will become more or less self-supporting and the indigenous churches will then be able to take over the responsibility for them.

“The indigenous churches will never be able to compete with the medical relief carried out in Government hospitals, if the young doctors and nurses and other medical helpers do not learn *now* in the present Mission hospitals to do conscientious and first class work, and to do it

in the Spirit of Christ. To weaken the present medical mission work is, in fact, to prevent the indigenous churches from ever making the ministry of healing an essential part of their work.

“There are also other ways to follow in order to bring into the indigenous churches the ministry of healing in connection with the present mission hospitals, but it will here carry us too far to discuss. Only it should be mentioned that even if these churches should succeed in finding new methods of their own in which to carry out the act of healing, they will probably never be able to be self-supporting in *them*, unless their doctors are now thoroughly trained in first class mission hospitals.

“In conclusion, we emphasize again that the ministry of healing should become an essential part of the life of the indigenous churches as it was in the life of our Lord, who said regarding the healing of the man who was born blind: ‘We must work the works of Him that sent me while it is day.’”

Current Medical Literature

PRELIMINARY ENQUIRY INTO BERI-BERI IN BURMA

TAYLOR, MARTIN AND THANT

CONCLUSIONS

So far as the available information goes it would appear that:—

1. (a) Over the greater part of the populous agricultural areas of Burma beri-beri is not endemic or epidemic to any extent and although cases do occur their total number is very small.
- (b) There is a regular annual incidence in the larger coastal towns, notably Rangoon and Bassein which mainly affects Hindu labourers who are temporary immigrants from India.
- (c) Outbreaks of beri-beri frequently occur in certain small communities living under special conditions. These epidemics occur in timber-felling camps in forests, military police posts, schools, lock-ups, light-houses and light-ships, etc.
- (d) In one outlying area of the province, namely, upper Chindwin District, beri-beri is probably of more frequent occurrence than in the rural areas of the rest of Burma. Other such areas may exist and require further investigation.

2. (a) The diet of the average Burman both in towns and villages is generous and varied and comprises a good allowance of other articles of diet in addition to rice. In the villages a good quality of freshly hand-pounded rice is used and in the towns undermilled rice is usually eaten. Under normal circumstances the rice mills only mill up to immediate requirements and the rice is usually not stored for long in the milled state.
 - (b) Mohammedan dietaries, taken from town figures, are somewhat similar to Burmese but are slightly less in their quantities of food-stuffs other than rice. Special enquiries have not been made into diets of Mohammedan coolie gangs.
 - (c) The diet of vegetarian Hindus is similar to that of the same class in India and shows the use of considerable quantities of atta as well as the use of milk and milk products. The use of atta will be of value in replacement of any vitamin deficiency in the rice used.
 - (d) The meat-eating Hindus form a large class with somewhat varied diet habits. Their dietary is distinctly inferior to that of Burmans and in the case of certain groups is extremely badly balanced. Large groups of Indian immigrant coolies, chiefly Hindus from Madras Presidency working in the larger coastal towns, consume large quantities of rice, frequently $2\frac{1}{2}$ lbs daily and use extremely small quantities of any supplementary articles of food.
3. The outstanding feature of beri-beri in Burma is its incidence amongst the Hindu labourers in the larger towns, large groups of whom use an almost exclusive rice diet.
 4. The outbreaks under the special conditions mentioned in 1. (c) the records of which have been examined or in which investigations have been made appear to be associated with two factors which prevail in varying degrees. These factors are (a) a diet consisting largely of rice with a minimum amount of other food-stuffs, and (b) conditions favouring the deterioration of rice which occurs readily when rice is stored in the husked state in the damp conditions of the monsoon in Burma.
 5. There is a definite seasonal prevalence of beri-beri in Burma commencing about two months after the establishment of the monsoon, reaching its height about October and diminishing during the cold weather months.

6. The deterioration of rice from damp and moulds appears to be a very important factor in the outbreaks we have had an opportunity of investigating. It is not possible to form a definite opinion on the evidence obtained, as to whether the production of any toxic substance in the rice may influence the occurrence of beri-beri or whether the necessary washing of the friable mouldy rice to make it fit for consumption results in such loss of the outer layers of the grain as will materially reduce its vitamin content.
7. The varied and generous dietary of the average Burman under normal circumstances would appear to be a very important factor in preventing the occurrence of beri-beri under ordinary town and village conditions.

