HYDATIDIFORM MOLE AND CHORIO-EPITHELIOMA

J. PRESTON MAXWELL, M.D., F.R.C.S., F.C.O.G.
Professor of Obstetrics & Gynecology
Peiping Union Medical College

One of the most interesting group of diseases with which we have to deal is that comprised under the heading of new growths of the ovum. And in this group we have two which spring from the chorionic villi which are of special interest. These are Hydatidiform Mole and Chorio-epithelioma.

They stand to one another in the same relation as adenoma and carcinoma of the breast, though in the latter case there is a much more sharply cut line between innocent and malignant growths. In the case of hydatidiform mole and chorio-epithelioma, the two shade off into one another so gradually, that it may be a matter of extreme difficulty to be sure whether a hydatidiform mole is really an innocent one, and to determine exactly when one can call it a chorio-epithelioma.

And at the same time it must be borne in mind that chorio-epithelioma may follow any pregnancy. Furthermore, although it undoubtedly springs from cells which are generally associated with a developing ovum, it may also spring from foetal remnants, either in a testicle or in some other situation as, for instance, in an ovarian teratoma, though these latter cases are extremely rare.

With these preliminary remarks, let us look at the first part of the subject, and I quote an illustrative case which not only serves as a good introduction to the subject but will also bring out the close relation which ought to be maintained between pathological and clinical work.
Mrs. M., a woman 25 years old, was married in 1919, and in November she became pregnant. After six weeks she began to vomit, and continued to do so, and that severely. At the end of the twelfth week, there began to be a brownish discharge, and at the sixteenth week, on account of haemorrhage, she went into the Sleeper Davis Hospital, Peiping, and the hydatidiform mole was cleared out. Her uterus was at that time above the umbilicus, and she nearly died of haemorrhage during the process of evacuation. In February 1921, I examined her and found a uterus apparently perfect in mobility, position, and size.

She became pregnant again in April 1921 and miscarried at six months. Possibly the miscarriage was brought on by a malarial attack, but it may have been due to some toxic condition, for the placenta was hydatidiform in parts, though to the naked eye it appeared fairly normal. The baby showed prematurity, haemorrhages beneath the peritoneum of the liver and the diaphragm, and haemoperitoneum. The mother had no excessive haemorrhage, and made a good recovery.

She again became pregnant in the end of 1921, her last monthly period occurring on December 27th of that year. About four weeks later nausea began, which ceased about March 8th, 1922. On February 27th she had slight bleeding for three days. On March 26th she came in to the Peiping Union Medical College Hospital with a history of there having been a sudden gush of waters. She then started a brownish watery discharge which persisted till about April 10th. The cervix would admit a finger into the external os; the bleeding was from the cavity of the uterus and at times was quite red. But I was not satisfied that the pregnancy was dead, and temporized. The pregnancy went on steadily, and on September 28th she went into labour. She was very stout, and labour was finally terminated by the delivery of an unreduced occipito posterior presentation by means of forceps. The placenta came away naturally, but the membranes came away in strips, and one portion was left behind, coming away on the 12th day. Convalescence was good. The child, a girl, was alive; weight 3,675 gms. The maternal surface of the placenta presented many areas of calcification, but microscopically the placenta was normal.

In March 1923 the patient again became pregnant, and was delivered on October 17th, spontaneously, of a small male child weighing 2,117 gm. There was no excessive bleeding, and the placenta, save for a few small areas of degeneration, was normal.

In connection with the first pregnancy, the salient points are (a) the early and severe vomiting; (b) the abnormal size of the uterus; (c) the brownish discharge; (d) the severe hemorrhage when the uterus was cleared out. In connection with the second pregnancy, one should bear in mind the persistence of the tendency to hydatidiform disease. In connection with the third pregnancy, one must remember: (a) the value of being patient when no septic symptoms are manifest and you
are not sure that a conception is dead; (b) the overcoming of the hydatidiform tendency still present and shown probably by the watery discharge and bleeding from the uterus. In connection with the fourth pregnancy, one sees the final overcoming of the hydatidiform tendency.

But to come back to our theme, hydatidiform mole, what is it, and whence does it come? What is a hydatidiform mole? It is a mass of vesicles arranged on stalks like beads on a string, and these vesicles are the oedematous buds of a chorionic villus, the main stem of the villus constituting the stalk. Whence does it come? Nobody knows. We know absolutely nothing of its cause, but we do know the following facts:

(1) It may be found in the early weeks of pregnancy and may cause no symptoms. A lady brought in to me one day a small mole, having passed it that morning without pain, and being unaware that it was a pregnancy. In this case the gestation was of about four weeks duration, and the microscopical sections were typical. I have seen more than one of these early hydatidiform degenerations.

(2) It may occur more than once in the same patient, as has been already noted in the case whose obstetrical history has just been given.

(3) It is a disease of the ovum, for only a portion of the placenta, or the placenta of one twin in a bi-ovular pregnancy, may be affected.

(4) It has been recorded in tubal pregnancy, so apparently it is not due to any disease of the uterus itself.

(5) It may occur at any age, has been noted in a girl of nine, but is said to be more common in elderly primiparae. I very much doubt the accuracy of this last statement.

Another name for the disease is Vesicular Mole, for when fully developed the vesicular nature is very evident and the appearance is like that of a bunch of grapes. The early villi are composed of connective tissue which is covered by two layers of epithelium, an inner layer of rather cuboidal cells called "Langhans' Layer," and an outer layer of undifferentiated protoplasm with many nuclei, called the "Syncytium." Now in hydatidiform mole, all these structures are affected, though the
villi are not equally damaged. You get proliferation of both layers of epithelium, and sometimes this proliferation may be so great and so active that it looks like a piece of chorio-epithelioma. It may invade veins and portions be carried to other parts of the body, or may eat its way right through to the peritoneum and cause bleeding into the abdominal cavity and rupture of the uterus. Stevens reported in 1926 the case of a patient admitted to hospital, complaining of intermittent hemorrhage for three months. The uterus was oversize, and a diagnosis of hydatidiform mole was made. This was delivered, but after delivery the patient became very seriously ill and died in about two hours, coughing up bright red, frothy blood. Sections made from different parts of the lungs showed that this was the result of invasion and destruction of the capillaries in the alveolar walls by fragments of deported villi. Of course, this is an extremely rare case, for apart from the development of chorio-epithelioma, hydatidiform moles do not as a rule metastasize to this extent.

But they often metastasize more than is realized.

Mrs. T. K. K., aet 29, Chinese, a primipara, came into the Ptiping Union Medical College Hospital on July 18th 1931.

She was very ill with dysentery and with a uterus which was the size of a five months pregnancy. Her last monthly period was on April 21st 1931. Dr. Pillat very kindly examined her eyes. In the retinae there were to be seen two or three spots which looked like tiny metastases, and laparotomy was done fearing that it might be a chorio-epithelioma. The uterus did not look bad, and was incised down the front and a hydatid mole containing a haemorrhage removed. The uterus was carefully rubbed out and closed, and the patient made a good recovery. The ovaries were filled with lutein cysts and were left alone. But immediately on the top of the operation two or three further metastases appeared in the retina, and then as she got better the whole of these metastases gradually disappeared. By August 4th the fundi were normal.

The circular connective tissue of the villus degenerates, the vessels disappear, and the whole becomes oedematous. In these cases the decidua is often thicker than normal, and this may be a uterine reaction tending to guard the uterine wall against this strange intruder.
But it must be remembered that in its incipience the process is akin at any rate to the normal procedure whereby the chorionic villi fasten themselves into the decidua; for at first, at any rate, the syncytium has distinct powers of penetration, and in sections of the placental site chorionic epithelium is often seen making its way deeply into the uterine muscle.

One thing more must be noted. The ovaries are often enlarged, and may present cysts containing lutein tissue. These ovaries may be 5 to 8 cm. in diameter, or even larger, and after the expulsion of the mole may return to normal size. What the connection is between this enlargement and the mole is not known, but the enlargement is due to the development of cysts lined with lutein tissue. It is not perfectly clear whether this lutein tissue is a development from the cells of the theca interna or from the granulosa cells. Novak and Koff have written a very interesting paper on this and kindred matters. The cause of this development is not known, but it must be born in mind that in the early months of a normal pregnancy, there is often a considerable development of lutein tissue in the ovaries. It is possible that this is nature's way of providing a sufficiency of female sex hormone. Later on the placenta takes up the role, and the ovary returns to a normal condition even before the end of pregnancy. In a hydatidiform mole it is probable that the elaboration of female sex hormone in the uterus is more than normal. At any rate the Zondek-Ascheim test is very pronounced in such cases. It is quite possible that this excess of female sex hormone acts on the ovary in a stimulating way causing the further development of lutein cysts, and when this influence is withdrawn by the removal of the mole the ovaries gradually return to normal. The development of these ovarian enlargements does not occur to any great extent with the hydatidiform moles which are shed early, or with those in which the uterus is about its normal size, and of course in this latter case the hydatidiform mole is not as pronounced nor the proliferation so active. But this development of lutein tissue may take place even where the mole is of small size. Whether the ovarian development is due to a pituitary stimulus set in action by the trophoblast, which is another possibility, is not known.

What are the signs and symptoms of hydatidiform moles? They are well known, for this is not a rare or a recently known
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disease, having been described by Actius in the sixth century A.D. Madame Boivin placed its occurrence at one in 20,000 pregnancies, but my own experience would lead me to believe that it is much more common. If all abortions were microscopically examined, we might find that it was present in a very large number, say one in five or one in six. Naked eye cases occur probably once in 2,000 to 3,000 pregnancies, and the disease may present itself in a hospital in rushes. In the Women's Hospital in Swatow, South China, on one occasion, they had five cases in a week. (personal communication)

There are three principal signs of the disease:—

(1) Vaginal bleeding and blood-stained watery discharge, often brownish in color; actual vesicles may come away, but this is not so common.

(2) A uterus which is larger than it should be for the calculated time of pregnancy. For instance, a three months' uterus, and it is generally about this time that it begins to give trouble, may be up to the umbilicus or above it.

(3) Inability to find a foetus in a pregnant uterus of such size that one ought to be able to find it without any difficulty. It is not absolutely necessary that the uterus should be oversize, for in a number of cases the uterus has been smaller than normal; but it is clinically important, for it is just these oversize cases of enlargement that bleed so badly during removal.

(4) X-ray diagnosis shows no foetus, although the uterus is often quite large enough to make the visualization of a foetus easy.

As to the diagnosis, it is made from the above four mentioned considerations, and the finger introduced through the cervical canal, if sufficiently open, may be able to palpate the grape-like masses. In many cases also there is prolonged vomiting of a toxic character, with emaciation.

