### Indices to
The China Medical Journal

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SOME FACTORS CONTROLLING THE FOOD SUPPLY IN CHINA.

B. E. Read, Union Medical College, Peking.

Of the many side issues to the Great War about the most important was the Food Supply to the many warring countries. Germany was the first to institute a food controller. His work was well described by Dr. Alonzo Taylor in four popular articles published by the "Saturday Evening Post." Their adoption of the American calorific standard and the dearth of vitamine containing fat foods were the most noteworthy points. Britain soon followed Germany's example and America right early organized her food stuffs to meet the needs of her allies and also her own troops.

In order to accomplish the great task of controlling the food supplies our leaders required and used certain factors and were very successful. Of course primarily there was needed an accurate knowledge of the output of each district or country concerned, also all the scientific data possible concerning each article, that suitable supplements or substitutes might be forthcoming wherever necessary. We have no small amount of information about our food, its supply and uses for many hundred years, so comparatively speaking the task was an easy one.

It is of interest to peruse such a book as Cogan's "Haven of Health" published in 1584 with its descriptions of hedge-hog suppers and Welsh rabbit, and recipes for such things as Welsh Nectar "that Juniper and Juno drank." Such an old book brings out very well one of the greatest factors in diet, viz., Habit and Local Custom. We find the following paragraphs:

"Of French wheate I can say thus much by experience that in some parts of Lancashire and Cheshire they used to make bread thereof for their households, being mingled together with barley, but for the winter time only. Also therewith they fat their swine, for which purpose it is greatly commended, and in my judgement it is more
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fitte to feede swine than men." "If Galem had lived in Englande he would say otes had been meate for men. For in these parts they are not only provinder for horses but they also make malt of them and thereof good ale." "We have no better proof than is in the Universities of Oxforde and Cambridge where the students have commonly but one kind of meate at a meale, and doe live and like verie well therewith and be for the most part as cleane men of personage as lightely may be seen." Their dinners consisted usually of one cent worth of boiled beef, pottage, bread and beer, with prunes for dessert. Beer was universally taken but our writer notes an exception to the rule. "Some odd abstemioues, one among a thousand, perchance degenerate and of a doggish nature." There were only two meals a day, and dinners at the time of good Queen Bess lasted three to four hours, from which custom arose the well-known saying. "After dinner sit a while, after supper walk a mile."

Since Cogan's time we have gleaned much of scientific value to our subject, the sum of which placed our leaders in a powerful position to control the food supply.

Whilst we at home in the west were grappling with this big problem, here in China there were serious local problems. Floods and famines, scourges and epidemics bringing great distress and misery to thousands. It is no new condition of affairs, but one that has absorbed the interest and effort of many good men.

To successfully tackle the situation we need to review and understand the factors at present controlling it, and then to find ways and means of modifying or removing them to meet the real solution.

"Supply" is largely controlled by "Demand," therefore we need to review the individual's demands. Personal taste is by far the greatest factor in our diet. Dr. J. T. Smith discusses its psychology in an able paper "Our mental attitude towards food," showing how every one of the senses play its part in our likes and dislikes. Sight is appeased by white bread, yellow butter, blued sugar, brown eggs. Most people like the smell of coffee, beefsteak, oysters, etc. The flavors of many foods quite overcome the idea of hunger, and they are eaten in huge quantity just because we like them. There is no doubt that the senses of hearing and feeling also greatly influence our appetites. The Russian physiologist Pavlov has shown how intimately the senses are bound and how easy it is to develop associated reflexes. Dogs "through habit" will salivate upon hearing a bell ring and go through all the motions of appetite. The importance of this point has been emphasized often in "aesthetic service," the style as it
effects every one of the senses, the clinking of glasses and good conversation, how it makes a difference in the amount we eat at a meal.

The sum of these associated reflexes constitutes habit, and, regarded in the mass, it is called custom. How great a factor custom is in every phase of life in China, we all know exceedingly well. We need to analyze it, and in this problem to permeate every channel with our propaganda if we seek to effect any real change.

It is considered that the number of meals, the amount of each meal, and the kinds of food partaken of, should with very great benefit to the individual be modified. These three things are almost entirely dependent upon custom, which needs to be attacked at its source. Any radical changes in food stuffs will not be brought about successfully unless the psychology of the situation is studied and idiosyncrasy pandered to, as regards the look and taste and smell and sound and the general associations of each article.

A change in the number of meals will not be successfully brought about unless some larger financial, economic or other factor be brought in, according to the circumstances prevailing.

Food 'Demand' is further influenced by a changing individual. Professor Mendel has emphasized this in his description of the Swiss farmer who formerly living on a good country diet was strong and robust, but to-day for economic reasons he sells all his farm products and lives on a very poor diet. In China we have factories springing up all around bringing the country folk into the cities with consequent changes of living conditions. Several events such as the Chinese labor in South Africa and the Chinese Labor Corps in France have given to many thousands a taste for good food and better living which they bring back to their old environment effecting many changes there.

Complementary to demand is 'Supply.' The supply depends chiefly upon local production.

Food production is dependent upon three sources, their relative importance depending upon their intensity: (1) wild produce; (2) cultivated produce, including the raising of stock; (3) manufactured produce. Wild produce includes fish, game, and wild plant stuffs. Island countries like England and Japan have made a very great thing of their fisheries. China when provided with better transport could send a larger amount of fish to every big city at a lower price than is being done at present. With such an abundance of chickens and at such a low price it is not to be expected that the shooting of wild game
would materially affect the market; if carried out to a greater extent it might serve as a good change to a monotonous diet of stewed, fried or boiled chicken of which certainly most foreigners get very sick. With regard to wild fruits excepting the wild date, eagerly sought after in the north, the country is very barren: nevertheless in the central and southern provinces there must be many wild edible plants growing in vast profusion and yielding marketable produce. All of these should be made use of. This could be attained by giving the individual a better general knowledge of transport, preservation, and business methods of advertising.

Intensive cultivation and the rearing of stock has gone along the path of least resistance, viz., attention has only been given to those things which with the smallest outlay will command the highest immediate local price. Pork is very plentiful because without any trouble every household can raise a number of pigs just on the refuse of the community. The far more digestible and preferable beef dishes are seldom seen because in the rearing of cattle, the pasture land and the cost of other necessary food stuffs are more than the average person feels able to afford to set aside for the purpose. Enough has been written and said about tuberculous pork for every thinking man to know that stock raising in China needs a fundamental change. Well conducted cattle and sheep farms would be a great blessing to the country.

The intensive cultivation of cereal food stuff has long been practised in China, but alas how often through lack of good transport do thousands of people in one area go starving whilst those in adjacent territory have a superabundance. Sir Wm. Crookes and others have emphasized the need for intensive cultivation in the west, he pointed out that to supply the wheat-eating countries our supply would not meet the demand after 1931 even if every acre were made to yield a maximum of 12.7 bushels. The war has shown how pressing a problem this is, and how, if scientifically handled, wheat to a certain extent might be supplemented with other grains. The dry ground in North China is able to produce good harvests of millet and sorghum and the wet marshy land down south produces a vast crop of rice. The actual values of these crops are unknown and can only be roughly gauged by the figures for the export of individual grains or beans from the big ports. Peking although situated in the north in the midst of a big millet and sorghum district lives on wheat and rice imported from Honan and other southern provinces. The majority of the sorghum grown is used for making the strong wine, “Kao Liang Chiu.”
may well speculate as to how long this would continue if China seriously sought to stamp out its famines by conserving its food products. Judged from the export figures the province of Chihli devotes four-tenths of all its produce to this purpose. The cultivation of fruits and vegetables has shown progress in the last twenty or thirty years. Chiefly through foreign help the city markets are now full of good fruits. Strawberries, tomatoes, Chefoo pears, grapes and bananas are abundant in Peking. It was less than twenty years ago that a pair of ornamental tomato plants were sold for $75, and now tomatoes are sold for about three cents a pound. Further cultivation needs extended knowledge and more land. Both are quite possible. The government holds huge tracts of land which could be devoted to this purpose. Their value runs into billions of dollars. Yuan Shih K'ai has them valued and classified under the following heads:

- Sand lands, barren lands, government farms, station lands and forests. China's chief products, tea, sugar and rice might not be suitable for cultivation, but many other things are and should be grown.

In an agricultural country with so few big factories one does not look for the existence of many manufactured products. Over seventy million dollars worth of beans were exported from China in 1915, and as much and perhaps more were devoted in China to the manufacture of special bean preparations. Eight articles are commonly sold. Foremost bean curd in its variety of forms, besides which we have sprouts, flakes, sauce, paste, oil, cake and refuse. The enterprising province of Canton has taken up the biscuit business, and other manufactured goods are rapidly finding their way on to the market.

To sum up these remarks on food production. Emphasis is needed to-day upon intensive cultivation for the biggest and best crops relative to local condition, not just relative to immediate local value. Such a policy could be made economically stable by better transport, advertisement and modern business methods, and the cultivation of the public taste.

Another factor in the Food Supply of any country is its ability to handle its produce so as to hold it ready for use at any needy time. Ordinary storage leads to great waste from putrefaction, pests and pilfering. All the means at our disposal for "food preservation" should be used. Drying, canning or bottling, pickling, salting, smoking, freezing or chemically treating are some of the means. China has many good dried fruits such as dates, raisins, persimmons, litchi, etc. Kitchens are well supplied with dried mushrooms, ginger, shrimps and many other good things. Canning has been adopted in the South at
some of the big cities. Bottling can only be done successfully where bottle factories are close to hand, otherwise the extra cost of freight and breakage of the original containers runs the price of the article up beyond a reasonable figure. A great deal more towards preserving food could be done in the South by the manufacture of artificial ice. In America especially almost wonders have been done with dairy and fishery produce by means of cold. In North China people have not overlooked this, but the natural ice used is so filthy that a change is desirable in every way. Fish frozen into ice will keep good for two years. A visit to the refrigerators of the packing industries of Chicago would surprise most of the Chinese who handle fresh meats and vegetables. Every city needs similar large cold storage plants and the railroads need refrigerator vans for the carrying of fresh food. Pickling and salting are secondary to a fresh food supply; however, in some cases they are to be preferred and are of greater economy in space and weight. Salted peanuts, various members of the turnip family, cabbage and vegetables of all kinds and salted mutton and pork dishes are prepared in great variety. Practically all of Heintz's fifty-seven varieties are or can be available. The chief criticism made is that insufficient precautions are taken to insure perfectly clean food. Emphasis is needed upon hygienic methods with efficient sterilization of everything handled. So produced goods would be more welcome on foreign markets. This will be most easily accomplished by collective industry controlled by large firms with strict supervision. The education in these matters of every small producer is a never ending task.

In the drying of persimmons one's appetite is not aroused by a man pressing them down through the core on to a central stick between the big and first toes. This and kindred practices must be changed in the new order of things.

Reference has already been made to "Transportation." It is a great factor in the world's food supply. International trade has so developed that when we look over our dinner table we are surprised that our food comes from so many quarters of the globe. Chinese tea to-day goes by ship, train and caravan to all parts. There are rapidly developing industries such as egg-powder and tou-fu preparations. We see in great quantity Chinese eggs in the Chicago market and tou-fu milk in Paris. Europe has for centuries imported goods from the East in early times by central Asian caravan, later by Singapore shipping, and to-day every artery of traffic is made use of. Whilst this is the case how is China faring internally? It is unfortunate that through lack of facilities one part of Anhwei periodically starves.
Some Factors Controlling the Food Supply in China.

while the other has superabundance and the same is true of other parts. It is a maxim that "Transportation destroys famine," then let us have it more and that of the most efficient kind. The multitude of local taxes, likins, etc., which kill present effort must be readjusted. It must not be overlooked that rapid progress is being made. The slow water traffic of former days, big arteries with a thousand ramifications covered the country, these are being replaced by railroads. On the larger lines of the thirty-odd railroads in China, freight traffic has been more than tripled during the last seven years, and there is every reason to expect it to go on increasing far more.

The old Siberian railroad had three types of engines according to the type of fuel used, viz., coal, oil, or wood, symbolical of the three great classes of food required in a good diet, viz., Carbohydrates, fats and proteins. This illustration introduces the factor which should be predominant in Food Control; which is, an adequate diet to make a nation grow up, to make them strong and keep them in good stamina against disease which is so prevalent. Dr. Sherman has divided an adequate diet up in the following way:

1. Adequate calorific production. Supplied by the combustion of carbohydrates and fats.
2. Ample amounts of protein food, and of a suitable kind.
3. The right amount and proportion of mineral salts, iron, calcium, phosphorus and sulfur.
4. Enough vitamine containing substances, that growth may be promoted.
5. Sufficient amount of roughage to ensure good elimination of waste products.

This last factor, an adequate diet, is a purely chemical one which in our present situation one obviously places last. It is by no means of the least importance rather it is uppermost in our minds when we think of the real changes needed in the food supply of China. An eminent English physiologist when visiting America speaking of the calorific standard said "You can't cook your breakfast with mathematics." There are other standards such as the metabolic standard. Whatever our standard is, it should be recognized that the factors involved are many and we cannot afford to overlook any one of them.

BIBLIOGRAPHY.

FURTHER NOTES ON THE THERAPEUTIC VALUE OF TYPHOID VACCINE.

W. W. Cadbury, M.D., Canton.

In 1917 the writer prepared a paper telling of the results of treatment with typhoid vaccine in a variety of conditions.

Altogether fifty-one patients were treated including the following diseases: acute arthritis, rheumatic fever, chronic arthritis, gonorrheal arthritis, syphilitic arthritis, neuralgia, tic douloureux, psoriasis, lichen planus, eczema, erythema induratum.

We have been able to follow up a few of the cases.

No. 18/909 with chronic arthritis remained in the hospital until March 1919. No more vaccine was given and no further improvement occurred.

No. 18/1015 with ankylosis of knee-joint remained in hospital till September 1919 when he could walk with crutches, no pains in knee but weakness persisted.

No. 18/1285 with acute arthritis remained well for a week after leaving the hospital on September 18. She returned on September 29 and received four more injections of vaccine together with sodium salicylate medication and was discharged free from symptoms at the end of a month.

Two of the cases of psoriasis have been seen and have shown slight recurrence, but were not as badly affected as before treatment was started.

Case No. 17/1434 with chronic rheumatic fever returned to the hospital in 1919 with signs of pulmonary tuberculosis. Her rheumatic condition was greatly improved.

Case 18/877 with tic douloureux returned six months later. She reported that attacks of slight pain continued until two weeks ago when they became exceedingly severe. These were relieved by one injection of vaccine. Operation was advised but the patient refused.

The relief obtained in a number of cases was so marked that it was felt desirable to continue the use of intravenous injections of typhoid vaccine in such conditions, as this form of therapy seemed warranted.

The reaction is generally severe and there is no doubt that an element of danger to life exists. With a proper preliminary study of the patient, however, we believe the risk is no greater than that.

Therapeutic Value of Typhoid Vaccine.

involved in administering an anesthetic. In two of our cases death may be attributed to the vaccine. One was a case of osteomyelitis which had resisted all surgical aid and was gradually sinking under the infection. The other was a desperate case of typhoid fever in which vaccine was given only as a last resort.

The case of psoriasis, in which peripheral neuritis followed the injection, is inexplicable, except as a coincidence.

Old typhoid vaccine was used in all cases, generally that manufactured by Burroughs & Wellcome.

The dose used varied from 10,000,000 to 100,000,000 bacilli. We believe these doses accomplish all that larger ones will do and in using larger ones unnecessary risks are incurred.

Since writing the last paper the following conditions have been treated by this method of therapy. Unless otherwise stated all cases were patients at the Canton Hospital.

1. Acute Arthritis ... 2 cases
2. Rheumatic Fever ... 2 cases
3. Chronic Arthritis ... 16 cases
4. Arthritis Deformans ... 3 cases
5. Gonorrheal Arthritis ... 3 cases
6. Unhealed Sinuses ... 7 cases
7. Psoriasis ... 1 case
8. Leucoderma ... 2 cases
9. Chronic Erythema ... 1 case
10. Lupus Erythematosus ... 1 case
11. Painful Affections ... 8 cases
12. Asthma—Bronchial ... 1 case
13. Chyluria ... 3 cases
14. Elephantiasis ... 1 case
15. Typhoid and other fevers ... 13 cases

Total ... 64 cases

ACUTE ARTHRITIS.

Two cases were diagnosed acute arthritis. Both were middle-aged men. The disease involved several joints. In one the improvement was temporary. In the other it was quite marked and lasted until the patient left the hospital.

RHEUMATIC FEVER.

Two cases had fever, with painful and swollen joints. In one of these, following a second injection of vaccine the fever reached normal and the patient was able to walk without pains. In the second case the temperature also reached normal and the pains were greatly relieved following the third injection of vaccine.
CHRONIC ARTHRITIS.

There were sixteen cases of chronic inflammation of the joints. In some, while syphilis appears to have existed, yet antisyphilitic treat­ment failed to clear up completely all joint symptoms. After the injection of typhoid vaccine, partial or complete relief was obtained.

From one to seven injections were given in each case. Only one case failed to respond, in him the old arthritis with ankylosed knees seemed to be made rather worse than better by the treatment.

ARTHRITIS DEFORMANS.

There were three of these cases treated. Two of them received seven injections and the other one. All were materially improved, at least for the period of stay in the hospital.

GONORRHEAL ARTHRITIS.

Three cases of this disease showed improvement following the injections of vaccine, but in one of them one joint continued to show marked inflammation and was very painful, till the patient was discharged.

One of these cases was of unusual severity. There was an irregular intermittent fever and the joint pains were excessively severe, so that the patient was wholly bedridden. After five weeks in bed and six injections of vaccine all pains were relieved and the patient was able to walk.

OLD SINUSES.

Under this heading are included seven cases as follows:

1. Tuberculosis of the left femur and lower end of tibia. After curettement the sinuses persisted. Six injections of vaccine were followed each time by definite decrease in discharge. This tended to increase later, but when the patient left the hospital a thin watery discharge only remained.

2. Sinus persisting after fracture of femur. The sinus closed the day following one injection of vaccine.

3. Tubercular sinus in hip. Curettement was done first, but the sinus persisted. Five injections of vaccine were given. Each time the discharge decreased. Following the fifth, the temperature became normal and the discharge ceased.

4. An infected wound of the heel with a persistent sinus. Even after curettement healing was very slow. One injection of vaccine appeared to hasten closure of the sinus.

5. Tubercular sinuses of hip. Patient received five injections of vaccine. Sinuses showed some tendency to close after injections, but complete recovery was not accomplished.

6. Perineal sinuses following an old urethral stricture which was dilated. The patient himself insisted that the vaccine greatly hastened closure of sinuses.
Finally a few words in particular concerning case 17/1632. This was a man with an old osteomyelitis of the femur and persistent discharging sinuses, in spite of two operations. After nine months in the hospital without improvement seven injections of vaccine were given in 54 days.

The discharge diminished after the injections but soon recurred. After the last injection of vaccine there was a very severe reaction, with suppression of urine, and death in less than 24 hours. Here death was undoubtedly the result of giving the vaccine to a man already exhausted by disease.

PSORIASIS.

Only one case of this disease is included in the series: a married woman aged 35. Duration 20 years, with recovery and relapse. The present attack began three months before admission, a typical psoriasis eruption covering the scalp, arms and legs, and very diffuse. On December 5th, 50,000,000 typhoid bacilli were injected. Next day the patient became unconscious, a peripheral neuritis and inability to urinate developed. A systolic murmur was heard at the apex of the heart. The patient showed all the signs of acute beriberi. The psoriasis eruption gradually faded and disappeared. Later a periostitis of the sternum developed which yielded to antisypilitic treatment. Later the patient had a typical attack of malaria. The patient left the hospital March 28th. The periostitis and psoriasis had completely disappeared. The knee jerks were still absent but the patient could walk normally. It is a question whether the peripheral neuritis was induced by the vaccine or was merely a coincidence.

LEUCODERMA.

There were two cases, both women with areas of leucoderma of the face, with slight itching. Both of these women received three injections of vaccine, and the itching was markedly relieved. The white areas appeared redder in color. They were observed only about ten days.

ERYTHEMA OF FACE.

A young girl with reddish splotches on the face, slightly suggestive of leprosy, but there were no lepra bacilli found. No anesthesia of the face. Two injections of vaccine were given followed within a week by almost complete blanching of the red areas. The patient was seen six months later and reported that the erythema had not recurred.

LUPUS ERYTHEMATOSUS.

This case was reported to me by Dr. Ewers of Yeungkong. The patient showed a dark red or violet patch covering the left side of the
face, and extending to the neck with elevated border. The skin was thickened and rough. No disturbance of sensation was noted. Fourteen injections of typhoid vaccine were given. The induration was markedly decreased, the area became blanched and the borders not so much raised.

**AS AN ANALGESIC.**

A man with psoas abscess complained of severe pains in the back and buttock. Another man had acute suppurative myositis with severe pain over the abscess areas. A correct diagnosis was not made at first in these cases and typhoid vaccine was injected to relieve the pain. Both patients were completely relieved for 24 hours and were able to stand and walk. Later the abscesses were discovered and operation resulted in cure.

A case of tic douloureux after a second injection of vaccine noted slight relief of pains.

A patient was operated upon for a painful mass in the left lower segment of the abdomen. No tumor was found. Later vaccine was injected and the pains were relieved for a day or two, but then recurred. Cephalodynia and pulmonary tuberculosis. The pains in the neck of this patient were much relieved temporarily by the injections of vaccine.

A patient suffering from neuralgia of the brachial plexus probably the result of a tumor in the thoracic cavity. Refused operation. Injections of vaccine gave definite relief to the pain.

A woman suffering pains from neurasthenia. No organic disease. No relief was afforded by vaccine.

A woman complaining of weakness and "drawing" sensation of right arm. No relief given by injections of vaccine.

**BRONCHIAL ASTHMA.**

No improvement after two injections of vaccine.

**CHYLURIA.**

There were three cases of this disease. All showed filaria nocturna in the blood. In two chyluria had existed off and on for one year and in the other for only a month. After resting a few days the Chyluria failed to disappear so typhoid vaccine was injected; on the day following or the third day the urine became wholly normal in appearance, but after two to four days longer it resumed the milky white appearance.
Elephantiasis.

Three injections of vaccine were given to a man with elephantiasis and the affected leg became greatly reduced in size. Since leaving the hospital the case has not been followed.

Antipyretic Action.

The patient referred to above with acute suppurative myositis was operated upon, the abscesses being well opened and drained. His fever rapidly came to normal, but nine days after the operation a remittent fever developed. On the sixth day of this fever typhoid vaccine was injected and the temperature was normal next day and remained so for several days till patient left the hospital. In a case of acute miliary tuberculosis the injections of vaccine were without effect.

Case Y. A student at the Canton Christian College had what was thought to be malarial fever, lasting for eleven days. Six days after his temperature reached normal there was a rise to 38°C. Quinine by intramuscular injection and by mouth had no effect. Vaccine was injected on the fifth day of this relapse and the temperature was normal next morning and there has been no recurrence.

In six typical cases of typhoid fever of average severity, after two weeks or more of fever an injection of typhoid vaccine was given and this was followed the next day by a critical fall in temperature to normal and an uninterrupted convalescence.

Another case was given the injection on the 27th day of fever, and from the following day the temperature showed a gradual decline till the 33rd day. After which it did not again rise above normal.

