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TUBERCULOSIS IN OBSTETRICS AND GYNECOLOGY *

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The subject is a wide one, and at the same time one of great importance, for on a proper decision not merely the life of a mother and a child may depend, but also the happiness or otherwise of a home.

For example, here is how the problem may be presented to one. A young married woman in the early twenties came into my consulting room a few days ago. She had been married several years. Shortly after puberty she had developed tuberculosis of the lumbar spine, with a pronounced curvature, somewhat narrowing the space between the ensiform cartilage and the pubes. The disease was now quiescent and the patient was getting about fairly easily, and without pain, with a light celluloid support. She came to ask if she might risk pregnancy. Now, here was a young married woman who, if the doctor said "No!", was condemned either to a life of contraceptives, or an operation for ligature of the tubes. Of course a pregnancy would be a risk, but if one could safely carry through a pregnancy, do a Caesarean Section, and tie the tubes at the same time, the patient might hope for a living child, and the possibility of normal marital relations for the rest of her life. I decided that it was better for her to risk a pregnancy under careful medical care, than to be faced with a life of constant contraceptive measures, but the case serves to show the difficulty of some of the problems one has to meet.

Let us consider the subject from four aspects:

- (1) Tuberculosis as it affects marriage, pregnancy, and child bearing.

*A Clinical Lecture delivered at the Peiping Union Medical College.

- (2) Tuberculosis of the pelvic organs and peritoneum.
- (3) Tuberculosis of the breast.
- (4) Tuberculosis as it concerns the newborn.

(1) *Tuberculosis as it affects marriage and child-bearing.*

All over the world this is a question which, as I have already said, confronts the doctor from time to time. Is a person with tuberculosis to marry, and if she does, is she to be allowed to have children? Is a person who develops tuberculosis when married to go on child-bearing?

Now you have got to use your own common sense about this matter. One is dealing with patients, not diseases, and when one remembers that 90 to 95 per cent of us bear about the scars of old infections with this disease, you will see that these questions are not easy to answer. The Chinese in many places look askance on a woman with scars on the neck, and yet tuberculosis of the glands of the neck is not one of the forms of tuberculosis seriously affected by pregnancy.

Some very interesting statistics have recently been published by Dr. Hans Heckscher from the Clinic of the Rigshospitalet, Copenhagen, (1930) and I extract some of the data from that paper.

During 1919-1920, 141 mothers with tuberculosis were delivered in Professor Gammeltoft's service. These mothers had borne altogether 400 children before, during, or after the mother's sickness.

Eighty-two of these mothers had active tuberculosis, and 59 had previously shown signs of pulmonary tuberculosis.

Let us look at the question as we see it here:

Of the eighty two mothers with active tuberculosis, seventy five were traced; and no less than 43% of them were already dead of tuberculosis, and 41%, though still living, had signs of active disease.

Of the other group fifty three of the fifty nine were traced. As has been already stated, they had an old or otherwise inactive lesion at the time of confinement. Forty eight were still well without any sign of pulmonary disease, five showed signs of tuberculosis, but only in two of these five were the signs at all marked.

When one comes to study the fate of the children; as to those born from mothers who had active tuberculosis at the time

of pregnancy, only half appeared to be healthy, roughly a quarter of the remainder being dead, and another quarter suffering from active tuberculosis.

On the other hand in the children born from mothers presenting healed or inactive lesions, the mortality rate amongst the children was decidedly lower, and the percentage of healthy children reached at least sixty. Fourteen of the children from these two groups had died of tuberculosis, and it is interesting to note that in no fewer than ten of these cases, the cause of death was tuberculous meningitis, and twelve of these fourteen were born from mothers with active tuberculosis at the time of their birth.

Let us look at the question as we see it here:

During the last eight years there have been admitted to the Peiping Union Medical College Hospital 44 cases out of a consecutive 2226 pregnancies in which pulmonary tuberculosis and pregnancy have been noted in the same patient. It is certain that were an X-ray to be taken of the lungs of all our patients we should have a much larger number of cases.

27 cases were aged 20—30

14 cases were aged 30—40

3 cases were aged over 40

I will not trouble you with tables, but substantially the same results are seen as in the set of cases from Copenhagen which I have just given you.

How can we sum up the matter?

If a young woman has *active* tuberculous mischief in the lung she should not marry, both for her own and her family's sake. It is almost certain to lead to a catastrophe. If a young woman has active bone, joint or glandular disease she should not marry, for the same reason.

If the lung process appears to be healed, if the glands are healed, if the joint or bone disease is perfectly quiescent, I think the case is one where, although there is a risk, the risk is quite worth taking, provided both parties to the marriage realize the need for extra care and avoidance of strain. And if they decide to marry it should be clearly understood that, if pregnancy is to be faced, extra care must be taken; and there should not be several pregnancies in rapid succession.

You must remember that you have not only to consider the question of pregnancy, but the influence of non-pregnancy and the use of contraceptives on the nervous health of the woman. In some cases pregnancy is less of a risk than the forbidding of pregnancy.

Now to face the second question. Supposing that a woman develops tuberculosis after marriage, is she to go on child-bearing?

If the tuberculosis is of the lung and active, a further pregnancy will be distinctly injurious. Should, however, the process become quiet and apparently healed, there is no reason why a future pregnancy should not be entertained.

Supposing that one of the cases we have been discussing becomes pregnant, what course is to be adopted? In former days it used to be taught that whether the tuberculosis were active or closed, abortion was not to be performed, for this frequently had a most deleterious effect on the general health and did not exert any good influence on the tuberculous process. But I am now, as the result of experience, inclined to modify this. If you have a young woman with active pulmonary tuberculosis I would advise an abortion within the first two and a half months. After this date it is a question whether it would not be better, if one is to interfere at all, to do a rapid hysterectomy. Certainly where you have a serious case of tuberculosis, a hysterectomy in the early months under spinal anaesthesia is the best practice. In such a case when the pregnancy is well advanced, it is better to wait to term, do a Caesarean Section under spinal anaesthesia and tie the tubes. Here are two illustrative cases which we have just had in the hospital:—

Mrs. K. F. P., a Chinese married woman of 23, was admitted for her second delivery on Oct. 13th, 1930. In July 1929 her first child was delivered, and it had been discovered in April 1929 that she had a minimal tuberculosis of the left upper lobe. *Tb. bacilli* were found in the sputum. In Sept. 1929 this lesion was found to have progressed. She unfortunately became pregnant, and came back to us with serious involvement of the left lung, and a cavity. On Nov. 4th, 1930 I performed a Caesarean Section under spinal anaesthesia and tied the tubes. Since the operation, which was well borne, she has developed a little temperature, but this is subsiding and we hope that she will do well.

Mrs. C. Y. Y., aet 25, a Chinese married woman, was admitted to hospital on Nov. 5th 1930. She had symptoms of preeclamptic toxæmia, had moderately advanced pulmonary tuberculosis especially on the left side and an oversized heart. There were also signs of an old nephritis. Under the circumstances, a Caesarean Section was done by Dr. Gordon King, and the tubes tied, as it was clear that any further pregnancy would most likely end in disaster either to the mother, or child, or both. She will now be placed on a careful regime, and up to the present time has done excellently.

During the pregnancy the patient should be relieved of all strain and anything but very light work, and should live out of doors as much as possible. Nutrition should be specially maintained, and labour should be made as easy as possible. Gas and oxygen is the ideal anaesthetic, and labour should not be allowed to drag but should be terminated by forceps as soon as the os is fully dilated, preferably under spinal anaesthesia.

After labour, suckling is not to be allowed, or only for a very limited time, and the patient must have her full rest in bed before being allowed to get back to ordinary life.

Provided that this is done, the majority will come through the strain quite satisfactorily, though if the tuberculosis is active, it is not uncommon for it to take a rapid downward course after labour is finished.

(2) *Tuberculosis of the pelvic organs and peritoneum.*

What proportion of women have tuberculosis in the genital tract? In about 10 per cent of all cases of salpingitis, tuberculous infection can be found. About 1 per cent of all women dying of general disease have tubercles in the genital tract. Of women dying of tuberculosis in other parts, about 5 per cent show genital tuberculosis.

The majority of cases occur between the 15th and 25th years, and it is rare after the menopause. An unusually large number of cases are associated with new growths of the tube and ovary, such as cysts and adenomyomata.

To discuss the subject in detail. Where in the pelvic organs is tuberculosis most usually seen? What is its clinical course? How does it affect the body generally? To answer the last

it occurs in the pelvis. Generally it means ill health, not necessarily definite illness, but an absence of *bien être*, and the patient may come simply complaining that she is always tired. Generally it also means irregular menstruation; it may be amenorrhoea; it may be menorrhagia, or just irregular and scanty periods. Menorrhagia is not uncommon, especially if the endometrium has been infected. It is the rare thing for menstruation which has been regular, suddenly to stop and not reappear; still I have seen two such cases. Irregularity, as I have said, is much more common. Generally the patient also gradually loses weight, occasionally afternoon temperature is present, and sometimes an irregular and inconstant diarrhoea alternating with constipation. Generally also it means fleeting, vague abdominal and pelvic pains, often ill defined and not localized, but tending to become more and more situated in the pelvis.

Lastly, it generally spells sterility, though this is not a constant feature, and depends on how far the disease has affected the general health and the tubes.

By far the most common site for tuberculosis in the pelvis is the tubes, and infection of the ovary and the uterus is generally secondary. Why the disease should fix on the tubes is not clear, but not infrequently these are the source of tuberculous peritonitis in women, and should always be examined in a case of this sort, as their removal may aid greatly in clearing up a peritoneal infection.

Where is the infection deposited in the tube and how? You have an ascending path, a descending path and the blood stream. The evidence as to the use of the ascending path is almost worthless.

The disease occurs most frequently before the marriage age, and although bacilli have been demonstrated in the spermatic fluid of men with tuberculous epididymitis, and in the fluid from men with tuberculosis of the lungs who have no local lesions, it is very doubtful if this is a method of infection. It conceivably might be in lesions about the vagina, but infection of the uterus is nearly always secondary to the tubes, and the worst case of tuberculosis of the vagina which I have seen supervened on a tuberculosis of the endometrium.

Descending infection is certainly possible from a previous tuberculous peritonitis, and it is a fact that the fimbriated extremity of the tube often shows the most marked lesions.

Infection through the blood stream is certainly possible, and it must be remembered that every month there is an intense congestion of the pelvic organs, and a single caseous focus has been found in the midst of the uterine muscle. In advanced cases of pelvic tuberculosis, other tubercular foci are almost always found in those coming to autopsy. Horizontow found the lung affected in 89 per cent, tubercles on the peritoneum in 64 per cent, intestinal lesions in 56 per cent, and urinary tuberculosis in 42 per cent.

Tubercular salpingitis may sometimes appear just like an ordinary pyosalpinx. The peritoneum around the tube is usually affected, and sometimes it is impossible to determine which of the two has been primarily affected.

At the time of the puerperium the tube is believed to be specially vulnerable to infection.

As a rule the tubes are enlarged, (though this enlargement may not be great), especially in the ampullary portion, and the fimbriae may still be visible. You may have the process either around the tube, in the wall of the tube, or in the mucosa of the tube, but generally all three occur together. The mucosa becomes swollen and the papillae of the mucous membrane may proliferate and invade the wall of the tube, forming adenomyomata or even starting carcinomata. Later the whole epithelium disappears.

Calcification may take place, and you may find stones embedded in the tube. In very early stages the tubes are not much enlarged and the fimbriated extremity may be open and one may see thin pus exuding. Rarely the tube may be so much distended as to form a big tumour, extending even up to the umbilicus. In advanced cases adherent organs are invaded by the process. Periophoritis is common, but the ovary is only attacked in about 20 per cent of all cases.

If the *ovary* is attacked one may find a large swelling containing caseous masses, but which may be quite smooth on the surface, and I have seen the ovaries in this disease looking

be quite small, and miliary tubercles may be scattered over the surface.

Tuberculous infection may occur in the outer layers of multilocular ovarian cysts and may spread into the parovarium.

The *uterus* is usually infected via the tube, but you may have an acute miliary tuberculosis with tubercles scattered throughout the uterine body. The uterus is attacked in about 50 per cent of all cases, and it may be affected before puberty. As to the proportion of infection of the various parts of the uterus, out of 100 cases, the cervix will be affected in about 2, the body alone in about 85, and the two together in about 13.

A large number of these patients are multiparae, and the disease is specially apt to infect the place where the placenta is normally situated, with a preference for the cornual region, that is, nearest the source of infection. The endometrium is thickened, yellowish-white areas may be seen in disease that is fairly advanced, and ulcers in the advanced stage. Tubercles and giant cells are easily seen in sections of the endometrium. Fibrosis of the wall of the uterus generally takes place, and you may get blocking of the cervical canal and a pyometra.

In tuberculosis of the cervix the portio vaginalis and the canal are generally both affected. The disease may appear like a simple erosion, or you may have fine papillary outgrowths, which may cause the cervix to have a velvety feel, but the worst form is the ulcerative. Here it may be and is frequently mistaken for carcinoma. As a rule there is less bleeding and more pus in tubercle, but often it is impossible to tell the difference without a microscopical examination.

During the last five years we have had several cases of this kind here. But as this form generally appears in young women, the age should put you on your guard with regard to malignant disease.

Tuberculosis of the vagina is rare, most commonly following parturition and due probably to the infection of tears inflicted during labour. Urine from urinary tuberculosis may be the source of infection. The disease is nearly always secondary to tuberculosis of the cervix, and may eat its way through into bladder or bowel. As a rule you get ulceration with sinuous cutlines and undermining. I have seen two such cases in China.

Tuberculosis of the vulva is not very common. It may be of the proliferative type, in which case one gets a spurious elephantiasis of the vulva which may be non-ulcerative. In other cases there may be a good deal of ulceration, with edema and fistula, and apart from the microscope it may be very difficult to distinguish it from syphilis, and the possibility of carcinoma being also present must be borne in mind.

What is to be the treatment of these cases? With regard to the vulval affection, excision, scraping, X-rays and ultra violet light may all be employed. The disease is very refractory. In the vagina, especially if high up near the cervix, a pan-hysterectomy may enable one to get clear of the disease, but excision of ulcers elsewhere in the vagina must be done with great care or fistulae will almost certainly result. Painting with pure lactic acid sometimes greatly improves these ulcers. As a rule these patients are not good subjects for operation as it is difficult to clear all the disease, and the possibility of using radium has made a considerable difference to the treatment of these cases.

As to the cervix, barring the use of radium, if this part alone is affected a high amputation is the best, but if tubes and uterus are also affected a clean sweep should be made. If, on the other hand, the tubes are affected and the uterus very slightly or not at all, then the tubes should be removed, and this should be done in cases of tuberculous peritonitis even if they do not look very bad, as they are frequently the primary cause. Where, on the other hand, there is a fibroplastic or caseous affection of the abdominal organs binding together bowel and uterus and tubes, as in one of the cases I quote subsequently, it is worse than useless to try and do anything. You will only make holes in the bowel, get faecal fistulae and hasten the patient's end.

I am becoming more and more conservative in the treatment of these patients and the more so, as one of our cervix cases has had a normal pregnancy and labour since the disease was diagnosed. In this case the cervix was treated with lactic acid and green and violet paint.

As to the exploratory caeliotomy wound, in a case of this kind through-and-through sutures must not be used, the wound must be sewn up in layers, trying to cover over each line of suture securely.

As to general treatment, I need hardly enter into this. It is the same as that for all cases of tuberculosis:—fresh air, good food, rest, and as the patient gets better, graduated exercise; ultra violet light is extremely good for patients with pelvic tuberculosis.

As to the benefits of tuberculin in these cases I can say but little. The subject is a highly controversial one. If used in afebrile cases with discretion it may do good; otherwise it may do much harm.

I have spoken of panhysterectomy in patients with tuberculosis of the cervix and uterus. The advent of radium has considerably altered the case. Radium and X-rays have a powerful effect in the initiation of fibrosis in tuberculous lesions, and, unless there is a large mass in the region of the tubes, for the treatment of tuberculosis of the cervix and endometrium, I am now inclined to use a full dose of radium and then wait. If the disease settles down and the patient is in good health, hold your hand about operation. You may find when you have done your laparotomy that the matting of the pelvic organs is so great that operation would mean opening up large raw areas, with immediate danger to life and the practical certainty that you have not removed all the disease. At the same time one must bear in mind that if the tuberculosis is grafted on a gonorrhoeal or septic tubal inflammation, radium may light this up and do real harm. There is no doubt in my mind that in cases of tuberculosis of the peritoneum and pelvis, sunlight and ultra-violet light are most useful.

(3) *Tuberculosis of the Breast.*

Tuberculosis of the breast has been known as far back at least as 1829, when Sir Astley Cooper described it.

It is a rare lesion, and I have seen only three cases of the disease in China. One was in Fukien, one in the Tainan hospital in Formosa, and one in Peiping, all in Chinese women.

It may be a primary or a secondary disease, the latter being by far the commonest.

Direct infection may be through cracks in the nipples, secondarily through the blood and lymph, and very rarely by direct extension into the breast from tuberculosis of the chest wall or axilla.

It is most common between the ages of 20 and 50 years.

It as a rule begins by the formation of nodules in the stroma, which caseate and spread, and involve the skin, and one gets tuberculous sinuses. A large cold abscess is rare. Sometimes fibrosis and sclerosis are marked, and in these cases the disease is apt to be mistaken for carcinoma.

The first sign is the presence of a lump, often in the upper and outer quadrant. There may be a moderate amount of pain, and there may be retraction of the nipple.

Generally the signs of tuberculosis elsewhere are scanty, and it is rare for both breasts to be involved, but when they are there is a tendency for both to be attacked at the same time.

Tuberculosis and benign tumours, and tuberculosis and cancer have been found together, and it may be impossible to distinguish the two before the microscope is used.

It is better to err on the side of caution and do an operation for malignancy than temporize in the hope that the tumor may be an innocent one; but if it is certain that one is dealing with tuberculosis, there is by no means the same need for radical clearance of the axilla as in malignant disease; all enlarged glands, however, should be removed, and after operation the general condition of the patient must be borne in mind. Careful examination must be made for other foci of infection, and open air life advised.

(4) *Extra genital tuberculosis.*

There is one other way in which tuberculosis concerns us. Tuberculosis of the hip joint is not uncommon, and of course you may have tuberculosis of the sacro-iliac joint.

Tuberculosis of the hip, especially during the years of growth, may have a very serious effect on the development of that side of the pelvis.

The leg being shortened on that side and brought closer to the midline of the body "produces a want of lateral expansion of the pelvis on that side. The symphysis pubis is pulled towards the healthy side, and an asymmetrical and slightly contracted condition of the cavity results. It is rarely sufficient, however, to give rise to obstruction in labour." (Berkeley and Bonney.)

This is not my experience as regards China. Of course here one meets with neglected cases of hip disease and much greater deformity results. I know of four cases of the affection, three of them being cases of my own. In two of them the pelvis was markedly asymmetrical and the side on which the disease had been, very contracted. In one of them delivery was accomplished with forceps, but the child was dead. In a second, craniotomy had to be performed, and even then the child was extracted with difficulty. In a third, under the care of the Women's Hospital at Chuanchow, Fukien, the leg was so flexed and adducted as to make delivery *per vias naturales* a matter of impossibility, and a Porro's operation was performed.

The fourth case was one under the care of Dr. F. J. Heath of the Sleeper Davis Hospital, Peking. Here the hip joint had been ankylosed carrying the thigh outwards. There was great thickening about the joint, and the side of the pelvis was deformed. Caesarean Section was done with good results.

In tuberculous disease of the sacro-iliac joint in early life the ala of the sacrum on that side is imperfectly developed, and the deformity approximates to that found in a Naegele pelvis.

(5) *Congenital Tuberculosis:*

This term should be reserved for cases where tubercle bacilli are present in the foetus either prior to or at birth.

We are not discussing congenital predisposition, which is a wide and very debatable subject.

We have to remember several facts:

(1) Tubercle bacilli have never been demonstrated within a spermatozoon, and although adhesion to the outside is theoretically possible it has never been proved.

(2) There is only one doubtful case where bacilli were found in the primordial follicle of a human ovum, though of course ova may become infected with bacillary disease and transmit the same to the offspring. But there are a set of most interesting case histories of undoubted congenital tuberculosis given by Norris.

(6) *Placental and Foetal Tuberculosis:*

You may undoubtedly have tuberculous lesions in the placenta.

The bacilli become localized in some of the villi and a tuberculous new growth formed. Infarcts are probably good breeding grounds for such infection, and during labour it is supposed that bacilli from the placenta may be forced into the foetal circulation. Tubercle bacilli may also reach the decidua from the Fallopian tubes and cervix.