Suppose you have decided that there is a hydatidiform mole present, what course should you adopt? The uterus should be emptied without further delay, because of the danger of perforation and destruction of the uterine wall, and the possibility of chorio-epithelioma following this affection. In an ordinary case, the cervix should be dilated so as to admit two fingers, and
the growth peeled off the uterine wall and removed. Care should be taken to avoid all roughness, as the wall of the uterus may be like paper and very friable. A pack should be ready, and a hot douche, and pituitrin, for some of these cases bleed frightfully. It must also be borne in mind that a judicious use of pituitrin will bring a relaxed uterus down to the finger during the evacuation. No curette should be used. If the uterus is well above the umbilicus and the patient well on in the child bearing period, it is better practice to open the abdomen and do a supravaginal hysterectomy. The same course, or an abdominal hysterotomy, is advisable where a woman comes into your hands, having bled severely, with her uterus large, and where it is certain that the severe bleeding attending the ordinary form of removal will place the women's life in imminent jeopardy. And where a patient is known to have a hydatidiform mole and the cervix refuses to dilate, it is good practice to open the abdomen, empty the uterus by a hysterotomy, and close it again by suture. For a few months after the evacuation, the patient should be carefully watched, and if there is any irregular bleeding the cavity of the uterus should be curetted and the scraping microscopically examined to try to exclude chorioepithelioma. If there is reasonable suspicion of the latter, the uterus should be removed, and it should be remembered that the presence of actual vesicles in such a curettage makes chorioepithelioma almost certain. You have to bear in mind that there may be very little growth in the uterine cavity and a great deal in the uterine wall. King describes a case where a hydatidiform mole was evacuated in June 1925, and three months later the patient had some irregular uterine bleeding. There were no physical signs of any growth in the pelvis, but the operator was not satisfied, removed the uterus, and found that it was riddled with growth, but only at one spot did the growth approach the endometrium and it would have been almost certainly missed by a curettage.

Occasionally a hydatidiform mole will seed itself, so to speak, on the vaginal wall or the vulva, forming small purplish or reddish tumours. These should be freely excised, and in many cases will not return, the uterus remaining normal. King describes a case of this kind: A patient was seen on account of uterine hemorrhage of seven weeks' duration without previous amenorrhoea. A hematoma had appeared at the vulva, and the
The uterus was enlarged. After excising the labial growth, the uterus was dilated and an ordinary hydatidiform mole was found. Histological examination of the vulval tumour, however, showed it to be a chorio-epithelioma of a low malignant type. Menstruation was normal during the ensuing three months, and then small, irregular hemorrhages commenced. The uterus was explored and one tiny vesicle removed by the curette. As this was suggestive of malignancy, hysterectomy was performed and two secondary deposits were found in the pelvis. Their removal was impossible, but the uterus was found to contain chorio-epithelioma. In spite of the secondary deposits, the patient had remained well during the four years which had elapsed since the operation.

Let us now consider three interesting cases as examples of the condition, before turning to the subject of chorio-epithelioma.

The first case is as follows:—

Mrs. L., a woman of 28 years, was admitted to the Peiping Union Medical College Hospital on October 14, 1922. She had been bleeding very severely at home, and for some time, perhaps eighteen days. She had had five normal pregnancies, four children being alive and well. The last monthly period was on July 12, 1922. A Chinese doctor had given her medicine to stop the bleeding, she had had a severe hemorrhage, and complained of headache, dizziness, palpitation, and loss of appetite. Her pulse was 126; the uterus was above the umbilicus, firm, hard, and tender. On account of the history and the impossibility of feeling a foetus, a hydatidiform mole was diagnosed. Her hemoglobin was 25%. As it was clear that another severe hemorrhage would probably prove fatal, the abdomen was opened, and I removed the uterus by a rapid supravaginal hysterectomy, losing practically no blood. A transfusion was given at 10:20 p.m. on the following evening. This transfusion pulled her up considerably, although on the following evening her pulse was up to 180. From that time she steadily improved, and went out well, and has remained well since that date.

The pathological findings were those of a hydatidiform mole, with bleeding into the uterus.

The second case was that of a woman of 51 years.

She was admitted to the Peiping Union Medical College Hospital on June 1st, 1923. Her past history was negative. She was the wife of a doctor, and about two years before she had been told that she had a mass in the lower abdomen. Later this mass had rapidly increased in size, there had been irregular bleeding, and during the last two weeks occasional vomiting. She had been examined by several doctors, but without a definite diagnosis.
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being made. Palpation revealed a large uterus, extending up to about a finger's breadth above the umbilicus. No foetus could be felt. There was no history pointing to pregnancy, and the diagnosis that Dr. Miles and I made was that it was probably a soft fibroma or a sarcoma. But when the tumour was exposed, it looked exactly like a seven months' pregnancy. No foetus, however, could be felt, and a diagnosis of hydatidiform mole was tentatively made. Considering her age and history, it was clear that the best treatment was complete removal, and with her husband's consent I removed the uterus at the supravaginal junction and the patient made an uninterrupted recovery. The uterus in its hardened condition measured 15×11×9 cm. The whole uterus was filled with a very marked hydatidiform mole. There was no sign of a foetus and no sign of malignancy.

The patient left the hospital on June 19, 1923, and has remained well since, and as it is now over eight years there is little likelihood of further trouble due to this cause.

The third case is as follows:—

A Chinese woman of 22 years of age, was admitted to the Peiping Union Medical College Hospital on February 6th, 1931 with vomiting, and a swelling of the uterus the size of a four months' pregnancy. Per vaginam the uterine wall was elastic, bulging into the vagina. Her last monthly period was on November 6th, 1930. There was a little doubt as to whether the uterus was bicornuate, or was a pregnant uterus with a cyst attached to it. It grew very rapidly, and by February 10th was well up to the umbilicus. Laparotomy was done, and a uterus with a distinct tendency towards a bicornuate uterus was found. It was incised and a large hydatid mole, with haemorrhage into it, was evacuated and the uterus sown up.

Both of the ovaries contained lutein cysts, and were the size respectively of a tangerine orange. They were left alone. The patient made a rapid recovery, and the ovaries were steadily going back to normal size when she left hospital on March 2nd 1931.

We now turn to the second portion of our subject, namely:—that of chorio-epithelioma. It is a rare disease. Unless one is in touch with a large number of cases, one may go for years and never see a case. During the last ten years we have had seven cases in the Peiping Union Medical College Hospital and the pathological material from an eighth patient was sent to me by a doctor in the Yang-tze valley.

There are two main varieties of the disease:—the so-called benign, and the malignant. The benign is a curious form; apparently although it metastasizes, if the primary growth is removed, and this may occasionally be done by curettage or hysterectomy, the secondary deposits will retrogress and the
patient get well. At present we are completely in the dark as to how clinically to distinguish the two varieties. But one thing must be said about the benign variety. Frequently acute infection of the uterus accompanies the condition, often leading to a terminal septicemia or peritonitis, which is the cause of death rather than the growth itself. Take for example the following case:

A Chinese woman, age 35, was admitted to the Sleeper Davis Hospital, Peiping, complaining of palpitations of the heart and weakness. She had been married at 18 and had had six children, the last one born three and a half years ago. A year before admission she had a miscarriage, at which time she had a severe uterine haemorrhage, and this haemorrhage occurred frequently thereafter until the date of admission. Physical examination showed a poorly nourished and very anaemic woman, with pulsating jugular veins, a systolic heart murmur, and a few moist rales at the bases of the lungs. Abdominal and vaginal examinations were negative. While confined to bed in the hospital, a uterine hemorrhage occurred without apparent cause. Her temperature varied between normal and 100.8°F. At the end of three weeks, there was a scanty, pink vaginal discharge. She then had a sudden rise of temperature to 104°F., and this only came down to 101°F. Eight days after the rise in temperature she complained of abdominal distention but had no abdominal pain. She sank rapidly and died that night.

An autopsy was performed. The abdomen was distended and tympanitic, containing grey purulent fluid, and culture of this fluid and the heart's blood yielded a hemolytic streptococcus. The uterus was slightly enlarged, and on being opened was found to have a rather large cavity containing a little purulent fluid. A smear from this fluid showed many Gram positive cocci in pairs and short chains. In the uterine mucosa there were many hemorrhagic areas. Otherwise the endometrium was pale and firm. In the right cornu there was a small growth of very soft consistency, with a grey, apparently ulcerated surface. The lungs were oedematous but showed no consolidation or evidence of an embolus. The mass in the uterine cavity consisted of a thickening of the stroma of the uterine mucosa, with entire absence of lining epithelium or glands, but containing scattered masses of smooth muscle. There were a few large blood vessels and very many small ones. Scattered through this tissue were many huge cells of all shapes, with one or rarely two nuclei of varied size, shape, and density, with deeply staining, slightly granular cytoplasm. They sometimes reached 100 micra in the longest diameter. These cells occurred both in groups and scattered singly through the tissue. They appeared to be easily distorted by the tissue in which they lay, conforming in shape to the requirements of the surrounding structures. Thus among the smooth muscle cells they often simulated huge cells of that type, and about blood vessels they shaped themselves to fit the lumen or coats of the vessel wall. They were especially numerous about blood vessels, sometimes jutting
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directly on the vessel lumen, to the apparent exclusion of the endothelial cells. These cells were often found close together, but were not seen to be confluent as is a true syncytium. In the myometrium beneath the tumour, these huge cells also occurred in a few large groups, as well as scattered singly in the smooth muscle and connective tissue about blood vessels. They were present, however, only in the more superficial portion of the myometrium, directly beneath the tumour, and were not found in any other part of the uterus than that immediately adjacent to the tumour. The ovaries contained no lutein cysts, and there were active ovarian follicles in various stages of development.

The description of the autopsy I have taken from a paper by Meleney on this case.

Chorio-epithelioma is, as I have said, a rare disease and so I have given full details of the remaining six cases which have been completely under our care.

The second case is as follows:

Mrs. H. S. C., a woman of twenty-five years, was admitted to the Peiping Union Medical College Hospital on September 14, 1925, because of uterine bleeding. She had bled almost daily during the month of July, and had begun to bleed again on September 8th. Pain had been felt in the lower abdomen and lumbar region since that date. A mass was found by Dr. Miles just to the right of the uterus. But when I examined her, the tenderness had gone, I could not clearly feel the mass, and was unwilling to definitely diagnose an ectopic gestation. She was put under an anesthetic and I dilated and curetted. Little in the way of scrapings obtained, and microscopically the material showed normal endometrium. Eight days later she had a sudden attack of abdominal pain and vaginal bleeding, and I could now feel a swelling on the right side of the uterus and high up. Thinking that we had been mistaken, Dr. Miles did a laparotomy, expecting to find a ruptured ectopic gestation. The mass, however, turned out to be a mass near the ileocaecal junction, about the size of a hen's egg and calcified. In the peritoneum, along the vertebral column, there were numerous fibrous or calcified nodules varying in size from a split pea to a large bean. In the ileum, not far from the colic junction, there were two areas of inflammation with small tubercle formation. These seemed to be active tuberculosis. The tubes and ovaries appeared to be perfectly normal. The abdomen was then closed. She made a good recovery and for a month after her discharge remained well.