Another patient was an unusually malignant case of typhoid fever complicated with lobar pneumonia. Patient had been ill for several weeks before entering the hospital. On the 13th day in the hospital the pulse was 118 and respirations 38. The general condition of the patient seemed to be desperate. Vaccine was injected. There was a drop in temperature followed by a rise, but the condition of patient was greatly improved. The temperature continued at a lower level however. A second injection was given four days later, followed by further improvement, in pulse, respiration, and general condition, but the temperature did not finally become normal till eleven days later.

Two girls suffering from very malignant cases of typhoid fever died following the injection. One of these had a pulse of 120 and respirations of 29 per minute. The general condition was desperate. Vaccine was given at 10 a.m., and death occurred at 6.30 p.m. The
other girl was very ill from the start. Three injections were given followed by the usual phenomena. The temperature remained lower, never rising above 38.2 after the third injection. The patient died nineteen days after this last injection with convulsions and other symptoms suggesting cerebral embolism.

In conclusion it may be said that typhoid vaccine is palliative and sometimes curative in acute joint affections. In chronic joint affections it is generally palliative.

In old sinuses, provided all necrotic bone, etc., has been removed, injections of vaccine cause a marked decrease in the purulent discharge and often hasten closure of the sinus.

In psoriasis, leucoderma and other skin affections itching is relieved and the lesions are markedly affected by vaccine.

Typhoid vaccine injected has a remarkable analgesic action. Chyluria is temporarily relieved by this mode of treatment.

In typhoid fever and other continued fevers a single intravenous injection may cause the temperature to fall by crisis within 24 hours and the patient may go on rapidly to a complete recovery.

A CASE OF ECLAMPSIA APPARENTLY WITHOUT CONVULSIONS.

JAMES L. MAXWELL, M.D. (Lond.), Tainan, Formosa.

A brief account of the following case may be of interest, as it exhibited one or two rather unusual features.

Ng Pin, aged 22 years, a Chinese primipara, was admitted to the Tainan Mission Hospital on July 25, 1920, on account of obstetrical difficulties. Her husband was an uneducated countryman and no exact history could be obtained. The facts seem to have been that the patient had been in labour for two days; perhaps 36 hours would be nearer the mark. Shortly after labour pains had commenced, the patient had become unconscious and very restless. Close questioning failed to elicit any history of a definite "fit." The condition on admission was one of restless coma, not in itself suggesting eclampsia, because, (1) fits of any kind were completely absent while the patient was under observation; and (2) there was a complete absence of the lividity that one associates with an eclamptic patient between the convulsive attacks. Per vaginam the cervix was found to have been completely taken up; the os admitted one finger. Painful contractions
A Case of Eclampsia Apparently without Convulsions.

of the uterus were occurring but seemed of little practical efficiency in causing the head to advance. Temperature was 101° F.; pulse, 110. The urine was fair in amount, but it became almost solid with albumen on boiling. Patient could not be roused in any way but was very restless, especially during the pains. She required then and for the next three days the constant attention of two people to prevent her throwing herself out of bed.

Chloral and bromide were given freely and it was determined to wait and see what progress the patient would make. The child was living. Examined again after six hours the patient showed no progress; the os still admitted one finger only; temperature and pulse were both rising, and the foetal heart sounds were less clear. Cæsarian section was then performed. The operation calls for no remark. It was quite easy, bleeding was not excessive, the uterus contracted well, and convalescence as regards the operation was perfectly smooth. The child was living and at full term, but it was feeble and, despite all efforts to save its life, it died some twelve hours later.

On the following day (26 July) the patient's condition was quite unchanged; she was still comatose and restless. The urine deposited about half albumen on standing. Temperature 102° F. The next day the patient could be roused for a moment or two by speaking to her sharply and then relapsed into her former comatose condition. Urine on boiling deposited about one-fourth albumen on standing. Temperature 98.4° F. and thereafter normal. On July 28, she was fairly conscious. She answered direct questions and was much less restless. Urine gave only a heavy deposit at bottom of test tube. On July 29, she was quite conscious. Urine showed a cloud of albumen only.

On August 9, the patient was discharged, fifteen days after admission, in apparently perfect health. The urine was quite free from albumen. Centrifugalized specimen showed no casts or other deposit beyond a few bladder cells.

Eclampsia is a rare disease in Formosa and I can recall having seen only two cases previously. Is this freedom from the disease a local condition only, or does it apply to China generally? Or may it be that eclampsia is less common in tropical climates? However this may be, the few cases I have seen or heard of have followed the course of eclampsia as seen at home, as to sudden convulsive attacks with, when these become frequent, an intermediate comatose state characterized by much congestion and lividity. In this case the convulsive attacks were absent, at least as far as we could determine; certainly they
were absent during the whole period the patient was under our observa-
tion. The congestion and lividity were also absent. Convalescence
was extraordinarily rapid and complete, despite the fact that uncon-
sciousness continued for from two to three days after delivery. For
these reasons I think this case is worth recording.

THE SECONDARY SUTURE OF WOUNDS.

E. W. KIRK, M.B., F.R.C.S.E., Kongchuen Hospital,
New Zealand Mission, Canton.

These notes are based upon six months' experience in Edinburgh
War Hospital. Large numbers of cases arrived by convoy whose
wounds were well past the acute infective stage. Their surfaces were
granulating, but large raw areas remained. Much time would have
elapsed before the natural growth of epithelium could be effected.
Skin grafting might sometimes have been employed, but was not found
so satisfactory either in rapidity of cure or in final result, as was the
plan of drawing the edges of the wound together by secondary suture.
Often the wounds were unsuitable for skin grafting. This might be
on account of the wound surface being insufficiently healthy, or it
might be that the area, as in the case of an unhealed guillotine hip
amputation, would be extensive and irregular. In many respects
secondary amputations performed on unhealed stumps may be looked
upon as secondary suture operations.

Definitions. Primary suture means the stitching together of skin
edges at the time of operation. Delayed primary suture means doing
so after the lapse of two to four days, but before granulations have
developed. (This practice was most successful after Carrel Dakin,
B.I.P.P., or dichloramine-T treatment.) Secondary suture means
the stitching together of wound edges after granulations have formed
on the wound surface.

Selection of Cases. Given the patient in good general condition
selection is carried out with reference to the site of the wound and
virulence of sepsis. Some sites, the thigh, calf, buttock, pectoral
region, etc., are peculiarly suitable, and in thigh cases longitudinal
wounds are likely to succeed better than transverse. The reason for
this is of course mechanical, in relation to the strain on the wound
edges after operation. Other sites, the shin, ankle, foot, hand, scalp
and forearm are not so suitable. In selection of cases attention to the strain and virulence of wound infection is important. Streptococcal infections, especially haemolytic streptococci infections preclude operation. Dr. Carrel of Campière was accustomed to examine films from wound surfaces noting not only the type of the organism but the number in the field of the microscope, and also the nature of the leucocytes and their phagocytic activity. In secondary suture at Bangour we were not in the habit of using such bacteriological controls, but careful attention was paid to the history of the wound infection and to the naked eye appearance of the wound and discharge. One learned to be very chary of operation in cases of recent virulent sepsis because of the readiness with which an apparently simple condition would "flare up."

**Method of Operation.** The wound having been cleansed and skin iodine prepared an incision is made about a quarter of an inch beyond the edge of the wound. Flaps are well undermined and the irregular skin edge adherent to the granulating surface is excised. At first one tried the plan of aseptic excision of the wound, whereby the sterile knife, fingers, and instruments are not allowed to touch the septic wound surface, but this was found not only unnecessary but to cause needless sacrifice of tissue. Latterly one curetted the surface with a sharp spoon or excised with scissors curved on the flat. After swabbing the wound with spirit and freely applying B.I.P.P. to its surface and corners, the muscle and skin is approximated by co-aptation sutures of silkworm gut. In application of these stitches it is important to prevent the occurrence of dead spaces which would fill with bloodclot and germinate sepsis. It was our custom to so encase these silkworms with small pieces of rubber tubing that the skin surface upon which they pressed was preserved. Skin edges were stitched together without tension and without drainage; but a small buttonhole drain, or two such drains, according to the size of the wound was used for insertion of a piece of rubber dam into the lowest angle of the wound. These buttonhole drains diverted any discharge from the line of stitches which was dressed with separate gauze protected from the gauze covering the buttonhole drain by means of oil-silk. The rubber dam is a great improvement on the old rubber tube.

**After-treatment.** Wound dressed daily so as to attend to the buttonhole drain which should be withdrawn as soon as possible. Healing, which is facilitated by four or five days' complete rest on a splint, as a rule results quickly by first intention. To prevent stiffness
of the knee in lower limb cases, the joint should be passively moved carefully at each dressing.

This secondary suture of war wounds is applicable to civilian practice. When site and non-virulence of infection warrant the operation and when the technique is accurately carried out, the result will be the considerable curtailing of the patient's convalescence.

FISTULA IN ANO.

W. E. Libby, M.D.

The difficulties involved in the successful treatment of fistula in ano are many and have been widely recognized. Dureck commenting upon Tuttle's compilation of 2,196 cases with less than 45% of cures says, "There is no other surgical condition apparently so simple with such a large percentage of failures." Allingham said, "It requires more dextrous surgery to cure a bad case of fistula in ano than any other surgical condition."

It will simplify our understanding if we define our terms. By fistula in ano we mean a chronic non-cicatrizing sinus within the rectum or about the anus with one or more openings and resulting from some pre-existing abscess. There are two kinds: complete and incomplete. Complete—one opening in the rectum and one or more in the skin. We shall confine our discussion to the complete form of fistula in ano.

As I made my first hospital rounds at Wuhu, I was impressed with the relative large number of fistula in ano cases—quite a contrast as I remembered my hospital experience at home. And as the weeks and months went by, I became more impressed as this proportion remained constant. In this series of 455 operative cases under general anesthesia covering a period of time from July 1, 1918 to January 1920, there were seventy-two operations for complete fistula in ano or approximately 16%. None of these cases as far as we could rule it out was due to tuberculosis. If we note the frequency incident to occupation, it is divided as follows:

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers and boatmen</td>
<td>48%</td>
</tr>
<tr>
<td>Workmen</td>
<td>13%</td>
</tr>
<tr>
<td>Merchants</td>
<td>32%</td>
</tr>
<tr>
<td>Students</td>
<td>5%</td>
</tr>
</tbody>
</table>

The cause of fistula in ano is always infection—the invasion of tissues by *Colo B.*, *Staphylococcus*, or *Streptococcus*. This invasion results in an abscess which is always the forerunner of a fistula. The
predisposing causes usually given are embryological (diverticulae, etc.) proctitis, constipation, hemorrhoids, fissures, tuberculosis, typhoid, syphilis, and dysentery. These are causes of fistula in every land, but why this increase in China? I believe it is due largely to two factors; first—the ever present scabies with the resulting abscess of the buttocks, a forerunner of fistula in ano; second—dysentery, largely due to animal parasites. I recall one case of rectal abscess which was full of Oxyuris. I became interested to find out whether the dysentery incident to ankylostomiasis and schistosomiasis bore a definite relation to the development of the fistula in ano. With this in view, I made an examination during the summer of 1918 of the stools of 165 consecutive cases entering the hospital for various causes. The result of this series was as follows; All cases showed 34% of infection with either hookworm or Schistosoma, or, in some instances, both. Farmers and boatmen showed a 70% infection. What relation had these cases to fistula in ano? The relation can best be shown by the following table:

1. Total in-patients... 984; fistula in ano incident... 8%
2. This series... 165; fistula in ano incident... 13%
3. Cases infected with hookworm and Schistosoma, fistula in ano incident... 27%

Treatment. There are two principles. First the method most frequently employed, which is simply slitting up the fistulous tract and not removing the "pyogenic membrane." Second, radical operation in which the fistula is excised en masse and the wound closed immediately with sutures. A groved director is passed through the fistula into the rectum. The internal opening must be found as this undiscovered is a common cause of failure. The tissues on the director are cut through and the "pyogenic membrane" together with the indurated scar tissue carefully dissected out. The closure is made in three steps, (1) the mucous membrane from point of entrance into the rectum to the anus with running catgut; (2) muscles and deep tissues with buried catgut; (3) skin with silk-worm. It has been our practice to give one grain of powdered opium each morning for three days and then move the bowels on the fourth morning with castor oil. Using this method our results have been very satisfactory. Of course we have had no way of following up our cases as a large majority were farmers, but only four cases have returned for further treatment. In each of these four cases, the failure was due to not finding every tract and especially the internal opening. One of these cases was so riddled with sinuses that he was operated upon three times and finally discharged from hospital uncured. In none of these cases was there any difficulty of sphincter control, though several of them had two or more fistulae.
The most important factor is the finding of every internal opening. This has been the experience of others and is borne out by our findings. If this method is carefully followed, we believe the results will be uniformly good.


DISCUSSION.

Dr. Branch. Confined remarks to question of treatment.

Said if one draws a transverse line through the anus he can divide the fistula into anterior and posterior. They have different characteristics. Anterior to transverse line all have internal opening. Posterior are crooked. So called horseshoe, opens posteriorly. Another important point we have found by personal experience is the value of injecting these with methylene blue. If one cannot find the opening by a probe, it is a great help to inject with methylene blue and with a speculum in the rectum find the point of external opening. As to method of operation, personally I feel that the sphincter anal muscle should not be touched. Such an operation should not interfere with this muscle. The ideal operation where it can be done would be to probe into the opening from the skin opening, make an elliptical incision around the probe and by enlarging the incision tunnel around the probe thereby removing the tract.

The mucous membrane is incised around the internal opening. That being the case, the tract is readily removed. The normal membrane is loosened up a bit. That, of course, slips over and falls to the anal margin. If sutures are used, use fine silk or whatever one wants. A wick drain should be left in for a few days. The convalescence is rapid and satisfactory ordinarily.

Dr. Lewis. Read from his last year's report regarding 145 cases.

He thinks no abscess should be opened without giving anesthesia and abscess packed. Then suture rare cases when all is cut away. Of sphincter muscle with packing of rectum but thinks anal sphincter in the U. S. is quite another thing from same in China. It is important to remove all of the tract and any necrotic tissue after careful search. In doing this, one should be certain to find the opening into the rectum, if there be any. If there is any necrosed tissue left
anywhere, there is certain to be a recurrence of the fistula. If one
does careful work and careful packing until the wound is healed, I see
no reason for not having 100% cures. There should be no hiding places
left for bacteria. The patient should always be sent to the stool before
dressing and the wound carefully packed. The matter of packing is
the most important thing in healing fistula, and not allowing any false
tract to form, and keeping a clean surface. With these precautions one
is certain not to have any recurrence of the disease. One thing in regard
to what Dr. Libby said in reference to worms. It seems to me that
those cases might just as well be infected with other bacteria as with
worms, and cause fistula just as readily. One cause is the kind of food
that is eaten. The food has a great many husks and these cut the
mucous membrane and allow bacteria to ramify into the low resisting
tissue and form an abscess. Another is the use of sticks and stones,
thereby scraping the tissues and causing an abscess.

Dr. King. Added that with methylene blue one can find exactly
where the opening is. He considered it a very good procedure.

Dr. J. Heng Liu. Dr. Lewis mentioned sticks and stones. Dr.
Liu stated that one of the most common causes of fistula is the Chinese
toilet paper. Most of them use common straw paper which is probably
as irritating as sticks and stones. He suggests raising a campaign
against it.

Dr. Todd was not present so his paper was read by someone else
but there was no time for discussion which was postponed until the
next day.

SOME PRACTICAL POINTS IN THE SURGICAL TREATMENT OF CERVICAL TUMORS.

P. J. Todd, M.D., Kung Yee Medical College and Hospital, Canton.

It is my purpose in opening a discussion on this subject to refer
to lymphatic glandular enlargement only.

Of the 4,687 in-patients registering in the Canton Hospital and the
Kung Yee Hospital, Canton, last year, we find 103 applied for the treat-
ment of enlarged cervical glands.

This is a large enough number to make it worth our while to con-
sider and discuss a few points in the treatment of these cases.
The fact that the most of these cases come to the surgical wards rather than the medical is a clear indication that our medical colleagues do not have a satisfactory way of treating them.

The cause of enlarged glands in the majority of these cases is tubercular infection; however, a large number are due to infection through bad teeth, tonsils, adenoids and furunculosis, or other infection of the face and scalp. A good many follow a malignant focus in the posterior nares, the ethmoidal cells, the tongue or some other part of the head.

The first point I want to bring out is that we must get rid of the original focus of infection. Unless we do this it is practically useless to subject the patient to an operation for the removal of the glands.

When it is necessary to do the two operations on separate days the operation for the removal of the cause should always precede that for the removal of the glands. If not the patient may be satisfied when he has been relieved of his tumor and may not be willing to undergo another operation for the removal of the unseen (to him) cause with the result that his trouble will return and the operator's reputation will suffer.

The removal of diseased tonsils, one of the most frequent causes of enlarged cervical glands, used to be, for me, a very difficult and unpleasant operation. If in opening this discussion I do nothing more than persuade some one here to use a tonsil snare which has the Vedder tip I shall feel that my effort has not been in vain.

The snare which I have used is known as Brown's Heavy Tonsil Snare with Vedder tip. Beck's Tonsilectome for enucleation of tonsils, Sluder-Beck method, is a later make and has some advantages over the Brown snare.

The important thing about these snares is the tip, which is a ring large enough to surround the tonsil, attached to a hollow bar which extends to the handle piece. The snare wire fits in a groove on the inner surface of this ring and when drawn passes into the hollow bar. The ring and bar must be strong enough to be able to stand a good deal of force.

The ring of the snare is placed around the tonsil and firm pressure is made with the left index finger over the anterior pillar until the tonsil is pushed well through the ring—even until it would seem as if the pillar were being pushed through also. The more adhesions around the tonsil the greater pressure will be required.

After the tonsil is pushed well through the ring traction is made on the snare wire until it has closed up tight around the base of the tonsil. The tonsil is then caught with forceps and slow, gradual
traction is made on the wire until the tonsil has been severed from its base.

The two important points to remember are that the tonsil must be completely pushed through the ring and the traction on the wire must be slow. If done this way there is practically no bleeding and the operation is one of the easiest and most satisfactory there is.

If the glandular involvement is extensive or if the patient is weak it is best to do the tonsils and adenoids one day and the glands a few days later.

Where the cervical glands are discharging pus it is often a great temptation to curette them out only, hoping they will soon clear up. My experience is that this practically never pays. In fact the curetting of these suppurating glands often seems to start up an infection of other glands which develops rapidly.

If the cause has been removed and there are only a few glands which can be felt we are justified in making an incision over them and dissecting them out without doing an extensive dissection of the fascia. If the glandular involvement is great, nothing but a radical operation as described in our books on operative surgery is justifiable.

The radical operation on the neck not only requires a thorough knowledge of the anatomy of that part, but it also requires skill in the handling of the knife, great care in the tying of veins to prevent air embolus as well as care in all other details of the operation.

If the tumor is malignant and firmly adherent to or surrounding the common carotid artery and pneumogastric nerve it gives some relief from pain and extension of life to tie the carotid below the tumor.

I have tied twelve common carotid arteries with one death. The patient who died was a woman sixty-five years of age and very anemic. In this case the tumor was removed as well and the patient died the following day, apparently from brain anemia.

In opening up a discussion on this subject I would like to especially emphasize the following points:

1. If due to tonsils, adenoids, teeth or other foci of infection the cause must be removed first.
2. If tonsils are to be removed use a snare as described above.
3. Be careful to avoid air emboli.
4. In discharging glands it seldom pays to curette—a radical operation should be done and all glands which can be felt to be enlarged should be removed.
5. It is better to remove focus of infection, and only the glands which can be felt, than it is to dissect out all the glands containing fascia and not the focus of infection.
6. In case of malignancy where there is pain, tying of the common carotid artery below the tumor will often give relief from pain and extension of life for a time.
Dr. Lewis. Thought this very important as we are often met here with the question of what we are going to do with these? He thinks in the first place if we have any way to prevent the cervical tumors the best thing is to remove the tonsils. Stated that previous to four years ago he had removed no tonsils by that method or if he did remove them he used the old type of tonsillotome and thinks what was left there probably gave future trouble, that it did more harm than good. During that time supposed he inspected at least a half dozen or possibly a dozen of children of that school—chiefly the Girls' School rather than in the Boys'. Was a tedious operation. Think the only way is to begin below and follow up the whole mass, removing all of it in block. The paper yesterday referred to some thing he had never run across,—that is ligation of the common carotid? The tube does not go to the common carotid. It goes to the internal jugular vein but not to the artery. Same line of internal jugular for at least three or four inches puffing out. It is a large vessel but never goes down to the carotid. These masses are almost circular and adhere to the inside of the jugular so that whole vein has to be taken out. There is no objection to remove the vein and tying the artery.

Four years ago began to remove tonsils in the proper way. Has never seen operation done as described in the paper. Has done it always under cocaine unless operation is on a small child. Believes it to be best method there is for preventing adenitis of a tubercular nature.

Dr. Thompson. I think he was not referring to glands of the neck but to all tumors.

Dr. Taylor. Thinks we should study the methods of a specialist and conduct operations out on the field as nearly like him as we can.

Dr. McSparran. Said he would like to report a case he thought would be interesting. Last year a woman of about sixty-five was referred to them at his hospital. Came from a distant city. Appeared to have a malignant tumor of the neck. Examination showed apparent enlargement of anterior glands. Did not know whether it involved thyroid gland or simply the cervical gland. Found not to be malignant. A little later on incision was made and a little pus and a good deal of blood escaped. Looked everywhere for the source of infection. Finally had the teeth X-rayed and found an old pus cavity. Took
off a gold crown where the dentist had covered up decayed root. As soon as these roots were pulled out the patient got well and had no further trouble.

_Dr. Gray._ Wanted to put in a short plea for unoperative treatment of glands. In France at the present moment a surgeon named Calot is doing a large amount of surgical work. He does a great number of cases of cervical glands and views them solely in the light of aspiration. Uses a mixture of ether, iodine and mercury. The supposed gland is in an inflamed condition without any pus formation. Introduces needle right into the middle of the gland and inserts one mil of this mixture. About ten days afterwards repeats the same process and in the course of time gets the gland purulent. This is an exciting event and his whole object is to make the gland break and become purulent. Then he treats it along the same lines as other. The main feature is the withdrawal of a small amount of pus at each sitting and the injection of exactly an equal amount of this ether mixture. Suppose two or three mils are taken when exactly the same quantity is put in. Nothing more is done but a light bandage is placed around the neck and the patient goes home for ten days. When he returns exactly the same procedure is gone through, and this is done at each sitting. The glands gradually become filled with this emulsion and at the last sitting a mass of the emulsion is taken away. Believes this justifies the operative removal of tubercular glands of the neck or in any other part of the body. He has tried this method in Peking and found it highly successful.

_Dr. New (W. L.)_ Stated he would like to mention a kind of gland not mentioned in the paper—glands due to syphilis. When he first returned to China he found quite a number of cases which looked like tubercular glands of the neck and found them due to syphilis. Upon treating them with mercury and iodide the glands became smaller and gradually disappeared. One type not often described in text books is due to syphilis.

_Dr. Gray._ Was asked what the proportion of these constituents of ether, mercury, and iodide are used. He replied that he would furnish this information on the following day to any members interested.
NOTES ON A RARE FORM OF SUBCONJUNCTIVAL GRANULOMA MET WITH IN CENTRAL CHINA.*


There are seen from time to time in Central China patients whose eyesight is obstructed, entirely or partly, by the formation of tumour-like masses which grow between the eyeball and the lid. There is no conjunctivitis or other acute inflammation. The growths are painless; they do not ulcerate on the surface or break down in the centre, but remain firm throughout. They gradually involve the eyelids, producing great thickening, which finally causes the mechanical occlusion of the palpebral aperture.