Ind. Med. Research Mem., March, 1928

THE TREATMENT OF ECLAMPSIA AS OUTLINED BY DR. WILLIAMS

1. On admission.
 - (a) To be placed in a quiet, darkened room and disturbed as little as possible.
 - (b) To have a special nurse continuously until definitely out of coma.
 - (c) To have $\frac{1}{4}$ grain morphine hypodermically immediately.
 - (d) To be catheterized, examined medically and obstetrically, and bled for 200 cc. under nitrous oxide anaesthesia, if conscious (blood in oxylated bottle and sent to lab. for study).
 - (e) To be placed on one side, with the foot of the bed elevated so long as coma persists. Mucus to be swabbed from the pharynx as it collects.
 - (f) To have water freely while conscious. If the patient cannot drink on account of coma or lack of desire, the intravenous administration of 500 cc. of 5% glucose solution should be considered.
 - (g) Not to be delivered until after the cervix is fully dilated, and then by the simplest operative means, unless spontaneous delivery seems imminent.
 - (h) No chloroform to be used.
 - (i) Chemical assistants to be notified as soon as the patient is admitted, so that the necessary observations can be made.

2. One hour after admission :

If comatose, 30 grains chloral hydrate to be given in 100 c.c. of physiological sodium chloride solution and the same quantity of milk by rectum. If conscious, the chloral can be administered by mouth in 100 c.c. of milk.

3. Three hours after admission :

$\frac{1}{4}$ grain of morphine hypodermically.

4. Seven hours after admission :

30 grains chloral hydrate as above.

5. Thirteen hours after admission :

$22\frac{1}{2}$ grains chloral hydrate as above.

6. Twenty-one hours after admission :

$22\frac{1}{2}$ grains chloral hydrate as above.

7. General directions :

- (a) While eclamptic patients are under treatment, the assistants and nurses must insist on the greatest quiet.
- (b) Catharsis, sweating, or venesection in excess of 200 c.c. must not be employed.
- (c) No change to be made in the schedule unless authorized by the doctor in charge.

TABLE I

Usual Range of Certain Constituents of the Blood

	Nonpregnant Normal	Normal Pregnancy	Nephritic Toxemia	Eclampsia
Nonprotein nitrogen..	30-35	25-30	35-100	25-35
Uric acid	2.0-3.5	2.0-3.5	3.5-9.0	4.0-12*
Blood urea nitrogen..	13.4	13.3	13	13.4
Sugar.....	70-100	70-100	70-100	120-185*
Lactic acid.....	20-35	20-35	35-80	50-200*
Inorganic phosphorus	1.5-3.0	1.5-3.0	1.5-3.5	2.5-3.5 *
Carbon dioxide.....	55-65	40-50	40-50	15-55

CONCLUSIONS OF DR. WILLIAMS

- (1) In mild cases as well as severe cases of eclampsia, the results are better under conservative than under radical treatment.
- (2) In mild cases, a modified Stroganoff technic gives almost ideal results.

*Radical changes.

- (3) In severe cases, such treatment gives twice as good results as more radical treatment, but is still followed by a mortality so high as urgently to demand improvement.
- (4) It appears that all the generally used anesthetics super-impose an additional toxemia on that associated with the disease.
- (5) Consequently, the operative treatment of severe eclampsia will probably not show better results until some nontoxic anesthetic is discovered.
- (6) It appears, that, after accouchement force, cesarean section performed under the usual general anesthetics is the worst treatment for eclampsia.
- (7) The necessity for still greater extension of prenatal care is the efficient means for the prevention of eclampsia.
- (8) It is necessary to realise that toxemia of pregnancy is a vague general term, and that we have to deal with several types and not with a single one.
- (9) The treatment of eclampsia must remain empiric and relatively unsatisfactory until the actual cause of the disease is discovered.

*The Queen's Hospital Bulletin with
Palama Clinic Section October, 1927.*

GIARDIASIS IN MAN

There has always been much diversity of opinion regarding the pathogenicity of *Giardia lamblia* in man. The clinical manifestations which have been attributed to the presence of *Giardia* in man include (1) diarrhoea, persistent or intermittent, with intervals of constipation; (2) chronic gall-bladder disease with symptoms of epigastric or right upper quadrant pain, discomfort or tenderness, dyspepsia, belching of gas, nausea, vomiting and diarrhoea; and (3) certain other obscure conditions in which the ætiology is not apparent. In a recent study Boeck* has investigated the prevalence of giardiasis in man and its relation to diarrhoea and gall-bladder disease.

He points out that the belief among physicians that *Giardia* causes diarrhoea appears to be due to these factors: (a) numerous reported "cures" are now known to be in most cases without basis or fact;

*Giardiasis in Man: Its Prevalence and Relation to Diarrhoea and to Gall-Bladder Disease, by W. C. Boeck, Ph.D., M.D., *Archiv. Int. Med.*, xxxix, January 15, 1927.