By histologic and inoculation methods, tubercle may be demonstrated in about 40 per cent of the placentae of tuberculous women.

Let us now look at a few illustrative cases. Take the records of 9 typical cases of genital tuberculosis, which have come under my care. Of these, three were in foreigners:—

In each of these cases there was the history of trouble about or shortly after puberty, and this trouble took the form of pleurisy. In each there was apparent complete recovery. In each case they came into my hands between 25 and 30 years of age, two for pelvic masses and one for sterility with an adherent retroversion. In the *first* case there was a large mass in the appendix region adherent to the posterior surface of the uterus. It was retro peritoneal, the appendix had been previously removed, and there were signs of recent lung trouble. The mass was freed from the uterus, fixed to the brim of the pelvis, the patient treated for the general disease, made a good recovery, acted for a time as a librarian in the U. S. A. and is now married and has had three pregnancies, one coming to term with a living healthy child. She is quite well. In the *second* case there was a soft mass of moderate size in the left iliac fossa. Since the pleurisy there had been two sharp attacks of pelvic inflammation and pain with fever. At the operation the left tube was found in the condition of an old pyosalpinx, the ovary enlarged and bound down with the tube to the pelvic floor. The appendix was also removed and showed signs of old inflammation probably tuberculous. She made a good recovery and has remained well for the past ten years. The right tube and ovary were normal and were not removed. In the *third* case both tubes were the subject of tuberculous pyosalpinx, an old tuberculous abscess was evacuated, which proved sterile, but tubes, uterus and ovaries were so bound down and plastered to the pelvic floor that removal would have meant a very severe operation, and a clean sweep of all the pelvic organs. Nothing was

done and the patient has remained in good health for the past eight years.

The other six cases were in Chinese.

Two were cases of general tuberculous peritonitis, in one case following a normal labour, in the other case following a Caesarean Section elsewhere which had resulted in a faecal fistula in the upper portion of the scar. In both the most active portion of the trouble was in the pelvis, and it was no doubt tubal in origin, but in each the abdominal contents were matted together and the cases hopeless. Two were cases of tuberculosis of the cervix, in each case giving the suspicion of carcinoma. One was a woman of 36, the other a woman of 29. In both the microscopical examination cleared up the nature of the case at once. Both refused radical treatment but were treated locally for some time, and one has since had a normal pregnancy and puerperium. Two were cases of tuberculosis of the endometrium. In one, a woman of 25, the disease was only discovered in a curettage undertaken because of irregular haemorrhage; in the other, a woman of 45, the curettage was undertaken for the same reason, but the woman was known to have tuberculosis of the lungs. The second case died of the lung trouble two years after. The first case had also a 4 plus Wassermann, and has dragged on in much the same condition for the last two years. There has evidently in her case been old pelvic inflammation and the tubes are palpable.

There are undoubtedly many such cases coming to our clinics. They present the most protean symptoms, and it must be always borne in mind that obscure inflammatory conditions in the pelvis are not infrequently due to this disease. Take for instance the record of the following case:—

Mrs. C. A. C., a Chinese single woman, aged 18, was admitted to the Hospital in February 1926, with the following history:—

Her menses had been irregular for 3 years and she had had backache for the last 2 months. She came because she was not well rather than for any specific pain and did not look ill. In the left lower quadrant there was an indefinite mass. Examination per rectum did not fully clear up the matter and we thought that it was possible that she had a dermoid or possibly pelvic tuberculosis. Her temperature gave us no help although she

told us she had had occasional afternoon fever. Dr. Miles operated and the following is his operation note:

"Immediately upon opening the peritoneum numerous adhesions between the omentum and the organs were encountered. These were separated by ligation and cutting, and it was found that both tubes and ovaries were matted together by dense adhesions, the tubes being much distended and filled with a material of doughy consistency. The tubes were joined together in the midline posteriorly forming a ring. On attempting to separate the adhesions between the fimbriated ends of the tubes, the left tube was opened and the contents were seen to be caseous partially calcified material. It was impossible to separate tubes and ovaries as both seemed equally involved in the tubercular process. Consequently the ovarian vessels were clamped cut and ligated, the broad ligament was also clamped and cut and both tubes and ovaries were removed in the usual manner including a segment of the cornu of the uterus. The incisions in the cornu were closed with figure of eight sutures of chromic gut, and the broad ligament was also sutured. The uterus was in good position. The mass in the left side of the pelvis was then palpated. It was found to be a spindle shaped mass as it crossed the pelvic brim about 4 or 5 cm. in diameter, and it extended upwards in the abdomen to the left of the vertebral column as high as the level of the twelfth dorsal vertebra. It was retroperitoneal and also seemed to be in the sheath of the iliopsoas muscle. It was evidently a cold abscess of tubercular origin. The abdominal organs were inspected. On the terminal ileum, a few inches from the ileocaecal junction, there was a small tubercle which was situated in the mesentery and it was removed for examination. No other signs of tuberculosis were found on the abdominal organs."

In a subsequent X-ray examination the patient was found to have tuberculosis of the 11th and 12th thoracic vertebrae, and a cast was applied.

Undoubtedly many cases are completely overlooked. I operated the other day on a patient for a double pyosalpinx due to gonorrhoea. The history and course of the disease and gross appearance of the tubes was typical. But on section, besides the subacute condition, there were a few tubercles, apparently retrogressing; and which, had the patient not

acquired the Neisserian infection, would probably have given her no trouble.

I cannot however close this subject without touching on a very controversial matter, but one about which one is likely to be questioned by parents and friends. Since 1904 there has been discussion from time to time on the question of terminating pregnancy. Not only has one to consider the possible deleterious effect upon the mother but what of the child? In the earlier part of this paper I have shown you some of the figures, and one must remember that some authorities put the neonatal death rate very high. Calmette in one series puts it as 24% in the first year, and in another place states that Couvelaire's observation that many of these children die in the first few weeks of life is correct and puts the figure at 12-38%. I am not going to discuss the evidence on which a diagnosis of tuberculous affection in these infants is based except to say that it is very slender. Calmette has started the injection of these infants from tuberculous mothers with B.C.G. vaccine. This is an attenuated vaccine with living bacilli which have become avirulent, and in spite of his apparent success it is a very grave question whether some of these cultures may not occasionally revert to virulence. The terrible Lübeck disaster is still sub judice, but my own judgment is that one would do wisely in holding one's hand in the matter. The Papworth Colony near Cambridge, England, has records now of some 140 children who have been born of parents with tuberculosis, have not been removed from home surroundings, and have no signs of tuberculosis, and I think by far the safer line of treatment is to urge the hygienic care of the children, rather than attempt to create an artificial immunity against tuberculosis.

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**A CASE OF ACUTE
APPENDICITIS COMPLICATING LABOUR**

GORDON KING, F.R.C.S. (Eng.)

*Contribution from the Department of Obstetrics & Gynaecology
Peiping Union Medical College.*

Acute appendicitis occurring at some time during the course of pregnancy is not particularly infrequent, but, from the nature of things, it can only very rarely coincide with the onset of labour, as in the case about to be described.

The patient, a Chinese married lady of 25 years of age (Hospital No. 29878), was admitted to the Peking Union Medical College Hospital on the morning of Oct. 28th 1930 complaining of vague abdominal pain since 1 p.m. of the preceding day. She was a primigravida and the last menstrual period was said to have commenced on Feb. 20th 1930 (although the appearance of the abdomen corresponded much more closely with that of a patient at full term). She had received adequate antenatal care, and with the exception of some mild oedema of the legs, which had lasted for about a week, the patient was apparently quite well until 1 p.m. of the day before admission, when she noticed some vague continuous abdominal pain. About 7 p.m. in the evening she vomited once, and felt considerably relieved. The pain gradually returned however, and increased in intensity up to the time of admission. Shortly before admission the patient became aware of the onset of intermittent abdominal pains, and came into the hospital under the impression that labour was commencing. The previous history of the patient contained nothing of any significance.

On examination the pulse was 88, the temperature 37.8°C., and the respiration 20. The patient looked uncomfortable, the face was flushed and respiration was somewhat pronounced, with dilatation of the alae nasi. The abdomen showed the usual appearance associated with a pregnancy at term. The foetus was in R.O.A. position and the foetal heart was well heard, rate 148. Definite, intermittent contractions of the uterus were felt, and rectal examination showed commencing dilatation of the cervix, although no bloody show was present. A point that was also noted at the time of admission was the presence of slight tenderness on palpating in the region of the right lower

quadrant and on listening to the foetal heart over this area. There was no muscular resistance or rigidity to be found, however. The pelvic measurements were normal and there was slight oedema of the legs. No abnormality was discovered in the lungs or heart to account for the somewhat forced type of respiration. The urine was normal save for a trace of albumin. The blood pressure was 120/94 mm. Hg.

The patient was kept under observation. Intermittent uterine contractions continued at intervals of 10 to 15 minutes during the course of the day, but at no time did the patient entirely lose the underlying continuous pain of which she complained. Instead, she asserted that the pain gradually increased in severity and was particularly felt in the right lower quadrant. Further examination at 10:30 p.m. on the day of admission revealed that the patient was breathing in a rapid and shallow fashion, with marked dilatation of the alae nasi. The tongue was recovered with a white fur. The abdomen was scarcely moving and, in marked contradistinction to previous examinations, was held rigid everywhere. There was distinct generalised abdominal tenderness reaching its maximum in the right iliac fossa. The foetal heart was heard clearly, rate 140. The maternal pulse had risen to 90 and the temperature was 37.6°C. There was a leucocytosis of 13,400 with a polymorphonuclear cell count of 90% (as compared with 84% in the morning).

The whole appearance of the patient was strongly suggestive of an acute abdominal emergency, and a tentative diagnosis of acute appendicitis with generalised peritonitis, complicating the first stage of labour, was made. The absence of pus cells from the urine appeared to rule out a diagnosis of acute pyelitis, and the healthy condition of the foetal heart pointed against a premature separation of the placenta with concealed accidental haemorrhage. An immediate exploration was advised and consent obtained.

Operation was commenced at midnight on the day of admission. Under spinal anaesthesia the abdomen was opened by a median subumbilical incision, and the general peritoneal cavity was at once found to contain a small amount of thin grayish-yellow pus, evidently originating from the appendix region. Owing to the enlargement of the uterus, however, it was not possible to expose the appendix from a midline incision

without first performing Caesarean Section. The operative field was carefully packed off and a healthy full term male child delivered, with surprisingly little bleeding, through an incision low down in the upper segment. The uterus was then brought out and placenta and membranes delivered, the incision being sewn up in the usual manner with interrupted chromic catgut. A strip of gauze dipped in mercurochrome was then tied in position over the uterine incision and the uterus covered with a saline pad, returned to the abdominal cavity and retracted over to the left side.

The appendix area was then exposed and a gangrenous retrocaecal appendix discovered. The caecum and terminal ileum were so fixed by inflammatory infiltration that it was impossible to deliver them, and it was only with considerable difficulty that the appendix was isolated. There was a perforation close to the base of the organ and the contiguous area of the inner wall of the caecum was gangrenous at this spot. The vessels of the mesappendix were completely thrombosed. The appendix was ligatured and removed and the stump buried as completely as the gangrenous state of the caecum would permit. Stab drainage was then made into the right iliac fossa and a second drain was placed in the utero-vesical pouch and brought out suprapubically. The mercurochrome gauze was finally removed from the uterine incision and the abdominal wall closed. The anaesthesia gave perfect results and the patient left the operating room in surprisingly good condition, with a pulse of 120.

A culture taken of the pus found at operation showed a pure growth of *B. coli*.

The first few days of convalescence were stormy and the temperature on three occasions reached 40°C., but the pulse always remained satisfactory. The drains were removed on the 2nd and 3rd days respectively, and for several days there was a profuse, foul-swelling, purulent discharge from the stab incision over the right lower quadrant. At one time it was feared that a faecal fistula was developing from the sloughing of the gangrenous area on the caecum, but about the 7th day after operation the discharge gradually diminished until by the 20th day it had practically entirely ceased. The patient received considerable benefit from a whole blood transfusion on the 9th day.

The temperature reached normal on the 10th day, and the patient was up in a chair on the 14th day. At the time of leaving the hospital, on the 27th day, the abdominal incision was well healed and there was no discharge from the wound: the temperature and pulse were normal and there was no localized abdominal tenderness or swelling.

A hystero-salpingogram done three months after the date of operation showed that the uterine cavity had returned to normal size and was of symmetrical outline: there was no evidence of deficient union of the Caesarean Section incision.

The baby was a perfectly healthy male weighing 3190 grams and evidently at about full term. He was fed artificially and has made uninterrupted progress since birth.

The pathological report on the appendix showed acute appendicitis and periappendicitis.

Discussion. An attack of acute appendicitis complicating pregnancy is one of the most dangerous conditions which may affect the lower abdomen. The mortality in non-operative cases has been estimated by Wagner at 77 per cent, indeed, in the words of the late John B. Murphy "no other acute abdominal lesion, not even the ordinary suppurative peritonitis from perforation, has any such mortality."¹

The operative mortality in cases of acute appendicitis in pregnant women operated upon early in the attack has been conservatively placed at 6.7 per cent, but after the first 24 hours it rapidly rises to the neighbourhood of 30 or even 40 per cent.^{1 2 3}

There are several reasons for this terribly high mortality. In the first place, as pregnancy advances the omentum and intestines are carried upwards away from the right iliac fossa; thus conditions are less favourable for the localisation of the inflammatory process, and generalized peritonitis is more likely to occur. Secondly, abortion or premature labour are very liable to follow an operation for acute appendicitis and the activity of the uterus is likely to do much towards breaking down protective adhesions and giving rise to widespread peritoneal infection. A third contingency is that, in severe cases, an infection of the placental site may occur through the bloodstream and impose upon the patient the superadded burden of uterine sepsis.

There can be no question that the more advanced the stage of pregnancy, the more dangerous is an attack of appendicitis. Equally there can be no question that the best and only treatment is to operate as soon as the diagnosis is made, whatever the stage of the pregnancy. During the earlier months the operation presents no unusual difficulties, but when the patient is nearing full term or is actually in labour two special problems have to be faced. The first is the problem of surgical access and the second is the problem of delivery. In the case recorded above both difficulties were solved by performing Caesarean Section as a preliminary to dealing with the appendix. The bulk of the uterus near full term would make it almost impossible to get an adequate exposure of the appendix by any incision, and even if appendicectomy were performed without emptying the uterus there would be grave risk of the subsequent onset of labour with breaking down of adhesions and wide dissemination of infection throughout the peritoneal cavity. It would therefore seem a wise procedure, in cases met with after the 32nd week, to empty the uterus by Caesarean Section before removing the appendix (unless the patient were actually in the second stage of labour, in which case delivery from below would be indicated.) There is undoubted risk of infection of the uterine incision but it is questionable whether such risk would be as great as the damage likely to be caused by the uterus going into labour shortly after the removal of the appendix. If Caesarean Section is performed the utmost care should be taken to prevent any direct infection of the incision, and the temporary use of a roll of gauze dipped in mercurochrome and lightly tied over the uterine incision is recommended as a useful means of protecting the wound during the removal of the appendix. After the drains have been placed and immediately before the abdominal wall is closed the mercurochrome gauze is removed.

The after treatment follows usual lines, with the exception that the utmost care should be taken to prevent abortion or premature labour in the event of the pregnancy remaining intact.

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HIGH SPINAL ANALGESIA

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Spinal analgesia is becoming very popular. One writer has said that it has become as safe as any anaesthetic can be. Nevertheless, most writers state very definitely that its use should be confined to operations below the xiphoid. French surgeons have used high spinal for many years, but it has not been accepted generally, or even by those who use intradural anaesthesia for abdominal and lower extremity operations. Koster and Kasman have used it in over 750 operations on head, neck, and thorax. Their technic is so simple and free from danger that we have adopted it with but slight modification.

In the seven months since April 1930 we have used high spinal analgesia 31 times with one death. In this case the patient was moribund from an overwhelming streptococcic infection following gunshot wound of the forearm. Our experience had been so favorable that we did not heed the warning of Babcock and others against using spinal analgesia for the bad risk. However, the method is so simple and satisfactory that we use it for dental extraction. We feel that the risk is less than that of severe infection following intraoral injection.

It is our opinion that novocain has proved itself the safest drug for intraspinal injection. We use the novocain-caffein compound as suggested by Li, having adopted slightly different proportions simply to obtain metric quantities. These ampoules are furnished us by the China Export—Import—and Bank Co., and are composed as follows,

Novocain	150 mg.
Caffein	200 mg.
Distilled water to 2 cc.	sp. gr. 1.0366

Whereas Koster and Kasman dissolve 250 mg. of Novocain in 8 cc. of spinal fluid and reinject, we utilize these ampoules which we have used for lower segment analgesia. It seems to make little difference whether spinal fluid is removed or not, since the compound is much heavier than spinal fluid and rapidly gravitates to the upper segments when the head of the table is lowered to 10°—15°.

Much has been written as to the vascular hypotension that frequently occurs during spinal analgesia. All are agreed that it is largely if not entirely due to the paralysis of the vasoconstrictor fibres carried in the white *rami communicantes* which are derived from all the thoracic and the upper two lumbar spinal nerves. Evidently, one of the best means of preventing this fall of blood pressure is to keep the anaesthetic agent out of the anterior half of the spinal canal. Aiding the surgeon in this aim is the *ligamentum denticulatum* which, with numerous deficiencies, divides the canal into anterior and posterior chambers. Of more importance is accurate deposition of the novocain in the posterior portion taking care not to push the needle in too far. It has occurred to the writer that a needle with a lateral opening might further aid in this procedure and he has approached manufacturers with the proposition of its construction.

Many methods of combating this fall of blood pressure have been suggested, from Babcock's elaborate "Saline team" for rapid administration of intravenous saline, to the modern method of simply placing the patient in a moderate Trendelenberg position and continuing with the operation. If the patient is kept head down until the anaesthesia has worn off, no harm can befall. Most of the fatalities have occurred because after the onset of the hypotension the head has been elevated to prevent the agent from going too high, with the result that the blood has been drained from the cerebrum to the splanchnic bed. Certainly with novocain, no harm can result from high diffusion if the cerebral blood supply be maintained by the Trendelenberg position. Following the suggestion of Ockerblad and Dillon, we have used a hypodermic of ephedrin about ten minutes before the spinal puncture. We find small doses (32 mg.) sufficient to sustain the blood pressure in most cases. Larger doses cause excessive bleeding as well as discomfort to the patient from the hypertension. Sometimes the fall of pressure occurs in spite of ephedrin, and then we rely on the Trendelenberg position, although we may repeat the ephedrin after this posture has been attained.

Before describing our technic in detail, we desire to urge that a special, fine gauge needle be used. Following Sise's suggestion, we use a short coarse needle to puncture the skin and tough interspinous ligament and insert the fine spinal

needle through the coarse needle. The spinal needle has a conical or non-cutting point which is believed to produce a smaller hole in the dura with less subsequent leaking. This non-cutting point punctures the skin with difficulty, and while a small incision may be made with a sharp pointed knife, we find Sise's suggestion most valuable. We have found Pitkin's short bevel needle quite satisfactory, detecting little difference in actual results, but the conical point appeals to us. The small caliber is the important detail.

The patient is given

Morphia grains 1/4

Hyoscin grains 1/200 one and a half hours
before operation

Hyoscin grains 1/100 one half hour before
operation

He is also afforded rest in a quiet darkened room if possible. On arrival at the operating room, the ears are plugged with vaselined cotton, the eyes covered with gauze fixed with adhesive, and the blood pressure taken. Usually 32 mg. of ephedrin are then administered hypodermically, but 64 mg. if the systolic pressure is below 100 mm. The patient is then turned to the side, usually the right, back is flexed, skin scrubbed with iodine and alcohol, and the field draped with sterile towels. We select the 2nd lumbar space, since the cord in adults ends at the 1st space, and there is no danger of injuring this structure. Half per cent novocain is used to make an intracutaneous wheal and to anaesthetize to a depth of an inch or so. A 1 1/4" 18 gauge needle is inserted through skin and interspinous ligament; through this needle a 3 1/2" 22 gauge non-cutting spinal needle is inserted, and the faint snap or "yield" betokening puncture of the theca noted. 8cc. of fluid are withdrawn, the stilette reinserted a short distance, and the head of the table lowered 10°-15°. 4 cc. of fluid are discarded, and after attaching another needle to the syringe, 4 cc. of novocain-caffein solution are drawn into the syringe. Thus we usually use 300 mg. although for long operations we have used 360 mg. After attaching the syringe to the spinal needle, momentary aspiration is performed, the contents injected slowly, and momentary aspiration again performed to assure us that the injection has been entirely within the subarachnoid space. We have at times, on obtaining the initial flow of fluid, dropped the

table to the desired angle and injected the contents of two ampoules without first removing spinal fluid. The result seems to be the same. The injection completed, the puncture is covered with gauze fixed with adhesive, the patient turned to the back, and the preparation of the field begun. As soon as the draping is complete, the analgesia will be sufficient to start the operation. Blood pressure readings are made every five minutes or so, the pulse counted, and the patient made as comfortable as possible. He may have water if desired. In simple breast operations we use but one ampoule, remove no spinal fluid, and lower the head of the table 8° - 10° although allowing a small pillow under the head.