The writer has seen about a dozen cases of this condition. The patients varied in age from fifteen to forty years, the majority being men. One or both eyes may be involved, the duration of the case ranging between one and a half and nine years.

The usual progress of a case is as follows: The growth commences as a rule near the inner canthus (rarely under the outer half of the upper lid), as a firm, fleshy thickening and protrusion of the conjunctiva. The protrusion is reddish in colour and not oedematous, and forms flat or rounded and nodular masses, one-eighth to one-half inch in extent, which interfere with the accurate closure of the lids. The conjunctiva does not move on the surface of the growth, but is closely adherent to it. The growth then spreads around the inner surface of the lids, involving the upper and lower fornices and making a heavy nodular curtain between the eyeball and the lids (Fig. 1). With a

FIG. 1.
Moderately severe case showing flat or nodular masses between eye and lids.

Subconjunctival Granuloma.

probe one can make out a sulcus between the upper lid and the growth, and another sulcus between the growth and the eyeball (Fig. 2). In the case of the lower lid these sulci are less marked. The movements of the eyeball are still free, so that the cornea and the pupil can be seen moving behind and between the masses of the growth (Fig. 3). Later, the growth involves the ocular conjunctiva, causing some limitation of movement of the eyeball. It does not, however, invade the cornea or become adherent to it (Fig. 4). Still later, the palpebral

---

**Fig. 2.**
Diagrammatic section through eyeball and lids showing the curtain-like growths.

- The cornea.
- The tumour masses.

**Fig. 3.**
Same case as Fig. 1. Drawings show how the eyeball could move behind the growths.

**Fig. 4.**
Drawing of a more advanced case, showing how the tumour masses gradually spread in front of the eyeball.
conjunctiva is involved. The lid becomes greatly thickened, so that, viewed from the side, the palpebral mass bulges forward very markedly. The progress of the case suggests that the tissue beneath the conjunctival fornix hypertrophies and slowly pushes the conjunctiva before it, in the form of a fold between the globe and the lids, and later obliterates the fornix, causing the conjunctiva to stretch from the edge of the cornea direct on to the inner surface of the margin of the lid (Fig. 5). The palpebral conjunctiva may become everted to the extent of one-third of an inch near the margin of the lids and show

FIG. 5.
An advanced case involving all the eyelids; duration, left eye six years, right eye seven years. Dark central area in palpebral aperture leads down to cornea.

FIG. 6.
Diagrammatic section through eyeball in a case like Fig. 5.

a, b—Upper and lower lids.
c, d—Everted conjunctiva.
f—Cornea.
e, e—Tumour masses
a dry atrophic or eczematous condition. The growth of the tumour mass at the inner and outer canthi, combined with that along each lid, causes the palpebral aperture to be almost concentrically reduced, till, in an extreme case, it is represented by a tunnel about one-eighth of an inch across, leading down to the clear cornea (Fig. 6). This gets easily blocked by secretions or eczematous scales, and vision is lost. Movements of the eyeball are progressively interfered with, so that eventually a strong effort to move the globe results in a slight twitching of the palpebral mass, to which the globe has now become anchored. The skin is not infiltrated by the growth but moves over it. The secretion of tears does not seem to be affected. In some cases only one lid is involved (Fig. 7).

Patients show no sign of syphilis, tuberculosis, leprosy, or other infection. The Wassermann reaction was not available, but large doses of pot. iod. had no effect. There is no enlargement of the lymphatic glands, and general health is unimpaired.

Some cases were operated on, and it was found that the growth is not encapsulated, but gradually merges into the surrounding tissue. It is intimately blended with the conjunctiva, so that the latter cannot be stripped or dissected off it. The growth often extends backwards by the side of the eyeball into the orbit. In late cases it involves the
tissue of the lids. The texture of the tumour tissue is for the most part firm but friable. In the palpebral region it is harder, almost cartilaginous. In no case could one feel reasonably sure of having removed all the diseased tissue. After operation the lids cicatrize, become indurated, and adhere to the globe. Recurrence occurs later, the lid becomes thicker and further infiltrated by the growth. Finally, if the cornea is no longer protected by the lid, it of course becomes dull and lustreless.

Under the microscope, sections of the tumour show that the bulk of the growth is composed of round cells (lymphocytes) which are infiltrating the normal tissues. They involve the deep surface of the conjunctiva; the cells in the centre of the tumour show no sign of breaking down. The periphery of the tumour is rather vascular, while the vessels in the centre of the growth have thickened walls. Up to the present no organisms or parasites have been discovered in the tissue, but one suspects that such may be found ultimately as the cause of thesegrowths, which seem to be a form of local granuloma.

The writer wishes to thank Dr. H. Byles, Dr. J. Cormack, Dr. H. B. Taylor, Dr. T. Gillison, and Dr. A. Skinner (who kindly allowed him to see cases under their care), and would be glad to hear from others who have seen similar patients.

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**BLASTOMYCOSIS.**

LOUIS H. BRAAFFLADT, M.Sc., M.D., Tsinan.

In 1901, Ricketts described the literature, both European and American, bearing on blastomycosis. He states that Link, in 1840, first gave the name of "oidium" to a genus of fungi living as moulds; that Berg first saw filaments and spores of this organism under the microscope; that between 1840 and 1894 there are about thirty to forty references in the literature to organisms isolated from pathological processes in man which were given various names by those who observed them, in all probability, all are identical with this fungus, or the type of it which we call blastomycetes.

In 1894 Gilchrist described a specific infection of the skin due to a yeast-like fungus. He called the disease blastomycetic dermatitis; a complete report of it appeared in 1896. Busse, in Germany, in the same year described a systemic disease, due to this fungus. Since then a large number of cases of this skin disease have been reported
in America, Europe, and other places. Very few cases, however, of systemic blastomycosis have been reported. Nearly all of these have been reported by men in Chicago: Walker, Montgomery, Hektoen, Ormsby, Miller, LeCount, Myers, Herrick, Irons, and others. In 1902, Walker and Montgomery described the first case seen in America. In 1907, Hektoen reviewed the cases reported up to that time. Sixteen other cases were added during the following seven years, so that Stober, in 1914, was able to make a study of the findings in 29 cases. So far as I know, only one case has been reported in China, namely, that by Snoke and Strick in 1912.

**MODE OF INFECTION.**

The consensus of opinion of those who have studied systemic blastomycosis seems to be that the organism lodges in the bronchi, and, in individuals whose power of resistance has been greatly lowered, it is capable of multiplying and setting up an inflammatory condition which produces much granulation tissue, with numerous giant cells of the Langhans type, associated with more or less suppuration. Later, the organism is carried by way of the lymphatics to other parts of the body.

Wade has recently shown that in monkeys, which are the most susceptible to the disease of all lower animals, pulmonary blastomycosis may be secondary to an infection of the skin. He injected three mils of a bouillon culture subcutaneously in an adult monkey. A slight thickening of the skin at the site of injection resulted. The monkey began to lose weight; there was no cough or hemoptosis; seven months later it died, apparently from exhaustion. At autopsy, there were found in the lungs signs of typical chronic pulmonary blastomycosis. Numerous blastomycetes were present in the lesions; they were also found in the spleen.

**PATHOLOGY.**

Hektoen, in discussing the pathological changes found in thirteen cases of systemic blastomycosis, says that practically all the tissues of the body may be affected: brain, bone, glandular tissue, etc. In these cases, where there were cutaneous manifestations, he describes the typical lesion as follows: "Commonly it seems to begin as a papule or nodule which softens and yields a glairy, somewhat tenaceous pus; a granulating surface forms which assumes a more or less verrucose appearance, and in the reddened raised margin may be many abscesses. Large cutaneous nodules cause pin-hole perforations of the overlying skin and even necrosis of larger areas. As the superficial lesion advances
there is often cicatricial healing in older parts. Microscopically, there is marked epithelial hyperplasia, sometimes spoken of as carcinomatoid, and a granulomatous infiltration of the corium with minute, often intra-epithelial abscesses and giant cells, as well as spherical double-contoured, frequently budding organisms, generally from 10 to 30 microns in diameter. The number of blastomycetes present in such ulcers may vary, and in some cases prolonged search may be required."

**Bacteriology.**

In March, 1919, we isolated two strains of this organism; one from the breast of a Chinese woman, 26 years old; the other from the sputum of a foreign woman, 30 years old. The cultural characteristics of these two strains were very much alike. For the sake of brevity, I shall therefore describe in detail only one strain.

When inoculated into nutrient bouillon and incubated at 37° C. for 24 hours, the cultures for over a month invariably produced a grayish film or pellicle on the surface of the medium; after growing a few days a heavy sediment appeared at the bottom of the test tube. Such a culture, growing at room temperature in a flask containing 200 mils of bouillon, after ten months presented no pellicle, only a sediment at the bottom of the flask. It is still alive, but no pellicle grows on subcultures from it. The organisms are also longer than they were to begin with, when many were almost round. Many have buds attached to one end, varying somewhat in size, and usually attached to one end of the mother cell, a little to one side of the longitudinal axis. On examining the fresh organism in 10% potassium hydroxide, it is seen to have a thick refractile capsule. The cytoplasm appears slightly granular, and in some cells a vacuole is seen. It grows readily on agar. The surface-plate colonies are at first round, flat, opalescent, some attaining a diameter of 2 to 3 mm. Subcultures made from a ten month old culture do not grow colonies as large as those of a fresh culture. Many of the plate colonies of the fresh culture, growing at room temperature, when 2 to 3 weeks old, begin to grow aerial hyphæ and take on the appearance of moulds; others begin to send out branching "pseudopodia" which follow the surface of the agar, closely adhering to it. The latter type do not develop aerial hyphæ.

Examined microscopically, the first variety of colonies are seen to be made up of purely budding organisms, the blastomycetoid type; the mould-like type of colonies are composed of clusters of variously sized round, Gram-positive spores, attached to long, thin, Gram-negative
hyphae. In some of these hyphae are Gram-positive granules. This is the hyphomycetoid type. The third variety observed is composed of much thicker, Gram-negative branches, in which are definitely formed spores, round, or oval. This variety is perhaps what has been termed by some the mycelial type. Occasionally, among the hyphae and mycelium of the two last mentioned types, may be seen budding organisms,—blastomycetes. Some appear very much elongated, and seem to be losing their Gram-positive character. Others have become definitely Gram-negative, having a number of irregularly shaped, Gram-positive masses in them. These seem to be transitional forms, the blastomycetoid type passing over into the hyphomycetoid type. In wet media this transition from blastomycetoid to hyphomycetoid type has not been observed. When the transformation has taken place, it cannot be reversed.

Subculturing blastomycetes into nutrient bouillon or other moist media reproduces blastomycetes only; but if transferred to a dry media, such as agar, they will, in a few weeks, go over into the more resistant state in which hyphae and spores develop. Hyphomycetes, so far as we have observed, do not go back to the budding state on any media whether moist or dry. We have observed them for a period of only ten months, so we do not know how they will act as they grow older. We have not found hyphae in sputum or pus, although in sputum we have seen clusters of small and large organisms which resemble some of the clusters of spores seen in the hyphomycetoid variety grown on artificial media.

SYMPTOMS.

The most outstanding symptom of systemic blastomycosis is loss of strength and weight. While it remains pulmonary, there may or there may not be fever. The sputum is thick, sticky, and frequently purulent and blood tinged; pleurisy is frequently a complication; the pulse is rapid; the respiratory rate is increased, and the dyspnoea may be marked. The disease is, as a rule, mistaken for tuberculosis. When it becomes generalized there may be pains in various parts of the body, the spleen and lymph nodes become enlarged, and there may be cutaneous manifestations.

DIAGNOSIS.

Persistent examination of the sputum is necessary. It should be examined fresh in ten per cent potassium or sodium hydroxide solution. If the organisms are not numerous, it is well to mix the sputum with four or five times its volume of 50 per cent alcohol, or a two per cent
solution of potassium hydroxide; stir it up well and let it stand for three or four hours before examining. One should also stain smears of the sputum by Gram's method. The capsule does not stain by this method, but the body stains deeply Gram-positive. A thin stroke on the surface of an agar plate should also be made. Stober recommends this method, as the blastomycetes tend to spread out over the surface of the agar, and from the edges of this pure cultures can often be obtained. It may be difficult to get a growth if the organisms are not numerous, as they are easily killed by other bacteria.

**TREATMENT.**

The only treatment hitherto found of any value is increasing doses of potassium iodide in large amounts, or copper sulphate. As much as 600 grains of potassium iodide a day has been given. Snoke and Strick report the recovery of a case of pulmonary blastomycosis, to whom copper sulphate was given in quarter grain doses, three times daily.

**PROGNOSIS.**

The mortality of the cases reported has been very high, eighty to ninety per cent. This may largely be due to the fact that most of the cases were not diagnosed until the disease had become generalized.

**CASE NOTES.**

**Case 1.** A Chinese woman, 26 years old, came in on the surgical service because of chronic sinuses of the breasts. With the permission of Dr. Stearns, we record her clinical history.

*Past history:* The patient was married when 18 years old; husband alive and well; she has had two children. The first was born 3½ years ago; when one month old it developed sores in its mouth and refused to suckle. At the same time the mother developed sores in her breasts. The child is poorly nourished, and has had sores in the neck. The second child lived only three days. The trouble in the patient's breasts began with blisters near the nipples, which later discharged blood and pus and have refused to heal.

*Physical examination:* Fairly well developed and nourished; the spleen is enlarged three fingers breadth below the costal margin; slight enlargement of both breasts; near which are a few blebs, which bulge in the center and contain a yellowish-white, cheesy material. Manipulation causes exudation of a thin, slimy, milky, fluid from the sinuses. The axillary glands are enlarged.

*Laboratory findings:* Haemoglobin, 85 per cent; r. b. c. 4,568,000; w. b. c. 6,700; Wassermann test, negative; urine, negative. Examination of histological sections of the breasts after removal showed numerous, circumscribed, necrosed, areas, large and small, in which blastomycetes were present. Grossly, the breasts looked as if they might be tubercular.

*Subsequent history:* The patient was operated on, at her own request, before the organism had been cultivated and therefore before the diagnosis was fully established. There was a slight recurrence in the right scar which was cauterized. Both wounds healed. The patient has not returned.
CASE 2. A foreign woman, age 30. She complained of slight pain in the chest, cough with bloody sputum, dyspnoea, and weakness.

Past history: She has three healthy children; the first was born seven years ago. She was healthy until three years ago. Since then, while living in Chicago, she developed a bad cough which lasted two months and she had some fever. No tubercle bacilli were found in the sputum, nor any positive signs of disease in the chest. One year later, while living in Peking, she developed a cough which lasted about six weeks. At that time there was no fever, and no tubercle bacilli could be found in the sputum. About one month before the present illness set in, she suffered for one week from an attack of amoebic dysentery; from this she recovered, but the attack left her very weak. The present illness commenced with a severe cold. The sputum at first was very purulent, later it was sticky, glairy, and at times blood-streaked; the latter gradually increasing in amount during the last month. She has had no fever; on the contrary, her temperature has been subnormal during the six weeks she has been ill. The appetite has been good, but she has been losing in weight and strength, and the dyspnoea is becoming very troublesome. She is eight months pregnant.

Physical findings: The patient is poorly nourished and anaemic; pulse 115, resp. 38; loud and moist rales are heard in several places over both lungs; the creaky sound of a dry friction rub is heard over a small part of the right lower lobe in the axillary line; there is slight dullness over an area, the size of a silver dollar, a little to the right of the sternum in the third interspace in front. There is no glandular enlargement or other sign of anything abnormal elsewhere.

Laboratory findings: Haemoglobin, 80 per cent; r. b. c. 4,300,000; w. b. c. 8,500; faeces and urine, negative; blood pressure, 128 systolic, 87 diastolic; Wassermann test, negative. The sputum was examined almost every day for twenty-five days for tubercle bacilli, but none were found. Curschmann's spirals were found twice in the sputum. A few blastomyces were seen in the fresh specimens of the sputum when it was examined with ten per cent potassium hydroxide solution; also from time to time in smears stained by Gram's method, but no growth was obtained until a specimen was procured in which there were a large number present.

Treatment: As soon as a growth of the organisms was obtained, the patient was put on potassium iodide, commencing with 45 grains daily and increasing three grains a day until she was getting 100 grains daily. After three weeks of this treatment, the dosage was gradually decreased.

Subsequent history: After a week of treatment the patient felt much relieved, the pulse and respiratory rates were gradually decreasing, so also the cough and the amount of blood in the sputum. After a month's treatment these were normal; the cough had ceased and there was no more blood in the sputum. The patient had been up a week when she gave birth to a well nourished, healthy child. During the ten months that have now elapsed, there has been no recurrence; the patient is heavier than she has been at any time during the last three years and she feels quite well and strong. The child has been perfectly healthy all the time.

References.
2. Gilchrist: Johns Hopkins Hospital, 1896.
7. Wade: Philippine Jour. of Science, 1918, Vol. 13B.
REPORT OF ROUTINE WASSERMANN TEST AT SOO-CHOW HOSPITAL FOR ONE YEAR.

JOHN A. SNELL, M.D., AND P. Y. CHANG, M.D.

On December 1, 1918, we began doing routine Wassermann test on all patients in the hospital on Thursday. During the following year, 1,116 patients entered the hospital and a Wassermann test was done on 752 or 67.7% of them. Of the 364 on whom a test was not done, a few refused to allow the test to be made, a few were accidentally missed, the most of them entered after the test was made one week and left before it was made the next week. The following tables deal with the 752 on whom the test was made. The question of suspicion or history of syphilis had no influence on making or not making a test and, therefore, the study of these 752 cases is of special interest. I believe this is the first series of routine Wassermann tests reported from this section of China and if it is an index of the condition prevailing in this section we should take some step to prevent the further spread of syphilis. Another year we shall be prepared to report another series and it is hoped that similar reports will be made by other hospitals to show whether or not a similar condition prevails in other centers.

In this all the technical work has been done by Dr. P. Y. Chang, a graduate of the Harvard Medical School in China. He has used the technique of Emery which has apparently been very satisfactory. However, he has at the end of the year changed to a technique which is supposed to be even more accurate as well as more difficult.

A careful study of the following data will, I believe, convince the most skeptical of the value of a routine Wassermann on all our inpatients. It will be noted that only 50% of the positive cases could be clinically diagnosed and in many of those the diagnosis was questionable. In not a few a history was secured after a positive reaction was obtained. After such a laboratory test we are reasonably certain with what we are dealing. It is the difference between feeling our way in the dark and walking in the bright daylight.

The youngest positive case was three years old.
Babies born in the hospital were not tested.
The oldest positive case was sixty-three years old.
The oldest negative case was eighty years old.

The graphic table on age shows rapid increase of acquired syphilis up to fifty years of age. The low percentage of those over fifty years indicates that those having syphilis do not live much beyond that age.

Treatment is instituted immediately on clinical or laboratory diagnosis being made. Mixed treatment is given which consists of 4 to 6 mils three times a day of the following: pot. iod., 9.4 gm.
red iodide of mercury, .05 gm.; water, 100 mils. In addition an intra-muscular injection of mercury oil is given. The combination of these often produces a degree of salivation which requires stopping the treatment a few days. When one is able to pay, and in a few cases where they are not, a course of one to five injections of novarsenobenzol is given intravenously. We usually use large doses repeated in one week or ten days and have seen no bad results from it.

Table of Ages showing number and percentage of Positive and Negative Wassermann Tests.

<table>
<thead>
<tr>
<th>Age</th>
<th>No.</th>
<th>%</th>
<th>Posit.</th>
<th>%</th>
<th>Neg.</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>1—9</td>
<td>11</td>
<td>1.5</td>
<td>2</td>
<td>18.1</td>
<td>9</td>
<td>81.9</td>
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<td>10—19</td>
<td>75</td>
<td>10.</td>
<td>22</td>
<td>29.3</td>
<td>53</td>
<td>70.7</td>
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<td>20—29</td>
<td>252</td>
<td>33.5</td>
<td>95</td>
<td>37.7</td>
<td>157</td>
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<td>30—39</td>
<td>199</td>
<td>26.4</td>
<td>85</td>
<td>42.7</td>
<td>114</td>
<td>57.3</td>
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<td>40—49</td>
<td>140</td>
<td>18.6</td>
<td>67</td>
<td>47.8</td>
<td>73</td>
<td>52.2</td>
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<tr>
<td>Over 50</td>
<td>75</td>
<td>10.0</td>
<td>22</td>
<td>29.3</td>
<td>53</td>
<td>70.7</td>
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<tr>
<td>Total</td>
<td>752</td>
<td>100.0</td>
<td>293</td>
<td>39.0</td>
<td>459</td>
<td>61.0</td>
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Table showing Positive and Negative Wassermann with reference to Sex.

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<th>Sex</th>
<th>No.</th>
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<th>Posit.</th>
<th>%</th>
<th>Neg.</th>
<th>%</th>
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<tr>
<td>Male</td>
<td>586</td>
<td>77.9</td>
<td>253</td>
<td>43.2</td>
<td>333</td>
<td>56.8</td>
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<tr>
<td>Female</td>
<td>166</td>
<td>22.1</td>
<td>40</td>
<td>24.1</td>
<td>126</td>
<td>75.9</td>
</tr>
<tr>
<td>Total</td>
<td>752</td>
<td>100.0</td>
<td>293</td>
<td>39.0</td>
<td>459</td>
<td>61.0</td>
</tr>
</tbody>
</table>

Table showing Positive and Negative Wassermann with reference to Marriage.

<table>
<thead>
<tr>
<th>Marriage</th>
<th>No.</th>
<th>%</th>
<th>Posit.</th>
<th>%</th>
<th>Neg.</th>
<th>%</th>
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</thead>
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<tr>
<td>Married</td>
<td>660</td>
<td>87.7</td>
<td>265</td>
<td>40.0</td>
<td>395</td>
<td>60.0</td>
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<tr>
<td>Single</td>
<td>92</td>
<td>12.3</td>
<td>28</td>
<td>30.4</td>
<td>64</td>
<td>69.6</td>
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</tbody>
</table>

Graphic showing the Percentage of Positive Wassermann.
Table showing Positive and Negative Wassermann with reference to Occupation.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>No.</th>
<th>%</th>
<th>Posit.</th>
<th>%</th>
<th>Neg.</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Farmer</td>
<td>208</td>
<td>27.7</td>
<td>71</td>
<td>34.1</td>
<td>137</td>
<td>65.9</td>
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<tr>
<td>Merchant</td>
<td>96</td>
<td>12.8</td>
<td>59</td>
<td>52.1</td>
<td>46</td>
<td>47.9</td>
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<tr>
<td>No special work</td>
<td>86</td>
<td>11.4</td>
<td>41</td>
<td>47.6</td>
<td>45</td>
<td>52.4</td>
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<tr>
<td>Housewife</td>
<td>68</td>
<td>9.0</td>
<td>18</td>
<td>26.4</td>
<td>50</td>
<td>73.6</td>
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<tr>
<td>Soldier</td>
<td>58</td>
<td>7.7</td>
<td>21</td>
<td>38.8</td>
<td>35</td>
<td>61.2</td>
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<tr>
<td>Craftsman</td>
<td>49</td>
<td>6.5</td>
<td>20</td>
<td>41.8</td>
<td>29</td>
<td>58.2</td>
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<tr>
<td>Coolie</td>
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<td>6.5</td>
<td>21</td>
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<td>28</td>
<td>57.2</td>
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<td>37.2</td>
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<td>5.0</td>
<td>13</td>
<td>35.1</td>
<td>24</td>
<td>64.9</td>
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<td>Police</td>
<td>19</td>
<td>2.5</td>
<td>7</td>
<td>36.8</td>
<td>10</td>
<td>63.2</td>
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<td>35</td>
<td>4.8</td>
<td>11</td>
<td>30.3</td>
<td>25</td>
<td>70.7</td>
</tr>
</tbody>
</table>

Total | 752 | 100 | 293 | 39  | 459 | 61 |

Table showing Degree of Infection.