(b) reported cases of diarrhoea and "cure" by physicians in a group of selected sick persons complaining of diarrhoea, such evidence is one-sided, for the well persons with *Giardia* do not come under the physician's care, but are encountered in protozoan surveys that do not include such an exclusive selection of persons; (c) animal inoculation experimentations and the observation of material obtained at necropsy of man infected with *Giardia* are cited as evidence, but a review of the data shows the evidence to be either meagre and devoid of proper controls or open to other interpretation.

Boeck shows that there is no specific systematic onset which characterizes infections of *Giardia* clinically, and states that if we weigh the evidence at hand, there is little scientific proof that *Giardia lamblia* causes diarrhoea in either children or adults, except a few obscure and sporadic cases, whilst there is as much evidence, statistical and pathological, that this protozoan does not cause diarrhoea, and it remains to be proved whether *Giardia* influences temporarily an existing affection, e.g., duodenitis or colitis of bacterial origin which causes or aggravates a diarrhoea already present.

A review of the evidence that *Giardia* may cause chronic cholecystitis or secondarily complicate this condition appears to be based on inadequate evidence, and the data at present available indicate that *Giardia* does not initiate any pathological changes, and it is questionable whether it tends to aggravate, prolong or extend any pre-existing inflammatory condition of the duodenum or gall-bladder. The rare entrance of *Giardia* into the biliary tract is probably dependent upon the presence of a lesion in the papilla of Vater which involves the sphincter of Oddi, thus causing a dilatation of the common duct. Nor has it been shown that *Giardia* will produce any pathological condition, even when introduced into the biliary tract. It would thus appear that further investigation is necessary to determine whether this flagellated protozoan may frequently invade the gall-bladder or whether it gains entrance as a secondary invader, following antecedent pathological conditions of the biliary tract.

Finally, the theory of Barlow, that *Giardia lamblia* is concerned in the ætiology of arthritis deformans, certain forms of neurasthenia, melancholia with loss of weight, and such symptoms as nausea, vomiting, belching of gas, and epigastric pain and tenderness, is unsupported by any evidence of scientific value.

EFFECT OF CARBON TETRACHLORIDE, CHENOPODIUM AND THYMOL ON THE OVA OF EXPELLED HOOKWORMS*

The object of this study was to find out whether a drug against hookworm exerts any action on the ova contained in the uteri of expelled female worms. If it can be demonstrated that a vermifuge is capable of inhibiting the development of the larvae or completely killing the ova even when these are kept under favorable conditions, then such ovicidal action not only may indicate the ancylostomicidal power of the drug but also may possibly be used as an index or coefficient of efficiency.

In a series of observations on hookworms removed from patients and cadavers to determine the maturity and fertility of the females, it was observed that those obtained from autopsy when left in clean tap water at room temperature (25 to 30° C.) for twenty-four hours always, on being crushed between slides, showed motile, free-swimming larvae, or at least moving, coiled larvae in the shells, provided the ova had been fertilized.

It was observed that, when the number of parasites was large, almost every female had been fertilized. In only rare cases could an immature or unfertilized female be found.

The present observations were made on female hookworms, removed by treatment, from twenty-five patients divided into three groups; those of the first group were given carbon tetrachloride in doses of 1 cubic centimeter to every 5.5 kilograms of body weight and 1 cubic centimeter to every 7 kilograms of body weight; those of the second group were given chenopodium, 3 cubic centimeters in two 1.5 cubic centimeter doses, followed by magnesium sulphate; and those of the third group were given thymol, 2.6 grams in two doses of 1.3 grams each, followed by magnesium sulphate.

All stools for twenty-four hours were saved and screened, and the parasites left in separate Petri dishes with tap water at room temperature (25 to 30° C.). They were crushed between slides, some of them twenty-four hours after recovery of parasites and the others the following twenty-four hours.

The female parasites expelled by carbon tetrachloride failed to show development of ova into active larvae, while those expelled by chenopodium and thymol all showed active larval development, except a few, probably immature or unfertilized ones. Mostly *Necator* were examined, as *Ancylostoma duodenale* were few in this series.

*Extract from an article by C. Manalang published in the Philippine Journal of Science, April 1927.

This ovicidal property of carbon tetrachloride seems to confirm its superiority over chenopodium and thymol in the treatment of ancylostomiasis. Tetrachlorethylene has also been found to be ovicidal.

If the results of this study could be confirmed in a larger number of cases, it might be of value in determining the ancylostomocidal coefficient of a drug.

Improper emulsification of a vermifuge in the intestine may be responsible for failure.

The use of an inert, porous, powdered solid as a vehicle for anthelmintics is suggested.

Malayan Medical Journal, December, 1927.