Koster and Kasman give the following table of dosage:

Adults and children above age of 7 or 8 years	250 mg of Novocain in 8 cc.
Between ages of 5 and 8	150-200 mg. in 6 cc.
Between ages of 2 and 5	100-150 mg. in 4 cc.
Below age of 2	50-100 mg. in 3 cc.

Our youngest patient was a boy of eight years to whom we administered 250 mg.

If the anaesthesia fades before the end of the operation, ether or chloroform is given, usually the latter since Chinese tolerate it very well. The patients go under easily and regain consciousness quickly. They are transported from the operating room on a cart arranged to maintain the Trendelenberg position, and the bed is prepared with the foot elevated. This position is maintained for 24 hours. There is almost always an elevation of temperature to between 100° and 101° within 18 hours after operation which disappears completely after 30 hours in clean cases. Mild pleocytosis with increase of globulin content of the spinal fluid has been reported after introduction of novocain into the canal, and others have reported a transient albuminuria. We have had no sequelae except headache lasting for a day or two.

Most of the patients lay quietly throughout the operation. A few were nauseated and of these a few vomited once or twice. Many complained of faintness. In working in the mouth the tongue was not paralyzed and tended to interfere. In tendon

work on the upper extremities, the patient was able to follow directions in moving the various muscle groups. The duration of anaesthesia was a little over an hour, permitting one hour of painless operating. The fall of blood pressure has actually been less marked than in the usual lower segment induction, although in some few cases a reading of 64/40 was made.

At this juncture we should quote Koster and Kasman. "It is no exaggeration to state that in over 250 cases out of our total series (4500) the anaesthetist (whose only duties during the anaesthetic period is to record the blood pressure and respiration during the entire operative procedure) notified us that it was impossible to secure a blood pressure reading by means of the manometer. Of late, when we receive such information, nothing is advised. Our experience has taught us that, ultimately, the pressure will return and no untoward effect be occasioned as long as the patient remains in the Trendelenberg position." Further, "We have operated upon many patients with ruptured tubal pregnancies in whom in spite of treatment for shock and hemorrhage, the pressure did not rise above 55 millimeters of mercury, with perfect equanimity regarding the effect of the anaesthetic and we have have had no reason to change our opinion." In this connection one of our cases should be mentioned.

A Chinese man aged 37 sought death by cutting his throat. He was carried a long distance to the hospital and arrived about three hours after the act, drenched with blood and coughing clots and bloody foam from the wound. He was put in shock position and without anaesthesia or sterile preparation, the herbs flushed out of the wound, two spurters tied, and the wound packed. It became evident that hemorrhage was not controlled and five hours after admission, with B. P. 58/40 he was subjected to thoroughgoing repair of larynx, sternocleidomastoid muscles, and fascia. He had pain the last ten minutes of the operation. The blood pressure was not recordable throughout the operation. The wound suppurated, but he made an uneventful if prolonged recovery.

Four cases have had imperfect analgesia. One was due to inadequate dosage and for the other three we have no adequate explanation. In one, operation was continued with a few drops of chloroform at rare intervals and the patient was quiet although conscious. The other two seem not to have had severe pain although they protested loudly at times.

Regional analgesia, peripheral or intradural, presents many advantages over inhalation anaesthesia. Those skilled in peripheral analgesia will find no need to puncture the dura. However, in behalf of spinal injection, there is the simplicity of the lumbar puncture, the almost certain anaesthesia, and the small amount of drug needed. Failures do occur and many operations require a longer duration than is afforded by the single injection. A second injection is not contraindicated but it is inconvenient. It will be some time before inhalation anaesthesia can be entirely discarded. Percain gives excellent duration in lower segment operations, but it has not been shown safe for upper segment operations. Several writers deprecate the taking of blood pressure during the operation, stating that it merely annoys the patient and is unnecessary. Hence, a surgeon with but one assistant may perform almost any operation, limited only by the duration of the analgesia. Should percain prove safe for upper segment operations, spinal analgesia will have become very nearly ideal.

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NEPHRITIS AMONG THE CHINESE

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A study¹ made a few years ago of the blood pressure of normal Cantonese boys showed that the average readings were definitely lower than those for European and American youths. This fact has been abundantly confirmed by subsequent observers and in fact there is considerable evidence that the blood pressure in the Chinese race generally averages lower than in the white race.

A question arising naturally from this fact is whether or no diseases and conditions associated with hypertension are less frequently met with among the Chinese. This question seemed especially appropriate with reference to nephritis, a disease long associated with an increased protein intake and one of the common causes of hypertension. This question is well stated in an Editorial² of the *Journal of the American Medical Association*:

"To what extent diets unusually rich in protein may actually induce detrimental conditions must still be regarded as highly debateable. There are writers who like Newburgh of Ann Arbor insist that the human kidney may be injured by protein excess. . . . It is conceivable that bacteria as well as diet may injure. Furthermore the added conclusion that hypertension and arteriosclerosis are due to the same factors is an as yet unwarrantable jump."

However Newbury and Curtis³ by giving rats a diet containing 75 per cent of dried liver produced granular kidney in less than one year, while the same amount of casein fed for sixteen months caused only moderate injury to the tubules. The effect of beef muscle was intermediate between the two.

Two facts, therefore, aroused our curiosity to make a study of the nature and incidence of the nephritides occurring among Chinese. In the first place we had already demonstrated the fact that the blood pressure of these people is normally lower than that of westerners. In the second place the diet of the Chinese is relatively low in protein. Is then, nephritis less common? When it does occur is it less likely to be associated with hypertension? These two questions form the basis of the present study.

A careful search of the literature has revealed almost no references to nephritis among the Chinese. Dr. James L.

Maxwell, Editor of the *China Medical Journal*, in a personal communication under date of February 18th, 1928, wrote:

"I am very sorry that I can give you none (i.e. information on nephritis among the Chinese) at all. Apparently there have been no articles on the subject in the *China Medical Journal* nor do any articles appear to have been published on this subject in the *National Medical Journal*. I do not know of any in outside papers so am very sorry not to be able to offer you any assistance."

Jefferys and Maxwell⁴ in their chapter on Genito-Urinary Diseases and Stone devote a little more than a page to the subject. They state that:

"The careful examination of the urine of 400 patients in St. Luke's Hospital, Shanghai, by Yui gave a remarkably low percentage of patients with albuminuria, and it is confirmatory so far as it goes, of our impressions concerning the percentage and infrequency of nephritis, . . . Chronic nephritis associated with old age and which we had believed to be largely dependent upon the two factors of alcoholism and heavy nitrogenous feeding are altogether insignificant as compared with the white races in their bearing upon Chinese nosology."

Later the same authors⁵ state:

"We may take it as all but established that the acute inflammatory forms of nephritis associated with youth and especially those arising as sequelae to the infectious fevers are fully as frequently met with in Chinese as in any other races."

Again in Chapter II, Page 30 we read:

"The distribution (of nephritis) is a matter of some little interest and is probably largely dependent on climatic conditions. Generally speaking in the northern provinces it is very common while in the south less so, though far from rare. Curiously enough reports from Manchuria, though this province is in the far north, do not seem to indicate any wide prevalence."

Little⁶ assumes from certain reports that the Chinese have nephritis less frequently than the peoples of Europe and America.

In response to a brief questionnaire sent out to a few physicians in different sections of China (see also below) the following replies were elicited:

Dr. C. Y. Wang, Professor of Pathology of Hongkong University states: "As far as I can observe in the postmortem room I certainly think the disease (nephritis) is less frequent in the Chinese." Dr. W. H. Dobson of Yeungkong, Kwangtung, reports that he rarely sees a case of primary nephritis. On the other hand, the disease is not infrequent, often secondary, as he believes, to pyorrhoea.

Dr. G. W. Leavell of Wuchow, Kwangsi, believes that nephritis is less common in south China than in the southern part of the United States. Dr. John H. Paterson, of the Lester Hospital, Shanghai, imagines that there is less nephritis in Shanghai than abroad. Dr. S. D. Sturton, of the Church Missionary Society Hospital in Hangchow, Chekiang, thinks that the disease is as prevalent in this province as in England. Dr. A. E. Best of Chengtu, West China, thinks that nephritis is a shade more common than abroad. Dr. J. S. Robertson of Mukden, Manchuria, thinks acute and chronic parenchymatous nephritis are as common as in Europe. The chronic interstitial form is probably less so.

The above statements are only opinions with no actual statistics to support them. It will herefore be of interest to compare them with some actual figures.

In Table I. are recorded data for two large general hospitals in Boston, Massachusetts, and three large general hospitals in Philadelphia, Pennsylvania, U.S.A. These hospitals are all teaching institutions and one may presume that the diagnoses are made with some care. Moreover, the accumulated data in these hospitals should be fairly representative of the city population of the eastern part of the United States. Patients of all walks of life are admitted to these institutions. With the exception of the Philadelphia General Hospital where a large proportion of the patients have chronic diseases the relative incidence of nephritis to all the cases admitted to the medical wards varies from 5.89 to 7.61 per cent and in all the five hospitals the proportion of nephritis to all hospital admissions varies from 1.33 to 3.18 per cent. In the Philadelphia General only 3.63 per cent of medical cases are nephritis. We have

TABLE I.

Relative Incidence of Different Varieties of Nephritis. U. S. A.

Name of City	Name of hospital	No. of Years	Total patients	Total Med. Cases	Total Cases of Neph.	Percent of Neph. to all cases	Percent of Neph. to Med. cases	acute or sub-acute	Chronic.	Ob- par- anch	Chr. Inter.	Neph.	Uremia	Cardio- Renal disease
Boston Mass.	Mass. Gen'l Hospital	2	19925	6931	398	2.05	5.89	48	228			40	46	36
Boston	Peter Bent Brigham	12	52709	27179	1678	3.18	6.21	172	1077	5	362	5	57	
Philadel- phia, Pa.	Pennsyl- vania Hospital	2	9001	3894	244	2.71	6.27	22	146				36	40
Phila.	Philadelphia General Hospital	7	50,099	22888	830	1.66	3.63							
Phila.	Univ. of Penna. Hospital	5	25797	4507	343	1.93	7.61	26	234			59	24	

Nephritis Among the Chinese

included among the nephritis cases those diagnosed as Uremia, because we believe that in most cases this is the result of some renal insufficiency, usually of a chronic nature. Undoubtedly in some instances it is acute as in cases of eclampsia, in other cases it occurs in parenchymatous disease and it is not infrequently the terminal stage of interstitial disease.

To compare these data with those for hospitals in China we have prepared Table II. To obtain the facts recorded in this we have consulted hospital reports where these were available and in a few instances have quoted statistics from answers received to the questionnaire mentioned above.

The following questions were included in this questionnaire:

1. What proportion of your patients show signs of primary nephritis, either acute or chronic?

2. What is the relative incidence among the chronic cases of so-called parenchymatous and interstitial nephritis?

3. Is high blood pressure often present in your nephritis cases?

4. Is chronic nephritis more or less common in China than it is abroad?

Some of the answers have been quoted above. In general no very definite information was obtained. Dr. Dobson of Yeungkong declares that about 2 per cent of ward patients and about the same proportion of dispensary cases are affected with chronic nephritis. In Table II. are statistics from 25 different hospitals, ranging from Mukden in Manchuria to Hoihow in Kwangtung. In 23 of these the percentage of nephritis to all hospital admissions was noted. In ten of the hospitals this varied from 0.25 per cent at Tatungfu, Shansi, to 1 per cent at St. Luke's in Shanghai. In 11 it varied from 1.02 per cent at the Harvard Medical School Hospital in Shanghai to 1.69 per cent at the Peiping Union Medical College Hospital. Finally in two cities, Wuchang and Nanchang, the percentage rises to over 2. It should be borne in mind that in many of the mission hospitals medical cases are relatively more numerous than in hospitals abroad.

As for the percentage of nephritis cases to medical admissions only, there are data from twelve hospitals. In four

TABLE II. *Incidence of Nephritis in Hospitals for Chinese*

City and Province	Name of Hospital	No. of Years	Total No. of Patients	No. of Med. Cases	No. of Cases Nephritis	Percent of Neph. to all Cases	Percent of Neph. to Med. Cases	Acute or Subacute	Chronic Neph.	Chronic Parenchymatous	Chronic Interstitial	Nephritis (Not Specified)	Uremia	Cardiorenal	
Canton	Hackett	3	6313	1558	101	1.6	6.48	18	40	15	4	23	1	—	Women and Children
Chefoo	Temple Hill	9	5582	1227	48	.86	3.91	3	32	—	—	13	—	—	General
Hangechow	C.M.S. Hosp.	1	828	—	13	1.57	—	—	—	—	1	—	—	—	General
Hankow	London Mission	2	1758	—	19	1.08	—	—	—	—	—	—	—	—	Men only
Hoihow Hainan	Presbyterian	1	1986	—	15	0.75	—	—	—	—	2	—	—	—	General
Hongkong	Civil, Victoria and Kowloon	1	6260	—	61	1.02	—	19	45	—	—	—	—	—	Great Majority Chinese.
Hongkong	Gov't Civil	1	—	646	39	—	6.03	4	25	5	5	—	—	—	
Jukao Ku	Christ Reformed Church	1	368	—	4	1.09	—	—	—	—	—	—	—	—	—
Moukden Man	College Hosp.	1	3100	—	27	.87	—	13	—	10	3	1	—	—	—
Nanchang	Ensign Men.	2	882	—	20	2.27	—	17	1	—	—	—	1	1	—
Nanking	Univ. Hosp.	4	10691	4055	144	1.35	3.55	30	114	—	—	—	—	—	—
Peking	P. U. M. C.	8	20452	8457	346	1.69	4.09	105	94	53	48	6	40	—	—
Shanghai	Harvard	2	1080	423	11	1.02	2.60	3	7	—	—	—	1	—	—

Nephritis Among the Chinese

TABLE II. (Continued)

City and Province	Name of Hospital	No. of Years	Total No. of Patients	No. of Med. Cases	No. of Cases Nephritis	Percent of Neph. to all Cases	Percent of Neph. to Med. Cases	Acute or Subacute	Chronic Neph.	Chronic Parenchymatous	Chronic Interstitial	Nephritis (Not Specified)	Uremia	Cardiorenal	
Shanghai	St. Luke's	2	4584	1667	46	1.00	2.76	2	—	38	4	2	—	—	Men only
Shanghai	Lester	1	3817	—	35	—	—	6	—	15	14	—	—	—	
Shanghai	Marg. Williamson	1	3379	574	22	.65	3.83	4	—	3	1	14	—	—	Women and Children
Shaohing	Christian Hospital	5	3383	1626	40	1.18	2.46	2	15	—	—	23	—	—	
Soochow	Soochow Hosp.	3	2771	983	37	1.33	3.76	8	16	—	—	13	—	—	
Tatungfu Shansi	Mosse Mem.	1	396	—	1	.25	—	1	—	—	—	—	—	—	
Tsinanfu	Univ. Hosp.	1	1003	209	6	.51	2.87	2	4	—	—	—	—	—	
Kiangsu	Tsingkiangpu Hospital	3	3317	703	27	.81	3.85	2	18	—	3	4	—	—	
Tungkoon	Mission Hospital	5	3253	—	27	.83	—	—	—	—	—	—	—	—	
Weihsien Shantung	Gen'l Hosp.	1	590	—	7	1.19	—	3	4	—	—	—	—	—	
Wuchang	Church General	1	2536	—	68	2.68	—	22	45	—	—	—	—	1	
Wuchow Kwangsi	Stout Mem.	5	8804	—	64	.72	—	—	—	—	—	64	—	—	

the percentage is from 2 to 3; in five it is from 3 to 4; at Peiping Union Medical College 4.09 per cent and at the Hackett Hospital in Canton and the Government Civil in Hongkong the percent is over six of all medical cases. Comparing these figures now with those for Canton Hospital, see Table III, we find that for the ten years recorded the percentage of nephritis to all hospital admissions varied from 1.03 to 2.11 per cent or for all the years an average of 1.42 per cent. During a period of eight years the percentage of nephritis to medical admissions varied from 2.97 to 5.87 or an average of 4.04 per cent.

Those figures of the Canton Hospital are exceeded for per cent of nephritis to all admissions only in the case of the Hackett

TABLE III.
Canton Hospital Records

Year	No. of In-patients in Hospital	No. of Medical In-patients	No. of Cases of Nephritis	Percent of total In-patients	Percent of Medical In-patients	No. of Cases analysed
1914	1943	—	25?	1.29?	—	25
1915	1886	—	28	1.48	—	12
1916	1485	372	17	1.14	4.57	17
1917	1649	559	21	1.27	3.78	19
1918	1951	674	20	1.03	2.97	19
1919	2461	832	30	1.22	3.61	26
1920	2339	897	35	1.50	3.90	9
1921	2659	954	56	2.11	5.87	2
1922	2565	964	43	1.68	4.46	2
1923	3528	1107	45	1.28	4.07	0
Total	22466	6359	320	Av. 1.42	4.04	131

Hospital for women in Canton, Hangchow General Hospital, the hospital at Nanchang, the P. U. M. C. Hospital and the General Hospital at Wuchang. In all the other hospitals the percentage was lower. As to the percent of nephritis to medical

admissions this was exceeded in the case of the P.U.M.C., the Hackett and the Government Civil in Hongkong only.

Referring to the quotation given above from "Diseases of China," to the effect that nephritis is very common in North China, but less so in the south, our hospital records would rather indicate the reverse. Thus arranging the data given in Table II. geographically we have the following:

TABLE IV.

	Percent of Nephritis to all Hospital Admissions.	Percent of Nephritis to all Medical Admissions.
North	.25 — 1.69 or Ave. .92	2.87 — 4.09 or Av. 3.62
Yangtse Valley	.65 — 2.68 or Ave. 1.36	2.46 — 3.85 or Av. 3.60
South	.72 — 1.60 or Ave. 1.06	4.20 — 6.48 or Av. 5.54

So South China and the Yangtse basin would appear to have a larger proportion of nephritis cases admitted to the hospitals than in North China.

Now taking all the Chinese statistics together and comparing them with the five large general hospitals in Boston and Philadelphia it becomes at once apparent that the incidence of nephritis in the United States is considerably greater than it is in the hospitals of China. Compare Table I.

MORTALITY STATISTICS

Mortality statistics for nephritis in foreign countries are not very enlightening. In many cases it is included with other conditions as "diseases of the genito-urinary organs." Through the "Research Bureau" of the publishers of "Nelson's Loose Leaf Medicine" I have obtained the following data: In the United States the mortality rate per 100,000 from acute nephritis in 1924 was 6.1 and in 1925 5.6, while for chronic nephritis the rates were 83.5 and 90.8, giving for all nephritis deaths in 1924, 89.6 and in 1925, 96.4.

In the statistical bulletin of the Metropolitan Life Insurance Company the death rate from Chronic Nephritis for 1927 was 69.5 per 100,000 and for 1928 was 67.9. In another bulletin of the same company we find the following data for Chronic Nephritis:

TABLE V.
Chronic Nephritis Death Rate per 100.000

Year	Met. Life Ins. Co. Industrial.	U.S. Reg. Area. Ages 1-74
1911	95	71.8
1922	70.8	61.5
1923	69.5	

Again in the United States Public Health Reports⁷ the following Mortality Rates are given for the year 1928, including both acute and chronic nephritis. In some cases the rates for as many as eight months are recorded. In the Table only the maximum and minimum rates are noted and seven of the states are selected, Alabama as a southern state with a negro population, California as a western state, Connecticut as a New England state, Indiana a central state, Minnesota a north central state, New York and Pennsylvania as eastern states, the latter including one of the large cities.

TABLE VI.
Mortality Rates from Nephritis in Seven of the United States

State	Minimum Rates	Maximum Rates
Alabama		
White population	52.5	91.8
Colored population	92.1	156.9
California	93.8	142.7
Connecticut	57.6	89.
Indiana	71.2	96.4
Minnesota	38.	71.4
New York, excluding New York city.	92.6	129.2
Pennsylvania	50.7	125.6

Jessen in a recent issue of the *Schweiz Medizinisch, Wochenschrift*, gives statistics for the death rate from nephritis as follows:

	1910-14	1915-19	1920-24
Basel	32	29	30
Oslo	38	38	31
U.S.A.	100	99	82

The United States thus appear to head the list in these foreign countries so far as mortality from nephritis is concerned.