<table>
<thead>
<tr>
<th>Degree</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>293</td>
<td>39%</td>
</tr>
<tr>
<td>Negative</td>
<td>459</td>
<td>61%</td>
</tr>
</tbody>
</table>

147 or 50% of the 293 positive Wassermann cases were clinically diagnosed as having syphilis.

Clinical Diagnoses of those found Positive.

- Syphilis—all forms... 118—40% Ankylostomiasis... 2—40%
- Malaria...... 18 Dermatitis...... 2
- Opium Habit...... 14 Tinea Imbricata...... 2
- Fistula in Ano...... 13 Cholecystitis...... 2
- Cellulitis and Abscess...... 13 Mitral Regurgitation...... 2
- Fracture and Injuries...... 14 Adenitis...... 2
- Gonorrheal Infections...... 10 Yaws...... 1
- Necrosis of bone...... 8 Epididymitis...... 1
- Diseases of eye...... 7 Typhoid Fever...... 1
- Malignant tumors...... 7 Pneumonia...... 1
- Non-malignant tumors...... 6 Salpingitis...... 1
- Hernia...... 4 Cystocele...... 1
- Hemorrhoids...... 4 Fasciitis...... 1
- Appendicitis...... 3 Intestinal Obstruction...... 1
- Nephritis...... 3 Insanity...... 1
- Phimosis...... 3 Spermatoctoa...... 1
- Amoebic Dysentery...... 3 Cirrhosis of liver...... 1
- Gastric disease...... 3 General peritonitis...... 1
- Schistosomiasis...... 3 Erysipelas...... 1
- Labor...... 3 Acid Poisoning...... 1
- Tuberculosis...... 3 Cholera...... 1
- Beri-beri...... 3 Elephantiasis...... 1
- Stricture urethra...... 2
- Scabies...... 2

Total...... 293
Routine Wassermann Test on 502 In-patients.

Table showing treatment applied.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixed treatment alone</td>
<td>64</td>
</tr>
<tr>
<td>Mixed treatment and mercury intramuscular</td>
<td>165</td>
</tr>
<tr>
<td>Mixed treatment and novarsenobenzol</td>
<td>15</td>
</tr>
<tr>
<td>M. T., mercury intra. and novarsenobenzol</td>
<td>26</td>
</tr>
<tr>
<td>No treatment</td>
<td>23</td>
</tr>
</tbody>
</table>

ROUTINE WASSERMANN TEST ON 502 IN-PATIENTS.

Richard H. P. Sta, B.S., M.D. (From the Medical Department, Peking Union Medical College Hospital.)

From January 1, 1919, to January 31, 1920, there were 739 admissions on the medical service of this hospital. A Wassermann test was done on 502, or 67.9% of them. Of those that did not receive the test, some were missed accidentally, while the others either left or died before any chance was given for the work. This report is, therefore, a statistical summary of the 502 cases on whom a test was made.

The technical part of the work was at first done by Dr. E. T. Hsieh, and later on entirely by Dr. Edgar T. H. Tsen. The technique used will be published later in the National Medical Journal of China by Dr. Tsen.

In going over the following tables one may be struck by the high percentage of cases with involvement of the central nervous system. This, however, is to be explained by the fact that all or almost all suspected or clinically diagnosed cases of syphilis with involvement of the central nervous system were admitted into the hospital for study, while cases of primary or secondary syphilis were not taken in, but were treated at the out-patient department of the hospital.

Unfortunately, most of the cases that gave a one or two-plus Wassermann were given no second test. And this does not attempt to correlate these tests with the presence or absence of clinical evidence of syphilis.

Since this is a hospital for men, the table that deals with sex cannot be taken as of much value. The few female patients that were admitted all came into the private patients' ward.

It will also be seen that in about 60% of the positive cases the primary diagnosis was something other than syphilis and that in about 40% a diagnosis of syphilis might not have been made and treatment not instituted if it had not been for the findings in the blood.
All these go to show the prevalence of unsuspected syphilis which can be demonstrated only by a routine test.

Table I, showing Number and Percentage of Positive and Negative Wassermanns.

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
<th>per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>382</td>
<td>76.1</td>
</tr>
<tr>
<td>Positive</td>
<td>120</td>
<td>23.9</td>
</tr>
<tr>
<td>Total</td>
<td>502</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table II, showing degree of reaction.

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
<th>per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>+++++</td>
<td>87</td>
<td>72.5</td>
</tr>
<tr>
<td>+++</td>
<td>7</td>
<td>5.8</td>
</tr>
<tr>
<td>++</td>
<td>7</td>
<td>5.8</td>
</tr>
<tr>
<td>+</td>
<td>19</td>
<td>15.9</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table III, showing number and percentage of Positive and Negative Wassermanns with Reference to Age.

<table>
<thead>
<tr>
<th>Age in years</th>
<th>No.</th>
<th>per cent</th>
<th>Positive per cent</th>
<th>Negative per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1—10</td>
<td>11</td>
<td>2.2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11—20</td>
<td>58</td>
<td>11.5</td>
<td>3</td>
<td>5.2</td>
</tr>
<tr>
<td>21—30</td>
<td>174</td>
<td>34.7</td>
<td>28</td>
<td>16.1</td>
</tr>
<tr>
<td>31—40</td>
<td>137</td>
<td>27.3</td>
<td>53</td>
<td>38.7</td>
</tr>
<tr>
<td>41—50</td>
<td>71</td>
<td>14.1</td>
<td>26</td>
<td>36.6</td>
</tr>
<tr>
<td>51—60</td>
<td>39</td>
<td>7.8</td>
<td>8</td>
<td>20.5</td>
</tr>
<tr>
<td>61 and over</td>
<td>12</td>
<td>2.4</td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td>Total</td>
<td>502</td>
<td>100.0</td>
<td>120</td>
<td>23.9</td>
</tr>
</tbody>
</table>

Table IV, showing Positive and Negative Wassermanns with Reference to Sex.

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
<th>per cent</th>
<th>Positive per cent</th>
<th>Negative per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>494</td>
<td>98.4</td>
<td>119</td>
<td>24.1</td>
</tr>
<tr>
<td>Female</td>
<td>8</td>
<td>1.6</td>
<td>1</td>
<td>12.5</td>
</tr>
<tr>
<td>Total</td>
<td>502</td>
<td>100.0</td>
<td>120</td>
<td>382</td>
</tr>
</tbody>
</table>

Table V, showing Positive and Negative Wassermanns with Reference to Marriage.

<table>
<thead>
<tr>
<th></th>
<th>No.</th>
<th>per cent</th>
<th>Positive per cent</th>
<th>Negative per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>327</td>
<td>65.1</td>
<td>86</td>
<td>26.3</td>
</tr>
<tr>
<td>Single</td>
<td>175</td>
<td>34.9</td>
<td>34</td>
<td>19.4</td>
</tr>
<tr>
<td>Total</td>
<td>502</td>
<td>100.0</td>
<td>120</td>
<td>382</td>
</tr>
</tbody>
</table>
Table VI, showing Positive and Negative Wassermanns with Reference to Occupation.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>No. per cent</th>
<th>Positive per cent</th>
<th>Negative per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soldier</td>
<td>83</td>
<td>16.5</td>
<td>30</td>
</tr>
<tr>
<td>Student</td>
<td>76</td>
<td>15.1</td>
<td>2</td>
</tr>
<tr>
<td>Coolie</td>
<td>44</td>
<td>8.8</td>
<td>10</td>
</tr>
<tr>
<td>Merchant</td>
<td>42</td>
<td>8.4</td>
<td>15</td>
</tr>
<tr>
<td>No special work</td>
<td>38</td>
<td>7.6</td>
<td>11</td>
</tr>
<tr>
<td>Servant</td>
<td>36</td>
<td>7.1</td>
<td>8</td>
</tr>
<tr>
<td>Officer</td>
<td>34</td>
<td>6.8</td>
<td>10</td>
</tr>
<tr>
<td>Farmer</td>
<td>31</td>
<td>6.2</td>
<td>3</td>
</tr>
<tr>
<td>Huckster</td>
<td>21</td>
<td>4.8</td>
<td>6</td>
</tr>
<tr>
<td>Rickshawman</td>
<td>13</td>
<td>2.6</td>
<td>3</td>
</tr>
<tr>
<td>Missionary</td>
<td>12</td>
<td>2.4</td>
<td>0</td>
</tr>
<tr>
<td>Clerk</td>
<td>9</td>
<td>1.8</td>
<td>2</td>
</tr>
<tr>
<td>Tailor</td>
<td>8</td>
<td>1.6</td>
<td>4</td>
</tr>
<tr>
<td>Professional</td>
<td>7</td>
<td>1.4</td>
<td>0</td>
</tr>
<tr>
<td>Teacher</td>
<td>7</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>41</td>
<td>8.1</td>
<td>13</td>
</tr>
</tbody>
</table>

Total 502 100.0 120 382

In 69 or 57.5% of the 120 positive Wassermann cases, the primary diagnosis was something other than syphilis.

In 65 or 54.2% of the 120 positive Wassermann cases, clinical diagnosis of syphilis was made.

51 or 42.5% of the 120 positive Wassermann cases did not have any physical findings suggestive of syphilis.

Table VII, showing positive cases with and without a clinical history.

<table>
<thead>
<tr>
<th></th>
<th>No. per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>With clinical history</td>
<td>...</td>
</tr>
<tr>
<td>Without clinical history</td>
<td>...</td>
</tr>
<tr>
<td>Total</td>
<td>120 100</td>
</tr>
</tbody>
</table>

Table VIII, showing Duration of Infection.

<table>
<thead>
<tr>
<th>Duration</th>
<th>No. per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 month—1 yr</td>
<td>... 9 12.5</td>
</tr>
<tr>
<td>1 yr.—2 yrs</td>
<td>... 12 16.7</td>
</tr>
<tr>
<td>2 yrs.—3 yrs</td>
<td>... 3 4.2</td>
</tr>
<tr>
<td>3 yrs.—4 yrs</td>
<td>... 9 12.5</td>
</tr>
<tr>
<td>4 yrs.—5 yrs</td>
<td>... 9 12.5</td>
</tr>
<tr>
<td>5 yrs.—10 yrs</td>
<td>... 16 21.3</td>
</tr>
<tr>
<td>10 yrs.—15 yrs</td>
<td>... 5 6.9</td>
</tr>
<tr>
<td>15 yrs.—20 yrs</td>
<td>... 5 6.9</td>
</tr>
<tr>
<td>20 yrs. and over</td>
<td>... 4 5.5</td>
</tr>
<tr>
<td>Total</td>
<td>72 100.0</td>
</tr>
</tbody>
</table>
Table IX, showing Incidence of Involvement of Central Nervous System.

<table>
<thead>
<tr>
<th>With C.N.S. Involvement</th>
<th>...</th>
<th>...</th>
<th>...</th>
<th>41</th>
<th>34.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without C.N.S. Involvem ent</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>79</td>
<td>65.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>120</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table X, showing results of Wassermann Test on Spinal Fluid in 41 cases of C.N.S. Syphilis.

<table>
<thead>
<tr>
<th>No.</th>
<th>per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>+++++</td>
<td>31</td>
</tr>
<tr>
<td>+++</td>
<td>1</td>
</tr>
<tr>
<td>++</td>
<td>3</td>
</tr>
<tr>
<td>+</td>
<td>1</td>
</tr>
<tr>
<td><strong>Negative</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>41</td>
</tr>
</tbody>
</table>

Table XI, showing Clinical Diagnosis of the Positive Cases.

<table>
<thead>
<tr>
<th>No.</th>
<th>per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syphilis (all forms)</td>
<td>...</td>
</tr>
<tr>
<td>Dysenteries (diarrhoea)</td>
<td>...</td>
</tr>
<tr>
<td>Endocarditis</td>
<td>...</td>
</tr>
<tr>
<td>Syphilis (all forms)</td>
<td>...</td>
</tr>
<tr>
<td>Dysenteries (diarrhoea)</td>
<td>...</td>
</tr>
<tr>
<td>Endocarditis</td>
<td>...</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>120</td>
</tr>
</tbody>
</table>
SCOPOLAMIN AND MORPHINE AMNESIA IN LABOR.

Mildred Jenks, Canton.

[Given originally at the 7th Biennial Convention of the Zeta Phi Fraternity, April 22, 1916, and revised and brought up to date for the Conference of the China Medical Missionary Association at Peking, February 21-28, 1920.]

The subject of "Scopolamin and Morphine Amnesia in Labor," while we realize at the start is not a very practical subject for discussion in the greater part of China, still may be found of some interest to us here, that we may keep in touch at least with what has been done and is being done in this line in other parts of the world.

About six years ago the subject was much more popular than it is at present, as then it was in an experimental stage still. We learned from that period, primarily, that the method lacked much of being ideal. It is to be hoped, therefore, that the subsequent fewer articles produced on the subject may mean a time of practical advance toward this ideal. One cannot pass over this period referred to, without noting the significance of one other fact, and that is that so many of the popular magazines took up the subject. "Twilight Sleep" was the theme talked of and read about at nearly every turn for months! This showed an intense desire on the part of the laity to know about this thing, to satisfy a need deeply felt by our modern civilization.

While one realizes that these popular articles were anything but scientific, and have, perhaps, in some cases earned for themselves the rather scathing criticism of some of the medical profession, still they have placed before the women of our country a vision of possible relief at the time of labour, and the consequent increased demand for the treatment is bound to be a means of advancing the technique of the obstetricians along this line. Then, of course, there were those whose reaction was quite the opposite, those who still maintain that it is the lot of women to suffer to the full the pain of childbirth and would not dare to attempt relief!

In reviewing the history of scopolamin and morphine amnesia, "Twilight Sleep" as it is popularly called, one is taken back to the first article pertaining to the subject by Steinbuchel which appeared in the "Centralblatt für Gynakologie" No. 48—1902. Here he makes the first mention of the use of scopolamin and morphine in obstetrics. Steinbüchel, stimulated by the work of Korff in surgical anaesthesia, and by Schneiderlein in psychiatry, attempted to bring about a condition, not of amnesia or seminarcosis, in which the patient is sensitive to pain but has no memory of it afterwards. He used 1-20c gr. scop. and
1-6 gr. morp. at two-hour intervals, one or two injections. His conclusions were as follows:

(1) It appreciably reduces pain; (2) it does not stop uterine contractions; (3) it does not contraindicate the use of general anaesthesia; (4) it is safe for the mother; (5) it does not harm the child; (6) it does not cause post-partem atony of the uterus. His work was followed in 1904 by Waterpetian and Raining of Jena, who varied the dosage slightly and the number of injections (for they believed the dazed condition of the children at birth was due to the amount of morphine used. They also found that frequently repeated doses lessened the strength and duration of the pains and increased the excitement of the patient). Ziffer and Puching of Germany, Pizarzewsky of Poland, and Laurendeau of France all reported cases where many variations in dosage were tried. All results were fairly favorable. Cremer first recommended its use in private practice. Bertino reported four hundred cases with fair results, but he used 1-120 gr. scop. and 1-6 gr. morp. The loss of uterine contractions and asphyxiation were the principal results of the overdose.

In 1906, assistant to Kroning at Freiberg, reported three hundred cases in "Archiv für Gynakologie." He developed a technique, under the supervision of his chief, which has become standard, and he named the scopolamin-morphine treatment "Dammerschlaf" (Twilight Sleep). His aim was to secure better methods of administration and he made use of memory tests by which, if the patient, when asked to recall an incident which took place a few minutes previously, was able to recall this incident correctly, that was taken to mean that the time had come for another dose. If, on the other hand, she did not recall the incident, the dose was deferred. Gauss was most enthusiastic over this result and placed amnesia as the criterion of his success. He wrote several articles subsequently, bringing out in each new points whereby his technique had been improved. He laid great stress on the preparation used, preparing his own solutions from powders or tablets each time. For to the instability of the drug and the accumulation of decomposition products, especially apotropin, Gauss attributed any irregularity in his results, such as asphyxiation and lessened uterine contractions. This idea of his stimulated Straub to prepare a more stable preparation in which manuite, a sugar of the sixth degree, was used remained therapeutically active over a period of years—and this is the preparation used to-day. As a result of his work Gauss concluded that:

(1) Twilight Sleep greatly lessens the suffering of the lying-in woman; (2) "this result is obtained without secondary unpleasant
subjective symptoms, without appreciably influencing labor itself, and without danger to mother and child.

Just about the time of Gauss' brilliant results, Strassmann, Hocheisen, and others of Berlin reported cases of asphyxia and lessened uterine contractions from the use of the scopolamin-morphine treatment. Then followed the well-known controversy between the two cities which did perhaps more than any one thing to cool the ever-increasing enthusiasm at the Freiburg clinic, and to stop the advance of the work of improvement in this line. The Freiburg doctors, however, attributed the Berlin failures to failures in technique—since their own results had been so uniform. This controversy continued and meanwhile more men, notably Preller, Lehman, Steffen and others were trying to vary the dosage and technique to perfect the method. Their results varied considerably, but were for the most part encouraging. Gauss continued also, and in 1915 he had treated over 6,000 cases and was more than ever convinced of the value of it and enthusiastic over his results.

In brief the Freiburg technique is as follows:—The physician must be expert in obstetrics and have a thorough knowledge of the drugs used. There must be an adequate corps of nurses and assistants and the attending physician must be able to devote his whole time to his task. It is believed that much may be done to perfect the treatment from close observation of the patient by the physician. There must be quiet, a darkened room, entirely separated from that of others, and all hospital facilities must be at hand. When the pains occur over 5-6 minutes in primiparae, 7-8 minutes in multiparae, the first dose is given. This dose consists of morphine hydrochloride gr 1.4 and scopolamin hydrobromide gr. 1-150. Watch the patient and the foetal heart. In 15-20 minutes the patient may sleep between pains. 40-60 minutes later give second injection of 1-450 gr scop. and no more morphine. The subsequent doses of scop. are regulated according to the memory tests. There may be twenty injections with no harm, although 3-7 suffice usually. Watch also for the manifestations of the drug action: As scopolamin is of the tropin series, one looks for dilated pupils, loss of accommodation, slow heart and respiration at first, with later an increased pulse. This point is one particularly against the use of scopolamin, since the state of the maternal exhaustion is determined by the pulse and this is, accordingly, obscured by the drug treatment. Blood-pressure falls slightly, the face is flushed, reflexes are increased, and the Babinski reflex is present under the influence of scopolamin. There is apt to be motor excitability; twitching of hands and toes.
The sleep is a natural one without after-effects. There is diminished secretion in the organs and great thirst is experienced.

The first stage of labor is said to be shortened by this method, while it is generally recognized that the second stage is lengthened. Delays of 6-8 hours or even longer, in this stage, with a good foetal heart—not under 100 nor over 170—have proved harmless! The teaching that the use of forceps is indicated after the second stage has lasted two hours would seem to be contraindicated here. In cases of prolonged second stage, suggestion to the mother to use her abdominal muscles is often obeyed without awakening her. Pituitrin may be used here, too. The extreme excitability and restlessness in some cases may be controlled by experience in administering the drug and by following accurately the memory tests. The mother and child should be watched for some time after the delivery, since the depressing drug has penetrated the foetal organs and is not wholly negligible for an hour. It is not found in the mother after twelve hours. The mother is not exhausted, but refreshed on waking six hours later. The puerperium is normal. There is no increase or decrease in lactation.

Shortly after Gauss' original work, scopolamin and morphine were used in Great Britain and in America. The Freiburg technique was rarely adhered to, the memory tests being often abandoned. New ways were being tried constantly and the results were fairly favorable. Several articles, notably those of Cromm, Innes, and Giuseppi, appeared between 1908 and 1914.

Siegel, in Freiburg, advanced his method in 1914. He used, instead of morphine, narcophine. The latter is a combination of morphine and narcotine. (Some believe the drugs are not unlike one another.) Siegel also advocated a time schedule to replace the memory tests. By this schedule the first two doses are forty-five minutes apart, .0045 gm. (L–150 gr.) scop. being given each time, narcophine .03 gm. was given with the first dose. In the third dose forty-five minutes later 1-3 the amount of scop. (.0015 gm.) and 1-2 the amount of narcophine (.015 g.) were given. After one and one-half hours the fourth dose was given, consisting of scop. .0015 gm. alone, and one and one-half hours after the fourth dose, the fifth dose, the same as the fourth, was given. At the sixth dose one and one-half hours later, the same amount of scop. is given plus .015 gm. of narcophine, and at the ninth dose narcophine is given again and so on at every third dose, while the scop. is continued at one and one-half hour intervals, the same amount (.0015 gm.).

This scheme was followed by many but it was found by Libby of California that one was still apt to get asphyxia and lessened the
uterine contractions more frequently by this way. He therefore used only one dose of narcophine. (Not always was he able to put the treatment on a time basis, although he found that satisfactory in one half his cases. He said: "Whenever the patient is deeply narcotized and the uterine contractions are becoming impaired, the next dose in the schedule should be deferred or dropped.")

On the ward at Johns Hopkins in 1916 the Siegel method was used with only one dose of narcophine, however, plus a certain individualizing after the third dose. The patient was watched continually, all noise was eliminated, a bandage was placed over the eyes. An attempt to relieve the thirst was made. Instead of following the time schedule after the third dose, or insisting on the memory tests, the individual actions of the patient were watched and each succeeding dose given according to indication. For instance, by long continued watching it has been found that if, between pains, the hands relax, the patient is doing well and needs no more of the drug. If they do not relax, however, and if there is twitching of the fingers, another dose is indicated. By constant observation the operator can learn many points by which to regulate the dosage. If the patient is excitable, she is too heavily dosed. Whereas, in Freiburg, the only contraindication to Twilight Sleep considered, is primary inertia, here there were further considerations. In a case with a feeble foetal heart sound or in placenta praevia, or in accidental hæmorrhage, eclampsia, prolapsed cord, and dead foetus, the treatment would not have been attempted. The results obtained at Hopkins bear out pretty well those obtained elsewhere. In 1916 we had approximately 70% complete amnesia with 20% partial (these are not considered failures), and 10% of the cases had been refractory. The effect on the mother had been satisfactory both subjectively and objectively. There had been no increased hæmorrhages, no increased tears, while the incidence of forceps delivery tended to be diminished. The milk was not affected, the puerperal psychoses were not increased. The first stage of labor was shortened, the second lengthened. There tended to be a lack of making use of the abdominal muscles. The patient, however, responded to suggestions somewhat, but if necessary pituitrin (1 mil) was used. With regard to the children, they did not always breathe so well and had to be watched for an hour. Often at first they would breathe and cry spontaneously, but if not watched might become apneic in 10-15 minutes. In Freiburg they believe that if left alone the baby would survive even from an apneic state without interference, but no one has quite dared to try omitting the artificial respiration! The infant mortality in the cases
tried there—and our experience was extremely limited compared with that abroad—was 2%. Without Twilight Sleep the mortality had been 7%. It was generally believed that Twilight Sleep was justifiable in selected cases—that it has a restricted place in obstetrics. It was found to be most effective in neurotic patients, found useful in cardiac cases, removing the excitement and effort, and in cases of nervous irritation and consequent slow dilatation of the cervix. In borderline cases, where the diagonal conjugate is between 7½ and 9 cm., it was thought to be of use in the first stage only, bringing about a spontaneous delivery which might not otherwise have been. Straub’s stable preparation of scopolamine in ampules was used. (The purity of the drug may be tested as follows: if it remains clear and colorless after adding sulphuric acid it is pure. If still colorless after adding nitric acid, it is free from morphine.)