She was then seized with pain in the lower abdomen on the left, and went to the Douw Hospital, Peiping where she stayed for eighteen days. There was a tender mass in the left lower quadrant. The pain was intermittent, and the patient was anaemic. She went home, and having been seized with another attack of abdominal pain and vomiting, was readmitted to our hospital. She was acutely ill. The abdomen was slightly distended, and on the left side below the umbilicus there was an indefinite
tender mass. The uterus was retroverted and flexed, and low down in the pelvis. The vaginal mucous membrane was pale. Her red blood cells were down to two and a quarter million and the hemoglobin down to 76%. She improved somewhat, but continued to vomit. The mass in the left lower quadrant shifted somewhat toward the middle line, but was indefinite. On the whole I was inclined to think it was a tuberculous abscess connected with the left tube and ovary. Her chest was X-rayed and the report was "An old tuberculous process of the adult type, left upper, with probably a recent recurrence." On a re-examination the impression was that there was "Old, moderately advanced, but apparently well compensated pulmonary tuberculosis of both uppers, particularly left." A barium enema showed that the colon filled promptly without any evidence of obstruction; the sigmoid was straightened out, and, with the descending colon, displaced to the right as far as the middle line. An attempt to get a gastro-intestinal series proved impossible. In the beginning of January, I began to be suspicious about the uterus. There was distinct softening of the cervix and uterine body, which appeared to be enlarged upwards. She was still vomiting. Corpus luteum was given by injection, and the vomiting promptly stopped. She went out much improved and went down to her home in the country.

On February 26th she was readmitted for severe pain in the course of the left sciatic nerve. Dr. Woods and Dr. De Vries, after examination, were of the opinion that this was due to neuritis produced by tuberculous adenitis near and probably infiltrating the sciatic roots. She continued to grow worse, the pain having to be controlled with morphia. Meanwhile the uterine tumour had increased to above the umbilicus, and was rapidly growing but no foetus or foetal heart could be found, and a hydatidiform mole was diagnosed. It being also clear that the pregnancy was telling on her chances of recovery, it was decided to operate. I operated on March 9th, and the operation note was as follows:

The abdomen was opened by a median subumbilical incision. It was a little difficult to make out the layers, and when the peritoneum was opened dark blood gushed out in considerable quantity. On enlarging the wound, what appeared to be a placenta presented in the center of the incision, and from a rent in this mass dark blood poured out. So severe was the hemorrhage that it was a question whether we should not lose the patient on the table. The mass was rapidly detached, and the bleeding checked by grasping the broad ligaments. The mass now broke in two, the lower portion coming forward and being attached to the top of a uterus which was about three times the normal size and soft. This attachment was of the nature of a fungation from the left uterine cornu. The other portion of the mass was turned out of the abdomen and proved to be a soft mass of growth with extensive omental attachments. As it was bleeding very little, it was for the time being left alone. The ovaries were now sought and turned out into the wound. They were both greatly enlarged, and apparently full of cystic growth. The tubes appeared normal. The uterus and ovaries were removed at the supravaginal junction, and the rest
of the mass removed by cutting its omental attachments. It had not invaded other structures, and on examination afterwards it was clear that it was a chorio-epithelioma springing from the left uterine cornu.

The patient went steadily down hill and died on the 26th of April about a month after operation. She suffered considerably from pain towards the end. An X-ray on March 29th had not revealed any definite pulmonary metastasis. The report on the growth removed at operation was as follows:

_Gross Examination:_

The specimen consists of a uterus which is amputated at the cervix, both tubes and ovaries. There is a large tumor mass connected with the fundus of the uterus which was separated artificially by manipulation during the operation; opening the uterine cavity the wall of the uterus is found to be thickened, especially in the region of the corpus uteri. The cavum is rather narrow and there are no abnormalities seen in the mucosa. There is a tumor nodule seen in the wall of the corpus uteri which measures about 2 cm. in diameter; it consists of rather loose tissue which shows many small, irregularly outlined cavities and clefts, and the tissue is very hemorrhagic. The solid parts show a finely granular structure. Another tumor nodule is found in the wall of the right horn of the uterus; it measures about 1 cm. in diameter, and its tissue is of the same character as the above described tumor nodule. The uterine wall of the fundus is very much thinned out and seems to stretch over the tumor in the form of a thin membrane of muscle tissue. At the anterior aspect of the fundus uteri there are several nodules seen covered by peritoneum, and these represent tumor tissue which has grown through the wall and is now located between the serosa and the surface of the muscular core of the uterus.

The surface of the large tumor mass is nodular and covered with what appears to be omentum. The surfaces of the individual nodules are smooth. Mesenteric fat tissue is bound down to the surface of the tumor. The consistency of the tumor tissue is rather soft, and the tissue is very fragile. On cut sections it shows irregularly outlined cavities and solid parts of tissue which are granular in structure. The tissue is very hemorrhagic in character. The nodules seem to be separated from each other by septa and most of them appear well encapsulated.

The left tube is long and thin; its lumen is patent. There is a cyst connected with the wall of the tube near the fimbriated end. At the place where the ovary is supposed to be there is a large mass which consists of several cysts. These cysts have rather thin walls and are filled with translucent fluid. The cysts communicate with each other. There are also cysts found in the broad ligament.

The right tube is long and thin and its lumen is patent. There is also a small cyst connected with the wall of the tube near the fimbriated end. One part of the right ovary is still seen as a solid piece of tissue from which there is a single cyst projecting over the surface. At the
distal end of the ovary there are several large cysts which are closely bound together and contain translucent fluid; their walls are thin and the lumina communicate with each other. On sections cut through the ovaries the inner surfaces of the cysts are smooth. Some of the cysts are filled with clear yellowish fluid; others contain a brownish hemorrhagic fluid. The part of the right ovary which appeared to be solid consists of fibrillar tissue which is quite dense. No ovarian structures can be made out in this part.

Microscopic Examination:

The glands of the uterine mucosa do not show any abnormalities. Parts of the uterine mucosa are invaded by tumor. This tumor consists of two different kinds of cells—one kind showing round cells with large nuclei which stain very light blue; the protoplasm shows granules and vacuoles. These cells form groups which are surrounded by another kind of cells; these cells are oblong; their nuclei are oblong or polymorph, and their protoplasm forms a syncytium. The nuclei contain very much chromatin which stained dark blue. The protoplasm is homogeneous and stains dark red with eosin. Both cells together form villi-like structures, often seen only as rudiments. The cells found in the center of these villi resemble Langhans' cells. The cells in the periphery resemble cells of the syncytium of the chorion villi. The Langhans' cells vary greatly in size and shape and often show mitotic figures of their nuclei. The syncytial cells differ still more in size and shape, and one often sees large blood spaces in the neighborhood of the tumor areas, and sometimes the above described villi are floating in such blood spaces. There are several tumor nodules in the wall of the corpus uteri. Isolated groups of both kinds of cells are seen invading the muscular wall of the uterus, spreading apart the muscle bundles. Areas of necrosis are frequently seen in the tumor tissue. The large tumor mass connected with the fundus of the uterus consists practically of tumor tissue, blood and necrotic tissue. This tumor shows the same characteristics, showing villi-like structures which consist of Langhans' cells and syncytium. Sections of the tissue near the surface of the large tumor show smooth muscle bundles all along the periphery. These muscle bundles are in some places atrophic and even necrotic. The surface of the upper pole of the large tumor mass is bound together with the mesentery; beneath the mesentery there is also a more or less continuous sheet of smooth muscle fibers. These findings suggest that the large tumor mass connected with the uterus represents the fundus of the uterus, which is tremendously dilated by the growing tumor inside the uterus. Sections of the ovaries do not show any ovarian parenchyma any more. The ovaries are transformed into large cysts which show a flat endothelium-like lining and are filled with blood and coagulated fluid.

An autopsy was secured and an extract of the report is as follows:—

Peritoneal Cavity:—Contains about 30 cc. of thick, dark red, uncleotted blood. Recently formed fibrous adhesions are present between the loops
of the small intestine and the interior abdominal wall, and also between the small intestine and the top of the urinary bladder. The body of the uterus and its adnexa are absent. The omentum is thin. In it are found two rounded reddish masses of tissue, fairly firm, measuring about 1 1/2 cm. in diameter.

**Lungs:**—Both lungs show numerous small and large rounded soft or firm dark red, hemorrhagic nodules or masses, measuring up to 3 cm. in diameter. These nodules are evenly distributed throughout the lungs. They stand out sharply as elevated masses on the surface which is otherwise smooth and grayish in color. The lung tissue between these masses is soft, crepitant and air containing. On section cut surface of these masses is usually dark red or hemorrhagic with a few greyish areas. The tissue in these areas is friable and easily broken. The surrounding lung tissue, however, appears quite normal in gross. There are about a dozen large and many more small masses in each lung. At the apex of each lung there are a few old scarred areas, in one of which there is a rounded, calcified nodule, measuring about 3 or 4 mm. in diameter. Attached to the surface of the lung there are several tags of old fibrous tissue. The bronchi are normal in gross. There is no evidence of any exudate present in their lumina. The peribronchial lymph nodes are dark and contain numerous areas of caseation and calcification.

**Spleen:**—Weight 215 gms., moderately enlarged. Surface is smooth, slatey-blue in color; capsule thin. At its upper pole there is a slightly elevated yellowish-red, irregular area about 2 to 3 cm. in diameter. On section cut surface shows one large and several small grayish and reddish areas which are distinctly different from the rest of the cut surface. The tissue in these areas has a soft consistency. The rest of the cut surface is dark red, moderately congested, and on scraping a moderate amount of pulp is carried off by the knife. The lymph follicles are not distinct. Trabeculae visible.

**Liver:**—Weight 1860 gms., much larger than normal. Organ is distinctly yellow in color, showing numerous elevated, dark red areas scattered over the surface. The largest one measures about 7 cm. in diameter. It shows slight umbilication in its center and is much more hemorrhagic. This area is found on the lateral anterior side of the right lobe. On section cut surface shows numerous round, dark red, soft, hemorrhagic areas scattered everywhere. Many of these are not suspected by examining the surface of the liver. These areas average about 2 or 3 cm. in diameter, although the largest measure 5 or 6 cm. across. The lobules are very distinct and when they are near to the tumor mass, greatly distorted. Their central portions are congested and their peripheral portions are very yellow, apparently due to the presence of a large amount of fat.

**Gastro-Intestinal Tract:**—Stomach normal. Small intestine normal except for the presence of adhesion between the intestine and the abdominal wall of the bladder. On the serous surface of the large intestine
there is one small, dark red, soft, rounded, encapsulated nodule about 1 cm. in diameter.

Uterus:—The uterus has been partly removed. Only the cervical portion remaining as a rounded solid mass, measuring about 7 or 8 cm. in diameter. On section the wall of the cervix is found to be filled with soft friable tumor tissue. The cervical canal is obliterated except near the external os. The cervical glands are dilated and easily visible to the naked eye. The adjacent bladder and rectum are not invaded by tumor.

Mesenteric and Retroperitoneal Lymph Nodes:—The mesenteric lymph nodes are moderately enlarged and very numerous. Some of them show calcification. The retroperitoneal lymph nodes are very much enlarged. Those around the pancreas form a nodular chain measuring about 5 cm. long and 1.5 cm. wide. On section these lymph nodes show marked caseation and calcification.