Coming now to China, for the non-Chinese residents of the Shanghai Municipal Council area⁸ for the years 1923 to 1927 there were altogether 2713 non-Chinese deaths. From 35 to 43.9 per cent of these were non-Asiatic and there were 36 cases of acute and 52 of chronic nephritis making 3.06 per cent of the total deaths. The average annual mortality rate for five years from nephritis for the non-Chinese population of Shanghai amounts to about 61. Unfortunately no data are available for the Chinese.

In Hongkong we have reports from two mortuaries⁹. Nearly all of the bodies were of Chinese subjects, but some were so decayed that no diagnosis was possible. Not counting these we have the following facts: In the Victoria mortuary during ten years 29,815 diagnoses were made, 174 of which were called nephritis. In the Kowloon mortuary during the same period 13,722 bodies were diagnosed and 117 of these were called nephritis; thus the nephritis deaths constituted only 0.67 per cent of the whole, a considerably lower per cent for these Chinese than for the non-Chinese population of Shanghai, but one must not forget that mortuary cases are largely accident and suicide cases. Taking the Hongkong reports for three years, 1920, 1926 and 1927 and comparing nephritis deaths in the two mortuaries with the population of the colony for those years the mortality rate per 100,000 is only 8, but of course many died of nephritis in the colony whose bodies were never taken to the mortuary. Unfortunately no more reliable statistics can be found for Chinese.

CANTON HOSPITAL DATA

The present study is based on a study of cases of nephritis seen at the Canton Hospital in the years 1914 to 1923 inclusive. Some of the histories were not available or were so incomplete that they could not be used. The number studied for each year is noted in the last column of Table III. Out of 320 diagnosed nephritis only 131 records were sufficiently complete for our purpose. To these have been added five cases, three students and an infant with acute Bright's disease at Lingan University and one farmer with chronic nephritis seen at the Lingan Hospital. Also there are thirteen patients who were treated at

Canton Hospital in the years 1924 and 1925 for which years no annual reports have yet been published.

AGE

Record was made of the age of all the 149 patients included in the study.

TABLE VII.
Showing the Ages of the Patients with Nephritis

Age Years	Acute and sub-acute Nephritis	Chronic Nephritis and Nephritis	Chronic Interstitial Nephritis
2-10	6	6	
11-20	12	27	
21-30	5	44	2
31-40	3	17	1
41-50	0	9	1
51-60	1	9	4
61-70		1	
71-80		1	
Totals	27	114	8

According to the Nelson data above referred to deaths from chronic nephritis predominate in the eighth decade, then follow in order the seventh, sixth, ninth, fifth, fourth, third, tenth, second and first in order of frequency.

In our data of the 27 cases of acute nephritis the ages ranged from 2 to 54, the greatest number occurring in the second decade, followed by the first and third decades: the average age being 20 years. Chronic nephritis occurs most frequently in the third decade, followed in frequency by the second and fourth. The average age of the 114 cases was 28 years. The eight cases of interstitial nephritis occurred between the ages of 22 and 60, four of them being between 51 and 60 years of age. The average was 43 years.

SEX

According to Flint¹⁰ in 102 patients suffering from chronic Bright's Disease 67 were males and 35 females. The personal communication from T. Nelson's and Sons states that out of 91,476 deaths from chronic nephritis in the Registration Area of the United States 42,227 were in white males and 6,759 in colored males as against 37,959 in white females and 5,131 in colored females or about 53 per cent males to 47 per cent females. Moreover Jessen, quoted also by Nelson's, in statistics for Basel, Switzerland, noted that in acute nephritis there were more male deaths but in chronic disease more female deaths.

In our series of cases there were 17 male and 10 female cases of acute nephritis or over 58 per cent of the former. Of our chronic cases 102 or 83 per cent were in males and 20 or about 17 per cent were females. One must bear in mind, however, that the male admissions to the Canton Hospital are considerably greater than the female.

RESIDENCE OF PATIENTS

The patients were all Chinese from Kwangtung province in south China, except eight, most of whom were soldiers from Yunnan, Honan and Hunan provinces.

OCCUPATION

The majority of the 149 cases were merchants, laborers and farmers, but these are also the chief occupations of all patients admitted to the hospital. There were also 21 students and 10 soldiers and nineteen other occupations with one or two cases for each.

RESULTS

The treatment of Bright's disease is often very discouraging so far as results are concerned. The old style Chinese doctor relies chiefly on purgation, and cases have been seen which failed to show any improvement with western methods of treatment which entirely recovered in the hands of a Chinese doctor. The newer diuretics, together with the better knowledge of dietetic requirements offer hope for greater success in the future.

TABLE VIII.
Results of Treatment

	Acute and Sub-acute cases	Chronic Nephritis.	Chronic Interstitial.
Recovered	11	4	0
Improved	5	81	5
No Change	3	11	
Death	8	17	2
No report		1	1

The mortality rate during the patients stay in the hospital thus amounts to 18 per cent.

SYMPTOMS

A study has been made of the main symptoms which presented themselves in the Canton Hospital cases. In the various text-books and articles that we have consulted little information has been gained in a statistical way so that it is not possible to compare the incidence of these symptoms in the Canton cases with other races.

EDEMA AND ASCITES

Flint¹⁰ in an analysis of 89 cases found dropsy present in 74 and absent in 15. In 410 cases it was present in 376 and absent in 34 or taking both series there were 90 per cent of cases with edema. The following table shows the incidence of the edema and the extent of it.

TABLE IX.
Edema in Canton Hospital Patients

	Acute Nephritis	Chronic Nephritis	Nephritis	Interstitial Nephritis
Edema present	23	87	20	8
Edema absent	3	3	1	
No record	1	1	2	
<i>Location of edema</i>				
Ascites	6	57	13	3
Face only	7	6		
Legs only	5	20	7	3
General	11	57	12	4

The above record is of course only applicable to the time of the patients' stay in the hospital and does not refer to what may have occurred prior to or later than this. In the 149 cases of nephritis there was no record made in four. In the remaining some form of dropsy was noted as being present in 138 or 95 per cent. In the acute cases ascites was present in 23 per cent of 26 cases. In the chronic patients it occurred in 61 per cent of 119 cases, while generalized edema occurred in 42 per cent of the acute cases and 61 per cent of the chronic cases.

ALBUMINURIA

TABLE X.

Albumen in Nephritis

	Acute Nephritis.	Chronic Nephritis.	Interstitial.
None present	0	1	1
Present, but amount not stated	3	9	1
A trace	6	9	5
Heavy precipitate	16	92	1
No record	2	8	0

Albuminuria is generally considered a *sine qua non* of nephritis and yet in some cases of the chronic interstitial type even albumen is absent at times. In the above table all acute cases showed albumen and 64 per cent had a marked amount of it. Of the chronic cases 83 per cent showed a heavy precipitate, but the interstitial cases only gave 12 per cent with this finding.

RENAL FUNCTION TEST

In only 23 patients was the phenol-sulphonephthalein test performed. Three of these were acute cases. The first showing 15 per cent died in the hospital, the second with 35 per cent recovered and the third with 25 per cent was much improved. There were also 19 chronic cases in which the test was made. (See Table XI)

TABLE XI

Phenolsulphonophthalein Readings in 19 Chronic Nephritis Cases

	P.T. 5-10	P.T. 11-20	P.T. 21-30	P.T. 31-40	P.T. 41-45
Improved	6	3	5	2	1
No change	—	—	1	—	—
Recovered	—	1	—	—	—

Finally there was one case of chronic interstitial nephritis which showed a renal function of only 8 per cent and died in the hospital.

BLOOD PRESSURE.

As stated above we showed¹ in 1922 that there was a tendency to low blood pressure among the Chinese. This has later been confirmed by investigators working in other parts of China.¹¹ Dennison¹² in 1000 Africans of Kenya Colony found no instances of high blood pressure and no case of chronic interstitial nephritis. In response to our questionnaire we quote the following replies:

Robertson of Mukden, Manchuria says: "High blood pressure is almost invariably present in nephritis. The following are averages of all cases:

	<i>Systolic</i>	<i>Diastolic</i>
Acute nephritis	141	98
Chronic parenchymatous	169	121
Chronic interstitial	185	113

Paterson of Shanghai writes: "I have been surprised to find how seldom one finds really high blood pressure in this (nephritis) as in other diseases. Systolic of 150 to 170 occurred in some cases, but might have been as much due to the normal rise of advancing age as to nephritic conditions."

Sturton of Hangchow writes: "I think that high blood pressure is relatively rare in these cases."

TABLE XII.
Blood Pressure in Cases of Nephritis

	SYSTOLIC										DIASTOLIC												
	No Record 70 mm.	80-90	91-100	101-110	111-120	121-130	131-140	141-150	151-160	161-170	171-180	191-200	201-250	No Record	20-35	40-50	60-70	71-80	81-90	91-100	101-110	120	140
Acute Nephritis	15	3	3	1	1	2	1	—	—	—	—	1	17	1	1	4	2	1	1	—	—	—	—
Chronic Nephritis and Nephritis	50	2	7	5	6	14	6	12	4	2	3	12	59	2*	4	14	10	10	6	6	2	1	—
Chronic Interst. Nephritis	4	—	—	—	1	1	—	—	—	—	—	2	6	—	—	—	—	—	—	1	1	—	—

*One of these was a case of aortic regurgitation.

Goddard of Shaohing, Chekiang Province, says that high blood pressure is not often present in nephritis cases.

Leavell of Wuchow, Kwangsi, writes that high blood pressure is not often recorded.

Dobson of Yeungkong, Kwangtung, says: "As blood pressures are uniformly low a high pressure would be but relative. Higher blood pressures occur in the chronic nephritis cases."

Seaton of Hoihow, Hainan, reports that of fifteen cases of nephritis "not more than one or two were of the interstitial variety and the others did not have high blood pressure."

In the Canton Hospital series the systolic pressure was recorded in only 80 cases. (See Table XII) Of these 64 or 80 per cent showed less than 140 mm. and only 16 or 20 per cent were over this figure and one of these was complicated with a chronic aortic lesion of the heart. There were no systolic readings above 250 mm. Likewise with the diastolic readings: one case registered 140 and two cases 120. Considering 100 mm. as high, in the 67 patients in whom diastolic pressure was recorded 56 or 83 per cent were under 100 and only 11 or 17 per cent were over 100 mm. Thus we may state that high blood pressure does not play a conspicuous part in the symptomatology of the nephritis cases under review.

HEMOGLOBIN.

In 15 cases of acute and 89 of chronic nephritis an estimate of the hemoglobin was made. The results appear in the attached table:

TABLE XIII.
Hemoglobin in Nephritis.

	90-100	80-89	70-79	60-69	50-59	40-49	30-39	20-29
Acute	—	1	9	3	—	1		1
Chronic	2	17	24	35	9		2	

Thus in most of the cases there was no very marked anemia present. The majority occurred in the space between 60 and 80.

TABLE XIV.
Parasitic ova in the Feces.

	None	Ascaris	Clonorchis Sinensis	Asc. and Clon.	Hook-worm	Fasciolopsis Bnshi	Fasc. and Asc.
Acute Nephritis	7	7	1	—	—	—	1
Chronic Nephritis	50	16	8	2	6	1	2

In only sixteen acute cases and eight-five chronic was an examination of the feces recorded. Probably in these the occurrence of parasites had little bearing on the renal disease. Less than half of the patients gave positive findings in the stools: This is a low proportion for Chinese in South China.

ALCOHOLISM.

Thirty of the patients under consideration admitted indulgence in alcohol, but drunkenness is very rare in China so that it is not likely that any were very excessive drinkers. Users of alcoholic drinks were distributed as follows: Acute nephritis, one case; chronic nephritis, 25 cases; chronic interstitial nephritis, 4 cases.

TABLE XV.
Complications.

	Acute Neph.	Chr. Neph.	Chr. Interst. Neph.
Heart murmurs	0	5	
Endocarditis	1	7	
Myocarditis		2	
Dyspnoea	1	3	1
Bronchitis	1	1	1
Broncho-pneumonia		1	
Pulmonary tuberculosis		1	
Chronic arthritis		1	
Dysentery		1	
Gonorrhoea		1	
Purpura	1		
Pyelitis		1	
Syphilis		12	1
Typhoid fever	1		
Diarrhoea	1		
Opium smoker		2	
Pregnancy		1	
Renal calculus		1	
Splenomegaly		1	
Uremia	1	3	

Altogether 41 complications were recorded in 40 patients, besides the thirteen who had a definite history of syphilitic infection. The above table lists the complications. There were fifteen who had some cardiac complication.

DECAPSULATION OF THE KIDNEY

This operation was performed in six cases. The ages were 8, 10, 14, 18, 20 and 30 years. In two only the right kidney was operated on, in one both kidneys and in three no record was kept. The blood pressure was not high in any of these cases. 130 systolic pressure was the highest and in one of the children it was only 70 mm. In three the phenolsulphonephthalein test was made before operation and the readings were 5, 10 and 15 per cent. All patients were improved by the operation and one was apparently cured by it.

RELATIVE INCIDENCE OF THE DIFFERENT KINDS OF NEPHRITIS.

It is generally admitted that the classification of nephritis into the various clinical groups is very difficult. Frothingham¹³

TABLE XVI.

Varieties of Nephritis Reported in Different Hospitals

City	Hospital	Percent acute nephritis	Percent Chronic Nephritis	Percent Chronic Parench	Percent Chronic Interst.	Remarks
Boston	Mass. Gen'l	12	88	—	—	
Boston	Peter Bent Brigham	10	90	79	11	The percent of parench and interst. based on report of 1 year only.
Philadel.	Penna. Hospital	9	91	—	—	
Philadel.	Univ. of Penna.	7	98	—	—	
Canton	Canton	18	82	94	6	Assuming 'nephritis' is chr. Paren. Neph.
Canton	Hackett	17	83	78	22	Data for parench. and interst. estimated for 2 years only.
Chefoo	Temple Hill	6	94	—	—	
Hongkong	Civil, Victoria and Kowloon	29	71	—	—	
Hongkong	Gov't Civil	10	90	86	14	From special report by Dr. T. Y. Li. 25 cases of chr. called chr. parenchymatous.
Mukden	Med. College Hospital	50	50	77	23	1 not specified case of neph. not included
Nanking	Univ. Hosp.	21	79	—	—	
Peiping	Un. Med. Coll.	35	65	53	47	Omitting 6 cases not specified and 40 of uremia.
Shanghai	Harvard	27	73	—	—	
Shanghai	St. Luke's	4	96	90	10	
Shanghai	Lester	17	83	51	49	Not counting 2 unspecified cases.
Wuchang	Church General	32	68	—	—	

clearly demonstrated this in 18 cases of chronic nephritis which came to autopsy. His conclusion was that by clinical tests it was impossible to determine into which group a given case of nephritis belonged. In Osler's *Modern Medicine*¹⁴ chronic nephritis is divided into two groups (a) chronic parenchymatous with edema, much albumen and casts and (b) chronic interstitial with little albumen, few casts, large amount of urine with low specific gravity and frequently complicated with uremic and cardiovascular changes and hypertension.

Nephrosis, according to Tice's *Practice of Medicine* includes all degenerative processes formerly called chronic parenchymatous nephritis, without high blood pressure.

In the questionnaire that was sent out the second question was: What is the relative incidence among chronic cases of so-called parenchymatous and interstitial nephritis? Few statistical answers were received to this query. Robertson of Mukden replied: "I think acute and chronic parenchymatous nephritis are as common here as in Europe. Chronic interstitial is probably less common. Out of 27 cases diagnosed in 1927 thirteen were acute and thirteen chronic or subacute, and one not clearly stated. Of the thirteen chronic cases ten were parenchymatous and three interstitial."

Leavell of Wuchow records about three cases of parenchymatous to one of interstitial nephritis.

Dodson of Yeungkong says he has rarely seen a case of interstitial nephritis.

Seaton of Hainan, out of fifteen cases of nephritis found not more than one or two with interstitial nephritis and the others did not have high blood pressure.

Volhard and Fahr¹⁵ report 55 cases of Nephrosis (chronic parenchymatous nephritis) among 565 cases of Bright's disease.

In 60 consecutive autopsies on tubercular subjects Walsh¹⁶ found the following percentages:

Passive congestion	6	per cent
Cloudy swelling	8.3	" "
Acute parench. neph.	38.3	" "
Chr. parench. neph.	30.0	" "
Diffuse neph.	6.6	" "
Interstitial neph.	8.3	" "
Amyloid Degeneration	6.6	" "

In examining hospital reports abroad one finds a general tendency to classify all the nephritis cases as simply acute or chronic. A few years ago, however, more detailed classifications were made. Thus the Peter Bent Brigham Hospital of Boston, in 1914 reported 170 cases of nephritis of which 2 were acute, 131 chronic, 34 chronic interstitial with hypertension and 3 chronic parenchymatous.

In an attempt to classify the patients at the Canton Hospital and to compare these with other institutions we have first divided all cases into acute (including subacute) and chronic. The chronic cases have been subdivided into two groups (A) Chronic parenchymatous including nephrosis and cases without high blood pressure or markedly decreased renal function, much albumen and usually marked edema. (B) The class known as chronic interstitial nephritis associated with high blood pressure and decreased renal function, little albuminuria, few casts and slight edema.

Probably accurate statistics are not obtainable from any of the hospitals in China, but an attempt has been made in Table XV. The data there recorded are obtained from personal communications and from the statistics published in the regular annual reports of the various hospitals. By reference to this Table it will be noted that acute and subacute nephritis are evidently much less common in the four American hospitals than in the Chinese institutions. The only exceptions to this are at Temple Hill Hospital at Chefoo, Government Civil Hospital in Hongkong and St. Luke's Hospital in Shanghai. In the last named hospital only men are admitted, no women and probably very few children.

Comparing the different varieties of chronic nephritis is a much more difficult proposition. In the first place, as many contend, it is impossible to differentiate the various pathological conditions during life at all. We have attempted to do no more than differentiate two types, viz. Class A and Class B, as described above. By reference to Table XV, and also Table I, it will be observed that Class A is everywhere more prevalent than Class B, but we believe that this difference is much greater in China than would appear from the statistics. Unfortunately all reports classify a large number of their patients as chronic nephritis or simply as nephritis. It is our belief that the majority of these might be considered as belonging to Class A.

In Table XVI are brought together certain hospital data in which the differential diagnosis of the different classes of nephritis seems to have been made with more than the ordinary care. Thus one may observe that in Peiping the percentage of the interstitial type of the disease is greater than that of the Boston figure, but in the South China hospitals the percentage is considerably less.

TABLE XVII.

Some Selected Data from Hospital Records Showing Relative Incidence of Different forms of Nephritis

City	Hospital	Total number of cases Neph.	No. of acute cases	No. of Chronic probably Parench.	Chronic Interst. and Hypertension	Per cent of Interst. to Chronic.	Remarks
Boston	Peter Bent Brigham	170	2	134	34	20	For 1 year only.
Canton	Hackett	42	12	25	5	17	For 2 years Women and Children
Canton	Canton	149	27	114	8	6	
Hongkong	Gov't Civil	39	4	30	5	14	
Peiping	P.U.M.C.	346	105	153	48	23	Chr. Neph. and Neph. stand for Chr. Parench. Glomerulo-neph. for Interst.

CONCLUSIONS.

1. Almost nothing has appeared in medical literature concerning nephritis among Chinese.

2. There prevails a general opinion, with only a few exceptions, that Bright's disease is less prevalent in China than in Europe and America.

3. Most of those with practical experience believe that nephritis with hypertension is less common, relatively to other types of nephritis, than it is abroad.

4. Comparing statistics of hospitals in the United States with those of hospitals in China the proportion of nephritis cases to all hospital admissions as well as to admissions to the medical wards only is definitely greater in the American institutions.

5. A larger proportion of nephritis cases occur in south and central China hospitals than in those of north China.

6. In the Hongkong mortuaries nephritis constituted only .67 per cent of all the causes of death. Compared with this is 3.06 per cent which is the percentage of deaths from nephritis among the Shanghai non-Chinese population.