There have been many dissenting voices in the controversy on Twilight Sleep—and some of these are among the greatest and most experienced obstetricians. For instance, Victor C. Vaughn says: “The profession is not convinced that this drug, alone or with morphine, is free from danger either to mother or child or both.” Dr. Green of Harvard says it is not without danger, and has discontinued his lectures on the subject. Dr. J. Whitridge Williams, after observing two series at Hopkins in 1916, felt it was not satisfactory, and yet expected to do more with it. Dr. Hirst and Dr. De Lee also disapprove. The majority who have devoted much time and study to the treatment, believe that a perfected and safe painless childbirth would be of incalculable value, and since it is believed by some that modern civilization has rendered woman sensitive to pain to such a degree that there is more than physiological loss of energy at this time, including nervous exhaustion and paralysis of will in some cases, many believe that “under proper conditions and in properly selected cases, this treatment is ideal.”

There have been many substitutes for scopolamine and morphine that have been used with greater or less success. Further study of the comparative value of these would be of greatest interest. In this connection mention might be made of two common substitutes. Henry G. Barbour of New Haven wrote in 1917 of Twilight Sleep: “To-day its practice, as far as justified, is limited to a few who are fortunate enough to possess the combination of unusual facilities and almost superhuman patience.” His experimental use of tryamin, which is an active principle of ergot, being derived by bacterial action on tyrosin-containing proteins, has led him to the conclusion that until further data there is “no objection to the employment of tryamin and morphine.
by those observers, and only those, who are thoroughly versed in the use of morphine in labor." Of the other substitute, nitrous oxid with oxygen, Dr. A. J. Steel of Cleveland says: "Gas is most dangerous unless in the hands of a skilled anaesthetist"; while another doctor from that same state says: "Nitrous oxide is ideal in labor, preferable to hypodermic amnesia." (C. E. Turner, Columbus). Dr. Hurden, of Baltimore, prefers this last substitute to T. S. She begins at any stage thought advisable, according to the case, has no amnesia, but the patient is quickly under the gas during the pains only. She finds no after effects on mother or child. In the end it is less expensive than T. S. She does insist on a skilled anaesthetist, however.

At present, just as formerly, the actual method used in scop. morph. amnesia itself is much under discussion. One woman physician, Dr. Van Hoosen of Chicago, having had over four hundred cases, advocates its use even in the private house. She uses a special bed with canvas sides, the patient's legs being strapped to the sides. The patient is enveloped in a sterile gown, arms inside and is kept perfectly aseptic. She is left alone for the most part while under the influence of the drugs, for Dr. Van Hoosen believes that the external stimula of the physician present is detrimental to the success of the treatment. The doses are given throughout the labor. She uses \( \frac{1}{2} \) morph. and scop. at first. In one hour the scop. is repeated, and given at hourly intervals even to eighteen doses. She claims no bad results. There are those who believe that the whole theory of the scop. treatment lies in the power of suggestion primarily—that the scop. in the doses used has little other than a psycho-therapeutic effect on the mental associations. Thus, one can see what a field is open to obstetrics at present, but Dr. J. C. Edgar of N.Y. concludes that: "The recent agitation over the questions of painless labor has accomplished much good in: (1) stimulating research into nerves and even older methods of painless labor; (2) demonstrating that the use of some preparation of opium, intelligently administered, is not as dangerous to the unborn child as we have in the past supposed, and (3) emphasizing the bareful results of fear, pain, the shock of labor, and the subsequent mental and physical condition of the higher civilized neuropathic woman of the day . . . . . That the danger to the new-born is negligible when drug narcosis is limited to the first stage."

In conclusion, while one feels it to be impossible to state definitely as to the true value of Twilight Sleep at present, and while, as Helleman says: "the hope of establishing in every community sufficient Twilight Hospitals so that every woman can be delivered therein by
her own physician and the semi-anæsthesia regulated by a resident
too Utopian to be looked for in the near future," still, as
Libby says: "Physicians must recognize that the method has not
reached the perfection which warrants indiscriminate use"—and that
the very satisfactory results in the majority of cases provides the
stimulus to further improvements in the method which will broaden its
field of application and remove its objectionable effect upon the new-born
infant." It would seem imperative also that no one should
attempt to make use of scopolamin-morphia amnesia "unless he is
willing to give the time at a personal sacrifice to master the details."

Undoubtedly the use of Twilight Sleep will require much greater
equipment than one now finds in the ordinary obstetrics hospital, in-
cluding a larger obstetrical staff, specialized located and equipped rooms,
and a specialized knowledge of the subject. But obstetrics would be
benefited by just that, and, to quote in substance a lay writer on the
subject,—instead of the obstetrician in attendance on the case sleeping
quietly on the lounge until his services are imminently needed, while
the patient suffers agony with each recurring pain unalleviated until the
very last, the tables will be turned some day—to the glory of obstetrics,
too,—and the patient will have her pains while asleep, and the doctor
will watch by her unceasingly, his first thought the easing of her pain.

DISCUSSION.

Dr. Libby. Stated that when he undertook the study of this
question of "Twilight Sleep" there had been no work done in America
—all data came from print. Dr. Slemons, now head of this department
at Yale, asked him to take up the study. He did so for a period from
November 1914 to February 1915. During this time the cases he
observed were from the out-patient department. Took no cases if he
was doubtful whether or not there would be trouble. In each of the
cases observed the fetus presented at the vertex. He followed the scheme
of dosage used by the Freiberg clinic. The doses were given at certain
periods. Had several cases where it took half an hour to resuscitate
the child. Later he disregarded this schedule and tried to individualize
each patient.

While carrying on this work he never left the patient over twenty
minutes at a time. Started this method the first day of labor and gave
dosage regularly at definite intervals of at least five hours.

At the end of this period of study he came to the conclusion that
it takes a lot of time more than the average man can spend, and while
they had very good results, it necessitated too much time and labor on
the part of the doctor. Believes it out of the question for the ordinary man to attempt. It is for the large institutions.

Discussion by . Stated he had used this method for the past three or four years and disagreed with Dr. Libby that it should be for institutions only.

SKIN INVOLVEMENT IN BREAST CANCER WITH REFERENCE TO ITS BEARING ON THE INTERPRETATION OF APPEARANCES OF TRANSITION BETWEEN NORMAL EPITHELIUM AND CANCER.*

Alson R. Kilgore.

Whether carcinoma ever extends by the transformation of normal epithelial cells into cancer cells at the advancing tumor margin has been a much debated question. The principal evidence in favor of spread in this manner is found in the histological pictures showing all stages of apparent gradual transformation of normal epithelial cells into malignant cells, seen notably in epitheliomata and in cancers of the intestine and duct cancers of the breast. If these are true pictures, their bearing upon the nature of cancer is of the first importance, indicating that the properties of malignancy may be conferred upon normal cells by an influence outside themselves, and that tumors need not necessarily grow exclusively from their own cells.

Borrmann¹, writing of epithelioma and arguing for the origin of tumors from foci of misplaced embryonic tissue, considers that the apparent transitions are to be explained as secondary union of the cancer with the normal epithelium. Ribbert², in a discussion of Paget's disease of the nipple, has expressed the same opinion: "Cancer here (of the breast) as elsewhere and like all other tumors, after it is once fully established, grows only from itself. This is a fundamental consideration. . . ."

Janeway³ has summarized and endorsed the opposite view, that the pictures observed are true transformations. Writing of epithelioma, he says, "The new growth increases in size by a transforming influence upon the adjacent healthy epithelial cells with which it is in direct connection." More recently Ewing⁴ has definitely expressed this view. In the breast, for instance, "some acinar and many duct carcinomas

* This work was done during the tenure of a fellowship of the China Medica Board, Rockefeller Foundation.
The China Medical Journal.

arising at one focus, gradually extend over adjoining areas by a gradual transformation of duct and acinar epithelium into neoplastic cells." A similar conception of the spread of carcinoma of the large intestine is mentioned. The question has not, therefore, been answered with finality and any evidence bearing on it is worthy of record.

The researches above referred to have been made by histological study of the relation of tumors to surrounding normal epithelium in which they have arisen. The tumor cells, especially in epitheliomata, still bear a more or less close resemblance to the surrounding normal cells and are of necessity in contact with them (unless the normal epithelium has been destroyed well in advance of the cancer), so that every opportunity is offered for the production of deceptive appearances of transition. It is reasonable to expect some light to be thrown on the question by a study of contact between malignant and non-malignant epithelia of different histological type. The problem has been approached experimentally from this point of view by Rous who demonstrated that a transplantable adenocarcinoma (the Flexner-Jobling tumor) would unite directly with normal regenerating skin epithelium of a granulating wound to produce histological pictures of simple union and of apparent gradual transition, without evidence which could be interpreted as showing that the skin cells were actually changed into tumor cells. Previous work with simultaneous grafting of embryo tissues and tumor had shown that the cells of an adenocarcinoma may unite secondarily with normal epithelial cells of quite different histological type and intermingle with them.

We are approaching the problem on experimental animals from a somewhat different point of view. But in the meantime it has seemed worth while to study the experiment, carried out by nature in the human subject, of allowing cancer to grow into contact with normal epithelium, which may be observed whenever cancer of the breast involves the overlying skin. The conditions are ideal, inasmuch as the tumor is one arising from the individual's own cells rather than from transplanted material, and, furthermore, the mammary epithelium from which the tumor arises is intimately related embryologically with the skin epithelium, while it is yet sufficiently different in histological appearance to be readily differentiated.

The object of this paper, therefore, is to report a study of the histological pictures seen when skin epithelium has been "exposed" to approaching mammary carcinoma and to show that in the cases studied, no pictures of transformation occurred, but that appearances of histological union were seen which, except for the well-marked difference in
Skin Involvement in Breast Cancer.

morphology between the cells of the two types of epithelium, might be mistaken for true transformations.

The processes which go on when deep carcinoma of the breast approaches the skin have been summarized by Ribbert: "When a cancer approaches the epidermis either it destroys it as a whole by compression, or its alveoli press on the basal layer, blend with it and break through it here and there, or they grow inside the epidermis, building in it epithelial nests and columns." Each of these processes has been observed in the material studied for this paper. The variation in the general relation of advancing carcinoma to overlying skin has been striking. In some instances a single column of cancer cells has approached and penetrated the entire thickness of the epidermis well in advance of the main tumor mass (fig. 1). In a number of cases, especially at the margins of ulcers, islands of cancer cells have been found immediately against the skin epithelium without the interposition of basement membrane. The arrangement of the groups of cancer and of epithelial cells, however, has not been such as to suggest a true union but only a very close apposition (fig. 2).

In another type of approach a large area of cancer has been circumscribed against the epidermis with a narrow margin of connective tissue intervening (fig. 3). In still other cases, extraordinary pictures

![Image](image_url)

**Fig. 1. Path. No. 23931**

*a, A single column of cancer cells penetrating the epidermis.*
of hypertrophy of the epithelium downward in fine processes interlacing with equally fine strands of cancer have presented themselves (fig. 4).

It is in the last-mentioned type of picture that the main interest of the study has centered, for in the relation of the fine strands of cancer and the fine hypertrophic processes of skin epithelium have been found the appearances of secondary union, the interpretation of which

![Fig. 2. Path. No. 25111](image1)

At an ulcer margin.  

**a.** An island of cancer cells in close apposition to skin epithelium which surrounds it on three sides. No basement membrane is seen, but there is no interdigititation of the two types of cells, the arrangement indicating only close apposition and not secondary union.  

**b.** Point of contact of another island of cancer with skin epithelium; basement membrane not yet destroyed.

![Fig. 3. Path. No. 23730](image2)

A second type of approach of carcinoma to skin. Broad area of cancer circumscribed against flattened epithelium with narrow zone of intervening connective tissue. No hyperplasia of skin epithelium. No secondary union.
Third type of approach. Marked hyperplasia of skin epithelium in thin processes interlacing with fine strands of cancer.  

*Fig. 4. Path. No. 14251*

\(a\), Process of skin epithelium.  
\(b\), Strand of cancer.

*Fig. 5. Path. No. 14251*

\(\alpha\), Cancer cells in apparent secondary union with a narrow process of epithelium at its tip.
is in question. Figure 5 shows a process of downgrowing skin epithelium which has preserved its basement membrane against the cancer strands at its side, but shows apparent union with the cancer cells at its tip. The connection between the two, evident under the microscope, is shown but faintly in the photomicrograph, and for this reason the picture is perhaps not as convincing as that shown in figure 6, from another part of the same specimen, in which a strand of cancer cells lies parallel to, and in intimate contact with, a process of epithelium and the highest cancer cell has definitely interdigitated with the skin cells. The change in its shape is obviously due to this interdigitation, and it cannot be regarded as a transitional form between normal and cancer cells. The non-malignant skin epithelium is readily distinguished by its fusiform or oval, small, deep-staining nuclei, its spindle-shaped cells with rather darkstaining protoplasm, arranged in a more or less orderly manner in the processes; the cancer cells by their large, irregular, more vesicular nuclei, their scant, ill-defined, and lightly-stained protoplasm, and the irregularity of their arrangement in strands and small islets. There are no intermediate types to be seen. If, however, the carcinoma were of the prickle-cell variety, confusion might easily arise in attempting to designate the last malignant and the first non-malignant cell.

In figure 7 a cell belonging to a small island of cancer has interdigitated with the cells of a process of skin epithelium, approaching in this instance from the side. In spite of the apparent actual histological union it is possible, on account of the marked difference in morphology

![Fig. 6. Path. No. 14251](image)

*a*, A cell at the end of a cancer strand interdigitating in apparent secondary union with cells of an epithelial process.
between the two types of cells, to designate with certainty the last mammary cancer cell and the first epidermal cells, and again no intermediate forms are to be seen.

The material on which this study has been made consists of 475 specimens of cancer of the breast of fully developed scirrhouus or medullary type which have been received in the Surgical Pathology Laboratory of the Johns Hopkins Hospital during the past ten years. Of this number seventy-four showed histological involvement, either of the nipple or of the skin overlying the breast. In twenty-four of these, however, the cancer had reached only to the lower layers of the derma and showed close approach only to the hair follicles or skin glands—incidentally without showing any appearances of histological union with these structures. It has been considered, therefore, that true "exposure" of the epidermal epithelium to carcinoma has occurred fifty times in the four hundred and seventy-five breast cancers observed. Of these fifty exposures sixteen showed intimate approximation of cancer to skin cells, but in only seven of these were seen pictures of apparent histological union such as is illustrated in figures 5, 6, and 7. In none of these seven cases of secondary union was seen any suggestion of transformation of non-malignant skin involvement in breast cancer.

![Image](image.png)

**Fig. 7. Path. No. 12215**

a. A cell from a cancer island interdigitating with cells of a process of skin epithelium. Approach from the side of the process.
into malignant cells. Study of serial sections in a number of specimens has not changed the interpretation of the appearances at any given point.

It is of interest that all the pictures of apparent secondary union found in these cases occurred only where the skin epithelium was definitely hyperplastic, i.e., in those cases in which the skin over the cancer showed the type of reaction illustrated in figure 4. In the experimental work mentioned above, Rous also obtained secondary union between tumor cells and epithelium in hyperplastic activity, either regenerating epithelium on a granulating wound or transplanted embryonic epithelium. Active growth of both of two tissues is therefore favorable, if not essential, for secondary union. If the uniting epithelia are dissimilar the cells of each retain their indentifying characteristics.

These considerations suggest a reasonable explanation of the apparently perfect transition pictures seen between cancer and surrounding normal epithelium. Certainly hyperplasia of non-malignant epithelium is commonly seen at the margins of cancer, the effect of which is to alter the general morphology of the normal cells in many respects toward that of the tumor cells.* Cancer cells, on the other hand, vary from marked distortion to forms nearly, if not quite, normal in morphology. Gradual transition may easily be simulated by this variation of each type toward the other, the line of demarcation between cancer and normal epithelium being obscured by their secondary union.

SUMMARY.

It is not the purpose of this paper to assert that cancer never extends by transformation at the periphery of normal epithelial into malignant cells, but an attempt has been made to show that, in a considerable number of cases in which conditions for the occurrence of this transformation were theoretically very favorable, it has not been observed. Conclusions may be summarized as follows:

1. In fifty instances of "exposure" of epidermal epithelium to cancer approaching from below seen in four hundred and seventy-five mammary carcinomas, no picture was observed which could be interpreted as transformation of normal into malignant cells.

* This reaction of normal epithelium is by no means specific for cancer. Exactly similar hyperplasia is characteristically observed in epithelium at the margins of benign epitheliomata and of ulcers due to tuberculosis, syphilis, or chronic inflammation. Vide, Councilman: Bull. Johns Hopkins Hospital, 1890, No. 2.
2. In seven cases, however, secondary histological union apparently occurred, which, but for the distinctive morphological appearance of the cancer and the skin epithelial cells, might be mistaken for transformation.

3. In so far as this evidence weighs, it is against the transformation of normal epithelial cells into cancer at the advancing margin of tumor.

4. The pictures of secondary union observed in these cases have occurred only in the presence of hyperplasia of the normal epithelium, and with this in mind a reasonable explanation is suggested of the apparent transitions seen at the margins of tumors, the cells of which are more nearly like those of the surrounding epithelium.

I am indebted to Dr. Joseph C. Bloodgood for permission to use the material in this laboratory and for criticism and suggestions; and to Mr. Herman Schapiro for the accompanying photomicrographs.

REFERENCES.

Editorial.

As so often happens out here in China, the changes and chances of life bring together a man and his work, unfitted for the alliance as he may be. Owing to the sudden departure of Dr. Merrins on furlough, the writer has been catapulted into the editorial chair, as locum tenens, by the action of the Executive Committee; and allied with him, to save his face, to act as buffer states between him and outraged allies, and to be of what help they can in emergencies are Drs. Hutcheson of Nanking and Peter of the Public Health Council, Shanghai; each of whom is doing a whole man’s work and then some.

That most of the editorial responsibility falls on one head is too obvious for comment.

With this brief apology for his existence in the present sphere of activity, he will endeavor, with the assistance of his colleagues, readers of the Journal, and other kindly disposed persons, to keep the time-honored publication in the race; but can hardly be expected to do much in the way of changing gears, as he is more than ever convinced of his lack of fitness for the editorial calling, and is, moreover, under obligations to other duties.

So until the return of Dr. Merrins he asks the kindly consideration of the Association for sins of omission and commission, and the assistance of its members in maintaining the high standard set by Dr. Merrins in the past few years.

C. S. F. L.
This last month one of the commissions appointed by the British National Council for Venereal Disease, combating Venereal Diseases reached Shanghai on its tour of survey. (See editorial in November Journal.)

The Municipal Council appointed an Advisory Committee to assist in any way it could and appointed Dr. W. W. Peter local secretary of that Committee, and also to the Commission during its stay.

Much local interest was aroused, and foundations laid for real constructive work, the corner stone of which is education.

That the Commission did not die of over-work during its brief visit among us was not his fault.

The other day I asked him to kindly write an editorial on the work of the Commission to give the brethren scattered through China a clearer idea of what was done and what ought to be done.

Dr. Peter is a man of action as well as words, and the result of that request is printed as a separate article.

FIGHTING VENEREAL DISEASES OPENLY.

W. W. Peter, M.D., C. P. H.

SYPHILIS.

Syphilis is the third killing disease. It ranks next to tuberculosis and pneumonia. Fifteen per cent of the male admissions to the asylums of large cities of Great Britain are cases of general paralysis of the insane due to syphilis. This costs the taxpayers £90,000 every year. Other forms of insanity due to syphilis cost at least another £60,000 a year. About twenty-five per cent of congenital deafness is due to syphilis. It costs ten times as much to educate a deaf child as a normal child. In a series of 7,001 pregnancies in 150 families where syphilis existed, there occurred 172 miscarriages or still-births, and 229 infant deaths; while of 600 live children 390 were diseased, leaving only 210 normal children in 1,001 pregnancies. Of 1,100 children in London blind schools, 31.2 per cent of cases were certainly and, in addition, 2.8 per cent probably due to syphilis. It costs seven times as much to educate a blind child as a normal child.
GONORRHEA.

Gonorrhea is said to be the commonest cause both of absolute and relative sterility in women, probably fifty per cent. It causes seventy per cent of the cases of ophthalmia neonatorum. In the above mentioned series of 1,100 cases of blindness 24.35 per cent were due to gonorrhea. More than half of all cases of blindness among children are the results of venereal diseases in parents.

PREVALENCE OF VENEREAL DISEASES.

In the British Isles there are about 850,000 fresh cases of venereal diseases every year. This means that venereal diseases take a more terrible toll of victims than did the most destructive war in history (the yearly average of British casualties in the war was 750,000 approximately). In 1912 out of 227,092 men in the British army (119,510) and navy (107,582) there was an average of 593 constantly sick from venereal diseases. These diseases lowered the efficiency of the army (269,210 days) and navy (216,445 days) by a total loss of 485,655 days. This amounts to maintaining a regiment of 1,330 incapacitated men for one year. It is estimated that in London one man in seven has or has had at some time in his life one of the venereal diseases.*

A ROYAL COMMISSION ON VENEREAL DISEASES.

Great progress has been made in the last four years in Great Britain in fighting venereal diseases. This advance dates from the appointment by the Crown of a Royal Commission on Venereal Diseases in November 1913. This Commission, consisting of fifteen members whose names carried a great deal of weight, held 86 meetings, examined 85 witnesses to whom 22,296 questions were put. The findings of the Commission were published in 1916 in a Final Report of 191 pages illustrated by twenty-three photographs and charts as well as numerous statistical tables.

OPEN FIGHTING.

One of the first and most important results of the prolonged activities of this Commission was to bring the fight against syphilis and gonorrhea into the open. Those who have not lived in Great

* All of the above statements are quoted from the final report of the Royal Commission on Venereal Diseases or from addresses recently delivered in Shanghai by members of the Eastern Commission of the National Council for Combating Venereal Diseases.
Britain cannot appreciate with what reluctance these diseases were discussed in public, even as important phases of the public health problem. Now public meetings are being held all over the country to discuss the problem of venereal diseases and publications, previously silent out of deference to the wishes of a majority of readers, have responded to the change in public opinion by frequent articles in which syphilis and gonorrhea are mentioned by their right names.

WHAT THE COMMISSION FOUND.

The Commission made clear that the racial, social, and economic loss arising from these diseases would justify the most strenuous efforts to reduce their prevalence, not only so far as the interests of the individual are concerned, but in the economic interest of the community. It is now understood that the community as a whole suffers from these diseases and that their ravages are not confined to the relatively small group engaged in professional prostitution, but are scattered among men and women of the various social grades, including numbers of married women and children. It is further acknowledged that the cost of supplying diagnosis, treatment, and instruction is far less than the cost of maintaining large numbers of individuals in the later and incurable stages of the diseases.

ADVANCE STEPS.