Spinal Column:—The bodies of the 4th and the 5th lumbar vertebrae were removed and the spinal canal exposed. In the spinal canal outside of the dural sheath there is a large mass of friable, hemorrhagic tumor tissue, this tissue is also found inside of the dural tube. The nerve roots inside the spinal canal, as well as the nerves forming the sacral plexus, are normal in gross. On the anterior surface of the sacrum there are numerous small tumor masses, which are apparently not invading the surrounding soft tissue.

MICROSCOPIC NOTES

Tumor:—The tumor consists of two types of cells. One type resembles the syncytium of the normal chorion villi, having basophilic cytoplasm multiple nuclei, but without cell border. The other type resembles the cells of Langhans, having more vesicular nuclei and clearer cytoplasm. Each cell is distinctly separated from the other by a sharply outlined cell border. The size of the cells of both types varies considerably; especially the cells of the syncytial type in which the nuclei of many reach tremendous size and may be very irregular in form. A few mitotic figures have been observed in the syncytial cells and a probable mitotic figure in the cells of Langhans. The largest portion of each tumor mass consists of hemorrhage, fibrin and degenerated tumor cells. As a rule only a thin rim of living tumor cells is present at the periphery of each mass. In a few foci there is leucocytic invasion following the necrosis of tumor cells or hemorrhage.

Lungs:—Large or small areas of tumor tissue are found in every section of the lung. Most of them, even when they have reached considerable size, are still found in the lumen of the blood vessels. The walls of these blood vessels are either intact or partly broken, as shown by the rupture of the elastic layer. When the tumor is too big, it breaks through the vessel wall and extends into the air sacs, filling up the air spaces, and in places, with the alveolar walls still intact; in other places the tumor grows expansively and pushes the surrounding lung tissue aside; so that
the air sacs may be greatly flattened. In these tumor areas there is as a rule a large amount of hemorrhage which is also often evident in the surroundings of even the distant alveoli. Fibrous stroma is almost lacking in the tumor tissue and is also often absent around it. The alveolar epithelium is often found to be swollen. There are also many large carbon-containing cells in the alveoli. In one section foci of old tuberculous lesions surrounded by fibrous capsules are seen.

Liver:—Areas of tumor with marked hemorrhage are present. The surrounding liver lobules show great distortion due to pressure from the expanding hemorrhagic tumor. The liver cells, especially those at the periphery of each lobule, show a very marked fatty change.

NEUROLOGICAL REPORT

Gross:—Months ago patient began to complain of pain in left leg, afterwards also in right leg; neuralgic in character. The reflexes were low; there were no neuralgic pain points; the cause probably root involvement by metastasis of chorio-epithelioma, found by operation. Autopsy, tumor in vertebral canal, outside of dura, and tumor masses in the sacrum, perforating into the pelvis.

Microscopic:—The cauda equina shows degeneration of some roots, in which the myelin does not stain yellow with van Gieson any more, or black with Weigert Pal. The inner side of the dural sac is partly lined by granulation tissue; no tumor tissue is seen in the dura. Outside of the dura a small nodule of typical chorio-epithelioma is lying, in the midst of granulation tissue and some chronic inflammation.

In this case, I think there is little doubt that the pregnancy started during the month after she left the hospital for the first time, probably as a hydatidiform mole in the left uterine cornu, transformed itself into a chorio-epithelioma, and expanded the cornu. The case shows how difficult diagnosis may be in some of these cases, and how extensive may be the metastases. No examination of the brain was possible but there were no clinical symptoms pointing to brain involvement.

The third case is more instructive as showing the insidious nature of some of these cases and the necessity for decisive action in regard to them.

Mrs. L. C. S., a Chinese married woman, aet 35, was admitted to the Peking Union Medical College Hospital on September 3rd, 1926, with the following history:—

She was a multipara, having had four children, only one, however, the last born 5 years before, being alive. Her last monthly period was on June 4th, 1926. Five weeks later she suffered from morning sickness and noticed that the abdomen was enlarging. In the middle of August she began to suffer from irregular abdominal pain. There had been a scanty
brownish discharge since the beginning of July. For the last three weeks she had been in the Presbyterian Hospital. When she entered that hospital her uterus was up to the umbilicus and since her admission had grown to four fingers breadths above the umbilicus. The patient has noticed the rapid growth, but has not noticed any foetal movements.

The fundus was now 26 cm. from the pubes, the circumference of the abdomen was 76 cm., and no foetus or foetal heart could be made out.

There was no bleeding on vaginal examination but a brownish discharge was present and the swelling was evidently the enlarged pregnant uterus. Suddenly, whilst lying in bed, the patient began to bleed and bled about 500 cc. in a short time. Operation was performed at once.

**Operation:**

The patient having bled about 500 cc. per vaginam, and the bleeding not ceasing after packing, with a practically closed cervix, it was thought advisable to remove the whole conception to save further blood loss.

Patient was placed on the back and the abdomen opened by a median subumbilical incision. The uterus was the size of a seven months pregnancy and in places the uterine wall appeared to be haemorrhagic. There was a little free blood in the pouch of Douglas. The ovaries were each the size of a tangerine orange, filled with cysts. The uterus, ovaries, and tubes, were removed in one piece at the supravaginal junction, the whole conception being removed unopened. The uterine stump left appeared quite healthy, and was closed in the usual way. The patient lost practically no blood during the operation, at the most half an ounce. The abdomen was closed in the usual way. The operation took 35 minutes and the patient left the table in good condition.

She made a rapid and satisfactory recovery and the pathological report was as follows:

**Gross Examination:**

The specimen consists of a uterus, both tubes and ovaries. The uterus is amputated at the cervix. It is very large and measures about 10 cm. in diameter. The uterine wall measures 3 cm. in thickness, and on cut section the uterine cavity is enlarged and filled with numerous small cyst-like structures, which resemble grapes. There are also areas of necrotic tissue seen. The walls of the smaller cysts are very thin and delicate, and the lumina are filled with transparent fluid. The tubes do not show any abnormalities. The ovaries are tremendously enlarged, each measuring about 8 cm., in diameter. Their consistency is cystic. On cut section many large cysts are found in the ovaries, which are all filled with a yellowish, clear, translucent fluid. Some of the cysts contain blood.

**Microscopic Examination:**

The sections show chorionic villi which are very much enlarged. Their epithelial lining is quite irregular and often forms papillae, which project
over the surface. These proliferations consists of Langhans' cells and also syncytial cells. Both types of cells are quite irregular and vary in size, shape and staining characteristics. Their nuclei show mitotic figures. The stroma is very loose and consists in most of the villi of only a few star-shaped cells from which there are processes radiating into the surrounding tissue. Many of the villi show large spaces in their center, which are filled with coagulated fluid. The inner surface of the uterus is lined with irregular layers of Langhans and syncytial cells, these cells also having penetrated into the superficial layers of the uterine wall. There is no suggestion of formation of villi in the wall of the uterus, but both kinds of cells have invaded the tissue separately, and they vary greatly in size, shape and staining characteristics. The syncytium often forms giant cells containing many nuclei, the nuclei of both kinds of cells showing mitotic figures. These cells do not penetrate into the deeper layer of the wall of the uterus.

The large cysts in the ovaries are lined with one or more layers of large granuloma cells. Their lumina contain thin coagulated fluid, and some contain blood.

It was clear that one had here a hydatid mole which was more than usually destructive, and well merited the name of a malignant hydatidiform mole. Yet one would have hesitated a little to call it chorio-epithelioma.

She was discharged on September 20th in good condition. On September 22nd she reported that she was bleeding from the vagina and on September 24th she was readmitted with signs of obstruction. Dr. Adrian Taylor reopened the abdomen; the operation note being as follows:—

The old wound was reopened and a large congested coil of the small bowel at once seen. Its wall was marked by multiple hemorrhages. This loop was 50 cm. in length and constituted a complete volvulus. Tracing it down, a band was found binding the small bowel to the right side of the pelvis at the level of the brim, this was released, a narrow neck-like constriction in the bowel wall was found, a part of which was gangrenous, and through it a long ascaris worm was felt. Just beyond this there was a sessile band of adhesions binding the gut to what was apparently the uterine stump. In the separation of the gut from this stump, using the K-D dissector, the gut wall was torn and gross contamination occurred. The rent in the bowel was closed and inverted, the gangrenous area buried beneath mattress sutures and an enterostomy done in the upper portion of the distended coil, after the Mayo method, re-inforcing the line of suture about the catheter into the bowel with a layer of omentum. The catheter was brought out through the abdominal wall in the left flank, and was then pulled snugly through the stab wound and with one end inside the bowel protected by its layer of omentum, was placed snugly against the parietal
The specimen consists of two small pieces of tissue each measuring about 3 mm. in diameter. The tissue is soft in consistency and greyish-pink in color.

Microscopic Examination:

The epithelial lining of the cervical portion is intact. The tissue shows a few cervical glands which are not remarkable. The stroma is rather dense in character and shows infiltrations of plasma cells, lymphocytes and leukocytes. One section shows a large hemorrhage and in this section one sees large single cells lying in the stroma of the cervical mucosa, these cells being different in character. They are all large, some of them show a nucleus which stains light blue and which is round and located in the center of the protoplasm; others are irregular in shape, their protoplasm stains dark red and their nucleus is irregular in shape and elongated. These cells resemble Langhans and syncytial cells of chorionic villi, but since they are found in the deeper layers of the cervical mucosa and vary in size, shape and staining characteristics, they are considered to be of malignant character representing cells of chorio-epithelioma. The nuclei of some of these cells show mitotic figures. The hemorrhage is probably caused by the invasion of these tumor cells.

The shrinking in the growth caused by the radium was most striking and on her discharge the cervix looked almost normal and when inspected a year later there was no sign of disease. Four years later i.e. in 1930, she was fat and well.

The fourth case was as follows:

Mrs. W. V. W., aet 31, American, married, was seen by me first on February 20th 1929. Patient was complaining of multiple miscarriages.
Her previous history and family history were unimportant save for the following details:

She was married in 1921. A full term child was born on March 31st, 1926, and is still alive and well. In October 1927 she had an abortion at two months. On June 22nd 1928 she had another abortion at four and a half months, and the foetus was said to have been dead for some days before delivery. Subsequent to that time the periods had been irregular, especially since November 1928. Per vaginam the uterus was enlarged to the size of a fist apparently by a fibromyoma of the anterior wall. The cervix was much torn and drawn up, and the body of the uterus appeared to be retroverted and retroflexed. There was slight bleeding from the uterine canal.

There was also a history of a fibromyoma having been found on the anterior wall of the uterus during the full term pregnancy, but it was supposed to have disappeared.

A diagnosis was made of fibromyoma, and a myomectomy, or hysterectomy was planned and the patient admitted to the Peiping Union Medical College Hospital. In preparation for this operation, on the evening of February 23rd, 1929, patient was given an enema. Whilst at stool she was conscious of a pain in the head and then inability to move her right arm, which however quickly recovered to some extent. Within two hours there was trouble with speech, and the report by Dr. DeVries next morning was as follows: "She is quite alert, tries to sit up in bed, understands quickly and answers all right as far as her peripheral nerve trouble permits.

No dullness or somnolence. Percussion of the head is not tender, nor do I hear a difference in sound.