7. Canton Hospital data:

Average age:	Acute nephritis ——— 20 years Chronic nephritis ——— 28 years Chronic interstitial neph. 43 years
Sex:	Acute nephritis males equal 58 per cent. Chronic nephritis males equal 83 per cent.
Occupation and Residence:	Most cases were from Kwangtung province, and represented merchants, labourers and farmers chiefly.
Result:	18 per cent of the patients died in the hospital.
Edema:	This occurred in 95 per cent of cases.
Albumen:	All acute cases had albuminuria and all but two of the chronic cases.
Renal function:	In 23 cases in which a phenolsulphonophthalein test was made all but one showed a definite deficiency.
Blood pressure:	80 per cent of the 80 cases examined had a systolic pressure of less than 140 mm. 83 per cent had a diastolic pressure of less than 100 mm.
Hemoglobin:	There was not a marked anemia in the cases tested.
Feces:	Intestinal ova were not unusually common.

Alcoholism is not important in the case histories.

Cardiac complications occurred in 14 cases.

Decapsulation in six patients proved very beneficial.

Acute and subacute nephritis are relatively more common than the chronic disease in the Chinese hospitals. The parenchymatous type of chronic nephritis in China is relatively more common than the interstitial variety. It would appear that in most of the hospitals for Chinese the percentage of interstitial nephritis is less than in one of the large Boston hospitals. The Peiping Union Medical College Hospital is an exception to this rule.

The present study is only a beginning. It is evident that much more careful work than simply reference to statistics in hospital reports will have to be done before positive conclusions can be arrived at. It is hoped therefore that this study will serve as a challenge to research workers in China as well as abroad. Some of the questions that need to be answered are the following: If nephritis is less prevalent in China, what is the reason? Is it because a smaller proportion of Chinese live to the age when the degenerative diseases are most common? Does the diet, largely vegetarian, have any bearing on the problem? Is the Chinese manner of life less strenuous and so less susceptible to the development of a disease like nephritis?

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**SUPRARENAL DISEASE IN A KOREAN MALE
CAUSING PSEUDO HERMAPHRODITISM, HYPERTENSION
AND HYPERTRICHOSIS**

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In the study of endocrine causes of hypertrichosis (excessive hair growth) we find that women are overwhelmingly in the majority with many cases showing a tendency to male characteristics. I wish to report in this article a case occurring in a male Korean. Professor Bauer of Vienna states that this is the third case of this kind of which he has ever heard.

Past History. The patient, aged 27, No. I 166 says that he was born with a moustache and abnormal growth of hair over the cheek bones. At the same time there was a cruciform growth of hair along the spine and across the shoulders. (*See photograph*)

The family history was not important except that his mother's body "swelled up all over" before she died. Also an uncle died of pulmonary tuberculosis.

Physical Examination. The patient, a well nourished man with puffed face of muddy and doughy appearance, showed three large bronzed spots on the right cheek. He had abnormal hair growth over the malar bones and a well developed moustache (not common in Korea). The chin was blunt and receding. The eyes showed some exophthalmos. Pupil reactions were normal. There was pyorrhea and gingivitis and the teeth were abnormally placed and crowded. There was marked arching of the palate bones.

The chest showed marked hair growth over the pectoral muscles and deltoids down to the elbows and also along the spine from the 7th cervical down to the lumbar region and across the back at the level of the upper third of the scapulae. It varied



Case of Adrenal Tumor.

in length from one inch to three inches and was thick and black. The chest movements were normal. The apex beat was diffuse. There was a blowing systolic murmur. Fluoroscopy of the chest showed a dilated heart and an orthodiagram showed the enlarged heart to be greater in width than one half the diameter of the chest.

The pulse was 90 per minute and the blood pressure was 194 systolic and 98 diastolic. The abdomen showed adiposity as well as ascites and a mass was felt in the right kidney area.

The penis was somewhat small and found adherent to the medial raphe of the scrotum along its whole length except at the distal end. Pubic hair showed the female type of distribution.

The lower limbs showed excessive growth of hair and some edema. Knee jerks were normal.

His posture was fair. His weight was 144 pounds.

Laboratory Report.

Blood: Sahli 55%
 R.B.C. 2,790,000
 W.B.C. 8,800

Differential W.B.C. 72.5 polymorphs
 2.5 mononuclear
 24.5 lymphocytes
 .5 eosinophile

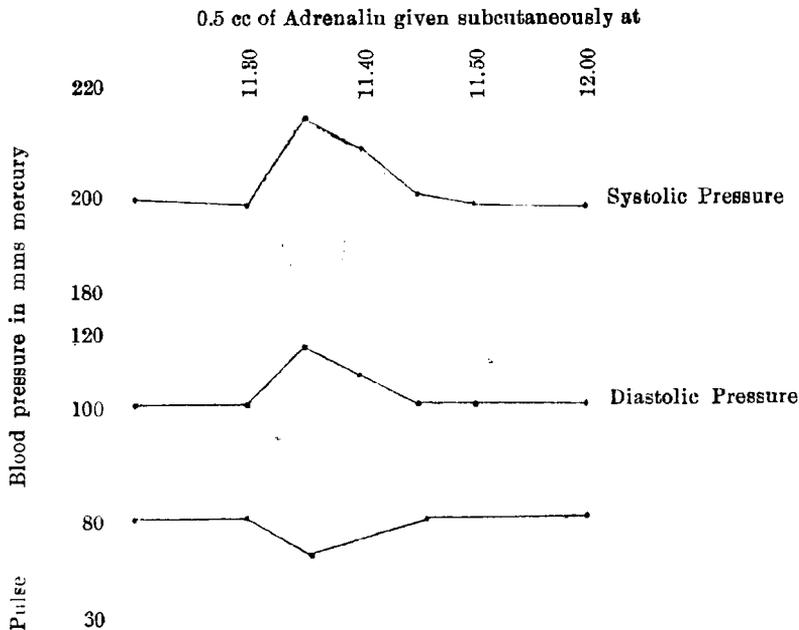
Urine: Six examinations. Some albumen was found at each examination. No casts. Blood cells were present once.

Stool showed nothing of importance.

Sputum examination was also negative.

Von-Pirquet test for T. B. was negative.

An adrenalin test was made on April 26th which resulted as follows:



Normally the pulse rate should rise with the blood pressure but in this case it dropped. There was some palpitation and tremor during the test. A similar test was done with 1.00 cc. of pituitrin, which showed a normal reaction.

Daily Notes: April 26—May 4. The patient daily became more drowsy and slept most of the time. The blood pressure kept high. (Maximum 204/110 minimum 194/98). The ascites increased causing distress and paracentesis was done on May the 2nd when 1800 cc of pale fluid was removed. The mass in the right kidney area was then easily felt, irregular in shape and but slightly movable. A diagnosis of hypernephrona was considered and Dr. Lee of the Genito-Urinary department was asked to outline the kidney with oxygen gas and investigate the kidney pelvis looking for distortion from pressure. The next day, the patient's father came unexpectedly from the country and finding his son not improved insisted on taking him home. The patient was reluctantly discharged without our being able to do further study. At the time of discharge an operation was not advisable. The patient's temperature was subnormal throughout the time he was in hospital, running from 36 to 36.5° Cent.

He died the morning after he arrived home.

INFLUENCE OF FATIGUE
UPON THE GROWTH OF RAT TUMORS

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Many investigators have studied the various influences on animal tumors and much progress has been made along this line. For example, the growth of animal tumors is effected by such varying factors as changes of chemical, physical milieu or even diet. But no one, so far as I know, has reported on the relation between the growth of tumors and exercise or fatigue. This in spite of the fact that it is well known that the organism or its functions may be influenced by fatigue. Also, it is quite possible that physiological processes will also be influenced by fatigue. Hirata^{3 4 6} found recently that mice, which are exercised and fatigued, survive longer than normal mice after the subcutaneous injection of morphine, strychnine or adrenaline in lethal doses.

In this paper observations on the relation between fatigue and the growth of rat sarcoma and carcinoma are reported.

EXPERIMENTAL PROCEDURE

Normal albino rats, weighing from 45 to 140 grams were used.

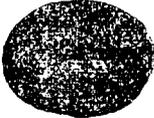
As tumor strains, Flexner's rat carcinoma and rat sarcoma from Fujinawa of Kyoto Imperial University were inoculated intra-muscularly in the leg. Tumor bearing rats were exercised twice daily by rotation 3 hours before noon and 3 hours after noon with only one hour recess between them. Later the sizes of their tumors were measured and compared with controls in from 12 to 22 days after implantation of tumor tissue.

EXPERIMENTS WITH RAT CARCINOMA

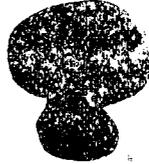
Three such experiments were made to find the effect of fatigue by daily exercise on the growth of rat carcinoma.

Experiment 1. Five rats were exercised 6 hours daily for 16 days following the implantation of rat carcinoma tissue and, as controls, 6 rats which were allowed to rest after implantation

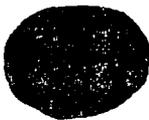
Text-Fig. 1, Experiment 1.

Date	Rats bearing carcinoma exercised 6 hours daily for 16 days.	Control rats bearing carcinoma.
1		
2		
3		
4		
5		 

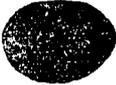
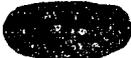
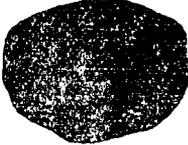
Text-Fig. 2, Experiment 2.

Date	Rats bearing carcinoma exercised 6 hours daily for 20 days	Controls rats bearing carcinoma.
1		
2		
3		
4		
5		

Text-Fig. 3, Experiment 3.

Date	Rats bearing carcinoma exercised 6 hours daily for 22 days.	Controls rats bearing carcinoma.
1		
2		
3		
4		
5		
6		

Text-Fig. 4, Experiment 4.

Date	Rats bearing sarcoma exercised 6 hours daily for 12 days.	Controls rats bearing sarcoma.
1		
2		
3		
4		
5		
6		
7		
8		

and the difference of tumor growth was observed. As shown in Text, Fig. 1, the growth of tumors is slightly faster in the controls than in the fatigued rats which were exercised 6 hours daily for 16 days.

Experiment 2. Five rats were exercised 6 hours daily for 20 days following the implantation of rat carcinoma tissue and, as controls, 5 rats were allowed to rest after the implantation. Any difference of tumor growth between them was observed and is reported. As shown in Text, Fig. 2, the growth of tumors is markedly faster in controls than in the exercised animals. Thus the growth of rat carcinoma seems to be inhibited by the fatigue resulting from daily exercise during 16 or 20 days.

Experiment 3. Six rats were exercised 6 hours daily for 22 days following the implantation of rat carcinoma tissue and, as controls, 5 rats were allowed to rest after such implantation. Any difference of tumor growth was observed and is here recorded. As shown in Text, Fig. 3, there is no difference of tumor growth between the exercised and the control animals.

EXPERIMENT WITH RAT SARCOMA

As recorded it has been shown that the growth of rat carcinoma was inhibited after exercise for 6 hours daily for 16 to 20 days. So in this experiment we tried to find a corresponding influence of fatigue on the growth of rat sarcoma.

Experiment 4. Eight rats were exercised 6 hours daily for 12 days following the implantation of rat sarcoma tissue and, as controls, 8 rats were allowed to rest after implantation. Any difference of tumor growth was observed and is here recorded. As shown in Text, Fig. 4, the growth of tumors is faster in the controls as compared with rats exercised for the same length of time as the carcinoma bearing animals. Thus in rat sarcoma bearing animals exercise seems to inhibit the growth of rat sarcoma.

DISCUSSION

As in Text, Figs 1, 2, 3 and 4, the growth of rat carcinoma or rat sarcoma is inhibited by fatigue due to continuous exercise. Isshiki (8) has maintained that the blood of the tumor bearing side of a chicken contains less sugar and more lactic acid than normal. Also that during fatigue after exercise more lactic acid

is produced than normal. So, possibly, the growth of tumors, both rat carcinoma and rat sarcoma, is inhibited by the accelerated metabolic products resulting from fatigue due to exercise.

CONCLUSIONS

1. The growth of rat carcinoma or rat sarcoma is inhibited by fatigue caused by exercise.

2. This is perhaps due to metabolic products resulting from the exercise.

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ON THE BIRTH OF MACDUFF

P. V. EARLY, M.B., Fatshan.

There is a good deal in the play of *Macbeth* that is of interest to medical readers; and such must often have been intrigued by the question "How was Macduff born?"

It will be remembered that, when the thanes were rising against him, Macbeth sought out the witches, who called up for him three apparitions: the first warned him to "beware Macduff"; the second assured him that he could be harmed by "none of woman born;" and the third uttered the Birnam Wood prophecy.

We are concerned here with the second of these; the apparition was "a bloody child," who urged Macbeth to

"Be bloody, bold and resolute; laugh to scorn
The power of man, for none of woman born
Shall harm Macbeth."

In the confidence given to him by this prophecy, Macbeth meets Macduff (in the last scene), and as they fight Macbeth cries:

"Thou lovest labour:
As easy mayst thou the intrenchant air
With thy keen sword impress as make me bleed:
Let fall thy blade on vulnerable crests;
I bear a charmed life, which must not yield
To one of woman born,"

To which Macduff replies:

"Despair thy charm,
"And let the angel whom thou still hast served
Tell thee, Macduff was from his mother's womb
Untimely ripp'd."

As it stands, and if the story and the words of the play had been solely Shakespeare's, we might with some reason diagnose the method of Macduff's birth as Caesarean Section; for, as is suggested below, it is quite likely that Shakespeare knew of this operation. The main story, however, as everybody knows, is not Shakespeare's, but was taken from Holinshed, whose "Chronicle" was published in 1578 and again in 1587. Holinshed's Chronicle, though "history" in a sixteenth century sense, was a compilation from various sources,—historical, traditional, and legendary: and the present writer has not the means of tracing the Macduff story further back than Holinshed. But that Shakespeare took the witches' quibble about Macduff ready-made from Holinshed is shown by comparing the Shakespeare lines quoted above, with the parallel passages from Holinshed, which are as follows:

"And surelie hereupon had he put Macduffe to death, but that a certeine witch, whom hee had in great trust, had told him that he should never be slaine with man borne of anie woman, nor vanquished till the wood of Birnane came to the castell of Dunsinane. By this prophesie Makbeth put all feare out of his heart, supposing he might doo what he would, without anie feare to be punished for the same, for by the one prophesie he beleaved it was unpossible for

anie man to vanquish him, and by the other impossible to slea him. This vaine hope caused him to doo manie outrageous things, to the greevius oppression of his subjects." and then, in the final fight,

"Makbeth perceiving that Makduffe was hard at his backe, leapt beside his horsse, saieng: 'Thou traitor, what meaneth it that thou shouldest thus in vaine follow me that am not appointed to be slaine by anie creature that is borne of a woman? come on therefore, and receive thy reward which thou hast deserved for thy paines,' and therewithall he lifted up his swoord, thinking to have slaine him.

But Makduffe, quicklie avoiding from his horsse, yer he came at him, answered (with his naked swoord in his hand) saieng: 'It is true, Makbeth, and now shall thine insatiable crueltie have an end, for I am even he that thy wizzards have told thee of; who was never borne of my mother, but ripped out of her wombe:' therewithall he stept unto him, and slue him in the place."

Whatever, therefore, may have been Shakespeare's idea as to the birth of Macduff, in writing the play we see that he merely reproduced Holinshed's tradition, (though incidentally he immortalized Holinshed in doing so). And Holinshed himself was *only* a compiler. The story of Macduff must have had a beginning somewhere, and however far back it may go, it is not impossible that Caesarean Section should have been the supposed method of the abnormal birth: though the older the story, the less likely is this to have been so. The operation of Caesarean Section, as is well known, was regularly performed in Roman times on women dying in advanced pregnancy; but this would not be known in England until the advent of Renaissance literature. The operation is known to have been performed on the living mother during the sixteenth century; and the first treatise on the subject is said to be that of the French surgeon Francis Rousset, which was published in 1581, when Shakespeare was seventeen years old.

The word "ripped" (taken by Shakespeare from Holinshed) suggests (without any wish to reflect upon the technique of the surgical members of our profession!) a surgical procedure; and the use that is made of the tradition for the purpose of the story ("being of no woman borne") excludes a mere forced accouchement as being the method in the minds of the chroniclers.

Shakespeare says "Untimely ripped," which would be consistent with the removal of the child by Caesarean Section from a mother who had died in or before labour. It may be remarked that the *form* that the three apparitions took is Shakespeare's own, and it is significant that the second one was "a *bloody* child."

The word "ripped" with reference to childbirth is used by Shakespeare also in *Cymbeline* (Act V. Sc. 4):

"Lucina lent not me her aid,
But took me in my throes;
That from me was Posthumus ript,
Came crying 'mongst his foes."

But of the birth of Posthumus we only know that his mother

Big of this gentleman, our theme, deceas'd
As he was born,"

which does not tell us much.

While, then, we are not able to conclude that Shakespeare had a knowledge of Obstetrics, (nor even that he had been a medical student in his youth, though such a tempting theme ought not to be left alone by the critics!), nevertheless it is interesting to speculate that he may have had his own thoughts about this obstetrical question that he introduced into *Macbeth*—that "melodrama raised to the sublime." Plutarch does not mention the birth of Julius Caesar in his "Life," (Shakespeare had been reading it a few years before). But the question of Caesarean Section was discussed in Shakespeare's day, and not in medical books only: in 1608, for instance, the Senate of Venice formally enacted that the operation should be performed on dead mothers, as in ancient Rome. Shakespeare was doubtless a great gossip,—talker and listener too,—interested in the "new learning," and picking up information on all sorts of subjects. And in 1607 his eldest daughter, Susannah, married Doctor John Hall, who appears to have been a physician of repute in Stratford. We may imagine that in the years 1605 and 1606, when he was writing *Macbeth*, Shakespeare would be on intimate terms with his future son-in-law. Perhaps he would propound the question of Macduff of Doctor John as they smoked together (for Shakespeare surely smoked!), and then—

"Come, your reason Jack, your reason,"
and again

"Give me a cup of sack, boy."

Clinical Notes

THYROID CYST

Report of a Case

H. S. GARVEN, M.D. and H. C. PAI

From the Pathology Department of Moukden Medical College.

Complaint: Patient complained that he had a tumour in front of his neck. It appeared one and a half years ago.

Age: 32 years of age.

Family History: There is no family history of disease nor of tumours affecting the thyroid gland.

Previous Illnesses: Nothing of interest.

Present Condition: One and a half years ago, he began to feel that there was a small tumour in the supra-sternal notch. At that time, it was as small as a peanut. From that time, it grew larger and larger, until it was the size of a pigeon's egg. It moved freely in a vertical direction during deglutition, but there was no difficulty in breathing or swallowing. He states that there was no pain nor discomfort at any time. The patient's health is in no way impaired.

Physical Examination:

General: General condition is fairly good.

Local: A small swelling about the size of a pigeon's egg is found situated just above the supra-sternal notch. It is freely movable and is not adherent to the overlying skin, nor to the deep tissues. If the patient swallows, the tumour moves vertically up and down. There is no tenderness nor pain, and no pulsation. No sign of metastases elsewhere in the body could be found.

At operation the tumour was found to be situated just below the thyroid gland and behind the muscles. The upper border of the tumour was attached to the lower border of the thyroid isthmus in the middle line. The cyst contained clear glairy fluid.

Description of Microscopic sections: Microscopically in section the tumour shows typical thyroid tissue inside of a thick connective tissue wall. Hyaline degeneration occurs in most parts of the wall, and a small area has undergone calcification. The vesicles, which contain a translucent homogeneous eosinophilic colloid, are fairly large in size. At the edge of the colloid, and, just inside the epithelium, there are many clear vacuoles, both large and small. The epithelium is cubical, but the cytoplasm is much clearer than normal. Between the vesicles there is a small amount of connective tissue stroma. In one small part the epithelium of the vesicles has proliferated and formed an irregular, many celled layer. As yet, however, this irregular layer is mostly confined within the vesicles, which seem to be passing from a simple state to one of malignancy. Mitotic figures have been found in this proliferating part.

The interest of this case lies in the fact that the tumour is not situated above the isthmus of thyroid which is the normal situation of thyro-glossal cyst. It seems probable that during the process of development, a small part of the embryonic thyroid has been carried down with the thymus stalk and so was disconnected from the developing thyroid and later underwent the changes now observed. A similar but opposite condition, that of a small piece of thymus becoming incorporated in the adult thyroid was recently observed in this laboratory in a young dog.