Three advance steps have been put into operation in Great Britain:

1. Facilities for the free diagnosis and treatment of venereal diseases have been provided at public expense. In the two years in which this plan has operated 176,000 persons have been treated in the free clinics. This does not include army and navy figures, nor the very large number of those who sought treatment through private practitioners. This provision by governmental agencies was supported by a liberal campaign of advertising. Many quacks were forced out of business. In Sheffield, Dr. Rupert Hallam's home, not a single quack remains.

2. Post-graduate courses of instruction in modern methods of diagnosis and treatment have been arranged for medical practitioners in various parts of the country.

3. Popular instruction is provided and an effective effort is being made to stimulate social agencies and activities that are calculated to reduce the prevalence of these diseases.
FACTORS IN PREVENTION.

It has been found that the main factors in prevention of venereal diseases have been:

1. The dissemination of knowledge from the medical aspect among adolescents and adults of the country.

2. The revision of the teaching of children that they may acquire sufficient information on the normal facts of life in a clean and desirable way.

3. The development of counter attractions to street life for the youth of the country.

4. A consideration of the legislative measures that can be taken to encourage facilities for treatment, to check the dissemination of disease by persons known to be infected, to suppress advertisements for treatment by unqualified persons, and to make the treatment of disease by unqualified persons illegal.

5. To secure increased provision for treatment and instruction in all seaports with special view to the health of the seafaring population.

6. A recognition of the deleterious effect of crowded housing, late marriage, and bad social conditions on the problem of disease.

N. C. C. V. D. TO CONTINUE THE FIGHT.

A National Council for Combating Venereal Diseases (N. C. C. V. D.) was established during the sittings of the Royal Commission and subsequently the members of that Commission became the Executive Committee of the Council. The newly formed Ministry of Health has recognized the N. C. C. V. D. as its agent in undertaking educational propaganda throughout the country, and, in addition, the N. C. C. V. D. is a voluntary organization. During the War the Council undertook educational work on behalf of the War Office, Air Ministry, Ministry of Munitions, etc.

THE N. C. C. V. D. COMMISSION IN SHANGHAI.

The results achieved by the National Council in combating venereal diseases in Great Britain led the Colonial Office to authorize an extension of the work of the Council in the dispatch of two Commissions,—one to the Crown Colonies in the East, and one to the Crown Colonies in the West, to discuss with the members of the local medical faculties and the administrative authorities in each Colony those practical measures which would be most likely to result in the reduction of venereal disease.
Since the Eastern Commission came across the United States and Canada on its way to Hong Kong, it was possible for the Shanghai Municipal Council to arrange for a series of lectures, conferences, and public meetings in Shanghai from December 14th to 24th.

**The Shanghai Program.**

As a Committee of Arrangements to prepare for the visit of the Eastern Commission, the Shanghai Municipal Council appointed an Advisory Committee consisting of Judge Skinner Turner, Chairman; Mr. C. H. C. Platt, representing the French Consul; Drs. W. B. Billinghurst, J. W. Jackson, S. A. Ransom, Mary Stone, and E. S. Tyau; Mrs. C. F. Remer, Rev. Frank Rawlinsou; Mr. S. Sakuragi and the Very Reverend C. J. F. Symons. Dr. W. W. Peter was appointed by the S. M. C. as secretary to this Advisory Committee and as local secretary to the Commission.

The Commission consisted of an Educational Commissioner, Mrs. C. Neville-Rolfe, General Secretary of the N. C. C. V. D., and Dr. Rupert Hallam of Sheffield, the Medical Commissioner.

After a preliminary dinner at the Astor House, and an opening meeting in the Ellis Kadoorie Public School, attended by two hundred invited guests, the two commissioners held meetings daily. Those for heads of schools, teachers, and parents met in the Cathedral Church House with Mrs. Rolfe. Dr. Hallam met the Medical Faculty at the Shanghai General Hospital and at the S. M. C. Health Department laboratories. In addition there were many interviews with representatives from the police, health office, hospitals, social organizations, shipping and business concerns. There were three special meetings for women, and one at the Olympic Theater for men and women to see the film "Damaged Goods." The Commission presented the report requested by the S. M. C. and addressed a final meeting in the large town hall on Thursday, December 23rd.

**The Commission's Recommendations.**

The gist of its recommendations to the Shanghai community through its Municipal Council, the Commission embodied in a statement at a joint meeting of the Health and Watch Committees:

1. To consider the provision of facilities for the free treatment of venereal disease by the Municipal Council for the whole population in as far as practicable in the immediate future.

   a. Foreign population. Free treatment to men and women at a venereal disease clinic at the Shanghai General Hospital with
paid medical staff. Also a full time Venereal Disease doctor attached to the Municipal Health Office as an Assistant Health Officer.

b. Seafaring population. Provision at the General Hospital with an early treatment center near the docks open day and night.

c. Chinese population. Existing hospitals should form V. D. Clinics with Chinese staff under the supervision of the S. M. C. Venereal Disease officer.

2. To consider the rendering of certain services to the medical faculty by the Municipal Health Department with reference to:

   a. The provision of facilities for free diagnosis.
   c. " " postgraduate courses.

3. To consider what steps can be taken towards public enlightenment on the dangers of, and the facilities for treatment of, venereal disease.

4. To consider the provision of increased facilities for treatment of municipal employees and prisoners.

5. To consider what further steps can be taken to suppress prostitution.

At the public town hall meeting the Chairman, Mr. Brooke Smith, said that all these and other recommendations by the Eastern Commission will be given careful consideration by the Municipal Council.

There is no question but that the visit of this distinguished Commission has been a very good thing for Shanghai. However, with fifteen nationalities represented in the Consular body, with commercialized vice always quick to take advantage of possibilities to dig itself in, with very little united public opinion on this question, up to the present time at least, it is not to be expected that this particular problem of venereal disease will be solved in a short time. There was a great deal of interest in this question during the stay of the Commission and it remains to be seen to what extent the people and the Shanghai Municipal Council will be able to follow the splendid example set by the people of Great Britain.
Japanese Medical Literature.

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

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

Kyoto Igaku Zasshi
(Kyoto Journal of Medical Science)


In the heart fluid they found four types of cells, corresponding to the blood cells of vertebrates. These cells represent primitive stages in blood development, since they reacted positively to tests for vital and supravital staining, and for the oxidase reaction.


Following injection of india ink into the common bile duct, with ligation of the duct, the particles appeared in the bile capillaries within a few hours, at first appearing in those in the peripheral portion of the lobules, and later fill those of the central part as well, outlining in a remarkably clear manner the course of the finest bile capillaries. After twenty-four hours, the particles escape through ruptures in the capillary walls into the surrounding lymph spaces where they are engulfed and removed by the macrophages.

(660) VASO DILATOR ACTION OF SUGARS, SODIUM CHLORIDE, AND UREA ON THE RENAL AND PERIPHERAL VESSELS. Pages 17-25. S. Kondo. Abstract in German text.

The dilator action was more marked on the renal vessels than on the peripheral vessels. The activity of the various sugars tested was inversely proportional to their molecular weight, and directly proportional to their osmotic pressure.

(661) RELATIVE SENSITIVENESS OF SENSORY AND MOTOR NERVE FIBRES TO DIRECT APPLICATION OF DRUGS. Pages 27-71. Y. Ozaki. Abstract in German text.

The tests were performed on the isolated sciatic nerve of a frog.

Distilled water, and hypertonic glucose (Ringer) solution paralyzed the sensory nerve more quickly than the motor fibres. Acids and alkalies affected them about equally. Neutral salts (added to Ringer's solution) acted similarly to hypertonic solutions except that potassium and magnesium chloride paralyzed the sensory endings almost immediately.

Anesthetics (ethyl alcohol, urethane, chloral hydrate, etc.) acted slightly more rapidly on sensory fibres. Phenol acted much more powerfully on sensory fibres.
Antipyretics (acetanilid, antipyrine) acted a little more quickly on sensory fibres.

Curare and guanidine hydrochloride had no effect. Tetrodotoxin and veratrin hydrochloride acted rapidly and more powerfully in the sensory fibres. Aconitine acted very rapidly, and about equally on both. Cocain acted less powerfully than these, and much more quickly on the sensory than on the motor fibres.

Strychnine nitrate, atropin sulphate, and apomorphine hydrochloride acted slowly, but much more quickly on sensory than motor fibres.

Morphine, pilocarpin, and heroin hydrochloride exerted no appreciable effect on either.

(662) Uric Acid, Urea, and Creatinine Determinations in the Blood as Aid in Diagnosis of Renal Disease. Pages 72-84. C. K. Watanabe.

With increasing impairment of renal function, the order in which these substances accumulate in the blood is: uric acid; urea; creatinine. The creatinine content in the blood is the most important single factor in prognosis. Values of 5 mg. per 100 cc. and over indicating an almost certain fatal determination. Values of 4 mg. with a urea content of 80 mg. indicates uremia. High urea with low creatinine is of doubtful significance.

Uric acid determinations alone are of little significance. A high uric acid content in the blood of itself is not diagnostic of gout.

(663) Sodium Salt Distribution in Plant and Animal Cells. Pages 85-120. S. Funcoka, 3 plates. Abstract in German text.

The author used seven different methods for the demonstration of sodium, the most useful being to precipitate it as crystals of sodium-cerium-sulphate, or as sodium-magnesium-uranyl-acetate. The sensitiveness of these reactions is not great enough to permit one to exclude the presence of some sodium on the basis of a negative result.

In the blood of vertebrates and invertebrates the reaction is positive in the plasma but never in the red cells. In muscle, it is present in muscle lymph never in the fibres themselves.

In cartilage, the crystals are numerous in the ground substance, none in the cartilage cells. In other tissues the crystals likewise appear in the intercellular substance, not in the cells.

In plants they form in the cell juice but not in the nucleus, the chlorophyll bodies or protoplasm.

Kyoto Igaku Zasshi
(Journal of the Kyoto Medical Society)


The author studied particularly the quantity of milk of lime (Ca(OH)₂) and chloride of lime required to produce a perfect disinfection of feces and urine and the most effective method, for their application.

To about fifty grams of feces, using in separate tests both fresh and old dried specimens, there were added about half of the growth of a fourteen hour slant agar culture of colon typhoid, paratyphoid, dysentery, and cholera bacilli, a measured amount of the disinfectant, and sufficient water to bring the total up to 100 grams. After six to seven hours incubation at room temperature (25° to 30° C), cultures were taken in broth, and on agar plates, and the pathogenic organisms, if present, identified by cultural and agglutination reactions.
He made up for the tests, a 2% stock solution of chloride of lime which contained 25% available chlorine, and tested it as such, and also after the addition of 6 cc. of crude hydrochloric acid, or 2 cc. crude sulphuric acid to 100 cc. In testing milk of lime he used a 10% solution (?) of CaO, or a 5% solution (?) Ca(OH)_2. The quantity of milk of lime used was about quarter that of the excreta, as required by the Hygienic law of the Japanese Government.

To disinfect 50 g. fresh feces required 0.7 g. chloride of lime, with a 0.7 cc. crude sulphuric acid. Old feces required 1.0 g. and 1.0 cc. respectively.

To disinfect 50 cc. fresh urine required 0.05 g. chloride of lime, and 0.05 cc. sulphuric acid; for old urine 0.2 g. and 0.2 cc. were required.

For 50 grams fresh feces 17 cc. milk of lime were required; for old feces, 25 cc. For 50 cc. fresh urine 1.5 cc. sufficed; but with old urine about double the volume of milk of lime was necessary, and had to be thoroughly mixed.

Chloride of lime, without the addition of acid was much less effective. For 50 g. fresh feces, 1.4 g. or 28 cc. of the 5% solution prescribed by the Japanese Hygienic Law, was not sufficient, though half this quantity sufficed if acid were added. The use of milk of lime is more convenient, and less expensive at present.

Methods of Destroying Larvae of Flies in Feces and Urine.

If the larvae are in water, the greater number will be killed in two hours if 5 cc. of a 1% solution of chloride of lime containing 25% effective chlorine are added to each 20 cc. of the fluid. In old feces and urine, the larvae are not killed till after twelve to twenty-four hours.

Petroleum was very effective in killing the larvae. In old feces and urine contained in a vessel about eight inches in diameter and one foot in height, the larvae were killed in a few hours by 20 cc. of petroleum. To secure results, the feces must be evenly distributed in the vessel and the papers, etc., pressed down to the bottom of the vessel. The petroleum is mixed with water in proportion of 2% to 5%, and poured over the feces; or the water may be added first, and the petroleum poured over it. The sides of the vessel should be sprayed with the petroleum to destroy crawling larvae.

The larvae were readily destroyed, in a large quantity of old feces, by passing steam into it.

The quantity of disinfectants required for varying quantities of feces and urine are tabulated below:

<table>
<thead>
<tr>
<th>Volume of</th>
<th>Surface of</th>
<th>Contents of</th>
<th>Surface of</th>
<th>Amt. of</th>
<th>Amt. of</th>
<th>Amt. of chloride of lime and H_2SO_4</th>
</tr>
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<tbody>
<tr>
<td>vessel. (1 T=8 gals)</td>
<td>vessel.</td>
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<td>and H_2SO_4</td>
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<tr>
<td>3 To</td>
<td>2.27 sq. ft.</td>
<td>1 To</td>
<td>1.8 sq. ft.</td>
<td>70-150 cc.</td>
<td>1,000 g.</td>
<td>1 lb. ea.</td>
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<tr>
<td>3 To</td>
<td>.. ..</td>
<td>1.5 To</td>
<td>1.5 ..</td>
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<td>5 To</td>
<td>3.14 ..</td>
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<td>1.5 ..</td>
<td>90-200 cc.</td>
<td>1,500 ..</td>
<td>1 1/2 .. ..</td>
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<tr>
<td>5 To</td>
<td>.. ..</td>
<td>2.0 ..</td>
<td>2.5 ..</td>
<td>100-200 cc.</td>
<td>2,000 ..</td>
<td>1 1/2 .. ..</td>
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<tr>
<td>5 To</td>
<td>.. ..</td>
<td>2.5 ..</td>
<td>2.5 ..</td>
<td>100-200 cc.</td>
<td>2,500 ..</td>
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</tr>
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</table>

Urinals. For 4 to 8 gallons of old urine in a vessel of 12 to 20 gallons capacity, 40 to 80 g. of chloride of lime, and 40-80 cc. of sulpheric acid are required; or 600 to 1,200 cc. of 10% milk of lime.

For one liter of water in a wash basin, 2 to 3.5 mg. of chlorine are required to disinfect in thirty minutes.

To disinfect sewerage effluent of Osaka, Japan, which contained from 600,000 to 700,000 bacteria per cc. for each cubic meter of water there was required 75 g. chloride of lime, and 30 to 50 cc. of sulpheric acid; or 150 to 200 g. of chloride of lime without acid; or 500 grams of lime.

To disinfect one cubic meter of water from the public baths required from 20 to 48 g. of chloride of lime; or 10 to 25 g. of the latter with 30 cc. of sulpheric acid.
A Saponin found in the root of Platyodon grandiflorum.

This plant which belongs to the order Campanulaceae, was used by early Chinese physicians as an expectorant, tonic, and gastro-intestinal sedative.

The author obtained the active substance by extracting the finely divided root in warm alcohol; concentration; and purification by dialysis, and repeated precipitation in alcohol, and ether.

The substance is a non-crystalline powder, with a hot bitter taste, sparingly and slowly soluble in water, in which it forms a light yellowish solution. It is insoluble in acid solutions, and dissolves in alkalies. It is insoluble in ether, chloroform, or benzene. It melts in 220° C. It does not reduce Fehling's solution, but if boiled with a metallic acid, a white cotton-like sediment forms and the filtrate reduces Fehling’s solution. It contained no nitrogen. When dissolved in strong acetic acid, and a drop of strong sulphuric acid is added it turns a red-brown color.

The substance is optically inactive, but after hydrolysis with acids yields 65.4% of its weight of dextro-glucose.

If the saponin is treated with benzene, chloride and sodium hydroxide, a benzyl compound is formed, which is a white non-crystalline substance is formed which is insoluble in water, but soluble in alcohol and in ether.

With acetic acid and sodium acetate, it forms a similar white substance also soluble in alcohol, ether and benzene but not in water, which melts at 151° C.

Chemical analysis revealed a structure corresponding either to $C_{33}H_{48}O_{20}$. The CO$_2$ averaged 51.79%; and H, 6.36%.

The substance is haemolytic, about one-half as actively as diostin, and about twice as active as senega.

Intestinal lesions produced by the excretion of poisons.

Pages 156-297. N. Okubo.

The author found that on introduction into the animal body, poisons such as Bismuth, mercury, chromium, arsenic, ricin, caustaridin, snake venom, and several bacterial poisons were excreted in part through the mucous membrane of the gastro-intestinal tract. The enteritis resulting is usually most pronounced in some definite portion of the digestive tract. In very young animals this is much more diffuse and uniform throughout the tract indicating a less complete development of the tissue and differentiation of function. Thus, in the young animal, Bismuth granules are deposited diffusely in the lining epithelium and even in the glandular epithelium throughout the intestine, whereas in the adult they are mainly concentrated in the epithelial cells at the tips of the villi in the lower part of the small intestine.


The tritolsin (haemolysin) is destroyed by heating at 56° C and cannot be reactivated. It resists freezing. It was not affected by being shaken for two hours, but was markedly weakened after twenty-four hours.
It was destroyed by two hours exposure to direct sunlight, and also to ultra-violet rays. It was destroyed by evaporation to dryness in vacuo.

It dialyzed very slowly through an animal membrane. It was removed by filtration through charcoal. It was weakened by addition of large amounts of salt to its solution.

The addition of acid and alkali (to a concentration of 15%) destroyed the haemolysin.

On passing CO₂ through a solution of the lysin, a precipitate (of globulin) formed, which contained about ¼ of the lysin, while ⅔ remained in the supernatant fluid (albumin fraction).

Passing hydrogen gas through a solution for one hour reduced its strength to ⅓ of the original value, while hydrogen sulphide quickly destroyed it.

The addition of filtered saliva reduced it to ⅝ of its original strength in one hour, while pancreatin almost completely destroyed it, as did filtered gastric juice.

This accords with the observation that the fatal dose by mouth is 100 times greater than by intravenous injection.

It was destroyed by alcohol, chloroform, and ether. It was slightly weakened by 0.5% phenol. It was not injured by solution in distilled water. It was well preserved in glycerine.

The neurotoxin of the triton has distinct anticomplementary action, this being exerted against the third (thermo-labile) ingredient of the complement.

Taiwan Igakukai Zasshi
(Journal of the Formosa Medical Society)
No. 185. March 28, 1918.

(668) DISTOMA OF THE LUNGS; Paragonimus westermanii, a study of the liberation of the encysted cercaria in the alimentary tract of the final host. Pages 401-426. T. Yokogawa. (Continued.)

The author here reports studies on encapsulated cercaria of a small fluke infesting the liver of the native crab (Potamon obtusipes, Stimpson, and Potamon Dehaanii, White) in Motoshima. He used bits of liver containing cysts, and also cysts freed from liver tissue by teasing in water.

In artificial gastric juice containing 0.05 to 0.2% hydrochloric acid the cercaria were never liberated. The free cysts were killed after two to three hours exposure to 0.2% acid, and ⅔ of them to 0.1% acid. They were much more resistant, however, if embedded in liver tissue.

Cysts which had been exposed to gastric juice for two to three hours were transferred to water, and incubated but the cercaria were not liberated.

Cysts which had been exposed to gastric juice and then placed in a 0.1% sodium carbonate solution containing 1% bile were dissolved, and the cercaria liberated after one to two hours.

Cysts which were placed directly in artificial intestinal juice were not dissolved. He used 0.1% sodium carbonate solution containing pancreatin in quantities from 0.1% to 3% and 1.0% pancreatin solution with sodium carbonate from 0.01 to 0.1%.

Cysts subjected first to gastric juice for one and two hours and then to the intestinal juice were not visibly changed. If the bile was added to the intestinal juice, the cercariae were liberated.

Cysts placed directly in an alkaline bile solution were rarely dissolved, but only if previously treated with either gastric, or intestinal juice. They were better liberated in a bile solution containing 0.05 to 0.1% sodium carbonate than in more strongly alkaline solutions.
Unlike the cysts of pulmonary distoma, this organism is not liberated readily in 0.5 to 1% solutions of sodium bicarbonate, even after previous exposure to gastric juice.

(669) Seven day fever in Formosa. Pages 427-432. S. Ohouishi.

Detailed report of a case presenting a clinical picture closely resembling jaundice. The serum from the patient, however, showed lytic activity for the spirochetes of seven day fever, and was inactive on haemorrhagic jaundice strains. The diagnosis was based on the serum reaction.

Juzenkai Zasshi
(Journal of the Perfection Medical Society)
Vol. xxiii, No. 2. February 1, 1918. (3 plates)

(670) Mushroom poisoning, with gangrene production. T. Ichimura.

The patient, a man of thirty-six, ate the mushrooms for three consecutive days. He then began to suffer burning sensations, and pain in the feet, which was relieved by elevation of the leg, or by immersion in water. The hands become similarly affected two to three days after the feet. The pain was continuous, and severe. After seven days constant immersion the pain subsided, and the extremity became cold. The macerated skin turned dark, became shrunken, and began to slough back as far as the metatarsal joints.

The mushroom in question, collected by the author in Baba, Ishigawa prefecture, he identifies as the Sasatake (of Shishi). The cap is several cm. in diameter, the center depressed, the surface smooth. The gills are attached to the stem. The stem is 1.5 to 4 cm. long, it is attached to the center of the cap, is hollow and has no ring. The spores are white. It is therefore a species of Agaricus. He has given it the name "Chitocybe acromelalga" and has reported it in the Botanical Gazette (University of Chicago, Ill., U. S. A.).

He regards it as identical with forms described as causes of poisoning in Takiomura (Yafushimida) and Kerichimura (Ishigawa prefecture), reported in the Tokio Igakukai Zasshi, (Vol. v, No. 4). In other districts it is called the Take-motashi, Yafutake, Yafumotake and in Kana Sasamotake.

Very similar symptoms have been reported due to poisoning with the Karahatsu-take, a distinct species described by Kawamura in the Botanical Journal, Vol. xxiii, No. 275.

(671) Cat bite disease. Pages 5-12. I. Tanoka.

The author discusses the conflicting opinions as to the identity of this disease with rat bite disease. Hatake; Kitagawa and Mukoyama, and Isumi and Kato regarding them as identical, while Makano, Orishiga and Tanomura believe that a different species of spirochete is concerned.

The symptoms come on as a rule seven to ten days after the cat bite. Prominent are lassitude, weakness, chilly sensations, aching, and dull abdominal pain. The disease begins frequently with a chill and fever, which may be continuous, but is more often intermittent, are at first brief but toward the terminating of the disease more protracted.

The limb bitten shows circular or elliptical areas of infiltration, variable in size, purplish red in color, fading on pressure. Later the skin sloughs, and a scar is formed.

There is swelling of the regional lymph glands. There is pain and tingling in the bitten limb.

Enlargement of the spleen is not constant.
The outlook is good, except in infants, in the aged, and in those debilitated by disease.

Under salvarsan treatment, the disease is usually cured in two to three weeks, but may persist for several months, or even years.

Reports a case observed personally, following seventeen days after a cat bite, which showed a clinical picture typical of rat bite disease. After four febrile paroxysms he was cured by salvarsan. No spirochetes were found in the blood.

Chu Gai Iji Shimpo
(Home and Foreign Medical News)
No. 911. March 5, 1918.