Right pupil larger than left; both react well to light and accommodation. Eyeball movements possible in all directions; no nystagmus; some difficulty in keeping her eyes quiet. No hemianopsia. Both discs, especially right very red. Margin sharp, where seen. Motor and sensory trigeminus normal. Facial: nearly total paralysis of the right lower facial; but the eye branch is normal.

Tongue protrudes much to right side. Speech: no aphasic trouble, only dysarthria. No rigidity of the neck; no dizziness on turning the head. No difference in muscle tone in both arms. All arm movements are possible, but strength is less in right hand and arm muscles. Tendon reflexes right present; left very low or absent. Touch and pain sensation, and stereognosis are quite good in the right hand.

Abdominal reflexes not obtained. The left leg may be a little hypotonic, more so than the right.

Voluntary movements normal. Knee and ankle jerks easily obtained on right, low on left side. No clonus. Footsole right and left typical dorsal flexion, slow, sometimes with spreading of other toes."
The eyes were examined by Dr. Pillat who reported as follows:—February 23rd, 1929. "Right pupil somewhat irregular and larger than left. Light reaction prompt. Accommodation reaction prompt.

_Fundus:_ Both discs redder than normal and unsharp, vessel—relation normal. Swelling of the disc about 1 D. No hemorrhages, no white exudate.

The operation was of course postponed, and the question raised as to what was the nature of the lesion. Taking the choked disc into special consideration, the question of metastatic growth could not be ruled out, and it made the possibility of chorio-epithelioma a matter for consideration, especially in view of Dr. Pillat's further examination:—

February 25th, 1929. "Fundus right disc only on the nasal side a little redder, at the temporal side and in the periphery paler than normal. Outlines overlapped by a small degree of edema, veins and arteries normal, no hyperemia, only more capillaries are visible at the disc, what suggests a beginning edema. All vessels bend at the margin of the disc. No hemorrhage, no white exudation. Left fundus almost the same.

Swelling R. 2 D.
L. 1 D.

Dr. DeVries' further note on March 1st was as follows:—

Patient has slight complaint of pain in the left temporal region. This pain is felt deep in the tissues. Pressure does not cause pain. There is some pain in the neck, but the complaint is vague. No rigidity of the neck. Percussion of the skull equal on both sides, normal tone. Pupils dilated by homatropine. Eyeballs move in all directions; more steadily to the left than to the right however.

Upper facial branches are nearly equal in function; lower facial branch has regained a good deal of its function, but is still weak, especially for emotional movements.

The tongue still protrudes to the right side but less than before. No fibrillary contraction noted.

Speech is much better, but still not normal, and patient has to repeat often before I can understand her.

Patient thinks her right arm has much improved, but is not yet quite normal. In writing she experiences difficulty in the executive part of the writing. Strength of grip in right hand a little less than in left. Biceps and triceps strength equal on both sides. Finer movements O.K. Tendon reflexes low and equal on both sides. No rigidity in the right arm. Sensation to touch, pain, stereognosis very correct in both hands. Abdominal reflexes absent on both sides.
The right leg is a little more rigid than the left. Active movements of the right foot are somewhat clumsy. Toes move all right. Strength in flexion and extension of the knee is equal, left and right. Kneejerk right a little higher than left. Achilles jerks equal. No clonus. Footsole reflex right Babinski fairly typical; left sometimes flexion, sometimes isolated dorsal flexion of great toe, sometime spreading of other toes.

Sensation to touch normal in both feet. No ataxia.

The vaginal discharge appeared to be worse, though the amount of blood was very slight. On March 2nd I dilated and curetted the uterus getting a considerable amount of doubtful looking material, 50 mg. of radium were placed in the uterus, and 2400 mg. hours of radium element were given.

Sections showed a chorio-epithelioma and so on March 5th the abdomen was opened, and the uterus removed. The operation note is as follows:

The growth had perforated the uterus on the left side behind and the uterus and ovaries were difficult to free. The right ovary was cystic, the left fixed in Douglas' pouch and transformed into one large cyst. The omentum was adherent and apparently a little infiltrated and this portion was removed. The appendices epiploicae of the sigmoid were thickened and possibly involved. The bowel and omentum having been detached the bladder was freed in front and pushed down, the broad ligaments divided and the ovarian and uterine arteries secured. Working carefully downwards the uterus was freed on both sides, the vagina divided and the uterus removed. The vagina was sewn up and the stumps of the broad ligaments drawn into the middle and secured over the stump, the bladder peritoneum being used to cover all in. The liver and spleen appeared to be normal and no secondary growth was felt elsewhere. Patient stood the operation well and left the table in good condition.

Patient had little post-operative sickness. She was however confused, and occasionally said things which she did not mean, and her temperament was different to her ordinary condition. There was slight abdominal distension which yielded to the usual remedies and with the exception of a small haematoma below one portion of the scar the abdomen gave no trouble.

Dr. DeVries' report on March 8th, 1929 was as follows:

March 8th, 1929. The right arm seems weaker than before. Patient can still use it for grasping objects, but has more difficulty, and some ataxia. Several times I noted contractions or twitching in the fingers, giving the impression of involuntary cortical twitching. Patient denies to have noted involuntary movements. The mental condition is not as alert as before. Patient seems to dissimulate her true mental condition, or she is rather confused about it."
On March 9th, 1929; 90 mg. of radium element was applied over the left lower abdomen 1980 mg. hours being given. Screening: lead, felt and chamois leather.

On March 10th, 1929; 90 mg. of radium element was applied over the right lower abdomen, 1980 mg. hours being given. Screening: lead, felt and chamois leather.

A few days after operation patient developed a marked attack of herpes over the lower portion of the right side of the face, spreading outwards from the angle of the mouth.

On March 11th, 1929. Dr. Pillat again examined the eyes and his report was as follows:—

Right disc paler, vessels normal, 3 point-shaped hemorrhages, 1 on the disc, 2 near outside, 2 white spots about 3-4 P.D. downwards from the disc about in the vertical meridian. Macula lutea free. Pigment scattering in the lower half. Left disc a little unsharp, vessels normal, also in the lower half of the fundus 2 small choroid or retinal spots (size of \( \frac{1}{2} \) vein diameter). Macula normal.

**Diagnosis**: Hemorrhages in the U. fundus; chorioideal foci (Metastases?); Optic Neuritis.

On the evening of March 12th, 1929, she suddenly began to improve, became mentally clear and herself again, the weakness of arm improved, and she left hospital walking, on March 28th, in good condition.

Skiagrams were taken of chest and head, and proved negative. There was no sign of metastasis in the chest.

The laboratory findings in the case were as given below:—

**Urine**: 1006 alk. no albumen, no sugar.


**Diff. count**: Polymorphonuclears 80% Lymphocytes 16%. Large mononuclear 4%. No parasites. No poikilocytosis or nucleated reds.

**Blood chemistry**: Non-protein nitrogen 30 mg. Calcium 11.9 mg. per 100 cc. of serum. Wassermann reaction negative.


**Stools**: Negative for ova or parasites.

The pathological reports on the portions removed were as follows:—
Scrapings from uterus

Microscopic Examination:

Sections show tumor tissue composed of irregular masses of elongated and polyhedral cells varying greatly in shape and size. The cytoplasm is abundant, pale and homogeneous. The nuclei are vascular, either rounded or elongated. Sometimes crescent in shape, having two nucleoli. Mitotic figures are frequently seen but not numerous. In between the individual cells there is no fibrous tissue. Necrosis of tumor tissue is quite extensive and infiltrated by polymorphonuclear leucocytes. Capillaries are many, scattered among the tumor cells.

Uterus

Gross Examination:

Specimen consists of a uterus amputated below the cervix measuring about 11 cm. in diameter. It is moderately enlarged and slightly distorted. Serosa is partly smooth and partly rough and hemorrhagic in places. There are many small firm nodules upon the anterior surface. The left ovary shows large cyst which has been broken. The inner surface of the cyst wall is very rough and attached with grayish white tags of tissue. Nearby a hard nodule adheres to the ovary cyst measuring 3.5 cm. in diameter. The cut surface of this nodule shows grayish white fibrous-like tissue and a large calcified area which feels very hard. The left tube is not remarkable. The right ovary shows a large cyst. Cut surface shows few cysts containing brownish fluid. Between the cysts there is a solid mass of grayish white tissue. The right tube is very enlarged. To the infundibulum a small firm nodule adheres. Cut surface of the nodule shows fibrous-like tissue and calcified area. The cervix is very small and not remarkable in gross. On opening the uterus uterine cavity is found to be filled with tumor tissue eroding the myometrium in places. The tumor tissue is very loose and spongy in character. Necrosis and hemorrhage are found. Small areas of cartilage-like tissue are present. Accompanying the specimen there is a piece of fat tissue measuring about 7 cm. in diameter.

Microscopic Examination:

Sections of uterus show the myometrium is thinned out, edematous, atrophic and invaded by large masses of tumor tissue composed of two different types of cells. The first type consists of separate, small, rather regular cells having rounded nuclei and rather small amount of cytoplasm. Such cells are very few in number and distributed among the other type of cells. These cells are large, irregular, with one or more fairly large vesicular nuclei forming irregular, ragged anastomosing strands. Those which have multiple nuclei are irregular and tremendously large, mitotic figures are frequently found. Some of these cells have a small oval pinkish stained translucent body in the nucleus. Blood vessels are numerous, necrosis of tumor tissue is very extensive and infiltrated by polymorphonuclear leucocytes. Sections of right tube and ovary show invasion of the tumor tissue. Section of large nodule shows smooth muscle tissue,
hyalinization, calcification and tumor tissue near the surface, ulceration
and leucocytic infiltration and hemorrhage are present. Sections of left
ovary show tumor tissue and cyst formation. Section of left tube shows
tumor cells within the blood vessels. Section of the small nodule shows
hyalinized and calcified smooth muscle fibres. Section of omentum shows
many giant cells and infiltration of polymorphonuclear leucocytes and
lymphocytes with some amount of fresh fibrin on one side.

Diagnosis: Chorio-epithelioma of uterus with extension to ovaries
and fallopian tubes; chronic and acute inflammation of omentum
with peritonitis.

Patient after her discharge from hospital returned to
Tientsin, and was better for a time and able to get about, but
still had a good deal of vaginal discharge.

On April 17th, 1929, Dr. Amos Wong went down to Tientsin
and examined the patient. There was a good deal of thin
discharge coming from the vagina, but no growth could be seen.
The vagina tapered into a cone, and a well screened dose of
1800 mg. hours of radium was given, the bowel and bladder
being guarded by lead plates. Otherwise the patient was in
good condition. Pupils fairly normal during the day, the left
one tending to become a little larger at night. The facial
muscles were acting well and there was no arm disability.