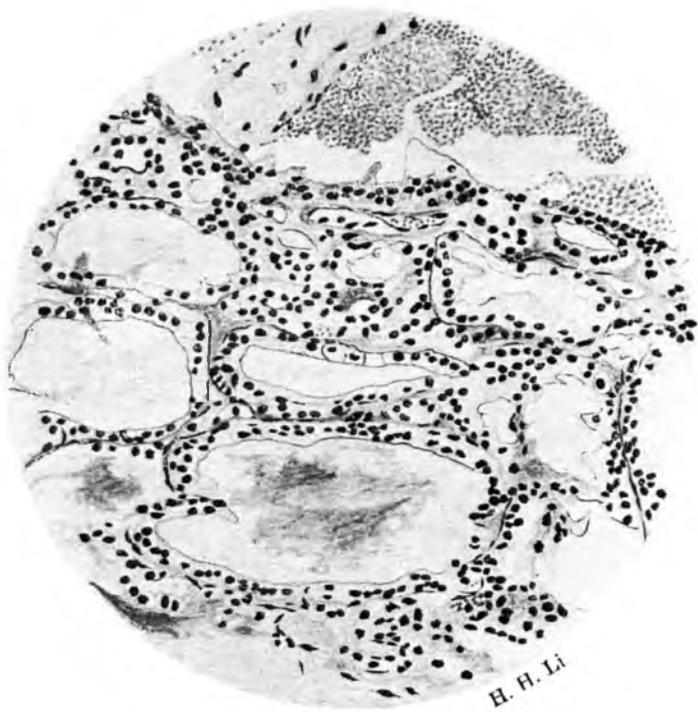
Our thanks are due to Dr. W. M. Nairn for providing us with facilities for using the clinical material.

A REPORT ON 167 CASES MALARIA

Treated in Elizabeth Blake Hospital during 1930

DR. T. C. Y. SUN and DR. M. P. YOUNG.

This study includes 120 inpatients and 47 cases treated in the out-patient department. All but five were diagnosed as malaria only after the parasites were found in the blood. Of the 120 inpatients, 29 or 24.1% were tertian, 2 or 1.6% were quartan, 5 or 4.1% were tertian and aestivo-autumnal combined



H. H. Li

THYROID CYST

and 84 or 70% were aestivo-autumnal. Of the out-patients, 21 or 44.7% were tertian aestivo-autumnal, 15 or 31.9% were quartan and 11 or 23.4% were tertians. We attribute this high percentage of malignant malaria, not only to the high incidence of this kind of malaria, but also to the fact that such patients are usually incapacitated and are forced to seek hospital care on account of their grave illness.

Diagnostic Method. Stained specimens were always used. Giemsa's stain proved most satisfactory. In some instances, several prolonged searches were made before the organism was found. In a few instances, organisms were found in the circulating blood only after the administration of quinine intravenously. We also occasionally used the method recommended in the Medical Report of the United Fruit Company. (Adrenalin is administered, a few minutes later, five cc of blood are withdrawn, centrifuged for five minutes and then smears are made from the superficial layer of red blood cells. The cells containing parasites are lighter than the others.) The characteristics of the aestivo-autumnal parasites are: they are smaller than the benign, usually eccentrically placed in the corpuscle, more than one organism often found in a corpuscle.

Location. Fifty-eight or 48.3% of our patients were N.S.R. employees and were drawn from an area extending from Changchow to Kunshan. Sixty were from Soochow and environs, and of this number 11 were from our staff. More than half of the patients were people from the northern provinces who had come south.

Occupations. Practically all were represented, but in order of frequency they were as follows: coolie, soldier, police, farmer and merchant.

Sex. 106 or 88.3% were male. 14 or 11.7% were female.

Age. Most of our patients were in the third decade. See diagram 1.

Season. The highest incidence was in the late summer and fall. See diagram 2.

Clinical Picture. The tertian and quartan cases presented the usual text book symptoms. A greatly enlarged spleen was

The subtertian may be divided, according to the classification of Kelsch and Keiner, into the Dynamic and Adynamic. The former present a typhoidal picture. Fever is continuous, but not necessarily high, tongue is dry and coated, delirium or confused mental state is often seen, great prostration, subsultus tendinum, diarrhea and nasal hemorrhage are often encountered. Six of our patients had broncho-pneumonia. The spleen is only slightly enlarged. The symptoms most often complained of were: dizziness, aching over whole body, nausea and epigastric discomfort.

The Adynamic cases are often afebrile, and usually show marked nervous depression, muscular tremor, cardiac weakness and marked anaemia. In this type of case, crescents, not ring form parasites are found.

Laboratory Findings. In uncomplicated cases, the average blood picture was as follows: W.B.C. 2500-3500, R.B.C. 2-3000,000, Hbgn, 30-55%, Polys 67%, Lymphs 30% Eosin. 1% Endothelial 2%. Van Den Berg, indirect, bile positive 100%. Out of 83 cases, subtertian, on which repeated urine studies were made, 20 showed albuminuria. Of 29 tertian cases, 6 showed albuminuria.

Complications. Ascaris 30, Syphilis 13, Hookworm 27, E. Coli 7, E. Nana 1, Giardia 1, Bronchitis 7.

Treatment. May be considered under three headings: A. Specific, B. Supportive and C. Tonic.

A. *Specific.* This consisted of capsules of quinine bisulphate grains five, three times a day, and grains five quinine dihydrochloride intravenously, once or twice a day. In many cases, nothing could be retained when given by mouth. When temperature reached normal, plasmoquine was begun. An average of 0.2 gm. was given each patient. No toxic symptoms were noted. Plasmoquine acts only on the sexual form of the parasite and is therefore a prophylactic rather than a curative agent.

B. *Supportive.* In no class of patients is good nursing and careful supportive treatment more essential. 500 cc glucose 5% was given intravenously once or twice daily to many of the patients. This should be given very slowly. Saline or glucose by bowel, Murphy drip method, was almost

*Showing the influence of Quinine on ring forms and
Plasmoquine on crescent forms*

Case No.	On Adm.	1st day in hosp.	2nd day in hosp.	3rd day in hosp.	4th day in hosp.	5th day in hosp.
8758	↙ O +++ C + P.	↙ O 33 C 4 P.	↙ O 8 C 2 P.	↙ O — C 6 P.	↙ O — C — P.	↙ O — C — P.
8769	↙ —	↙ O +++	↙ O 105	↙ O — C 5 P.	↙ O — C 3 P.	↙ O — C — P.
8772	↙ C ++ P.	↙ ↘ O 4 C 32 P.	↙ ↘ O — C ++ P.	↙ O — C 2 P.	↙ O — C — P.	↙ O — C — P.

O = ring form. C = crescent. ↙ = Quinine Bihydrochloride 0.3 in distilled water given intravenously.

P = Plasmoquine Co. tab (0.01 gm) given by mouth thrice daily.

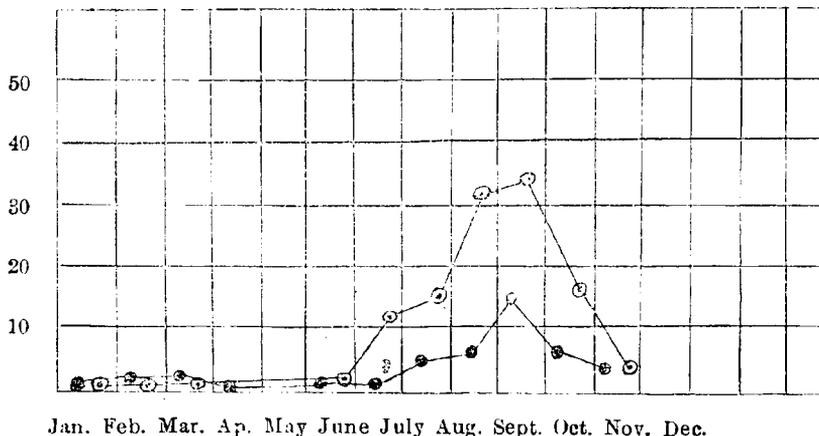
+++ = numerous parasites not counted.

++ = many parasites not counted.

— = negative.

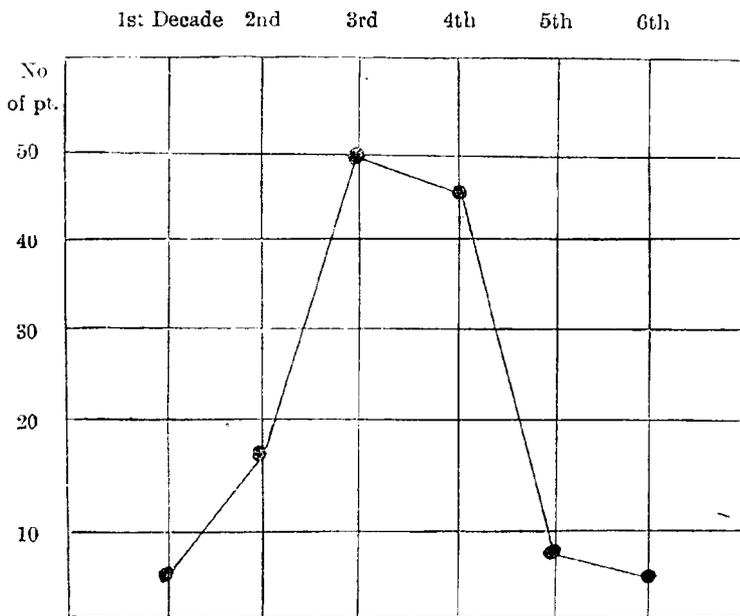
Scale of comparison is 200 leucocytes.

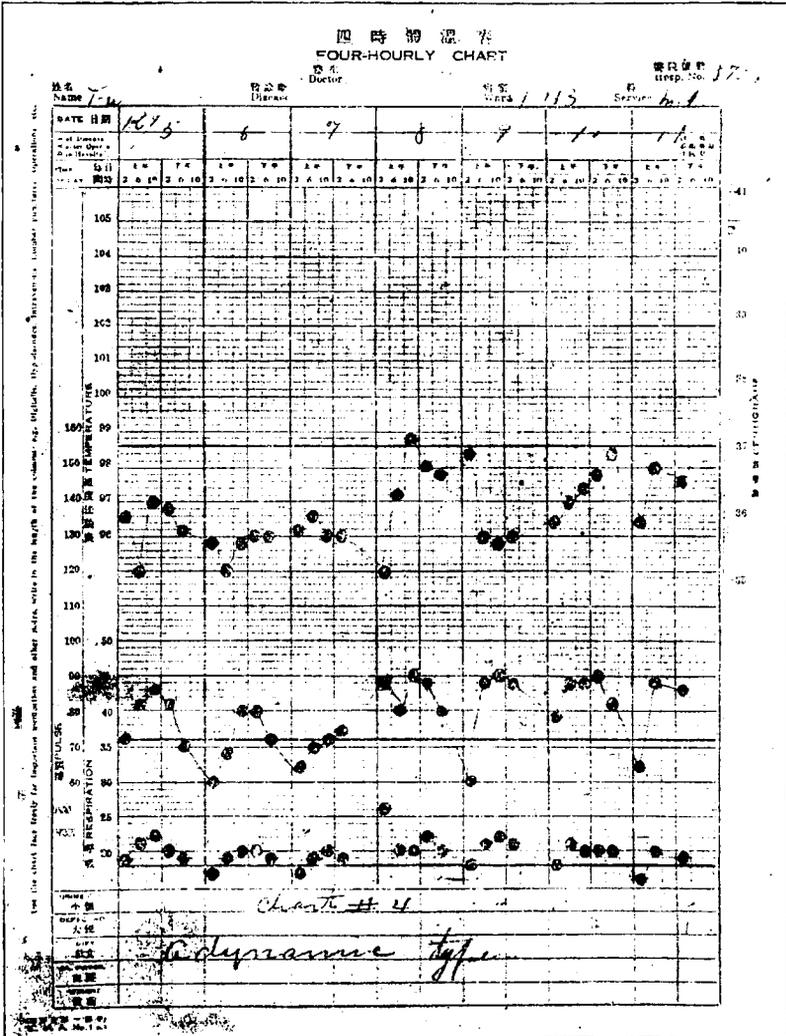
Diagram Showing Seasonal Incidence.

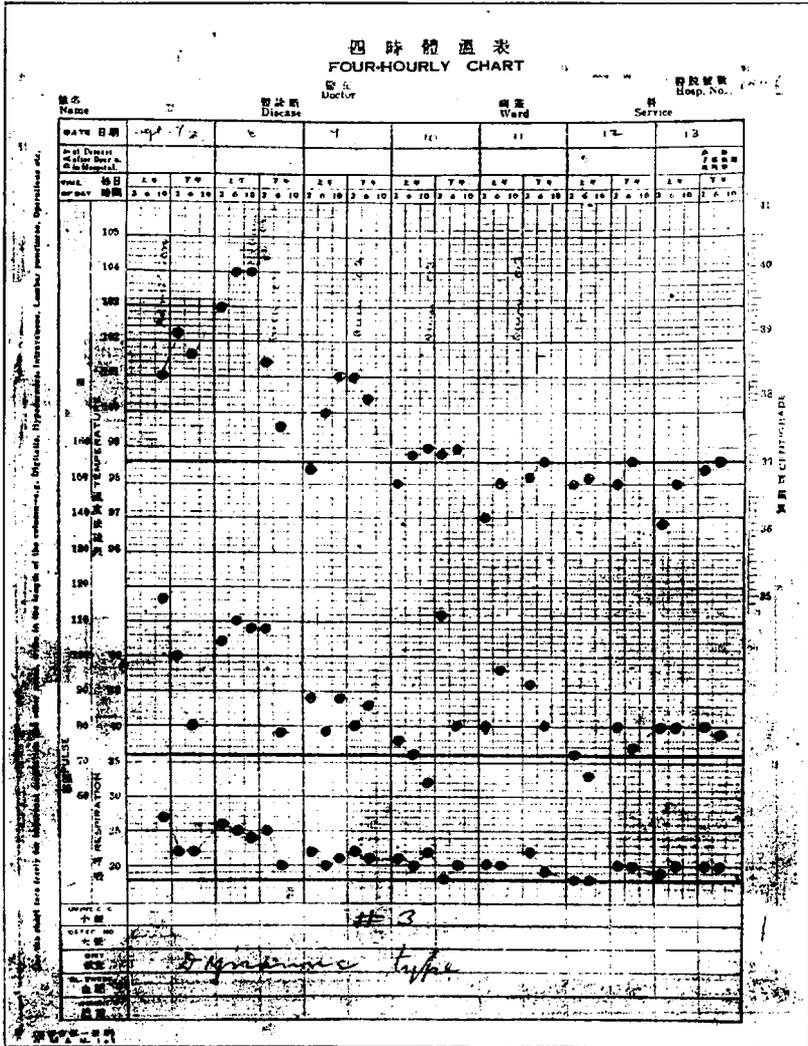


○ in-patient.
● out-patient.

Diagram Showing Incidence in the relation to age.







routine in our sickest patients. Adrenalin, one-half cc, was put under the tongue for lymphatic absorption or given by hypodermic three or four times a day. It is very essential that these patients be kept warm.

C. Tonic. This included, in addition to plenty of wholesome, easily digested food, preparations of iron, sodium cacodylate by hypodermic injection and nux vomica.

Clinical course. As a rule, the temperature became normal after the third or fourth injection of quinine. In the adynamic type, the temperature which had been below normal, reached the normal line about the fourth day. (See charts. 3 & 4) Crescents usually appear when the temperature reaches normal. In our opinion, quinine helps to develop these. (See chart. 5.) The average stay in hospital per patient was ten days. The longest was 66 days. Of 78 patients who were examined on day of discharge only two showed crescents in the blood. One of these had just been started on plasmoquine the day previously and the other was in the hospital only two days. Of seven patients not given plasmoquine, all showed crescents on discharge.

Result. Out of the 167 cases treated, there was one death.

Economic Loss. The total number of days in the hospital was 1214.

Remarks. In the subtertian form, we found that quinine by mouth did not control the infection. We believe quinine dihydrochloride, intravenously, the ideal treatment. If given slowly it is safe.

2. Plasmoquine is specific for the sexual form of the parasite.

3. Malaria is an important etiological factor in the nephritides of this part of China. 21% of our series showed renal complications.

4. Severe malaria has a remarkable effect on cerebrospinal syphilis. One of our psychiatric patients was clinically cured.

5. Supportive treatment and careful nursing is very essential.

Some of these cases were on the service of Dr. F. W. Dzen. We wish to thank him for allowing us to include them in this report.

CRANIOTOMY**Report of a Case**

V. Cheung, M.B., M.C.P.S. Kongmoon, China.

Patient age 37, married 16 years, para vi, was admitted Nov. 18, 1930, complaining of backache.

Last menstrual period was 9½ lunar months ago. All previous labors were normal. Last child was born 3 years ago.

Illness:

Perfectly well till labor pains began about 19 hrs. ago. Pains continued for 7 hrs. when membranes ruptured, then pains ceased and back began to ache. At no time was there sudden sharp pain, fainting nor cold sweat. Upon further questioning, she acknowledged that after the membranes ruptured, she felt nauseated and vomited with much retching. After a few minutes she broke out in perspiration, her back began to ache and labor pains ceased. As child was not born by morning she sought hospitalization.

General Appearance:

Patient looks exhausted, rather pale. Conscious, answers intelligibly. Lies quietly in bed but complains of severe backache. Pulse 160 per minute, thready but regular.

Abdomen.—enlarged to size of 9 months pregnancy. Fetal parts very distinct—feel as if just beneath the thin abdominal wall. No uterine contractions felt. No fetal heart made out.

Vaginal examination:

No bleeding visible. Caput showing. Upon inserting the fingers into the vagina to the side of the head, about 1000 cc. old blood and blood clots poured out. The cervix was not made out, the anterior vaginal wall was very boggy. The head was very easily displaced. The hand was inserted, a firm globular mass was felt in the right iliac fossa, which proved to be the uterus. Coils of intestines were felt beyond the fetus. Craniotomy was done without very much difficulty. There was slight bleeding after delivery. Two sterile towels (huckaback 14" × 18") were packed into the vagina awaiting death. 1000 cc. N. saline interstitial and other stimulants were given in the meantime.

Progress Notes:

Nov. 19. Very nauseated. Vomited all night. Vomitus, greenish, cloudy, no fecal odor. Considerable abdominal distention. Enemata unsuccessful B.P. 125/50. Pulse 114/min. regular, good volume.

Towels removed, moderately stained with blood. Vagina repacked with sterile gauze soaked with mercurochrome 2% (3" × 2½ yds.).

Nov. 20. Very tired. Still continues to vomit. Pulse good. B.P. 120/50 Marked distention. No bowel movements.

40 cc. 20% Na Cl sol. were given intravenously. Patient complained of abdominal pains immediately. 12 watery stools followed. Vomiting ceased.

Nov. 21. General condition good. Abdomen flat and soft except for the left lower quadrant which is firm and tender. Packing changed, moderately blood-tinged, no odor.

Nov. 22. Taking more interest in life. Suggesting remedies. Packing changed, no odor. Uterus well contracted.

Nov. 23. General condition improving. Still complains of backache. Abdomen flat and soft except for l. l.q. Frequent mucoid watery stools. Some difficulty in urination. Packing—slight purulent discharge. Not repacked.

Nov. 28. Profuse vaginal (purulent) discharge after vaginal examination. Temperature down to normal.

Dec. 1. and Dec. 3. Malaria.

Dec. 5. No rise in temperature.

Dec. 6. *Discharge note.*

Abdomen—flat, soft, no tenderness except in the l. l.q. which has a slight fulness. Uterus enlarged to a 4 mos. pregnancy, to the right of the midline.

Vaginal—good parous introitus. Cervix, almost flush with vagina, lacerated. Laceration extends into the left fornix

which is moderately full and slightly tender. Uterus, size 4 mos. pregnancy, anterior, to the right, slightly tender.

Speculum—cervix difficult to distinguish from vagina except for the os. Laceration extends into the left fornix from whence drains purulent discharge.

Urinalysis on admission.

Acid reaction; albumen 2 plus; sugar neg.

Micros. casts—granular and hyaline.

Nov. 22. W.B.C. 26000 Poly. 75% Hgb. 60%.

Dec. 6. W.B.C. 21000 Poly. 77%

Temperature hovered around 99-102 F. till the 25th and 26th when it gradually became lower, reaching normal on the 28th and remained so except on the 1st and 3rd of Dec.

Dec. 22. Neighbors of patient reported patient had totally recovered. Was up and out on the street.

Editorials

AN INTERNATIONAL CONFERENCE ON LEPROSY

The Editor has had the privilege of attending an International Conference on Leprosy held in the Philippine Islands during the month of January. This is the first international conference on the subject to gather in the Far East and is of special value in that the meetings took place in a region where leprosy is rife and in that section of the globe where the problems of the disease are most urgent.

The Conference was held at the invitation of the Leonard Wood Memorial Fund for the Eradication of Leprosy, and the members, while largely from those parts of the East where the disease is most common, included a strong representation of the Leprosy Commission of the League of Nations and participants from India, Hawaii, Fiji and Dutch Guiana as well as other places.