THE AETIOLOGY OF GRANULOMA INGUINALE

Writing from British Guiana in 1896. under the title of "Lupoid Form of the so-called Groin Ulceration of this Colony," Conyers and Daniels gave the first description of a condition of ulceration of the inguino-perineal region, which has now been recognized as a definite clinical entity and known as granuloma inguinale, as granuloma venereum and as ulcerating granuloma of the pudenda. Many views have been held regarding the aetiology of this condition, which has been discussed at length in two recent papers by McIntosh and Campbell.

The disease occurs in tropical and subtropical America and in Africa, Asia and Australia, but is rare in Europe and North America, although cases have been recorded in patients who have never been outside New York. In the majority of the recorded cases negroes have been attacked; the white races appear to be almost immune.

The disease first shows itself as a small moist papule on the penis in males (who are more frequently attacked) and on the labium minus in females, which rapidly ulcerates. The growth and ulceration extend, invading the surrounding tissues by an elevated, reddish, often shiny, delicately skinned granulomatous proliferation, superficially ulcerating when moist, cracked when dry. The lesions, however, are usually moist, with a thick, mucoid exudation and a peculiar offensive odour which is very characteristic and has been likened to that of dead fish. In the regions first affected there is usually seen some attempt at healing by the formation of dense scar tissue, though the disease as a whole shows no tendency to spontaneous healing.

The disease spreads by auto-inoculation and peripheral extension, and is usually of the greatest severity along the folds of the skin, especially the inguinal and gluteal. There is also often a patchy

distribution to be seen over the dependent genitalia, due probably to inoculation by clothing transmission and friction. Adenopathy is characteristically absent, though lymphatic involvement may be indicated by the occurrence of elephantiasis of the genitalia, and occasionally of the leg. The lesions themselves are only mildly sensitive, there is very little pain or pruritus, and the patients are singularly free from discomfort.

Daniels laid stress on the variation of the disease in various races; thus, in negroes it is more granular and spreads, in Indians it is less marked, whilst in Fijians it is softer and separate areas are commoner.

Conditions with which the disease is likely to be confused are syphilis, soft sore, lupus and epithelioma. From syphilis it can be differentiated by the absence of secondary eruption and inefficacy of antisyphilitic treatment. As regards the Wassermann reaction, it may be noted that in the 18 cases from the Bellevue Hospital, recorded by Campbell, this reaction was positive in seven. From soft sore it may be differentiated by the more chronic course. Lupus and tuberculous ulceration are very rare in such situations; tubercle bacilli cannot be demonstrated and animal inoculation is negative. In epithelioma there is greater induration and the lymph glands are affected. In doubtful cases, however, a biopsy specimen constitutes the most reliable diagnostic. That the disease is an infective one appears to be self-evident, yet, notwithstanding the seat of the lesions, transmission by sexual intercourse has not been observed. In fact, it has been shown that repeated exposure of normal individuals through coitus to those suffering with granuloma inguinale without their contracting the disease suggests that an actual breach of continuity in the cutaneous surface is necessary for successful inoculation or that the causal organism is infective only for susceptible individuals. Of the various micro-organisms that have been described in this disease and considered to be the causal agent, the Donovan bodies, peculiar ovoid inclusions within the large mononuclear cells present in the lesion described by Donovan in 1905, have received most attention.

Morphologically, these inclusion bodies are encapsulated, Gram-negative, coccoid or coccobacillary forms, the bacterial position of which is uncertain. In many respects, indeed, they closely resemble the encapsulated bacillus of Friedländer, and some have considered the two organisms to be identical or closely related.

McIntosh's data support the belief that the Donovan body is the cause of granuloma inguinale, and he believes that it is a bacterium unrelated to the Friedländer group of organisms. Campbell, however, considers that the aetiology is still indefinite, and that while the

intracellular inclusions described by Donovan seem to bear a direct relationship to the disease and are found with striking constancy, the disease has never been experimentally produced by the injection of these organisms (or what is considered, morphologically and culturally, to be these organisms) alone. Experimentally, too, Campbell's results have been uniformly negative in attempts to reproduce the disease by bacterial injection.

Hitherto, then, none of the organisms described in this disease have been able to fulfil Koch's postulates, and until these postulates can be specifically fulfilled the aetiology of granuloma inguinale must be regarded as not definitely established.

Jour. of Trop. Med. and Hyg. January 2, 1928.

THE USE OF PARATHYROID EXTRACT IN HEMORRHAGE

BURGESS GORDON, M.D., and ABRAHAM CANTAROW, M.D.

SUMMARY

1. To a series of 347 patients with hemorrhage from various causes, parathyroid extract was administered.

2. Cessation occurred in 304 patients following one or more transient increases in the calcium content of the circulating blood.

3. The most favorable results followed the administration of from ten to fifteen units every thirty-six hours for one to three doses.

4. As a preoperative measure in jaundice, it reduced the coagulation time to within normal limits and apparently prevented hemorrhage.