After the radium applied by Dr. Amos Wong, she was better
for a day or two and then had a violent flare up in the pelvis,
with acute vomiting, and the rapid formation of a large mass.
She was desperately ill, but after reaching hospital (April 30th)
and having enemata, she improved greatly and the mass began
to grow much smaller. Then it became clear that there was a
collection of fluid below the old operation wound, and I opened
this, letting out foul gas and evacuating an abscess. After
some days I opened up part of the old wound and found a small
button of what looked like strangulated omentum, with a sinus
leading directly down into the pelvis and entering a foul abscess
cavity. This was washed out and her temperature fell, and she
was much relieved for twenty four hours, but there was evidently
secondary growth present. Then a faecal fistula formed and it
was clear that there was a connection between the sinus and the
vagina. She commenced to have attacks of collapse with cold
extremities. On the 23rd she had a good breakfast but later
in the day began to vomit. She had a bad attack of collapse
during the night with vomiting which was expulsive and faecal
in nature. Her breathing for a time was of the Cheyne Stokes type, and she appeared to be on the point of death. She rallied somewhat and looked as if she was going to pick up again, but suddenly died at 9 a.m. on the 24th.

Her mental condition during the last three weeks had been very strange. She would sometimes be in a cataleptic condition, at other times perfectly rational, sometimes abusing her husband and apparently not recognizing her child. At other times she seemed to have bad hallucinations, some of them terrifying. The changes of pupil were curious. At one time the right pupil would be widely dilated and immobile, and again a few hours later it would be normal in size and reacting to light and accommodation. The left pupil varied little from the normal. On her second admission the loss of power in the right arm and hand was very marked, though she never had any complete paralysis. It was clear however, that the finer movements of the fingers were very impaired. The right leg also became weaker than the left and moved less though the power of movement was not lost up to the end.

An autopsy was secured and an extract from the notes runs as follows:

**Abdominal Cavity:**—The intestines are matted together in the pelvis and lower 2/3 of the abdominal cavity and adherent to the anterior abdominal wall in the region of the wound. Peritoneal surfaces of the upper third of the abdominal cavity are smooth, those of the lower 2/3 are roughened by fibrin and as the intestinal coils are separated with considerable difficulty pockets of thick dirty brownish-grey pus are encountered. As the intestinal coils are being pulled apart in the region of the abdominal wall opening a small perforation is found. The formalin has made the tissues quite friable and it is barely possible that the opening seen was not present during life, but the character of the exudate material about the intestines weighs in favor of a perforation in the immediate region in question. When the adhesions between the bladder, rectum and intestines are broken it is found that the pelvis contains a little thick dirty greenish-grey purulent fluid with small suspended masses of necrotic material. The tissues about are covered by the same sort of exudate and here attached to peritoneal surfaces of intestines and rectum are masses of spongy largely necrotic soft tumor like tissue. Several masses are between 5 and 10 cm. in greatest diameters and the necrotic surfaces are covered by thick purulent exudate. On section the better preserved centers show a spongy greyish-red soft tissue. Such tissue is found in small amount on the peritoneal surfaces of intestines as high as the umbilicus. Uterus, cervix, tubes and ovaries are not present. The vagina is shortened and forceps tips can
readily be pushed through an opening at the distal end into the pelvis where the exudate pocket is present. A perforation of the rectum wall is demonstrated and the wall adjacent is partly necrotic and covered by purulent exudate.

The appendix is firmly bound up in the adhesions. The transverse colon is little affected. The lower border of the liver extends just below the costal margin in the right mid axillary line. The upper level of the diaphragm is at the level of the 4th interspace on the right side. The spleen is above the costal margin and is not adherent.

No special findings were present in the chest save for old pleuritic adhesions on the left obliterating the pleural cavity.

**Intestines:**—The small intestines contain but little fecal material. The mucosa is well preserved. The peritoneal adhesions have already been described. There are some greenish-grey rounded fecal masses of moderately firm consistency in the large intestine. Section through the rectum shows tumor growth entirely surrounding the bowel. The lumen is not greatly narrowed though opposite mucosa folds are in contact with one another. Wall is necrotic about the perforation. The mesentery contains a moderate amount of fat. Lymph nodes are not numerous but one is found about 2 cm. in diameter and on cut section granular soft grey tumor like tissue shows. Just adjacent to this node there is a cystic structure about the same size, the fluid contains necrotic grey soft masses of tissue.

**Genito-Urinary System:**—The kidneys are normal in size. The left ureter in the pelvis is surrounded by much fibrous tissue with tumor nearby. Ureter above is diluted to diameter of about 8 mm. and kidney pelvis is considerably enlarged. The kidney surface is smooth. Cortical striations are straight. Cortex and medulla are not decreased in thickness. There is fibrous tissue increase about the right ureter in the pelvis, but ureter above is not dilated. Right kidney shows no recognizable pathological changes. Urinary bladder mucosa is not remarkable.

**Cranial Cavity:**—The Brain and the posterior portion of the eyes were removed. The venous sinuses are not obstructed. Hypophysis is normal in size. Sinuses are not examined. Bones of cranial cavity show no tumor.

**MICROSCOPICAL NOTES**

**Tumor:**—Numerous sections of tumor alone and of tumor attached to small intestine and colon are made. The tumor cells are large, irregular in outline and there is considerable variation in the size and shape of separate cells. Cytoplasm is abundant and stains pink. Nuclei are rather large and pale blue staining with chromatin arranged in fine network. A single large nucleolus is usually present. Many cells contain several nuclei and there are large syncytial cell masses or giant cells showing as many as ten nuclei. Mitoses are numerous. There is a rather delicate fibrous stroma. Numerous thin walled blood vessels are present and some
of these are partly occluded by fresh thrombi. In the intestine sections the tumor at the edge bordering the peritoneal cavity is necrotic and in places polymorphonuclear leucocytes are numerous. No tumor is found in blood vessels.

**Intestine:**—Mucosa in sections of colon, ileum and jejunum shows no pathological changes. Submucosa is quite oedematous.

**Mesenteric Lymph Nodes:**—In two sections tumor growth composing most of the sections and only a small amount of lymphoid tissue is visible.

**Urinary Bladder:**—Tumor is attached to the peritoneal surface and is also invading the adjacent muscle. Mucosa shows some oedema and infiltration by a few large mononuclear wandering cells.

**Spleen:**—Tumor cells are seen attached to the capsule in one place. In places structure of framework is remarkably clear, probably due to the fixation by embalming rather than fibrous tissue increase.

**Thyroid:**—Many acini are a little larger than normal.

**Parathyroid:**—Several areas of bright pink staining cells are present.

**Femur Bone Marrow:**—Blood formation is going on, but most of the section is composed of adipose tissue.

**Hypophysis:**—Fixed tissue was either lost or hypophysis was not removed.

**Vertebrae:**—Blood formation is active and no tumor is seen.

**NEUROLOGICAL REPORT**

**Macroscopic:**—Dura normal. After opening it, the left hemisphere is found definitely larger than right, especially over the fronto-parietal regions of the convexity, where the convolutions are flattened out and much broader than normal. Meninges are not thickened. Blood vessels at base are not sclerotic. On cross section a soft tumor mass is found in the middle of left hemisphere with some hemorrhage. Right lateral ventricle is slightly dilated. No blood in the ventricles. The median-line is considerably pushed to the right side. There are quite a number of small round or oval holes in both hemispheres chiefly in the white matter (post mortem change). No other tumor mass found.

The tumor mass consists of dark reddish brownish soft caseous like substance mixed with blood. It is about the size of an egg, measuring 4×4×4.5 cm. It is in the center of left hemisphere in left basal ganglion, extending from about the level of frontal tip of head of left caudate nucleus to below the surface of the convexity. Laterally it extends almost to the surface of insula which has only a thin layer (.5 cm.) of grey matter left. Medially it is about 1 to 1.5 cm. from the lateral wall of the ventricles. Below it is only .5 cm. from the temporal lobe. Near its posterior
end the tumor also invades almost the whole left subthalamic region, including the red nucleus, substantia nigra, and also a small part of the pons with fresh hemorrhages. The tumor involves the whole left lenticular nucleus, internal capsule, claustrum and external capsule, the lateral half of left caudate nucleus, greater part of left thalamus and almost the entire left subthalamic region.

Microscopic:—Blocks 1 and 2 show swelling and accumulation of fat in the ganglion cells. This is especially marked in the Beetz-cells. The glia of the cortex show ameboid changes. The vessels of the white matter show thrombi of streptococci without any reaction of the surrounding tissue. Block 3 shows the same glia changes as block 1 and 2.

Block 4. The Purkinje cells are badly stained and slightly swollen.

Block 5 and 6. The tumor masses invade the normal tissue diffusely, largely following the perivascular spaces. However, it invades also the vessel walls. The brain tissue around the tumor shows demyelination. The tumor itself contains many necrotic and hemorrhagic areas. The tumor cells are big with one or several multangular nuclei and a scanty dark protoplasm. Between the tumor cells lie big clusters of macrophages, many of them disintegrating. A lot of brownish pigment is scattered all over the tumor, lying especially on the surface of the vesicles in the macrophages. A prominent feature of the tumor is single concentric cells surrounded by a darker ring. This in many places, can be identified as the wall of a capillary.

Conclusion: Toxic degeneration of ganglion cells and glia. Metastasis of chorio-epithelioma in left hypothalamic region.

The examination of the eyes showed little in the way of definite lesions. The optic nerves were somewhat swollen and in some places in the sections there were thickened areas of cells but it was doubtful whether these were tumour tissue. No gross lesions were found in the choroid.

It is unfortunate that the hypophysis escaped microscopical examination, but at the autopsy it was noted as having been of normal size.

The fifth case was as follows:—

Mrs. H. C. H. a XVI para, aet 51, Chinese, was admitted to the Peiping Union Medical College Hospital on March 15th 1929 with metrorrhagia.

On September 21st, 1928 she had a normal period. She then became pregnant but had irregular bleedings. On February 15th, 1929 she passed a hydatidiform mole. She was curetted on March 16th and a fair amount of scrapings were obtained containing well formed hydatidiform vesicles showing no sign of degeneration. Sections showed undoubted chorio-epithelioma. On March 19th a panhysterectomy was done, and sections of the uterus showed chorio-epithelioma. On April 9th, 2025 gm. hours of radium were given from the vagina,
This patient was alive and well in April 1931.

The sixth case was as follows:—

Mrs. S. C. L. aet 24, Chinese, was admitted to the Peiping Union Medical College Hospital on June 17th, 1929 with the following history. She was married on January 30th, 1929. Her March period was normal. In May she began to have a discharge from the vagina and noticed a rapidly growing tumour in the abdomen. On May 12th she was explored from below and a hydatidiform mole removed.

On June 18th a curettage was done and the curettings were pronounced chorio-epithelioma. At the time of the curettage I was very doubtful as to the case being more than a case of hydatid mole with remnants, and on account of her age a dose of 1755 mg. hours of radium was given, in the uterine cavity.

On July 20th there was fresh bleeding and the uterus appeared to be enlarging, and on July 27th the uterus was removed by panhysterectomy.

Sections of the uterus showed manifest effects of the radium, but no further chorio-epithelioma was found.

In October 1929 she was perfectly well.

The seventh case was as follows:—

Mrs. H. Y. C., aet 33, Chinese, was admitted to the Peiping Union Medical College Hospital on July 23rd, 1929 in a very serious condition. In March 1928 she passed a hydatidiform mole and bled a little for six months afterwards. Thereafter the periods were regular. A curettage was advised but refused. A month back she began to bleed, and a couple of weeks ago had marked haemoptysis.