(672) Pleural exudates and transudates,—A study of. K. Nagahima.
Forty pleural fluids were studied by the author. Of these 17.5% were bloody, 82.5% serous. Most of the serous fluids were brownish yellow in color. The specific gravity of the fluids ranged from 1.017 to 1.023. One half of them had a specific gravity of 1.020. The amount of albumen varied between 2.5% and 6%. Of the fluids examined 55% contained between 3.5% and 4% of albumen. The specific gravity did not vary proportionately with the amount of albumen present. All the fluids contained a relatively high proportion of lymphocytes, and the type of cells present had no absolute value in the differential diagnosis of tubercular and non-tubercular cases.

Iji Shim bun
(Medical News)
No. 993. March 10, 1918.


The induration was in part the result of thrombus formation, due to adhesion of eggs of the fluke to the walls of the branches of the portal vein, and in part to a sclerosis of Glisson's capsule and its ramification in the liver.

Saikingaku Zasshi
(Journal of Bacteriology)
No. 270. March 15, 1918.


Slight activity was demonstrated toward the staphylococcus; none toward streptococcus. Serum from a tuberculous patient showed less than the normal bacteriolytic action toward staphylococcus; that from a patient with staphylococcus infection more than the normal. Serum of a patient with streptococcus infection shows bactericidal power for streptococcus.

(675) Dysentery bacilli; types prevalent in Miyakake, Japan, in 1916. Pages 197-207. Y. Enoue.

Of the cases studied 81% were of the original type (Shiga) and 19% of other types. The former type caused a severe form of the disease, with 33% mortality while none of the latter cases died. Some of the Shiga strains were atypical in their carbohydrate fermentations, and one strain formed indol.
IMMUNIZING PROPERTIES OF FAT-FREE TUBERCLE BACILLUS VACCINE.


They found that this vaccine, freed from fat by extraction in alcohol and ether, possessed strong immunizing properties. The protected animals developed local lesions only on inoculation while control animals developed generalized tuberculosis.

HIFUKWA, HITSUNYOKWA ZASSHI

(Japanese Journal of Dermatology and Urology)

Vol. xviii, No. 3. March 20, 1918.


This is a mite, probably the larva of a species of Trombidium, found under the leaves, in wet, shaded regions. If the mite adheres to the human skin, it causes itching, and the local appearance after two to three days of small reddish macules, which persist for five to six days.

If the mite penetrates under the skin, the exanthem spreads to neighboring regions. It may become vesicular but rarely suppurates.

The body of the parasite is round or elliptic. The abdomen and cephalothorax are sharply demarcated. It possesses one pair of palpi and mandibles, three pairs of six jointed legs, and a dorsal plate. The body is marked by numerous wave-like stripes, and is covered by many hairs.

Treatment consisted in applications of balsam of Peru and of sulphur.


This moth, which is abundant in Miyakake districts in Japan, resembles the silk worm moth in appearance. It is a little smaller, is light yellowish in color, and the anterior wings are marked by eccentric yellowish brown spots and by two small black dots on both sides of the lateral marginal region.

The lesions consist of urticarial papules from 2 mm. to 2 cm. or more in diameter, surrounded by an area of erythema. Itching is intense. They appear within a few minutes, or only some hours after contact with the moth, both locally and in other parts of the body. They are abundant on the neck and limbs. The palms and soles are spared. There may be vesiculation.

The poison is contained in needle-shaped hairs, grouped at the tip of the tail. The action of the poison is chemical, and it is believed to be an acid since alkalies partly but not completely neutralize it.

VESICAL CALCULUS OF UNUSUAL SIZE. Pages 47-49. Y. Imamura.

The measurements were 8.5 cm. by 6.2 cm. by 5.1 cm. Circumference 17.9 cm. Weight 250 g. Volume 152 cc. Specific gravity 1.64. It had a finely granular surface, and consisted of six layers.


The study was based on examination of 1,029 laborers. The size of the orifice increases from the fifteenth to the twentieth year and corresponds to Charrière's number twenty-one to twenty-six. It remains constant from the twenty-first to the fortieth year, at number twenty-five to twenty-seven. The average number was twenty-six. But 3% were under number fifteen in size and 33% under number twenty-four.

The average size of the orifice increased with the height. Those with height between 140 and 160 cm. corresponded to number sixteen to twenty-two; those over 160 cm. to numbers twenty-five to twenty-nine.
Individuals with phimosis showed on the average a small orifice 6°, taking a bougie less than number twenty-four. In hypospadias of moderate degree the orifice was larger than the average, but in men with second degree hypospadias, it was considerably narrower.

The incidence of gonorrhoea was higher in men with wide orifices.

In 5% of the men the valve of Guirru was narrow, in proportion to the size of the orifice corresponding to number three to four. This was usually in men with redundant prepuce, and a narrow external urethral orifice.

Iji Shimbun
(Medical News)
No. 994. March 25, 1918.

(681) Anaphylatoxin production from "Konnyaku" (Amorphophallus Riviere, Dur.) Pages 359-370. M. Kunimizu.

The addition of 0.5% Konnyaku to fresh guinea-pig serum resulted in the formation (after two hours incubation) of anaphylatoxin. On injection into normal pigs, it caused a typical anaphylactic shock.

Incubation of Konnyaku in inactivated guinea-pig serum did not result in toxin formation.

Fukuoka Ikwa Daigaku Zasshi
(Journal of the Fukuoka Medical College)

(682) Seven day fever, etiology of. T. Ido, G. Ito and S. Waji.

In 1917 (Journal of the Japan Medical Association, August, 1917) the authors reported the finding of a spirochete in the blood of a patient suffering from seven-day fever, by means of guinea-pig inoculation. Morphologically this spirochete resembled the spirochete ictero-hemorrhagic. The organism caused a disease in the guinea-pig resembling seven-day fever. The blood of the patient contained immune substances toward this spirochete. This spirochete was found in the kidneys of wild rats in the districts where this disease is prevalent. For these reasons the authors concluded that it was the etiological agent of this disease, and named it the spirochete of seven-day fever.

At the time of this report this organism had only been obtained in one out of six cases. Since then the authors have found that large guinea-pigs are not susceptible to the disease. By using young pigs they have found the same spirochete in seventeen out of twenty cases which they studied. The organism can occasionally be found in smears of the patient's blood, and they are excreted in the urine in large numbers during convalescence.

Juenkai Zasshi
(Journal of the Perfection Medical Society)
Vol. xxiii, No. 4. April 1, 1918.


A report of two cases of inverted canine teeth, associated with infection of the antrum. The only symptom was an excessive foul-smelling nasal discharge, which cleared up after operation and removal of the tooth.
HEMOLYSIN PRODUCTION IN THE CEREBROSPINAL FLUID. Page 477. C. Haoi.

Following the intraperitoneal, and intravenous injection of goat's or guinea-pig's blood into rabbits, the cerebrospinal fluid was found to contain demonstrable hæmolysin in dilution of 1 in 5, to 1 in 10 as compared with 1 in 2,500 to 1 in 5,000, in case of the serum.

ASCARIS INFECTION IN PREGNANCY. Pages 489-490. G. Rekigawa.

Author reports a case of a pregnant woman in whom persistent vomiting, leading to marked emaciation, was apparently due to ascaris, and was cured by santonin treatment.


The cases were reported from Niigata, the inhabitants of which show a high incidence of infection with this parasite. In infected children symptoms of focal cerebral disease were frequent. In young animals experimentally infected, the penetration of the parasite into the cervical veins has been demonstrable and it is probable that the same mode of invasion occurs in these children.

TRITON PYRRHOGASTER (BOJE) POISON. Pages 455-460. S. Matsusaki and I. Kabeda.

The tritons were obtained from the river Miyagawa, in Jiba, Japan. The poison is contained in the skin, the internal organs, and the muscles. The most effective method of obtaining the poison was by extracting the skin which had been ground up with sand, in ten volumes of glycerine. The solution is yellowish brown in color, has a strong odor, an irritating bitter taste, is feebly alkaline in reaction, and gives position reactions for protein.

There are two distinct toxins present; a relatively unstable hæmolysin and a more stable neurotoxin which kills experimental animals by paralysis of the respiratory center, and which also directly injures the myocardium.

It is much more toxic for warm blooded animals than for cold blooded animals. The minimal lethal dose of a 30% dilution of the toxic solution on intravenous or intra-peritoneal injection was 0.5 to 0.7 mils per kilo for warm blooded animals, 5 to 3 mils for frogs, 35 mils for snakes, and 100 mils for the triton.

On subcutaneous injection in rabbits it caused a local swelling which became indurated, and later gangrenous. In the eye it caused a severe conjunctivitis, and slight myosis. The poison is destroyed in the stomach. On intravenous injection in rabbits it caused in three minutes an acceleration of respiration, the respiratory movements became violent; next the skeletal muscles became weak, after fifteen
Japanese Medical Literature.

minutes the animal fell over, the respirations became slow and feeble and ceased after four hours. There were hemorrhages in the lungs, liver and stomach, intestines, spleen, kidney and adrenals.

Heating the poison for thirty minutes at 46° C., 70° C., and 100° C. reduced the activity to \( \frac{1}{2} \), \( \frac{1}{3} \), and \( \frac{1}{7} \), respectively of its original value. Exposure to direct sunlight for two hours reduced it to \( \frac{1}{2} \) of its original strength. It was markedly weakened by drying in vacuo, but not by freezing. It was rapidly destroyed by ultraviolet light. Shaking reduced the haemolysin \( \frac{1}{2} \) but did not affect the neurotoxin. It was destroyed by acids, alkalies, by 0.5% potassium permanganate solution and by gastric juice, and the haemolysin by carbolic acid. Passing \( \text{CO}_2 \) and \( \text{H}_2\text{S} \) gas through the solution destroyed the haemolysin and weakened the neurotoxin. The haemolysin was reduced to \( \frac{1}{4} \) strength by salt solution. Filtration through blood charcoal removed the haemolysin but did not affect the neurotoxin. It passed very slowly through an animal membrane.

The action of the toxin was neutralized by tissue suspensions. Of these the central nervous suspensions were most active, gland suspensions next, and muscle and connective tissue least active.


The larvae may be found in the liver from one to eight days after being fed, and in the lung from three to fifteen days, the maximum number being present on the sixth to eighth days. They appeared in the digestive tract on the eighth day and were in maximum number on the tenth and eleventh days.

The eggs were found to develop in cultures in 0.7% \( \text{HCl} \) solution. They developed in 0.1% carbolic acid but were killed in 0.5% solution.

Chuo Igakkai Zasshi

(Journal of the Central Medical Association)

No. 274. March 20, 1918.

(689) BERI-BERI PRODUCED EXPERIMENTALLY IN A GOAT. Page 1224. D. Kawakami. (From the journal of the Kimamoto Medical Association.)

The author fed five goats on polished rice and in two of them observed paralysis of the limbs, and general weakness, progressing to death. The other three showed only general weakness, which in some ended fatally and in the rest recovery followed the resumption of a normal diet. The lesions were the same as those reported in other animal experiments. (See review No. 222.)

(690) GINSENG OF KOREA, ITS PHYSIOLOGICAL ACTION. Page 1225. S. Watanabe.

On the basis of observations on four patients and some experiments with rabbits the author concluded that Korean ginseng causes diuresis, increases blood pressure, accelerates the pulse rate, and does not influence the temperature.


The urine contained albumin and hyaline and finely granular casts, which persisted for twenty-four hours.
The China Medical Journal.

Nippon Gankwagakkai Zasshi
(Journal of the Japan Ophthalmological Society)


(692) Sub-conjunctival injections of hypotonic salt solution. Pages 300-313. I. Mukai.

The protein content of the aqueous fluid was increased following such injections. The greatest increase followed 2% solution; next in order, distilled water then 0.2%, 0.4%, and 1%.

(693) Interstitial Keratitis, a statistical study. Pages 325-342. S. Watanabe.

Syphilis is the cause in 93% of the cases, in 85% congenital, in 8% acquired syphilis.

A positive von Pirquet test was obtained in 25.5% of the cases, and a positive reaction to subcutaneous injection in 14.3%.

The cause was not determined in 2.7%.

The disease constitutes 1.4% of all ophthalmological cases in Japan.

The disease is more common in males than females in the proportion of seventeen to eleven.

The age incidence is greatest at nine and ten and again at twenty-three to twenty-five. In males the greatest incidence was at twenty-four, in females at ten nineteen and twenty.

It was bilateral in 62%. In patients over twenty it was more frequently unilateral. Most frequently one eye is involved before the other, the average interval being forty-six days.
TRANFUSION OF BLOOD. Four methods of performing transfusion have been practised during and since the War:—(1) by means of Kimpton's paraffin-coated tubes; (2) by the use of a number of Record Syringes; (3) Hull's method of introducing the radial artery of the donor directly into the recipient's vein; (4) by using citrated blood, preferably with Robertson's bottle. The obvious disadvantages of Hull's method are that the amount of blood given cannot be measured and that as the donor's radial artery must be tied off it is, in a sense, slightly mutilating. On the other hand, there is no danger of clotting and no special apparatus whatever is required. It has a distinct place where transfusion is likely to be practised on rare occasions only. In referring to the author's description, however, (Brit. Med. Jour., 1, vol. 2, 1917, p. 683) the reader should be warned that the operation, while perfectly feasible, is by no means child's play. Hull has a tendency to describe operative procedures as if they were simpler than they really are. Of all four methods (and there are no doubt plenty of others) that of using citrated blood seems likely to be the one most generally employed. A good description, with a drawing of the apparatus, will be found in the Brit. Med. Jour., 1, vol. 2, 1920, p. 112. As the value of transfusion in appropriate cases has been placed beyond doubt, and as, in times of peace, the conditions needing it are chiefly chronic ones, giving time for preparation, it will no doubt come into use in many of our hospitals. The present writer has found that the idea of giving blood to an elder member of one's family appeals strongly to the Chinese mind.

LOCALIZATION OF INTRACRANIAL TUMORS. There is a most interesting and convincing paper by Dandy of Baltimore (Surg., Gynec. and Obstet.—April 1920) on the results obtained by what he calls "Ventriculography." Very briefly, this consists of tapping one lateral ventricle, withdrawing some cerebrospinal fluid and injecting a measured volume of air—enough to fill the ventricle that lies uppermost. Lateral and antero-posterior X-ray photographs are then taken. By turning the patient on his other side the air is made to find its way into the opposite ventricle, when more photos are taken. Puzzling as these cases will always be at the best, there is in China the additional handicap that until Western medicine is widely practised no one surgeon can hope to have enough cases referred to him to acquire experience in their diagnosis. Hence any method which helps to simplify the problem will be the more welcome. By way of contrast with the above, another paper in the same journal is much less impressive. It deals with the X-ray study of abdominal or pelvic conditions after the injection of a gas into the peritoneal cavity. It must be rarely indeed that such a procedure would turn the scale for or against an exploratory coeliotomy.
In the *Journal of the American Medical Association* for January 18, 1919, page 190, is published a paper by Lewis H. Weed, M.D., et al., on "The Production of Meningitis by Release of Cerebrospinal Fluid." These experimenters found that a strain of *B. mucosus capsulatus* possessed particular virulence within the meninges of laboratory animals. A typical acute and fatal leptomeningitis was produced by the direct subarachnoid injection of very small numbers of the organism, the animals dying in from eight hours to five days, with characteristic signs of meningitis. This particular organism had been isolated from the lungs of a patient dying of broncho-pneumonia. Subsequently 0.5 mil to 1 mil of a twenty-four hour broth culture of this organism was injected intravenously into cats. None of the cats, however, developed meningitis, and remained entirely normal during the period of observation. In one case it happened that, shortly after the injection of the cultured organism into the vein, cerebro-spinal fluid was removed by lumbar puncture. The next day the cat showed signs of meningeal irritation, and a second puncture showed cerebrospinal fluid turbid, and it contained 5,800 white blood cells, and gave a positive culture of *B. mucosus capsulatus*. There were also many of these bacilli present on a smear. The animal died in twenty-eight hours, and a typical exudative meningitis was found at autopsy.

A series of experiments were then undertaken to test the possible relationship of this withdrawal of cerebro-spinal fluid during an artificial septicemia to the production of a meningitis. Control animals were given a double dose of a twenty-four hour culture of the *B. mucosus capsulatus*, viz., 0.5 mil intravenously. The other cats were given 0.25 mil intravenously, and two minutes afterwards cerebrospinal fluid (1 to 2 mils) was withdrawn. The control animals, although treated with double the dose, were always normal and active throughout, and none developed meningitis, while the punctured cats always showed decided signs of meningeal inflammation within twenty-four hours, and died in ninety-six hours or less. An acute exudative leptomeningitis was always found at autopsy.

This procedure was followed scores of times with always the same results: release of cerebro-spinal fluid after intravenous inoculation being followed by meningitis with such "certainty and regularity" that these experimenters have adopted this plan when they wish to develop an experimental meningitis.

These experiments were first made on cats, but the same results followed when rabbits, guinea-pigs, white rats, and monkeys were used. Two monkeys were tested in this manner, and at the end of forty-eight hours both were punctured. In the control the cerebro-spinal fluid was quite normal, but the other showed 14,000 white cells and yielded a positive culture, and the animal died in fifty-four hours with typical signs of meningitis.

If the withdrawal of cerebro-spinal fluid occurred more than half an hour before the intravenous inoculation no meningitis developed. But if the puncture was done only a few minutes before the inoculation a meningitis supervened just as in those cases in which the puncture was made at the height of the artificial septicemia.
Animals from which cerebrospinal fluid was withdrawn at least three hours after intravenous inoculation developed meningitis. Animals receiving somewhat larger intravenous inoculations could not be punctured even five hours after inoculation without developing a meningitis; that period of time apparently not being sufficient for the defense mechanism in the blood to overcome the heavier infection, and thus the organisms carried over into the cerebro-spinal meningeal cavity were sufficient to set up a meningitis.

Other experiments tended to show that infection of the meninges begins almost immediately after the release of the cerebro-spinal fluid, and the process seems to begin in the cerebral meninges, afterwards becoming general.

They believe the determining factor in the infection is the disturbance of the intrameningeal pressure associated with vascular alterations.

The withdrawal and replacement of fluid immediately before intravenous inoculation did not result in a meningitis. But a similar withdrawal during the induced septicemia and replacement after two minutes did result in a meningitis.

These experiments were afterwards repeated with other organisms and the same results obtained. The other organisms tested were the B. pyocyaneus, B. paratyphosus B., and on rabbits a strain of streptococcus. Of course, whatever the organism used, it was necessary that it should be one that could multiply rapidly in the cerebrospinal fluid, and possess a certain amount of virulence for the meninges.

By inoculation of much larger doses than those used in the experiments noted above it would be possible to induce a meningitis without spinal puncture, but in such a case the animal would probably die from a septicemia rather than from a meningitis.

They then raise the question of the risk of inducing meningitis in man if spinal fluid is withdrawn during the course of a septicemia. That there is this danger, whenever the organism concerned is one that may multiply in the spinal fluid and is virulent for its membranes, is discussed in the report of a study of a series of cases carried out at Camp Jackson, S.C., in 1918 by Drs. P. Wegeforth and J. R. Latham and published in the *American Journal of Medical Sciences*, Philadelphia, 1919, (158) pages 183-202. These cases covered infections with pneumococcus and meningococcus. They found five cases which would support the view that meningeal infection might follow the release of normal spinal fluid by lumbar puncture during a septicemia; and that this procedure should be seriously considered as a causative factor, under certain conditions, in the production of a meningitis. They advise careful bacteriological study of the blood before the withdrawal of spinal fluid; and when lumbar puncture is advisable that only sufficient fluid for laboratory tests be withdrawn; and that a small bore needle be used.

Another series of experiments was carried out by Amoss and Eberson in 1918 and published in the *Journal of Experimental Medicine*, vol. 29, No. 6 (June 1st, 1919, page 605). The title of the paper is "Experiments on the Mode of Infection in Epidemic Meningitis." These experiments, while not successful in establishing the route whereby infection takes place in man in this disease, are yet exceedingly interesting and instructive, while the methods used to induce the passage of the organisms from the blood stream to the spinal fluid differed from those of Weed et al., as given above, still they
tend to show that, for monkeys at least, meningococci pass from the blood to the spinal fluid less freely than the organisms used by Weed et al., in fact, they failed to pass at all in that direction. They establish the fact, however, that for the monkey, the meningococcus passes readily in the opposite direction, that is, from the spinal fluid to the blood stream. If this latter phenomenon holds for man, and there is considerable clinical evidence to support such a view then in cases of meningitis there is a fair probability of there being an accompanying meningococcemia and hence it would seem most reasonable in treatment to introduce anti-serum intravenously as well as intraspinally.

First, the virulence of meningococcus was raised by repeated passages through monkeys; it was then capable of setting up a severe type of meningitis when introduced intraspinally.

A culture of this virulent organism was then injected into the vein of a normal monkey. Six hours later meningococci were demonstrated in the blood but although several lumbar punctures were done no meningitis developed.

In a second experiment an aseptic meningitis was set up by an intraspinal injection of normal horse serum, and twenty hours later meningococcus culture was injected intravenously. In this case also meningococci failed to reach the meninges, although numerous organisms were demonstrated in the blood on the second day after inoculation. This experiment was repeated with the same result.

Normal saline intraspinally is capable of setting up an aseptic meningitis; but after intraspinal saline injection inoculation of meningococci by a vein failed to induce a meningococcic meningitis.

Another monkey had been actively immunized by repeated intravenous injections of meningococci in doses of increasing potency, and afterwards an infection of a virulent culture was made intraspinally with the result that there was set up a meningococcemia which lasted for forty-eight hours.

This last experiment shows that meningococci in the monkey pass readily from the spinal fluid to the blood; although the efforts used to coax the organism to pass from the blood to the spinal fluid all failed.
Hospital Reports.

Report of the School of Medicine of the Shantung Christian University.

This report is beautifully printed and indicates a real alive medical institution.

It does one's heart good to see what it is doing, and to know what it hopes to do. May those hopes be more than fulfilled.

The school seems to have little difficulty in getting students; may the men and the money be forthcoming to supply their needs.

The list of graduates from the schools which were amalgamated in the formation of the present one is of deep interest to the missionary body, and shows that their men have not been lost to the ideals for which they were trained.

Needs of the Institution:—In spite of the encouraging progress which has been recorded during the past few years, and for which the generous support of the China Medical Missionary Association and of the China Medical Board has been so largely responsible, the Medical School has still to chronicle several urgent needs, which may be tabulated as follows:

Staff:—Two Surgeons; One Physician; Specialist in Ophthalmology; Specialist in Diseases of Ear, Nose and Throat; Pharmacologist; Obstetrician and Gynecologist; Specialist in Preventive Medicine; Dentist; Two Nurses.

Land and Buildings:—New Laboratory Block; Hospital Extension; Home for Chinese Nurses; Land and Residences.

Annual Upkeep:—Annual subscriptions towards the general upkeep of the School and Hospital, and the provision of scholarships and prizes for student anxious to engage in post-graduate and research work.

An earnest appeal is made to all who are interested in the attempt to establish and maintain the School of Medicine and Hospital, to remember these needs continually, and to co-operate with us in our endeavor to meet them.

The expenses of the Medical School and hospital amounted to approximately $46,140 Mexican.
Résumé of Reports, 1919, Men's Hospital, Canadian Methodist Mission, Chengtu, Sze.

Physician in Charge:—Frank F. Allan, M.D.

Pharmacist and Business Manager:—E. N. Meuser, Phm.B.

Superintendent of Nurses' Training School:—Miss B. J. McNaughton; Assistant Superintendent, Miss L. G. Hartwell.