5. The unfavorable results occurred when overdosage and prolonged administration were employed. In addition, unfavorable results occurred in blood dyscrasia (puerperal hemorrhage and hemorrhagic disease of the new-born) irrespective of the size and number of doses, apparently because of certain local changes in the tissues.

6. As compared with the common experiences with oral and intravenous administration of calcium the results are more dependable, and furthermore gastric irritation and other untoward effects are avoided. The hormone was found to be of special value in patients recovering from surgical operations who were unable to tolerate oral therapy.

7. The use of parathyroid extract is suggested as a means for controlling hemorrhage because it effectively mobilizes calcium salt, which is normally stored in the body and which is necessary for clotting.

J.A.M.A. April 23, 1927.

THE ANTIMONY TEST IN THE DIAGNOSIS
OF KALA-AZARR. N. CHOPRA, M.A., M.D. (Cantab.), MAJOR, I.M.S., J. C. GUPTA, M.B. (Cal.),
AND N. K. BASU, M.B. (Cal.)(From the Department of Pharmacology, Calcutta School
of Tropical Medicine and Hygiene.)

DISCUSSION

The antimony test for the diagnosis of kala-azar is dependent on the alterations in the composition of the blood produced by the disease. The alterations which take place in the blood and bring about these changes we hope to deal with in a separate paper; but it may be mentioned here that our observations lead us to conclude that probably it is in the euglobulin content of the serum which is increased and which is responsible for the formation of the flocculent precipitate. Whether this increase is brought about by changes produced in the normal metabolic processes of the body due to the disease, or whether it is due to the introduction of foreign protein from the disintegration of the parasites it is difficult to say. The fact that a strongly positive test may occasionally be obtained in conditions other than kala-azar may possibly point towards the former view. In the patients one meets with in Bengal, however, it is not possible definitely to exclude *Leishmania* infection. We have, therefore, undertaken to do the test on a large series of cases in an area where kala-azar is not endemic and the results will be published in due course.

SUMMARY AND CONCLUSIONS

1. In performing the antimony test for the diagnosis of kala-azar the flocculent appearance of the precipitate is of prime importance, whether the test is done with the serum or oxalated blood. When the serum is used for the test, in positive cases the precipitate collects together into a mass at the junction of the two fluids. This mass does not break up on shaking and does not dissolve if the tube is allowed to stand for 24 hours.

2. Further observations on a large series of kala-azar and non-kala-azar cases confirm the value of the test as a diagnostic measure for kala-azar sera. Our results show that the antimony reaction is more sensitive than the aldehyde reaction and therefore gives more positive reactions with definitely kala-azar. The difference in their diagnostic value in excluding non-kala-azar sera appears to be very small.

4. The reaction appears much earlier than the aldehyde test; generally sera from patients obtained on the 15th to 20th day of the disease give a positive reaction.

5. The variations produced in the test during the course of treatment of the disease with antimony injections have been worked out. The test remains positive up to the 10th or 11th injection and then begins to become less marked. Our series of cases is at present too small to draw any definite conclusion, but they tend to show the possibility of the test being used as one of the criteria of cure of the disease.

6. In dermal leishmaniasis the test is as a rule negative.

Ind: Med: Gaz. December, 1927.

UNITED STATES PUBLIC HEALTH SERVICE

VENTILATION IN THE HOME

The United States Public Health Service, as has recently been pointed out by Surgeon General H. S. Cumming, has repeatedly called attention in its many publications to the enormous number of colds and other diseases of the respiratory organs (nose, throat and lungs) which occur during the winter months of the year. Comparatively few people have colds in the summer months, but in the winter, even with the first onset of cold weather, colds, grippe and pneumonia appear and continue to increase in number, causing much discomfort, ill health and death until late in the month of March. In a five-year study which the United States Public Health Service has recently completed it was found that diseases of the lungs (respiratory diseases) accounted for nearly half (47%) of all of the cases of sickness reported. This constitutes a tremendous burden on the well-being of the worker as well as an economic burden on industry.

The winter increase in colds and diseases of the lungs is due to several factors: of first importance is our manner of living in the winter, which brings us in more intimate contact with one another and allows a much greater chance for the dissemination of infection. Secondly, although the effects of outside weather conditions and their relation to respiratory diseases is not well understood, there seems to be little doubt but that changes in the weather and exposure to cold and dampness may play a definite part. Lastly, and possibly of more importance, is the poor ventilation which takes place in the home, factory, or office.

For a long time it was thought that the evil effects of poor ventilation, or of a lack of ventilation, were due to chemical changes in the atmosphere; that is, to changes in the quantity of oxygen and carbon dioxide present. But about the year 1900 this idea was found to be

incorrect. Now we know that the home or ordinary room is never air-tight and as a result air is always leaking in about the windows and doors. The chemical composition of room air, is, therefore, prevented from changing in any great degree and for all practical purposes remains constant.