She was very anaemic, had a mass in the right lower quadrant and the uterus was enlarged half way to the umbilicus. In the vulva, a short distance from the urethral opening, there was a dusky reddish mass, the size of a cherry.

An X-ray of the lungs showed diffuse soft infiltration of the lungs, probably neoplastic metastasis.

The right ocular fundus showed two haemorrhages.

The patient was evidently beyond all possibility of effective treatment and was discharged in a dying condition.

The case from a hospital in the Yangtze valley was that of a woman with a considerable uterine tumour. The trouble had supervened on what apparently had been an abortion, and the portion of tissue which was sent me was easily scraped out of the uterus and was typical chorio-epithelioma. The further history of the case is unknown but I have no doubt that it quickly terminated fatally.
The primary growth may commence in the uterus, in a pregnant tube, or in the ovaries. It may also be found in teratomata and in the testicle. All that one needs is a foetal ectoderm, undifferentiated and contained in a teratoma. A very good example of these rare cases is found in the *Journal of Obstetrics and Gynecology of the British Empire* in a paper on "Extra-genital Chorio-epitheliomata of Congenital Origin" by Miller, J and Broune, F. F.—29:148. As to the ovaries not merely may it occur as a metastasis but it may occur there as a primary growth. You may retort that as it occurs in the tube following hydatidiform mole it may certainly occur in the ovary following an ovarian pregnancy. But the case is not as simple as this. In the *Proceedings of the Royal Society of Medicine* XXI No. 8, June 1928, 1381, you will find an excellent account of a chorio-epithelioma of the ovary in a child of eleven. There was a palpable ovarian tumour which was easily removed. She made a rapid recovery but died nine weeks later with metastasis in the parotid and lung. The sections of the tumour were typical, and there are at least two more cases of the disease in the literature of the subject, one in a girl of nine, and one in a girl of sixteen and a half. In these cases no doubt the tumour springs from a teratoma and one may recall that some dermoid cysts at least are supposed to be cases of the attempted development of an unfertilized ovum. The disease was fatal in all these cases.

What then are the symptoms of a typical case? As a general rule there is little to point to trouble during the pregnancy and early puerperium except of course that many of these cases follow a hydatidiform mole. In the late puerperium hemorrhage may commence, irregular in time and nature and sometimes severe. Occasionally the first sign is perforation of the uterus by the growth, and again in about half the cases the first indication is the appearance of vaginal or vulval metastasis. Generally the patient goes rapidly down hill. As a rule death occurs within the year, and there may be extensive metastases in the lungs and elsewhere. All cases of irregular hemorrhage of uterine origin, especially if occurring after abortion or the expulsion of a hydatidiform mole, urgently call for exploration of the uterus and curettage. Should portions of a chorio-epithelioma come away, a panhysterectomy should be done at once, and you must be able to diagnose sections of these
scrapings by the microscope. But you must be on your guard against mistaking a fragment of a mole for a chorio-epithelioma. Shortly after I came to Peiping, I had reason to look up a slide of chorio-epithelioma. I found that it had been obtained from a specimen obtained from a patient who had had a hydatidiform mole, and that a panhysterectomy had been advised. On careful examination it was at once clear that it was simply a fragment of a hydatidiform mole which had been left behind. On inquiry I heard that the woman had refused operation, and was perfectly well a year after, so that my surmise was evidently correct. But if there should be in such a curettage a formed vesicle, even if it looks benign, it is of grave import. One must also remember that even in a normal pregnancy there is often some invasion of the uterine musculature at the placental site by chorionic wandering cells and even masses of trophoblastic tissue may be found in the veins of the uterine wall which increases the difficulty of diagnosis especially from curettings. Novak and Koff have emphasized this point.

Any metastasis to vagina and vulva should be excised, as this may be due to seedlings from a hydatidiform mole and constitute the primary growth.

In these growths one gets two kinds of cells, masses of undifferentiated syncytium and large rather cuboidal cells which almost always spring from Langhans' layer.

In these cases also the ovary is often enlarged and contains cysts lined with lutein tissue just as one finds in a case of hydatidiform mole. The explanation of this enlargement and its influence on the chorio-epithelioma is quite unknown.

These cases, taking them all in all, are not common, but one must ever bear their possibility in mind and be prepared to investigate and act promptly in any case which begins to bleed erratically after the puerperium, or after an abortion.

The best thanks of the writer are due to many who have helped him in the care of these cases, and especially to his colleagues, Dr. Pillat and Dr. De Vries; to Dr. C. H. Hu and others in the Department of Pathology; to the Staff of the Department of Obstetrics and Gynecology; and to Mr. H. S. Wang for photographs and microphotographs.

BIBLIOGRAPHY

King, W. W. "Vesicular mole with coincident chorio-epithelioma of the vulva."

Meleney, H. "Syncytioma of uterus terminated by peritonitis."
S.G.O., XXXV, 2, Aug. 1922.

Miller, J. "Extragenital Chorio-epitheliomata of congenital origin."
Jour. Obst. & Gyn. of British Empire, XXIX, I, 48.

Novak, E. & Koff A. K. "The ovarian & pituitary changes associated with hydatidiform mole and chorio-epithelioma."

Novak, E. & Koff A. K. "Chorio-epithelioma."

Stevens, T. G. "Hydatidiform Mole."

ILLUSTRATIONS

1. Chorio-epithelioma springing from a hydatidiform mole in the cornu of the uterus. Note ovaries with lutein cysts.
   (Chorio-epithelioma case 2).

2. Secondary growth in liver.
   (Chorio-epithelioma case 2).

   (Chorio-epithelioma case 2).

   (Case 2).

5. Hydatid mole (unopened) showing lutein cysts of ovaries.
   (Chorio-epithelioma case 3).

6. Hydatid mole opened.
   (Chorio-epithelioma case 3).

7. Malignant hydatidiform mole.
   (a) Chorio-epithelioma in stump of cervix.
   (b) Appearance of cervix, 14 days after radium treatment.
      (Chorio-epithelioma Case 3.)
      (Water colour drawing).

8. Chorio-epithelioma filling the uterus, note ovary with lutein cysts.
   (Chorio-epithelioma case 4).

   (Chorio-epithelioma case 4).

10. Chorio-epithelioma showing tumour cells, one inside a capillary vessel.
    (Case 4).

11. Chorio-epithelioma showing tumour cells, one inside a capillary vessel.
    (Case 4).

12. Section of malignant hydatidiform mole showing invasion of uterine wall.
INTRACTABLE INCONTINENCE OF URINE

Report of a Case

D. M. Gibson M.B., B.S., LOND., F.R.C.S. EDIN.

Normally the act of micturition is under full control, the evacuation of the contents of the bladder being permitted at will by the relaxation of the sphincter muscle of the urethra. If, however, for some reason or other this muscle is not able to function the urine does not collect in the bladder but passes straight through from the ureteric orifices to the urethral meatus and dribbles away in a never ending trickle. The distress and inconvenience consequent on such a condition of incontinence are sufficient in themselves to call for measures of relief even if these entail some risk. But unfortunately other and still more serious factors may be superadded, namely those leading to renal sepsis.

A condition of this kind is usually due to one of the following causes:

a. Ectopia Vesicae, in which the anterior part of the bladder wall is absent and the ureters open directly to the exterior in the midst of a red, raw mucous area in the hypogastrium.

b. Vesico-Vaginal Fistula in the female, where the bladder is in direct communication with the vagina.

c. Multiple perineal fistulae in the male resulting from old infections and stricture urethrae.

d. Trauma involving the bladder or urethra and resulting in destruction of the normal sphincteric control over the act of micturition.

In all these states not only does the urine continually seep away and make the patient's life a moist misery, but the bladder musculature tends to contract causing the organ to lose its function as a reservoir, and the bladder and whole urinary system are rendered liable to infection. If there has been an element of obstruction in the course of the malady the likelihood of “ascending infection” of one or both kidneys is very great. This latter factor is usually responsible sooner or later for the
death of the patient, a tragic means of release from a miserable existence.

In any case of intractable incontinence it is, therefore, imperative to find some means of restoring sphincteric control over micturition with the dual hope of rendering the patient's life more worth living and preventing an early and untimely death from renal sepsis. A local plastic operation on the damaged urethra or bladder is only too often doomed to failure as the tissues available are too fibrotic and infected to be of service for plastic repair. The presence of a contracted bladder is another factor which militates against the success of plastic performances. What then can be done? The only alternative is to divert the urinary stream into the bowel where it will once again be under sphincteric control. For this purpose the ureters must be exposed, intra- or extra-peritoneally, resected from the bladder, and transplanted into the large bowel. Early attempts to do this resulted in the production of a pyelonephritis, the very condition which in part the operation was intended to prevent. The opening of the ureter into the bowel was patulous and permitted the reflux of septic bowel contents with resulting renal infection. The introduction of a modification in technique has now to a large extent if not entirely, done away with this danger. The bowel wall is not penetrated directly by the implanted ureter, but the latter is buried in the wall of the bowel for an inch or more before entering its lumen. A valvular action is thus obtained which, while permitting the downward flow of urine into the bowel, effectually prevents any backflow into the lumen of the ureter from the bowel. This is the essential step in the operation as now practised and is carried out as follows:—The resected ureter is laid against the pelvic colon and a spot chosen where the ureter can enter the bowel and lie easily without tension. Stay sutures are placed two inches apart above and below this spot and the wall of the bowel is incised in the long axis of the gut for an inch and a half.

This incision is carried down to but not through the mucosa, the knife dividing only serosa and musculosa. To introduce the ureter into the bowel lumen a minute stab wound is made at the lowest point of this incision and when the ureter has been passed through this wound its proximal 1½ inches lie on the undamaged mucosa above. It is then buried by suitable
Intractable Incontinence of Urine

Suturing between this mucosa and the muscular and serous coats of the bowel and an effective valve is produced which shuts automatically when there is pressure of faeces in the bowel but opens to allow of the outflow of urine when the latter flows down from the kidney above.

The result of thus transplanting the ureters is that the patient at once becomes "dry." During the first 24 hours or so after operation the urine is absorbed from the rectum but thereafter it collects and is passed at intervals by the voluntary relaxation of the anal sphincters in response to a "call to stool." Toleration to the presence of urine is soon established and the bowel may not need to be emptied more than three or four times during the day and twice or once at night. This is a welcome change from the perpetual perineal percolation of readily decomposing urine. If the operation has been performed as a first stage in a case of Ectopia Vesicae or of malignant disease of the bladder a suitable interval is allowed to elapse and then either a plastic procedure or a radical excision is carried out.

A case illustrative of the above rudimentary remarks will now be described.

Patient, a Chinese girl, unmarried, aged 13, native of Manchuria. Date of admission to hospital October 20th, 1930. Date of death April 21st, 1931.

Summary of History. Ten months before admission the patient fell across the leg of a chair and injured the perineal region. Immediately following the accident dysuria and haematuria were noticed for a few days. Symptoms of urinary obstruction followed which gradually merged into those of incontinence with constant dribbling.