A Unique Conference

The Conference was different from any that had attempted to deal with this subject before both in its nature and in the amount of work accomplished. No papers were read and the twenty-one members resolved themselves into a round table conference at which each aspect of the disease was discussed in plenary session, referred to committees, again discussed in plenary session and often reconsidered by committees before a final conclusion was reached. The meetings began at 9 a.m. and continued for the greater part of the day and often well on into the night. Even a tour of leprosy stations throughout the Islands was not allowed to interrupt the sessions and the unstable deck of a small revenue cutter in a choppy sea saw prolonged discussions of the various problems on hand.

The Conference lasted for two weeks by which time the members were mostly reduced to a state of exhaustion. But even after the sessions had ended and some of the participants

had hurried away, a strong editorial committee was left behind for another week's work in getting the report into final shape.

The report which was accepted unanimously covers the whole subject of leprosy with the exception of prophylaxis which had already been dealt with exhaustively at a conference immediately preceding this one and held in connection with the meetings of the Far Eastern Association of Tropical Medicine at Bangkok in December 1930.

The findings will, we believe, prove of great value to those actively engaged in leprosy work everywhere but especially where, as in China, anti-leprosy activities are still largely undeveloped and where, therefore, guidance in methods of treatment and classification are particularly needed.

The report will be published this month by the Bureau of Science in Manila in the *Philippine Journal of Science* and through the generosity of the Leonard Wood Memorial Fund reprints will it is hoped be available before very long for all workers in leprosy in China.

To some of the findings in this report we shall refer in detail later in the year when we hope it may be possible to publish another special leprosy number of the *China Medical Journal*. We have been very glad to find that the special number last year, though falling far short of what we should have liked such a number to be, was very generally appreciated and we would appeal to all workers in leprosy to help us to make this year's issue one of wider interest and greater value.

Dr. H. W. Wade of Culion.

The island of Culion in the Philippines and its famous leprosarium, the largest in the world with its population of over six thousand sufferers, is a familiar name to all who take anything more than a merely local interest in leprosy. From its workers have come many reports of scientific and clinical work which have been of the utmost value to those studying leprosy all over the world. Dr. H. W. Wade as the Director of the work at Culion and from whose laboratories many of the more recent advances have sprung is known to us all by name if not in person. We are very glad therefore to be able to announce an early visit by this distinguished leprologist to China.

Dr. Wade has now accepted the appointment of Medical Director of the Leonard Wood Memorial Fund and as such is planning a visit to the countries where leprosy has its largest incidence. He is hoping to visit China in the near future. While it is impossible for his stay in this country to be a long one and he will therefore be unable to see much of the actual work carried on, he will see as much of it as he can in the time he spends here and will meet with the representatives of the Missions to Lepers in Shanghai and also visit Nanking. His long experience in methods of work and in the principles of leprosy legislation will doubtless make his visit of very special value.

A new Association and a Leprosy Journal

With a disease as widely prevalent and of so serious a nature as leprosy there has been a strange lack of opportunities of association of those working on the subject and a very serious absence of any means by which scientific progress and discoveries could reach in detail those who were giving special attention to the problems of the disease. In saying this we do not in any way belittle the very valuable contributions of such papers as the *Leprosy Review* published by the British Empire Leprosy Relief Association or *Leprosy Notes* issued by Dr. Muir in India. To both of these we owe a great deal. They have however in the nature of things to satisfy a different public than that to which a journal devoted to leprosy work and research would appeal and they are necessarily of a size which could hardly undertake the publication of detailed accounts of research and progress in leprosy investigation. At one time a very valuable paper *Lepra* was published in Europe but came to an unfortunate end now many years ago. Attempts to resuscitate this paper and to form an International Association of Leprologists have more recently failed. We consider therefore that one of the most valuable contributions of the recent conference to the anti-leprosy campaign has been the formation of an International Leprosy Association and the decision to publish through that Association an *International Journal of Leprosy*.

The publication of a new journal is no small undertaking either from the business or financial point of view and it was only after prolonged consideration by the recent conference that

the resolution to form this association and to publish a journal was unanimously adopted. Thereafter the members of the Conference proceeded to enrol themselves in the Association so formed. This was only made possible, for an Association without a Journal would have been of little value, by the generosity of the Leonard Wood Memorial Fund which has promised a considerable subsidy for the Journal for a period of five years.

Details both of the Association, which will accept as Associate Members all who are interested in leprosy work but who are not themselves professional men, and of the proposed Journal will be placed in the hands of those in this country who are working for the cause at an early date and we hope that there will be a wide response from China.

A QUESTIONNAIRE ON MISSION HOSPITALS

We are fully aware of the serious objections that many of our Members have to questionnaires and sufficiently sympathise with that sentiment to feel that very clear justification is required before documents of this nature are imposed upon us. A writer quoted in a recent issue of the *Canadian Medical Association Journal* demands an answer to the following questions before replying to these documents:

1. What are your qualifications for asking these questions?
2. What are your qualifications for analyzing the answers received?
3. What guarantee will you give that the information furnished will be put to any use?

These are very fair questions and evidence that they can be answered satisfactorily should be forthcoming, and it is because these points are very fully met that we venture to urge all our Members to reply to the full extent of their ability to the questionnaire on Mission Hospitals now in their hands.

The justification for asking these questions is that they are sent out with the full approval of the Executive Committee of the Association which feels that a fresh evaluation of our hospitals is much overdue. The last time that this was attempted was some eleven years ago when Dr. Harold Balme published his very valuable paper on the efficiency of Mission Hospitals. Unfortunately, and of this we had a very glaring example last year, this paper as the only authoritative statement, is now being used as descriptive of the hospitals after a further decade has elapsed. The Executive Committee had occasion in this instance to point out how unfair such a use of Dr. Balme's paper was, but only in regard to a few of the items was it possible authoritatively to correct the mis-statements. It is high time therefore that the whole position be again reviewed.

Happily the opportunity for doing this and the right man to do it are both available just now. It would be very difficult to find anyone better qualified than Dr. Lennox to deal with a problem of this nature or to analyze with the utmost fairness the facts that are brought out by this questionnaire. Dr. Lennox is well known to all of us who have been in China for any length of time and some of his writings on mission health problems are regarded as among our classics. It is specially fortunate therefore that Dr. Lennox is here just now on a visit of investigation and is prepared to take up the matter of a review of the position of the Mission Hospitals and to analyze all the material that he can obtain with a view to providing us with a comprehensive review of the situation. It is of the utmost importance that we should know where we stand both as to progress and defects and it is equally important that the Mission Boards at home should thus be made to realize what are the actual needs of the hospitals.

Again therefore we urge as strongly as we can that full advantage be taken of this exceptional opportunity and that as complete returns as possible be made to this questionnaire at as early a date as possible.

NEPHRITIS IN CHINA

We are indebted to Dr. Cadbury for a very interesting and comprehensive survey of this important subject which we publish in this issue.

The question of nephritis in this country has, as Dr. Cadbury points out, largely escaped attention in the medical literature and it may be, as he suggests, that the incidence of the disease is much greater than is commonly supposed. There is a good deal of evidence in favour of this but we could wish that he had given in his paper a clearer definition of what constitutes a case of nephritis. We rather suspect that reports of nephritis from some of our hospitals depend a good deal on the discovery of albumen in the urine and this with or without the presence of hyaline casts would not be generally acknowledged as a proof of actual disease of the kidneys.

The relation of malaria, so universal in South China, to nephritis has never been properly elucidated and the presence of urinary conditions very suggestive of nephritis, associated with malaria, which rapidly clear up completely after efficient dosage with quinine suggest that special care should be given to the diagnosis of kidney lesions in malarial districts, and in any case are apt to confuse the issue.

We hope that Dr. Cadbury's instructive paper will be taken up by others with experience in this important matter and that we may receive further information on the incidence of this disease. We would also as noted above ask for a clear statement of what constitutes a true nephritis and how far cases simulating the disease are likely to introduce errors into the estimates of its genuine frequency.

THE JOURNAL INDEX

In a letter in our correspondence columns, Dr. A. H. Skinner criticises the arrangement of items in the Indices of the *Journal*. The matter is one of some importance and we think that his suggestions make for clearness and simplicity. In preparing the Journal indices we have followed the plan of our predecessors in the editorial chair. There is no reason at all why this should not be changed and the suggestions made by Dr. Skinner adopted in future. Before taking this step however we should like to be sure that these changes are felt to meet a need and we invite the opinion of our readers on the question. If the proposals meet with sufficient support we shall be glad in future to make the suggested alterations. Will the readers of the *Journal* kindly consider this letter carefully and let us know how they feel in the matter.

China Medical Association Section

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CHINA MEDICAL ASSOCIATION

Statement of Account for Year Ending December 31st 1930

RECEIPTS		EXPENDITURE	
Balance from 1929 a/c	\$ 3,180.30	Journal Printing	\$ 6,491.16
Membership Dues	4,379.94	Office Printing	307.48
Life Membership Fees	200.00	Salaries and Wages	8,648.00
Subscriptions to Journal	964.95	Travelling	30.25
Donations	323.45	Postage, Telegrams, etc.	1,091.15
Sales of old Journals, etc.	1,090.29	Commission on Advertising	398.82
Interest and Dividends	1,187.48	Rent and Taxes	973.67
Grant from Rockefeller Foundation	10,000.00	Interest on overdraft	40.47
Advertisements	2,658.73	Office Stationery & Supplies	162.57
		Donation collected in 1929 paid to the Institute of Hospital Technology	2,164.56
		Miscellaneous	21.05
		Balance carried to 1931 a/c	3,655.96
	<u>\$23,985.14</u>		<u>\$23,985.14</u>

The China Medical Journal

Audited and found correct

Walter Milward

February 23rd, 1931.

Announcements

PEIPING UNION MEDICAL COLLEGE
Intensive Studies in
OBSTETRICS AND GYNECOLOGY
1931

J. PRESTON MAXWELL, M.D., F.R.C.S., F.C.O.G., *Professor of Obstetrics and Gynecology and Head of the Department.*

AMOS WONG, M.D., *Assistant Professor in Obstetrics and Gynecology.**

SHIH-WEI LEE, M.D., *Assistant in Obstetrics and Gynecology.*

KHA-T'I LIM, M.D., *Assistant in Obstetrics and Gynecology.*

MARION YANG, M.D., *Director of the First National Midwifery School and Hon. Lecturer in Obstetrics and Gynecology.*

With the assistance of the Department House Staff and:

BERNARD E. READ, Ph.C., Ph.D., *Professor of Pharmacology.*

C. K. HSIEH, *Professor of Roentgenology.*

GEORGE Y. CHAR, B.S., M.D., *Professor of Urology.*

C. N. FRAZIER, B.S., M.D., *Professor of Dermatology and Syphilology.**

ERNST DE VRIES, M.D., *Associate Professor of Neurology.*

C. E. LIM, M.D., B.S., Dr. P.H., D.T.M., *Professor of Bacteriology.*

ERNEST SHEN-CHIH TSO, M.D., *Assistant Professor in Pediatrics.*

I. C. WEN, Ph. D., *Assistant in Anatomy.*

Intensive studies in Obstetrics and Gynecology will be offered from August 29th to September 19th, 1931.

Special attention will be given to macroscopic and microscopic pathology. Ward rounds will be held, dealing with the diagnosis of cases, which will subsequently be submitted to operation before the class, and a final ward round will be given to discuss the after history of these cases. There will be special demonstrations dealing with the diagnosis and treatment of sterility, the management of normal and abnormal labours, and female urology. The use of radium in the treatment of

*Year 1931-32.

gynecological disease will be discussed and shown to the class. The use of anesthetics in obstetrics and gynecology will be discussed and demonstrated.

Seminars will be held at which the class will be expected to discuss chosen subjects under the guidance of members of the Department. The class will also be invited to bring up cases and subjects for discussion.

An effort will be made to show to all the members of the class the conduct of normal labour, and they will be called to any case of abnormal labour occurring during the course. The technique of Rubin's test and hystero-salpingography will be shown to the class.

Enrollment will be limited to twenty-five, and all doctors are eligible for admission. The tuition fee is \$35.00. Applications should be sent to the Registrar of the Peiping Union Medical College or to the Head of the Department of Obstetrics and Gynecology. For information in regard to fellowships address the Registrar of the Peiping Union Medical College.

THE ELLA SACHS PLOTZ FOUNDATION FOR THE ADVANCEMENT OF SCIENTIFIC INVESTIGATION

During the seventh year of the Ella Sachs Plotz Foundation for the Advancement of Scientific Investigation, seventy-eight applications for grants were received by the Trustees, sixty-two of which came from twelve different countries in Europe and Asia, the remaining sixteen coming from the United States. The total number of grants made during this year was twenty-five, one of these being a continued annual grant. Twenty-one of the new grants were made to scientists in countries outside of the United States.

In the seven years of its existence, the Foundation has made one hundred and twenty grants and investigators have been aided in the United States, Great Britain, France, Germany, Austria, Hungary, Switzerland, Italy, Sweden, Esthonia, Czechoslovakia, Poland, Chile, Syria and Belgium.

In their first statement regarding the purposes for which the Fund would be used the Trustees expressed themselves as follows:

1. For the present, researches will be favored that are directed towards the solution of problems in medicine and surgery or in branches of science bearing on medicine and surgery.
2. As a rule, preference will be given to researches on a single problem or on closely allied problems; it is hoped that investigators in this and in other countries may be found, whose work on similar or related problems may be assisted so that more rapid progress may be made possible.
3. Grants may be used for the purchase of apparatus and supplies that are needed for special investigations, and for the payment of unusual expenses incident to such investigations, including technical assistance, but not for providing apparatus or materials which are ordinarily a part of laboratory equipment. Stipends for the support of investigators will be granted only under exceptional circumstances.

In accordance with the policy outlined in paragraph 2, four of the investigations which have been aided in 1930 bear on the general subject of nephritis; in 1929 there were seven, in 1928 three, and in each of the four preceding years four grants for work in this same field. Other general subjects, especially internal secretion and infection, have been favored by grants in successive years, but not to so great a degree as nephritis.

Applications for grants to be held during the year 1930-1931 should be in the hands of the Executive Committee before May 1, 1931.

Applications should include statements as to the character of the proposed research, the amount of money requested, and the objects for which the money is to be expended.

Applications should be sent to Dr. Joseph C. Aub, Collis P. Huntington Memorial Hospital, 695 Huntington Avenue, Boston, Massachusetts.

Current Medical Literature

THE AFTER-HISTORY OF HEALED SURGICAL TUBERCULOSIS

E. D. TELFORD, F.R.C.S.

Professor of Systematic Surgery, University of Manchester.

The treatment of non-pulmonary tuberculosis has passed through various phases in the last thirty years. In the earlier days treatment was mainly by operation, and tuberculosis was regarded as a local disease to be eradicated by painstaking removal. Hence, free and often elaborate excisions of joints were widely practised. In the end the unfortunate outcome as regards the local disease, no less than the frequency of disastrous functional results, caused the methods of radical excision and erosion to fall into deserved disuse.

It is clear that in the present state of our knowledge our main curative agent in tuberculosis is rest. The rest given by any form of external splint, however carefully applied, is at the best incomplete. If by operation we can induce ankylosis of a tuberculous joint, either by intra-articular or extra-articular technique, that joint will almost certainly heal. The object of the modern revival of operation is therefore not immediate eradication of disease, but ultimate cure by production of an ankylosis.

Any surgical method, however sound in theory, must in the end stand or fall by its results, and it is unfortunately very difficult to estimate with any accuracy the end-results in surgical tuberculosis. This communication has been written in no spirit of controversy, but simply with the object of contributing certain data which may be useful in any discussion of the respective merits of the conservative and operative methods. The author has had the advantage of treating this type of case during twenty-six years in one institution by conservative methods, involving, in addition to the usual resources of general treatment, a somewhat rigid fixation by plaster or appliance.

In these respects the series has the advantage of being very homogeneous, but the difficulties in arriving at an accurate idea of the results are great.

The investigation concerns a total of 170 cases of children who have been under my care for tuberculous disease of the larger joints. These patients comprise 67 suffering from disease of the spine, 71 with disease of the hip-joint, and 32 where the lesion was in the knee-joint. All these patients were discharged between the years 1906 and 1924 with the observation "apparently cured." None of the patients examined has been discharged from the institution for a shorter period than six years, and the length of time which has elapsed since their apparent cure ranges from six to no less than twenty-four years.

Of the 170 patients, I have been able to find 129, and their present condition is exactly known. The proportion of cases traced must be regarded as satisfactory when one considers the very floating nature of the population in a large industrial city.

In classifying the results, the method adopted is as follows:

Class A includes all patients found to be in good health with no sign of activity in the old disease and no fresh focus of tuberculosis. They are all either at work or quite capable of doing active work. These number 110.

Class B comprises cases in which there is complete arrest of the disease, as in Class A, but the functional result is not good; these patients, who number 7, must be regarded as cripples.

Class C contains those cases which show the original disease in a still active form, or have had some other sign of tuberculous infection. Of these there are 6.

Class D includes patients who have died since discharge. There are 6 of these, and with one possible exception, in which death is stated to have been due to "influenza," they have all died of tuberculosis of lung or kidney.

The main fact which emerges is that out of 129 patients who are known, no fewer than 110 remain perfectly well. These figures are in welcome contrast to the gloomy views often expressed, which are usually the vaguest of impressions not backed by any actual figures. Pessimism in tuberculosis is due mainly to the fact that, as with other diseases, it is chiefly the failures that come back.

Finally, it is contended—and probably with reason—that operative treatment may shorten the length of the time needed for recovery. In this respect it is worth noting that the average residence in the institution of these 170 patients was three years and two months.

B. M. J., November 15, 1930.

THE INJECTION OF WHOLE BLOOD FOR FURUNCULOSIS

D. W. Bruce, writing in the *British Medical Journal*, October 18, 1930, ii, 3641, recommends the intramuscular injection of whole blood in cases of recurrent crops of boils, which are usually resistant to treatment. A 10 c.c. syringe with a peripheral nozzle and two needles is used. If the syringe has been kept in spirit it should be thoroughly washed out with distilled water. One needle is fitted to the syringe and with it 5 c.c. of blood are withdrawn from one of the veins in the elbow; the needle is then detached from the syringe. The second needle is driven sharply into a point, which has been painted with iodine, in the upper, outer quadrant of the buttock. After waiting for a moment to see that no blood flows, the nozzle of the syringe is applied to the needle and the blood is injected. Bruce has found that with this treatment boils dry up within twenty-four hours, and the formation of further boils is prevented. In only one case did he find a second inoculation necessary.

New York State Journal of Medicine, December 1, 1930.

GEOGRAPHICAL DISTRIBUTION OF RHEUMATIC FEVER

Since study of geographical distribution has greatly aided the unravelling of the causes of disease, J. T. Clarke (*Journ. Trop. Med. and Hyg.*, September 1st, 1930, p. 249) believes that

if rheumatic fever can be proved to be confined to extratropical countries, the search for its cause will have been greatly narrowed. The disease has frequently been described as ubiquitous, an opinion which Clarke strenuously combats, maintaining that it is unknown among the inhabitants of the Tropics. For the purposes of this study accurate definitions of the Tropics and rheumatic fever are given. By the former is meant that region which lies between the latitude $23^{\circ} 28'$ north and south; thus only parts of India, China, Egypt, and Arabia are described as tropical. Rheumatic fever is defined as a specific febrile disease which has a particular incidence on the heart, and which frequently presents as its prominent features polyarthritis, chorea, and subcutaneous nodes. The essential typical lesion is the Aschoff body; these cells are the precursors of the fibrous scar tissue which, in the heart, produces mitral stenosis. The presence or absence of mitral stenosis has a great bearing on the question of the presence or absence of rheumatic fever. During thirty-three years of medical work in the Tropics, during which time about 150,000 patients were seen, Clarke did not find a single case of rheumatic fever, mitral stenosis, or chorea; nor in many post-mortem examinations was a valve found suggestive of the scarred valve of a rheumatic heart. It is pointed out that certain diseases occurring in the Tropics, such as undulant and relapsing fever, have rheumatic-like affections, anaemia, and cardiac murmurs (not mitral stenosis) as complications and sequels. A general review of the literature bearing on the geographical distribution of rheumatic fever and its racial incidence is given. Clarke strongly maintains that the disease does not arise in the Tropics, and that any case found in such countries has originated elsewhere. He adds that if this is true, every theory as to its causation must be reconsidered, and new lines of research instituted. There would appear to be some factor, common in one part of the world and rare in others, which investigation should eventually bring to light.