The work of the hospital has been much enhanced by visiting physicians. Dr. W. R. Morse of the American Baptist Mission and Dean of the University Medical College has performed many important operations for both Chinese and foreign patients; Dr. C. C. Elliott of the Church Missionary Society, appointed to the Medical College, not only relieved Dr. Allan during July but has taken complete responsibility for a large number of in-patients. Both he and Dr. Morse have taken a day a week at the out-patient dispensary. Dr. Speers of the Women's Missionary Society took over nearly all contagious diseases among foreign children. Dr. Maud Neave gave much valuable aid in fever cases especially during the malarial epidemic.

As yet we have no Chinese doctors or even internes, but the senior medical students are giving anaesthetics and assisting in all operations. Next year we shall have them part time. A senior pharmacy student is doing most valuable work in compounding prescriptions, being able to read them as well as a foreign druggist. During most of the year we had only one graduate nurse and he was in charge of the operating room, including preparation of dressings and instruments. We had fourteen nurses in training.

As there are no drug stores in Chengtu for compounding foreign prescriptions, the drug department of this hospital has to carry the heavy responsibility of supplying, not only most of the needs of Chengtu but also many other cities for many miles in every direction. We also get patients, both Chinese and foreign, from distant cities as there is no other hospital.

The forenoons have been filled to overflowing with the direct work of healing, while the afternoons are spent in teaching and study. Operations have required two mornings a week. Daily at 11 o'clock out-patients have been seen. These include foreigners, Chinese paying fifty cents, mission students and mission employees. Immediately after dinner twice a week the dispensary was opened at one hundred cash a visit for the very poor.
The foreign staff have had duties outside of the hospital. Miss Hartwell besides nursing foreigners in the hospital has had to go to the homes several times as well as to other cities. Mr. Meuser besides being freight receiver for the city has been superintendent of the large Sunday school which has over forty classes. Fully one-half the time of Dr. Allan has been given to foreign practice outside of the hospital. Out-call work has been with few exceptions restricted to the Women's Hospital and the Evangelists' Wives' School. Time did not permit more. This is a great loss.

This year we have stressed teaching, training and study. The time was opportune for such. The first class of medical students of our Union University are nearing graduation and this is the only hospital open to them for practical demonstration; two pharmacy students after six years of training are about to graduate from this hospital and this year in September we graduated eight young men as nurses. This has required a vast amount of time of the whole foreign staff. Dr. Lindsay of the Dental Hospital taught oral hygiene and Mr. Brace of the Y. M. C. A. has conducted physical drill six days a week with good results. Besides the regular course of the China Nurses' Association, Miss Hartwell has taught English, singing, and organ, so that the charts all in English are quite intelligible and the nurses are able to lead in singing as well as play the common hymns. This being the only training school for men nurses in this province of 60,000,000 population, there is great demand for our graduates not only in other hospitals of our own Missions but in other Missions also, as well as by foreign men patients. Several have already gone to occupy important positions. Time and strength have been sorely taxed to preserve a high standard of training. We are succeeding in raising the standard of entrance. Of the last ten probationers two have had two years of High School and one, one year at our Union Middle School and the others all have Higher Primary certificates from the West China Educational Union. There is no lack of applicants. Our teaching program extends to the help, an evening class is conducted four nights a week by the senior nurses and hospital evangelists. Medical students have likewise given us much help in the summer holidays by teaching the nurses. Our Training School has joined the Nurses' Association of China. The nursing work is done by the nurses and not by coolies. Beds are washed and made and tables dusted and washed by nurses, and bed baths to the number of 543 were given by nurses only. Every patient has a bath upon entrance and at least every week after, is given hospital clothing and bedding, nails cut and cleaned
and a head shave if needed. All this requires continuous supervision and efficiency demands it.

One of the advances of the year has been the establishment of a clean or aseptic operating room, painted snowy white, even the floor covered with ship canvas and whitelead. A second operating room has been fitted up in the old dispensary.

Sports, recreation and time off are on the daily program of the nurses.

In all our efforts to climb to a high standard of medical treatment we have in no wise sacrificed the spiritual ideal. Morning devotions have been continuous for all patients able to leave the bed as well as all help and nurses, conducted either by the foreign staff, the hospital evangelist, a medical student or other qualified person. The nurses have been responsible for vesper service in each of the big wards. One of the medical students has been superintendent of the hospital Sunday school and has drawn his teachers from the students of our various schools. Half of our nurses have attended a Normal Training class for teachers in order that they might be prepared to teach boys of our Junior Primary School on Sunday, while the other half of the nurses on another evening attend a weekly Bible study class. The nurses meet Friday evening for their Christian Endeavor conducted by themselves. We allowed eight of them to attend a Y. M. C. A. Summer School for ten days with much profit. All the nurses have joined the Church. Five of the coolies have expressed a desire to study the Doctrine and are given regular instruction.

OUR PRESSING NEEDS.

As Miss Hartwell goes on furlough and there is no one to take her place, we shall be badly handicapped for two years. We are also in much need of interns and a house physician. We expect the former a year hence. Homes for both the foreign and Chinese nurses are badly needed, as well as new quarters for the help, kitchens, laundry, drying rooms, water and latrine systems for the whole hospital, steam heat for the operating room, and an elevator. The erection of these buildings and the installation of the water, steam and latrine systems will require much time and thought of the foreign staff as well as that of a foreign superintendent of construction. Only with them can we do first class work, and the Chinese and the Kingdom for whose establishment we constantly work are well worth the time, thought, money, and prayer that we are able to give. Let us go forward for the fields are white unto harvest, and men, women, and little children will be saved if the reapers arrive in time.
STATISTICAL REPORT.

Chinese doctors and internes ... ... ... ... 0
Chinese pharmacist (in training) ... ... ... ... 1
Chinese graduate nurses ... ... ... ... ... 1
Chinese nurses in training ... ... ... ... ... 14
Number of beds ... ... ... ... ... ... 80
,, ,, in-patients ... ... ... ... ... ... 780
Operations without anaesthetic ... ... ... ... 583
,, with local ,, ... ... ... ... ... 64
,, general ,, ... ... ... ... ... ... 130
Visits to patients' homes, foreign ... ... ... ... 350
,, ,, ,, ,, Chinese... ... ... ... ... 71
Office consultations ... ... ... ... ... ... 1,118
Dispensary, new patients ... ... ... ... ... ... 1,424
,, return visits ... ... ... ... ... ... 1,166
Total expenditure ... ... ... ... ... ... Silver $9,381
Receipts ... ... ... ... ... ... ... ... ... Silver $5,074
Deficit, paid by Mission ... ... ... ... ... ... $2,922

The China Inland Mission Hospital, Kaifeng.
A concise attractive report of a live Christian hospital. Just the sort of a report that should appeal to the homelands.
More than a thousand in-patients and nearly twenty thousand out-patients.
Drs. Guiness, Gibson, and McDonald with their foreign nurses and student assistants are doing wonderful and blessed work.

Hospital Announcement.
A matter of considerable interest in Mission and medical circles is the recent reorganization of the Margaret Williamson Hospital in Shanghai. This hospital was formerly under the Woman's Union Missionary Society, and has rendered a great service under the leadership of Dr. Reifsnyder, and more recently under Dr. Garner. It is now established as a union institution, with the Woman's Union Missionary Society, the American Methodists (South), and the American Baptists (North), at present participating in its support and staff. It is anticipated that more Missions will enter the organization.
A training school for nurses, a graduate school of nursing, and a school of public health are to be established in connection with the hospital, to be known as the Shanghai Union Training School for Women. The first class in the Nurse Training School will be admitted at China New Year, 1921. Graduates of middle schools will be given the preference among applicants, but it is probable that some others will be received in the first classes if their qualifications or experience are considered an equivalent of middle school.

Later announcements will be made regarding the graduate courses, which will be offered in the subjects of obstetrical nursing, surgical nursing, and administration. Graduates of other nurse training schools in China which are members of the China Nurses' Association will be eligible for the graduate school, whether or not their preliminary training was that of middle school.

The School of Public Health will probably be open in 1922. The general plan of this school is to train hygienists, for work in schools, institutional churches, and social centers. Nurse training is not required for admission to this school, although nurses will be eligible. Instruction in all the schools will be given in English and Mandarin.

The plans provide for considerable remodelling and enlargement of the present plant, with the addition of a students' dormitory and also a new clinic building, the latter providing laboratories and class rooms. The present foreign staff are Drs. Whitmore, Love, Ingersoll, and Lawney, with three foreign nurses,—Misses Hood, Pitts, and Pollock. Several foreign-trained Chinese doctors and nurses are on the prospective staff for the coming year.

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**Book Reviews.**

**New Books Received.**

**Rivas’ Human Parasitology.** W. B. Saunders Company.

A wonderfully fine book in W. B. Saunders' best style of publication. See cover of November Journal.

**Pathogenic Micro-organisms, MacNeal.** And the Sixth Edition of Stitt. Also Saunders Company.

Well gotten up, convenient, concise, and the latest material on the subject. (Reviewed.)
Book Reviews.


PRINCIPLES OF BIO-CHEMISTRY for students of Medicine, Agriculture, and related sciences. T. Brailsford Robertson, Professor of Physiology and Bio-chemistry at the University of Adelaide, South Australia, formerly of the University of Toronto. $8.00 net.

PUBLIC HEALTH AND HYGIENE in contributions by eminent authorities. Edited by William Hallock Park, M.D., Professor of Bacteriology and Hygiene, University and Bellevue Medical College, and Director of the Bureau of Laboratories of the D.P.H., New York City. $10.00 net.

TEXT-BOOK OF BIOLOGY, Smallwood, Ph.D.

For students in Medical, General, and Technical Courses. Price $3.50.


This handy text has recently appeared in its second edition, revised and enlarged by reason of numerous additions including some references to the controversy with regard to the pathogenic role of Bacillus influenzae and of Bacillus typhii-exanthematis, and more complete accounts of the more conclusive advances in microbiology, such as the recent studies in botulism, yellow fever, rat-bite fever, and trench fever. Students of Bacteriology who are preparing for medicine will find the full index and table of contents a great help to quick reference to any part of the book desired. Moreover, the text itself by reason of its direct and simple manner of expression, its clear illustrations (221), its legible-sized type, its lucid explanations, and its absence of exhaustive detail commends itself to the beginner as a compact and well-organized introduction to the study of pathogenic micro-organisms.

One of the features of this book is the collection of specimen descriptive charts for use in bacteriological instruction. The three charts inserted were gotten out by a Committee of the Society of American Bacteriologists in 1907, 1914, and 1917, the last two being merely revisions of the first. In themselves they make perfect outlines and complete guides to the systematic study of bacteria and other micro-organisms. To fill out one of these charts one must have a well-rounded fund of knowledge on Morphology, Physiology, Bio-chemistry, and Laboratory Methods. It should be the aim of every student to take up his studies with the idea of being able to identify any pathogenic micro-organism by the given methods, and, moreover, to describe it from the many aspects laid out in the chart. And the facts as well as the procedure in collection, cultivation, and identification are systematically treated in successive chapters of the text in question.

W. M. P.

AN EPITOME OF HYDROTHERAPY FOR PHYSICIANS, ARCHITECTS AND NURSES.


An exceedingly interesting little book of 200 pages with useful illustrations and a lot of good common sense talk on the rational place and use of water as a therapeutic agent.

It is one of the paradoxes of life that an agent so universal and relatively so cheap should be so little understood and used.

As the author states a great deal of harm has been done by wrong physiological ideas and an incorrect application of methods.

Another real reason for the neglect of Hydrotherapy is the fact that it is so much easier and saves time to use drugs but, alas!, often at the expense of results.

Would respectfully suggest to W. B. Saunders, that they publish the price of a book either in the front or back thereof, as the slip on which the price is given sometimes fails to be included or is easily lost.

This little book by the well-known professor describing some of his ingeniously devised instruments for the diagnosis and treatment of diseases of the stomach and intestines would make most any practitioner, unless he is in close touch with the most advanced hospitals, or had become blasé to inventions of any sort, rub his eyes and wonder what next.

The application of the tube and such instruments as the pyloric dilator, the simultaneous gastro-duodenal aspirator, the duodenal obturator, and the intestinal delineator, is described in such a simple and interesting way that it looks as if any disease of the gastro-intestinal tract except malignancy is doomed to be cured.

But it is probable that some time will elapse before such procedures pass beyond the hand of the specialist; and it is best that it should be so.

In the meantime it is always interesting to get any new light on the physiology of digestion; and diagnosis by the use of the tube certainly presents new developments in that direction, and in the hands of geniuses like Professor Einhorn and his skilled assistants may help to solve some of the Sphinx’s riddle of the exceedingly complicated act of digestion.


A bulky tome of 1,650 pages, excluding index, in which almost everything in surgery is touched upon. Would be very useful to an isolated man with a small library.

The subject matter is well arranged and the surgical experience of the late war is largely drawn upon. The illustrations vary much in excellence and some are quite archaic.

The book might well be called an Encyclopedia of Surgery as there is a good deal of ancient history included which might reasonably have been omitted.

Prepared, as it was, during the past days of the war when Dr. Da Costa and most of his assistants were still on active service, one can sympathise keenly with the noted author and forgive him almost anything when he reads the preface.

INDEX OF PRACTICAL NURSING. By J. Basil Cook, M.D., D.P.H., Baillière Tindall & Cox, London. £½ net.

The Index of Practical Nursing, as its name implies, is a summary of many useful facts connected with nursing, and is arranged alphabetically, making it convenient for hasty reference.

It would not be complete enough for a training school text-book, but a nurse on private duty would find it extremely useful for reference as the material is good, clearly expressed, and up-to-date.

PHYSIOLOGY AND BIO-CHEMISTRY IN MODERN MEDICINE. By J. J. R. MacLeod, M.B., Professor of Physiology in the University of Toronto. C. V. Mosby Co., St. Louis. Price $10.

A clear scholarly, exposition of some of the most important functions of the body in the light of the latest research and their application to solving the problems of etiology and diagnosis of disease.

As the author expresses it in his preface:

"In a sense it is therefore an advanced text in physiology for those about to enter upon their clinical instruction, and at the same time a review for those of more mature clinical experience who desire to seek the physiological interpretation of diseased conditions."

It aims particularly to elucidate those functions that are most important to the body as an entity and to show how they are perverted in disease.

It will be a helpful text-book for the student and an inspiration and guide to the research man, be he practitioner or teacher.
Correspondence.

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

To the Editor, C. M. J.

Dear Sir,—In accordance with the resolutions passed at the meeting of the Head-committee of the fourth Congress of the F. E. A. T. M., we beg to inform you that, during the fourth Congress to be held in August 1921, amongst other things communications will be published on the subjects contained on the following list.

We feel sure that, should you be kind enough to write a paper on one of the subjects, your communications, on account of your different experience, will be certain to differ substantially from those sent in by others, which fact will no doubt considerably increase the importance of the ensuing discussions.

If you are unable to undertake the task referred to above, we should be very much obliged if you would transfer it to someone who, in your opinion, is capable of fulfilling it, and who is willing to do so.

All communications should reach us on or before January 1st, 1921, in English, French or German, so that they may be printed and sent to members of the Congress in time for perusal prior to discussion.

Awaiting your reply, we are dear Sir,

Yours truly,

O. DEGGELLER.

Weltevreden, July 1920.

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To the Editor, C. M. J.

Dear Sir:—In continue of my first Circulaire I have the honour to inform you, that the board of the Fourth Biennial Congress of the "Far Eastern Association of Tropical Medicine" will consist of:

President ... ... Dr. Byker
Vice-President. Dr. W. Th. de Vogel
Secretary ... ... Dr. H. M. Neeb

General Major of the Mil. Medical Service.

according the appointment at Saigon in November, 1913.

The papers offered will be classified of the following groups of subjects:

Tropical Physiology—(Beri-beri)
Protozoology—Helminthology
Cholera—Plague—Leprosy—Tuberculosis
Tropical fevers—Dysenteries
Surgery—Obstetrics—Infantile Diseases
Climate—Hygiene—Sanitation—Quarantine
and others if necessary.

Hereby I beg you once more to send in all TITLES of contributions and Communications on or before January 1st, 1921, so that the Committee of Scientific Works may be informed about it. The papers may be sent later on, which can be read in either English, French or German.

The subscription to the Association of $10 (Filip. Currency) is to be paid in fl. 13.80 Dutch Ind. Currency.

A suitable social programme is being arranged for the entertainments of visitors during the Congress.

I am Sir,

Yours very faithfully,

O. DEGGELLER,
2nd Secretary.

Weltevreden, August 1920.

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To the Editor, C. M. J.

Dear Sir:—Having read in one of the later JOURNALS of a case of perforation of liver abscess with fatal result, I am reporting a similar case which has now gone home completely recovered. The patient, a student, aged nineteen, had dysentery in July which lasted for ten days being finally cured by emetine injections. He was at that time living forty li from this town. From July until October he had continuous pain over stomach and radiating out to the right liver area—also during this time he had daily drenching sweats followed by high fever. (This history obtained after the operation.) On November 4th, he came by cart into town and called at the Japanese Government hospital where they gave him some ointment to apply,
and told him to go home that he would be well in two months. At noon while staying in a house not far from our hospital he felt a sudden tearing pain in the region of the stomach and became partly unconscious and could not lie down after a short while. His friends then as a last resort carried him to the British Hospital. (It is quite common here to get cases in extremis after they have visited all the local M.Ds.—one would think we were undertakers.) Seeing the marked peritonitis and shock we operated immediately. It was necessary to raise his knees and legs at an angle of ninety degrees in order to get him on his back for anaesthesia, the abdomen being so tense.

Search was made for perforation at the common sites; in the meanwhile about eight litres of pus had escaped from around the coils of now purple and reddish purple intestine. Continuous intravenous saline containing adrenalin was started into the basilic vein at the same time the abdominal cavity was thoroughly irrigated with a similar solution quite hot. The perforation was found in the lower right lobe of the liver and was about 2 cm in diameter. This hole was enlarged and a stab puncture made through the ninth interspace from the outside from which on being enlarged a greenish golden, thick pus exuded. The abdomen was closed with through and through silk-worm gut and patient removed to warm bed immediately, as I did not have any hope of his recovery. He was put in the Fowler position and a Brewer tube inserted into the liver, wound in the ninth interspace, (The perforation had been already plugged with gauze leading out to the abdominal wound.) The Brewer tube was connected by a T tube one side of which connected with hot saline the other with a large bottle under negative pressure. The abscess gradually became clear of pus and was washed out every hour for twelve hours.

The patient's pulse rapidly improved and one week later the abdomen was sewn up layer by layer in the usual way. He has been home some time now, and reports being quite well.

I am reporting a case of bichloride poisoning and the treatment used successfully in fifty-nine cases at another time.

By the way, the Imperial Japanese army has added to its laurels by murdering over eight hundred defenceless Koreans and some Chinese up here—and about nine hundred houses destroyed. We have been using military surgery here on old men and children as a result of their "gallant" treatment of innocent people. See P. and T. Times, etc.

To the Editor, C. M. J.

Dear Sir:—Acting under the instructions of the Executive Committee of this Association, I beg respectfully to call your attention to the enclosed extracts taken from the Punjab Excise Manual, published by the Indian Government. A perusal of this will show that while the Indian Government admits the evils of the habit of opium smoking, it allows that when eaten and not smoked opium may be serviceable in various ways. Apparently the Indian Government considers this sufficient justification for the cultivation of large amounts of poppy. It is the desire of the Committee to discover whether this opinion is upheld by the most modern medical opinion, or whether medical science in this is opposed to the authority gathered from centuries of inherited experience. If the Committee can obtain sufficient evidence that in the opinion of medical experts the habit of eating opium is injurious and does not differ greatly in the harm done from the habit of opium smoking it is prepared to publicly charge the inaccuracy from the standpoint of the best medical science of this statement. Will you do the Committee the favor of calling the attention of the Medical Faculty of the China Medical Missionary Association to this statement and ask if in the interests of this great cause the Faculty will express an opinion on this point. Such an expression would of course be of little value unless it could be presented as evidence to the British and Indian Governments and published.

The Executive Committee will be greatly obliged by a favourable reply.

I am,

Dear Sir,

Yours sincerely,

ARTHUR SOWERBY,
General Secretary.

Extracts from the Punja Excise Manual. Vol. II.

OPIUM.

Pp. 15 and 16, Lahore, 1917.

"Opium smoking is uniformly repro­bated by public opinion in India. It is a social vice, and the danger of its contagion, when practised in public, furnishes strong justification for adopt­ing measures which approach as nearly as is practicable to total prohibition."

The measures adopted in the Punjab conform to this standard."

"The practice of eating opium stands on a very different footing. As a vice it scarcely exists in India. As taken in moderation by the average Indian, opium is eaten either as a mild stimu­lant, as a prophylactic against malaria, for the relief of pain, or in the treatment of various ailments. It is in fact a household remedy for many ills, pre­scribed by centuries of inherited ex­perience."

The health of the Chinkiang com­munity during this time has been quite satisfactory as far as foreigners are concerned.

I have performed no surgery to speak of on resident foreigners here during this period, although patients non-resi­dent, but under my hospital care here, required a certain amount, and I have performed the usual ophthalmic and general surgery in my hospital.

There were two births amongst foreigners attended by me during this time.

This is the first of the four years I have practised here during which I am able to record no deaths amongst foreigners as having occurred.

As above stated I have done the usual general hospital work amongst Chinese, so that the appended remarks apply, unless otherwise stated, to foreigners.

Infectious Diseases.

Paratyphoid. One case amongst foreigners. This disease and its allies in the typhoid group have occurred year­ly since I have established myself in practice here.

Dysentery. The usual dysenteric and non-dysenteric intestinal infections were treated by me during the last twelve months.

Cholera. No true case of cholera amongst foreigners was treated by me in Chinkiang this year, but a case of cholerae was seen and treated by me, recovering.

Also one case of cholera in a Chinkiang resident occurred whilst he was up country. He was evidently treated very efficiently and recovered.

Amongst my native work I saw one doubtful case of cholera, which after remaining two hours in hospital was re­moved by friends.

Sprue. One case of sprue was seen by me and was transferred to North China.

Malaria. The usual cases were seen by me and got under control by means of the usual remedies.

Venereal Diseases. I must report a fair number of these this year amongst both residents and non-residents, as also cases of alcoholism,

This is the first of my four years here in which I have not had to deal with diphtheria amongst foreigners.

The rest of sicknesses seen and treated by me have been the usual general practice work.

S. BRADSHAW,
Port Physician.
NEWS AND COMMENT.

Dr. Martha Hackett, writing from the Hackett Medical College for women in Canton, wishes us to correct the statement made some months ago that the English language was the medium of instruction there now. The language used is still the Chinese and they have no intention of changing.

Dr. D. M. Gibson, writing from Kaifeng, says that in the Hospital Supplement he is reported as opening the discussion on hospitals and credited with sage remarks that he did not make.

The Journal regrets having crept into error, but is obliged to take the reports of discussions as they have been sent, and has no way of verifying them. It does not know by whom the discussions were reported or transcribed; but some of them are quite incomplete, and some, at least, apparently inaccurate.

The editor has been able, with the assistance of Dr. New, who was in Peking at the Conference, to rectify some of the more obvious mistakes, but for others he must waive responsibility and express regret.

BIRTHS.

WIGHT.—At Swatow on November 14th, to Dr. and Mrs. A. Wight, E. P. Mission, a daughter (Marjory Helen).

ECKFELT.—At Siangyang, Hupeh, on December 12th, 1920, to Dr. and Mrs. O. Eckfelt a daughter (Anna Louise).