Man is like a small furnace—he eats food which is utilized to supply the energy necessary for his daily work. The burning of this food in the body gives rise to heat. Some of this is used to keep the body warm while some must be wasted. The heat which is wasted is given off the surface of the body through the skin and the breath.

In cold weather, outdoors, it is necessary to protect the body against the too rapid loss of heat, and for this reason heavier clothing is and should be worn at such seasons of the year. Indoors in winter we use fires and furnaces in an effort to keep warm. But if we heat our homes too much we interfere with the body in its efforts to lose its excess heat. The purpose of ventilation is to surround the body with an atmosphere which is of such a temperature that the heat loss from the body will take place at the proper rate; not too rapidly and not too slowly. If the home is kept too warm that so the body cannot lose its excess heat, then the body will become overheated; this places an extra burden of work on the body. Should the body become sufficiently overheated perspiration or sweat will appear on the skin. When such overheating takes place and then a person is chilled by being in a draft of cool air or by going outdoors, then the possibility of taking cold is very greatly increased.

Ventilation has been the subject of much research by the United States Public Health Service as well as certain other health and research organizations. It has been found that the most comfortable temperature as well as the most healthful one is between 68° and 70°. There should be a slight amount of air motion in all rooms such as is produced by a small window opening. If the temperature is kept between 68° and 70° the moisture of the air, or as it is generally known, the humidity, will be kept at a satisfactory point from the health viewpoint.

Scientific studies have shown that a room temperature over 70° may not be healthful because the overheating produces a slight increase in body temperature as well as the pulse rate and the breathing rate, because the blood pressure falls and there may be a decrease in the efficiency of the blood circulation system.

Studies have been made in schools in which the rooms were kept at 68.5° and 66.5°. They showed that there was 70% more colds

among the pupils in the higher temperature rooms than among those in the rooms maintained at 66.5°.

The proper way to ventilate the home is to provide an accurate thermometer in each living room. This should always be maintained at 68° to 70° by regulating the supply of heat and by keeping the windows open slightly. The slightly opened window will produce a sufficient air movement in the room so as to be stimulating and refreshing and the room will feel comfortable and not stuffy. With a little experience it is possible to maintain these conditions without a great deal of effort, and for persons in good health the home will be very comfortable.

The ventilation of the sleeping or bedroom is different from the living room. Here the body is at complete rest and covered with heavy bedding which serves to keep it warm. Under these conditions it is possible to take advantage of the full outdoor air by having the windows wide open and having the air circulate about the room. This air movement is very beneficial. It stimulates the nerves in the skin and invigorates the body. Keep all the windows in your bedroom open at night and keep covered with sufficient warm bedding so that you do not feel cold. For a long time it was thought that night air was particularly unhealthy and that it must be shut out of the house by the closing of windows. This is a relic of the days when men closed and barricaded the doors and windows of their houses in order to prevent the intrusion of enemies and thieves. Now we know that all outdoor air is the same—both night and day and that outdoor air is never dangerous. Keep properly dressed and do not roast your body so that later it may be chilled and you may take cold.

A draft is a rapidly moving stream of air. To cut down drafts in the home it is not necessary to close the windows but merely to open them but a slight amount.

Heat your homes until they are comfortably warm. Do not bake yourself so that you take cold when going outdoors. Sleep in a room with windows open and keep warm with plenty of bedding. Air, like sunlight, is man's great benefactor. Get all the outdoor air you can and in this way you will be helping yourself to be free of colds.

Book Reviews

GYNECOLOGY FOR NURSES. H. S. CROSSEN, C. V. Mosby Co, St. Louis U.S.A., 1927.—Price G\$2.75.

The author has incorporated into this work a good many excellent illustrations from his works on the "Diseases of Women" and on "Operative Gynecology." Besides these illustrations, there are others showing posture, draping for operative procedures, etc., and although these procedures are in the main the individual practice of one clinic, the general teaching is sound. One is glad to see such details as the position of the arms during operation, the method of securing a retention catheter, stomach lavage, and proctocolysis, well explained both by illustration and in the text.

The anatomical details are good and not too elaborate, and the diseases of ovary, tubes, uterus and pelvic floor are carefully expounded both by picture and text. Fig. 77 from the "Diseases of Women," giving a diagrammatic representation of the spread of carcinoma of the cervix ought to fix this on the mind of any reader.