B. M. J., November 15, 1930.

**FACTORS WHICH DETERMINE THE DIFFERENCES IN
THE TYPES OF LESIONS PRODUCED BY *FILARIA
BANCROFTI* IN INDIA**

H. W. ACTON, LIEUT. COL., I.M.S. DIRECTOR,
and S. SUNDAR RAO, L.M.P., Filariasis Research Worker, Calcutta School
of Tropical Medicine and Hygiene.

SUMMARY AND CONCLUSIONS

(1) The physiography, climatic and environmental conditions of six large towns in different parts of India have been carefully investigated by one of us in relation to the varying degrees of filarial endemicity.

(3) These towns and their subdivisions can be classified according to their microfilaria rate into three sub-classes; (a) hyperendemic areas where the microfilaria rate is 20 per cent. and over, (b) endemic areas where the microfilaria rate is over 10 per cent. and under 20 per cent. and (c) areas of low endemicity where the microfilaria rate is under 10 per cent.

(7) Sundar Rao and Iyengar (1930) have shown that temperature and humidity play a very important part in the length of time for complete metamorphosis of the filarial embryo in the mosquito; i.e., a relative humidity of over 60 per cent., and a temperature between 80° to 90° F. is the most favourable.

(8) This optimum temperature and humidity must correspond with the favourability for *Culex* breeding, and the longer the period of coincidence of all these factors the higher is the microfilaria rate; and conversely the shorter the period of coincidence the lower the microfilaria rate.

(9) The age incidence of lymphatic obstruction varies with the conditions of intensity of infection under which the people are living; thus in hyperendemic areas the lesions commence commonly between the ages of 8 to 10, in endemic areas between 14 to 16, and in places of low endemicity between 20 to 30 years of age.

(10) The appearance of lymphatic obstruction generally coincides with the disappearance of microfilariae from the blood, except in chyluria when they are usually present.

(11) The site of the blockage of the lymphatics depends on the intensity of the infection in that particular area.

(12) In hyperendemic areas the first lesions seen are enlarged epitrochlear or inguinal glands, followed by filarial abscesses in the limbs and lymph varices around the glands, and still later by elephantoid lesions of the arms, legs, or breasts.

(13) In endemic areas the blockage may occur higher up so that hydroceles are common in young boys, and later on lymph varices of the cord. The superficial external inguinal glands do not appear to be markedly affected; a collateral circulation is established between them and the internal inguinals, so that elephantiasis of the scrotum, penis and vulva is commonly seen. Usually only a moderate degree of elephantiasis of the limbs develops.

(14) In areas of low endemicity obstruction at the juxta-aortic glands is more common, so that hydrocele, lymph-varix of the cord and chyluria are very common.

(15) The changes in the gland obstruction vary in their pathology. In hyperendemic areas the large superficial glands are replaced by an inflammatory granulation tissue containing numerous eosinophile cells, and around them are seen large dilated lymphatics containing adult filariae full of embryos, and yet none reach the circulating blood owing to the obstruction.

(16) In endemic areas these glands may from time to time become enlarged on account of the immature filariae passing through them, and scars gradually form, so that the gland is small and fibrous, and in the case of the inguinal glands a collateral circulation is established with the internal group draining the scrotum.

(17) In places where the infection is slight, the only lymphatic glands damaged are those situated high up in the abdomen, i.e., the juxta-aortics, for the few filariae that are inoculated from time to time can mature in this region and produce lesions.

(18) The authors (Acton and Rao, 1929) have shown that filarial obstruction is due to two causes, the irritation caused by the filarial toxin, and the result of secondary in-

(19) Variations in the intensity of the lesions produced by *Filaria bancrofti* are dependent on two factors, namely, the degree of the helminthic infection, and the presence or absence of bacterial invasion of the tissues by cocci.

Indian Medical Gazette, November, 1930.

THE STATE OF THE PUBLIC HEALTH

[Great Britain]

Sir George Newman's Report for 1929

Rheumatism: Tuberculosis;

After quoting from recent writings on acute rheumatic infection in childhood, Sir George Newman expresses the opinion that no sufficient case has been made out for the routine removal of apparently healthy tonsils in the rheumatic or potentially rheumatic child simply as a measure of prophylaxis against acute rheumatism. The removal should only be undertaken if there is some definite local condition, such as obvious enlargement or disease, associated adenitis, or ill-health caused by the obstructive size of the tonsils. In discussing chronic rheumatism he mentions that the incidence continues, to judge from industrial statistics, at about the same level. The figures from the approved societies show that rheumatic diseases account for about 14 per cent. of total sickness and disablement.

The new cases of tuberculosis coming to the knowledge of the health officers of local authorities have shown, especially in the pulmonary form, a steady decline for many years. The number of deaths from pulmonary tuberculosis rose slightly in 1929, but was below the figure for 1927. The figures for each year since 1847 show a remarkable consistency of diminution. The following table indicates the death rate for tuberculosis of the respiratory system per million living, the figures being taken at intervals of ten years.

1847	..	..	..	3,189	1897	..	..	..	1,356
1857	..	..	..	2,690	1907	..	..	..	1,125
1867	..	..	..	2,653	1917	..	..	..	1,085
1877	..	..	..	2,184	1927	..	..	..	744
1887	..	..	..	1,685	1929	..	..	..	738

Several pages of the report are devoted to a discussion of the place of the village settlement in a tuberculosis scheme. Sir George Newman regards the village settlement as a highly important experiment in connexion with the problem of after-care.

The Cancer Problem.

The recorded deaths from cancer per million of population again showed a rise in 1929, the figure being 1,437 as compared with 1,425 in 1928. The rate is higher than in any previous year, and is, roughly, double that which obtained thirty-five or forty years ago. In males, to judge from the death certificates, the most frequent site is the stomach; in females, the breast. There is a declining incidence among males of cancer of the of the tongue and jaw, and in view of the possibility that a proportion of cancers of the tongue originated in old syphilitic lesions, it would be reasonable to attribute this improvement to the higher curability of syphilis. The mortality from cancer of the uterus has been falling for some years past, possibly owing to improvements in the care of women during and after childbirth, whereby local effects on the cervix which are the precursor of cervical cancer have been diminished. From a study of the sex incidence, it would appear that whereas in 1851-55 the susceptibility of females to cancer was more than double that of males, in 1921-25 the susceptibility of the sexes was approximately equal. From certain other facts set out in the Registrar-General's report Sir George Newman draws the general conclusion that previous local disease or injury is a more important factor in the causation of cancer than susceptibility; the resistance varies with the organ concerned, remaining steady in some sites, increasing or decreasing in others, varying with the sexes, and probably 'also with age. Sir George Newman points out that under the powers conferred upon local authorities by the Local Government Act, many of these bodies will be called upon to provide treatment for the sick poor of their districts. As the sick poor include a large proportion of cancer cases, an opportunity of education in preventive treatment will be afforded.

**AFFECTIONS OF THE KIDNEYS, WITH SPECIAL
REFERENCE TO NEPHRITIS**

BY NORMAN KLETZ, M.B., M.R.C.P.

Physician to Ancoats Hospital

Tests for Renal Efficiency.

How may restriction of renal efficiency be recognized and its degree assessed? Many tests have been devised, and these now described are selected because of their simplicity and applicability especially to medical affections of the kidneys.

1. *Water Test.*

This is not a test of the completeness of excretion of water but of the rate of its excretion. It must be borne in mind that failure of adequate excretion of water may be due to extra-renal factors, the kidneys being normal. In any conditions of excessive loss of water from the body, *e.g.* vomiting, diarrhoea, or in which, for any reason, fluid is lost to the circulation by the development of ascites, etc., water taken in does not reach the kidneys in appreciable amount, but tends to trickle into the tissues. Fishberg terms this "pre-renal deviation of water." If, however, these possibilities can be eliminated, the water test is probably a useful test of renal impairment.

The Strauss-Graunwald test is a simple one. Beaumont and Dodds describe it as follows. "A pint of water is given to a starving patient and the urine is collected at hourly intervals. In the case of a normal person the sum of the first 3 hours' specimens should equal the quantity of fluid taken, whereas if the patient be suffering from nephritis the quantity is considerably less than a pint."

2. *Specific Gravity Test.*

This is a simple test of impairment of the concentrating power of the kidneys. Bennett describes an easy method. The patient is instructed to empty the bladder on waking in the morning, and is then given a good breakfast with plenty of protein but practically no fluid. One or two hours after urine is passed. "If the specific gravity is below 1020 the presence of renal 'impairment' is more than probable. Should the specific gravity be below 1015 it is certain that renal impairment is present."

3. *The Urea Concentration Test.*

This test, introduced by Prof. MacLean, is well known. It determines the concentrating power of the kidney for urea in response to a definite load. The details of this test need hardly be described. The average mean concentration of urea in urine passed 2 and 3 hours after the ingestion of 15 gm. of urea by a starving patient is from 2 to 4 gm. per 100 c.c.

4. *Blood Chemistry.*

Naturally alterations of blood chemistry will be recognizable only when renal inefficiency is advanced. The chief constituent estimated is urea. The normal value is 20 to 40 mgm. per 100 c.c. Values up to 400 to 500 mgm. may be found in severe cases of renal deficiency. Values of 50 to 100 mgm. indicate moderately severe disturbance; above 100 mgm. the outlook is serious.

Urea, may, however, accumulate in the blood from extra-renal causes with normal kidneys. This occurs, for example, in cases of severe and persistent vomiting, *e.g.* high intestinal obstruction. The cause is the great loss of water, as a result of which the amount of water available for the kidneys may be so diminished as to be inadequate for its excretory needs. Consequently metabolites cannot be completely got rid of and accumulate in the blood. The integrity of renal function can, however, be recognized by the presence of a high specific gravity in the urine.

As has been indicated, the chief cause of renal defect is organic renal disease, particularly nephritis. Clinically, attention is most frequently attracted to the kidneys by the discovery of haematuria or proteinuria; by the appearance of oedema, particularly a generalized oedema; or by the occurrence of some or all of the symptoms of uraemia. What, then, is the mechanism of production of these symptoms? In what way and to what extent are they correlated with renal damage?

The Clinical Journal, November 19, 1930.

Book Reviews

PHYSICAL DIAGNOSIS, by WARREN P. ELMER, M.D., Associate Professor of Clinical Medicine, Washington University, and W.D. Rose M.D., late Associate Professor of Medicine, University of Arkansas. Sixth Edition published by the C. V. Mosby Company, St. Louis, 1930 Pp. 903 with 337 illustrations. G.\$10.

For this new edition of a well-known students' manual we are largely indebted to Dr. W. P. Elmer who has extensively revised and re-arranged the earlier work of Dr. Rose. The book does not pretend to be a treatise on clinical diagnosis; the text is confined to the physical features of certain systems of the body in health and disease.

The volume is now divided into two main sections viz. Part I, consisting of thirty-four chapters dealing with the technique of physical examination and Part II, limited to twelve chapters describing the physical diagnosis of disease. It is doubtful whether this re-arrangement has added to the value of the book, because it has led to a certain amount of diffuse redundancy which has stretched the work beyond the limits of a handy bedside manual. The fact that in Part I there are no less than nine chapters devoted to "Inspection" of various regions of the body will give an idea of the detail and scope of the work. The descriptive text is clearly written and is relieved of undue heaviness by the excellent photographs and line drawings by which it is illustrated.

The tendency of modern authors to multiply the number of proper names associated with various clinical phenomena is particularly noticeable in Dr. Elmer's work. Such terms, for instance, as Duroziez's Sign, Roger's murmur, Graham Steell murmur might well be replaced by a simple clinical title which would give a lead to the student instead of calling for a feat of memory. It must be disconcerting for a beginner to come across sentences such as this: "Subjects yielding Babinski's and Chaddock's signs sometimes also yield, upon proper stimulation, the reflexes of Oppenheim and Gordon."

There is a chapter on Radiology in its relationship to physical diagnosis by Sherwood Moore, and one on Electrocardiography by Drew Lutten, both delightfully written and beautifully illustrated.

As a text-book devoted entirely to physical diagnosis, this edition of Elmer and Rose is as full, clear and up-to-date as any student or practitioner could desire.

J. A.

MODERN PHARMACOLOGY and THERAPEUTIC GUIDE. By AKHIL RANJAN MAJUMDAR, M.D., Bengal Medical Service. Second Edition, 1930; published by The Book Company Limited, College Square, Calcutta. Pp. 596; price Rs. 5.

Dr. Majumdar holds the appointment of Teacher of *Materia Medica* at the Campbell Medical School, Calcutta, and this book is based on the lectures he delivers to students entering for the Licentiate standard of the State Medical Faculty of Bengal.

Following a short historical introduction in which the author claims that the "first systematic treatise on medicine was the Indian Ayurveda and that is at least 500 years ahead of Greek medicine," the manual is largely devoted to the three main sections of Pharmacy, *Materia Medica*, and Pharmacology. In these sections the author is obliged to confine himself to an elementary standard because "the boys"—as he calls his students—"are required to finish the entire medical curriculum in four years." The work is essentially a concise student's hand-book which forms a useful stepping-stone to the more detailed study of Pharmacology.

In the preface the author states that "extra-pharmacopoeial and indigenous drugs of proved value have been largely included," and in an age of new remedies this statement must give rise to considerable interest, but in the text the list of purely indigenous drugs is disappointingly small. Beyond the anthelmintic, Butea Seed, and the emmenagogues, Asoka and Olat Kambul, there are probably no Indian drugs mentioned, the potentialities of which have not been fairly well explored by the scientific pharmacologist.

J. A.

BED-SIDE MEDICINE. By AKHIL RANJAN MAJUMDAR, M.D., Bengal Medical Service. Second Edition. Published by The Book Company Ltd., College Square, Calcutta. Pp. xi + 584; price, Rupees 7—8.

The first edition of this hand-book published in 1928 having been exhausted, Dr. Majumdar has taken the opportunity of a second edition to revise the work and to add a considerable amount of new matter dealing with recent research.

The author is Teacher of Medicine and Physician at the Campbell Medical School and Hospital, Calcutta, and his wide experience in preparing students of the Calcutta Medical College for the final M.B. examination forms the basis of the present volume.

It is a concise collection of the clinical phenomena and methods found in the standard text-books with emphasis laid on the tropical diseases prevalent in India. It is essentially a book for students, and preferably for students in the final year because many of the descriptions of clinical methods such as the Van den Bergh reaction p. 498, and the Schick test, p. 556, are too sketchy for the guidance of a beginner.

The text is written in an unconventional style which makes for pleasant reading but is rather unusual in a scientific treatise. For instance, in describing Cerebro-Spinal Meningitis the author says: "Respiration is also irregular, may be Cheyne Stoky.....Mortality is rather high." In dealing with the fever associated with Filariasis, he states that "Paroxysms sometimes may have some regularity as with full moon or new moon."

In the next revision the author should aim at reducing the number of orthographical errors. A repetition of the term "*Amoeba histolytica*" throughout the book is not a good example for students. The illustrations are numerous but the photographic reproductions are in general too small and indistinct to be of much assistance to the reader. However, for students and practitioners engaged in the study of phases of disease comparable to those found in India, this book should prove a very handy work of reference.

J. A.

Correspondence

Journal Index

Hankow,
22nd Dec. 1930.

The Editor,
China Medical Journal.

Dear Sir,

May I offer a criticism in regard to the C.M.J. Index just received? It is this; That I would suggest that the subject-matter be the guide all through for the alphabetical index and not the format. For example, I want to search the bound volumes for several years for "Plasmoma of the Conjunctiva." This in 1930 (and no doubt in other years) has one reference (the main paper) in its alphabetical place,—the rest are under "Correspondence" (2 more entries).

I would object also to "Congenital Melanoderma" as under "C" only. Obituaries are different, and so are Hospital Reports. But your extracts from Current Medical Literature would be more satisfactorily indexed right through the body of the index and not grouped together. I would even scatter the book reviews.

Anatomical names, Disease names, and Drug names should have all priority and take to

themselves all items,—large or small,—regardless of whether the item is original, or editorial comment, or a "note or query."

Forgive me for my presumption in thus putting forward my views, which are doubtless not those of many of the members.

The Index is far better than it used to be.

Yours etc.,

A. H. SKINNER.

∴ Congenital Melanoderma was, of course, only a *lapsus calami* and should have appeared under "M" and not under "C" in the Index. The other points raised in this letter are of considerable importance and are dealt with in an editorial in this issue.—*Editor*.

Treatment of Kala-azar

Haichow, Kiangsu
Jan. 27th., 1931.

Editor,
China Medical Journal

Dear Sir,

Referring to my article on Neostibosan in the Treatment of Kala Azar, in the January number of the Journal, I wish to offer an explanation of the total doses of the medicine used in the ten cases reported.

As you remember, the average total dose in the series was 6.5 grams. This is a very large dose, far above the ordinary average dose. We gave this large amount to these cases because they were the very worst cases we could find and we wished to see how large a dose would be required to reduce the spleen to normal, render the precipitation test negative and put the patient in good physical condition.

This desirable result may also be attained by giving the patient a total dose of, say 3.00 grams and

sending him home, relying on the long lasting effect of the drug to complete the cure. This is what we do in nearly all of our cases except the very severe ones. From 1.0 to 4.0 grams is our ordinary total dose.

However, it is our experience that cases such as were included in my report are more quickly cured by several weeks and the cure is rendered more certain, if the larger amounts of neostibosan are given.

Yours sincerely,

L. S. MORGAN, M.D.

WANTED COLUMN

Haichow, Ku

Western educated, Chinese male doctor as intern or assistant. He should be a Christian, dependable, willing to face many very real difficulties and dangers. Our people are very poor and most conservative. The country is full of bandits. This is pioneer medical missionary work. Communicate directly with the superintendent.

L. S. MORGAN, M.D.
Haichow, Kiangsu.

Hankow

UNION HOSPITAL HANKOW: The Board of Managers would be glad to know of a foreign Woman Doctor whom it could recommend to the Wesleyan Methodist Missionary Society for appointment to the staff of the Margaret Hospital. Applications should be sent to the Medical Superintendent.

UNION HOSPITAL HANKOW: (present staff six) An additional Doctor is required on the staff of the Men's Department for work in the out-patient clinics and wards (whether surgical or medical beds is open to arrangement). Candidates should have had hospital experience since graduation and should be in full sympathy with the aims of a Mission Hospital.

An acquaintance with X-Ray work would be an asset.

Applications should be sent to the Medical Superintendent.

Kuling

China's premier health resort,—the most centrally situated Sanatorium of the Yangtse Valley, sends out the following "S.O.S." to the Missionary Societies and Medical Associations of China:—We need and need urgently a competent medical man to administer the work of the Kuling medical mission (for Chinese patients, both men and women) and for the foreign residents of Kuling.

Here is a double call! The Doctor should have special knowledge of T.B. work, be able to speak Mandarin Chinese, and also control a staff of Chinese workers. There is ample scope for real Missionary work at Kuling, also for research work etc. A suitable residence will be provided. For further particulars please apply by letter to the Honorary Secretary.

Kuling Medical Mission,

Mrs. E. C. COOPER, Lot 30.

Kuling, via Kiukiang, Ki.

NEW MEMBERS PROPOSED

Swen Tung-shu	M.B. (Tsinan)	U.C.M.S	Nantungchow, Ku.
	Proposers:— Dr. G. L. Hagman, Dr. R. T. Shields.		
Yin Hsueh-chi	M.B. (Tsinan)	U.C.M.S.	Nantungchow, Ku.
	Proposers:— Dr. G. L. Hagman, Dr. R. T. Shields.		
Wagner, Grace St. Clair (Mrs. V.E.)	M.D. (California)	A.B.C.F.M.	Taiku, Shansi.
	Proposers:— Dr. W. A. Hemingway Dr. Edward F. Parsons.		
Wagner, Vincent E.	M.D. (California)	A.B.C.F.M.	Taiku, Shansi.
	Proposers:— Dr. W. A. Hemingway Dr. Edward F. Parsons.		
Dorling, George Charles	F.R.C.S. (Eng)	L.R.C.P. L.M.S.	Tientsin.
	Proposers:— Dr. E. J. Stuckey, Dr. C. H. Lei.		
Chen Hsi Teh	M.D. (St. John's)	A.B.F.M.S.	Swatow, Tung.
	Proposers:— Dr. Velva V. Brown, Dr. Alice W. S. Baker.		
Nilssen, Ragnar Wisloff	M.D. (Oslo)	N.M.S.	Shanghai.
	Proposers.— Dr. Margit Mortensen, Dr. Volrath Vogt.		

NEW MEMBERS ELECTED

Dr. Wang En Jun	K.M.A.	Tang-chia-chuang, Kuyeh, Hopei.
Dr. Yang Pao Chang	K.M.A.	Chin-wang-tao, Hopei.