Venereal diseases are well described, and the dangers to the nurse of both syphilis and gonorrhoea are clearly explained. The chapter on gynecologic examination and diagnosis is well written, and the place of Rubin's test and the X-ray in this examination is not neglected. Non-operative measures for the cure of gynecological conditions are not overlooked though the reviewer thinks that sufficient care has not been taken to point out the dangers of treatment with pessaries, and it is a question whether stem pessaries, which may be most dangerous should be given such a prominent place. The treatment of cancer by Radium and X-ray is described and its limitations and dangers stated.

Operations and their technique comprise a considerable portion of the work. These details are clearly given and work both in the office and in the home is described, as well as the needs of a first class operating theatre. The author is strong in his recommendation of the continuous strip sponge for abdominal work, and advises sheet rubber for packing off the intestines, and good directions are given for the preparation of these and other gauze sponges. Careful details are also given of methods used for the care, sterilization and storage of linen, the care of rubber gloves, etc.

Chapters are devoted to the preparation of the patient for operation, and the post-operative care needed in abdominal and vaginal operations.

The book is well printed, on good paper and the index is sufficiently extensive. It should prove very useful to all nurses who are working in gynecological clinics or are engaged in hospital work and the doctor himself might read the book with profit.

J. P. M.

ADVICE TO THE EXPECTANT MOTHER ON THE CARE OF HER HEALTH. (in Chinese). DR. LEE of The Department of Obstetrics, Peking Union Medical College Hospital.

This is a small booklet written especially for the benefit of the expectant mother. The author opens the book with a brief account of a few most important obstetrical complications; namely, eclampsia, contracted pelvis, breech, foot and transverse presentations. Then he tells about the signs and symptoms of pregnancy and follows with the signs and symptoms of onset of labor.

The author then gives a very detailed discussion of the care of the mother during pregnancy. He first considers the care of her diet, in which he tells which kind of food she should take and which she should avoid. Then he discusses the proper amount of exercise, the minimum amount of rest, the importance of cleanliness, the care of her teeth, breasts, bowels, and the proper kind of clothes. He warns against criminal abortion, excessive sexual relations especially in the last three months of pregnancy, and emphasizes the importance of care by a physician.

Some of the common minor ailments of pregnancy are carefully discussed and their respective treatments given. The last part of the book is devoted to the care of the mother after labor and the care of the infant.

Every thing in this book is put in a very simple and yet emphatic manner. Undoubtedly many complications could be eliminated and many lives could be saved if every expectant mother could read this book and act according to its advice conscientiously.

Z. T. W.

ARBEITEN UBER TROPENKRANKHEITEN UND DEREN GRENZGEBIETE. BERNHARD NOCHT, zu seinem 70. Geburtstag gewidmet von Freunden u. Schülern. (Hamburgische Universität: Abhandlungen aus dem Gebiet der Auslandskunde—Band 26, Reihe D, Band 2. (No price given.)

To do justice to a volume of 634 pages containing papers by 92 different authors in the space available is obviously impossible. The contents cover almost the entire field of tropical medicine while several papers of a more general nature are to be found as well. Most contributors have written in German, but some English, Spanish, Italian and French articles are also met with. South America is represented best; among the contributors from China are Hoeppli (Amoy), Hung Lee Hu (Peking), Kessler (Shanghai) and Meloney (P.U.M.C.).

To pick out at random a few items which caught the eye of the reviewer. We learn that the main causes of infant mortality in Sumatra are infectious and acute pulmonary diseases (p. 21). Attention is called to *Leptothrix* as a cause for pulmonary infections (p. 134). There are analyses of the *Anopheles* species of Mexico (pp. 184-197) and of Anatolia (pp. 286-313) which should be of interest in China as well. The same remark would apply to several papers on hookworm dealing with this disease in Witwatersrand (pp. 111-115) and Egypt (232-6).

Many articles are accompanied by very good tables with photographs and microphotographs. There is a short table of contents but no index. In the volume under review, page 419 was so badly torn that about $\frac{1}{2}$ of it was missing altogether; in some other places a few lesions of the paper were also noted.

One is impressed by the large amount of valuable work done in tropical medicine, inspired by Bernhard Nocht to whom this volume is dedicated.

G. V. B.

MONSOL—CLINICAL AND PATHOLOGICAL DATA. Published by The Mond Staffordshire Refining Co., Ltd., 47 Victoria St. London. *For the Medical Profession Only.*

We have received a copy of this book of a hundred odd pages for review. The greater part of it is devoted to brief clinical accounts of the action of the drug as an antiseptic in skin, genito-urinary, alimentary and other affections,

That antiseptics continue to be produced in considerable numbers is certain proof that the ideal one has not yet been obtained. The objections to antiseptics in general are twofold—that they coagulate albumen which then covers the organisms and so renders them immune to further action of the antiseptic, and that they are protoplasmic poisons without special selective action on organisms.

In this report there is no indication as to how far the first objection may be met in respect to Monsol, but as regards the second there appears to be clear evidence of a very markedly selective action. This is shown by the fact that a 5 per cent solution can be given safely to animals by intravenous injection without serious reaction and without affecting the leucocyte count when the fresh drug is used.

In vitro. Monsol in a solution of 1-1000 is shown to destroy all streptococci in a 1-10 emulsion of fresh faeces without however markedly affecting the coliform bacilli content. A dilution of 1-500 however reduces very largely the bacillary content and 1-200 removes it completely.

The non-irritant properties of Monsol are shown by the fact that it can be applied pure to the skin without causing any caustic effect.

In view of these facts it would seem possible that the drug may prove to be an intestinal antiseptic of considerable value but more clinical experience will be necessary especially in view of the many disappointments in the past with regard to intestinal antiseptics which appeared to be full of promise.

We have also received samples of this drug attractively done up for throat and intestinal use, as well as in liquid and ointment form. J.L.M.

Hospital Reports

MOUKDEN MEDICAL COLLEGE. 1926

Again we have to congratulate the Moukden College on a report which speaks of steady and satisfactory work, through a period which even in the extreme north has not been free from difficulties.

No interruption of the work has occurred during the past year though the number of students entering the College in 1927 has been a little smaller than in previous years.

This report is not a medical report in the ordinary sense of the word but a general review of the position of the College and the Staff, impressions of a visit to Europe by Dr. Leo and accounts of activities connected with the Institution. One of the most interesting of these was a class held for Coroners at the request of the Government in which twenty law students received a four months course dealing with Physiology, Experimental Physiology, Anatomy, Toxicology and Forensic Medicine.

The report closes with a brief financial statement and a detailed account of the contributions received from Home.

The staff of the College now contains four Chinese full professors and five Chinese lecturers, 25 per cent of the Senatus being Chinese. This is a splendid example of real evolution and promises a stable future for the College, which is not so certain in schools where a sudden revolutionary change to meet emergency conditions has had to be carried out.

TEIAN HOSPITAL, HUPEH. W.M.M.S. 1927

Staff: Dr. Owen Chapman

Nurses: Foreign 1; Chinese 1.

Inpatients 636. Outpatient Attendances 6707.

The get-up of this report is very attractive and the contents equally so, clearly printed on good paper and showing careful proof-correction that is sadly lacking in a good many of the printed reports that reach our office.

The first part of the report gives a brief history of the founding and early days of the hospital. Then follows an excellent account of the various activities and finally an interesting description of how the work was carried on through the stormy days of 1927, when the hospital not only stood firm itself but proved to be the rock to which the whole Christian Church of Teian looked for support and encouragement.

The report closes with a particularly valuable inpatient table of diseases and operations. These statistical tables are a model of what can be done in a small hospital with very limited staff, and might well be taken as an example for country hospitals to copy. They are short but clear, leaving out nothing essential and putting in nothing unimportant.

News and Comments**Dr. Maxwell**

Notice is called to the change of address of the Secretary and Editor. He has now left his former residence at 236 Seymour Road and is staying temporarily in the Missionary Home, 38 Quinsan Road until a flat which he has secured is ready for occupation.

Monsoi

We have received samples of this preparation from Messrs. Brunner Mond & Co. in liquid form and also in lozenges, capsules for internal use, and ointment. A review of a book on this new antiseptic is published among the *Book Reviews* in this issue.

Dr. McAll

Dr. P. L. McAll of the Council on Publication left Shanghai on furlough by the Empress of Asia on June 2nd.

Red Cross Work

Engaged in special Red Cross work with units from Shanghai are:— Dr. Sturton of Hangchow in Hsuechowfu; Dr. Manget of Huchow, Che. in Kaifeng; and Dr. Leavell of Wuchow, SL, on his way to join the unit in Kaifeng.

C. M. J. March Issue

We gather from a number of letters recently received that several of the copies of the March issue of the Journal have failed to reach our members. This seems to apply mainly if not entirely to copies sent to residents in Peking. We presume that troubles in postal connection with that city are responsible for the failure of the Journals to arrive. As far as possible we will supply duplicate copies but would be glad to hear at once from members who have not received this number.

NEW MEMBER PROPOSED

Traut, Heinrich	M. D. Tübingen	Basel Mission	Hoyün, Tung.
	Proposers:—Dr. James L. Maxwell Dr. Iva M. Miller		

NEW MEMBERS ELECTED

Dr. W. A. Busby	L. M. S.	Kulangsu, Amoy.
Dr. T. Y. Kuan	Ind.	Chang-Chia-Wan, Kirin.
Dr. H. R. Worth	E. P. M.	Swatow, Tung.