Summary of Physical Findings. On admission patient appeared weak, wasted and anaemic. Hair brownish and lacking lustre. The perineal region was moist and excoriated from the discharge of urine. On examination no urethra could be found but there was a short track leading straight into a contracted bladder. The urine was alkaline, containing albumen and pus and epithelial cells. A leucocytosis of 25,625 W.B.C. was present of which 87.5% were polymorphs.

Subsequent Course. On the second day after admission the temperature reached 101.6° and on the third day 104° and
this fever was accompanied by other signs of renal sepsis including pain and definite tenderness in the region of the left kidney, pointing to a condition of pyelonephritis on that side. As these symptoms persisted in spite of local and general treatment a nephrostomy was performed on November 6th in order to drain the kidney. Following this procedure the temperature fell and kept at a moderately low level, seldom rising as high as 100° for three weeks. However it then began to swing up again and continued intermittently and irregularly ranging up and down throughout the course of the disease, the highest peak often being at or soon after midnight, the night and morning temperatures being comparatively unalarming. This irregular fever was suggestive of septic absorption and a blood culture at a later stage produced a short chained streptococcus. Examinations of the blood for parasites were uniformly negative.

The effects of the nephrostomy were, therefore, disappointing and as the fistula in the loin continued to discharge, the patient's condition of perpetual dampness was increased rather than alleviated. It was noticed, however, that if the fistula in the loin ceased to leak for a few days the general condition of the patient as regards drowsiness, anorexia and fever became worse. The fistula appeared thus to be in a sense a sort of safety valve.

The patient had been admitted in the first instance with a view to some operative attempt at relieving the incontinence, but the general condition was such that any serious operative interference seemed to be a very grave risk. It was, however finally decided to attempt a bilateral transplantation of the ureters and it was hoped that if this was successful the urinary fistula in the left loin might heal permanently. It was thought best to transplant one ureter at a time and at the first operation the right ureter was isolated transperitoneally and resected from the bladder. It was found on division to be more like a piece of window blind cord than a human ureter, being hard, circular in section and fibrosed, with practically no sign of a lumen. This was not very promising and indicated a serious degree of renal infection on that side, albeit there had never been any pain or tenderness in the right kidney region. On the chance that some urine might want to escape through this badly obstructed ureter the operation was continued and it was implanted into the pelvic
Intractable Incontinence of Urine

colon by the valvular method and the abdomen closed as quickly as possible with pelvic drainage. The wound healed well but no urine was passed by rectum which fact confirmed the opinion that the right kidney was diseased and functionless. This operation was performed on January 8th, 1931. On January 29th the abdomen was reopened through the first incision and after separating adhesions the left ureter was isolated and found to be patent and with walls of normal flaccidity. It was duly inserted into the left aspect of the pelvic colon.

Following the operation no urine was recovered from the rectum till a week or so had gone by. During this time all the urine apparently came away by the short route in the loin. After this, however, urine was delivered into the rectum and passed by voluntary relaxation of the anus regularly five to eight times during the twenty four hours. The perineum, of course, became dry immediately after the second operation.

The nephrostomy fistula varied considerably. It was at one period dry for about ten days, at other times dry for two or three days at a time. The skin around the opening remained unaffected by the urinary discharge. It was protected throughout by the daily application of a dressing composed of equal parts of Ung. Ichthyol, Ung. Zinci and Ol Ricini. On one or two occasions when redundant granulations pouted through the fistulous opening these were successfully removed by the application for a day or two of a dressing of 2% Formalin.

The patient's general condition became progressively worse: anorexia was marked and emaciation extreme, the weight declining from 54 lbs. on admission to 34½ lbs. shortly before death. This took place on April 21st, 1931, the primary cause being renal septicaemia and the final cause inanition. There were no signs of uraemia at the close.

Post-mortem Findings. The contents of the abdomen were matted together and there was pus in some of the mesenteric glands.

Right Kidney:—Much enlarged, pyonephrotic, size 12.5 by 7 cm. and in girth 20.5 cm. The renal pelvis was contracted and ureter completely fibrosed. The capsule stripped easily but was adherent to the perinephric tissues. The lower end of the ureter was imbedded in a fibrous mass in the bowel wall. On section the kidney was found to be a collection of pus containing cavities with walls of 2 mm or more in thickness. Microscopically the kidney
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substance was largely but not entirely destroyed and there were obvious signs of chronic infection but no evidence of tuberculosis.

Left Kidney:—Somewhat enlarged, surface smooth, size 9 by 5 cm. and in girth 14 cm. There was no evidence of the nephrostomy wound or obvious point of urine leakage. The capsule stripped easily. The ureter was patent, the lower end opening satisfactorily into the lumen of a much contracted colon. A very fine silk suture had been used to fix the end of the ureter in the bowel wall. This had persisted and a small stone had formed round it of about the size of a green pea. On section the kidney appeared pale and waxy and the whole of its substance was dotted about with little cystic spaces containing firm brown pea-like nodules of a hyaline-like substance. There was no evidence of suppuration. The microscope showed definite amyloid deposits, also changes in the convoluted tubules the epithelium of which was oedematous and desquamative and the lumens blocked with debris.

The spleen on section had the appearance of amyloid change and the presence of considerable amyloid deposits was shewn by the microscope. The stomach mucosa appeared pale and atrophic. Amyloid material was present in small amount in the section examined.

Other organs were not obtained.

Summary and Comments. A case of intractable incontinence ensuing on traumatic stricture of urethra and complicated by grave renal sepsis is described. Mechanical relief of the incontinence was effected by the procedure of transplantation of ureters into the pelvic colon. The pathological condition of pyonephrosis in the right kidney, however, precluded any hope of a successful cure. A very marked feature was the progressive anorexia of the most incorrigible type, it becoming impossible to tempt the patient's appetite with anything in the shape of catables. Emaciation thus became extreme. Doubt is cast on the value of nephrostomy as a surgical procedure, the resulting urinary fistula tending to prove intractable. The suggested cure of such a fistula by nephrectomy was obviously out of the question in this case. The procedure of transplanting the ureters into the bowel is of great value in such cases as the above, more especially if carried out before renal sepsis has supervened. It is a sound surgical procedure not fraught with any serious risk provided that due attention is paid to details of technique.
TUBERCULOSIS OF THE STOMACH*
Report of Two Probable Cases

PHILIP B. PRICE, M.D.

It is generally agreed that tuberculosis of the stomach is rarely encountered, even at the autopsy table. Many textbooks and systems of medicine and surgery make little or no mention of the condition. McCrae says: "Many cases are reported which are doubtful. In 2000 autopsies at the Brompton Hospital a tuberculous ulcer was found twice." J. J. Conybeare of Guy's Hospital says that "tuberculosis of the stomach, whether miliary or ulcerative, is a pathological curiosity found only in association with widespread tuberculosis elsewhere, and is of no importance from a clinical point of view." Broders in 1917 reviewed critically the 306 cases reported in literature, 49 of these he accepted as proved, 118 as probable tuberculous lesions, but the remainder as doubtful or to be rejected altogether. He added a case, the only one in 2501 gastric operations at the Mayo Clinic during the years 1912 to 1915 inclusive. Reference to the Index Medicus and Quarterly Cumulative Index shows that over 25 additional cases have been reported since 1917 by almost as many observers. But these must be subjected to critical analysis, such as that suggested by Broders, before they can be accepted as proved cases.

It is thought worth while to report in detail the following two cases, admitted to the Medical Service of the Shantung Christian University Hospital, and operated upon by the writer. The diagnosis in one case was suspected before operation. Since it was found impossible to resect the lesions, in neither case is there definite proof that the gastric disease was tuberculous. But the gross appearance, the presence of tuberculosis in the regional glands, and the coincidence of active tuberculosis elsewhere in the body, render the diagnosis highly probable.

Case 1. Ch'en Yung P'ing, F5742, a Chinese merchant of 30, was admitted January 21, 1929 complaining of abdominal distention and vomiting for about 10 years. Onset insidious. During the first 2 or 3 years of his illness he vomited 2 or 3 times a day, and at times was unable to retain even water. Before vomiting there was abdominal pain and a

*From the department of Surgery, Shantung Christian University, Tsinan.
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sense of fullness in the epigastrium. During the following 3 or 4 years he was better, but never entirely free from distention, abdominal pain, and vomiting. For the past 4 years the symptoms have been constant. There would be abdominal discomfort, distention, and belching during the day, especially after meals, but no vomiting. About 10 minutes after supper every night the symptoms would increase in severity, and 20 minutes later he would vomit much more than he had just eaten. This nightly vomiting would bring instant and complete relief from all his symptoms. He would then drink as much as 5 pints of tea, and spend a comfortable night. The vomitus sometimes contained food eaten as long as 3 days before, and occasionally "copper-red" or black blood. Large quantities of food, or wine, aggravated the symptoms. Stools once every 3 to 5 days, and at times black in color.

P.H.: At the age of 10 he had masses in the neck which broke down and discharged for 3 years. 3 short attacks of "dysentery," the last one the summer before admission. No history of cough or hemoptysis.

F.H.: One sister died, probably of tuberculosis.

Examination showed a well-developed, surprisingly well-nourished young man, who in no way looked the part of a chronic invalid. Daily rise in temperature, never over 100°. Teeth dirty, the proximal portions black. Left upper incisor loose and painful. Gums slightly spongy, but no pus could be pressed out. Extensive scars on the right side of the neck and in the suprasternal notch. No enlarged glands in the neck, or elsewhere. Heart and lungs normal. B.P. 98/70. Abdomen generally distended and tympanitic. Liver and spleen not palpable. No masses could be felt. About every 5 seconds a powerful peristaltic wave would appear from under the left costal margin, pass rapidly down to well below the umbilicus, then upwards and to the right, and finally disappear at the pyloric region without a sound. The second wave would be well on its way before the first had disappeared.

Urine and feces normal. R.b.c. 4,816,000. Hb. 85%. W.b.c. 10,360; p.m.n. 88%, p.m.e. 2.5%, p.m.b 0.5%, s.l. 4%, l.m. 5%. Wassermann neg. Sputum neg. for B.Tb. Analysis of fasting gastric contents: 700 cc., yellow fluid without mucus or blood, total acidity 51%, free HCl 28%, no lactic acid, a trace of occult blood, no bile, yeast +, starch ++, no Oppler-Boas bacilli or sarcinae. Results of fractional gastric analysis shown in Fig. 1. X-ray showed: lungs normal; stomach greatly dilated,
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and spastic; duodenal cap not clearly visualized, and nothing diagnostic could be made out; emptying greatly delayed, a large residue being present after 24 hours.

Preoperative diagnosis: Peptic ulcer producing partial obstruction.

Operation, January 29, under ether inhalation anesthesia. High right rectus incision revealed a typical cicatricial-ulcer-appearance of the stomach just to the gastric side of the pylorus. The stricture would not admit the finger tip. While the duodenum was being mobilized preparatory to a resection, very hard glands were encountered. Three of these were removed for section, one of them rupturing where it was adherent to some dilated veins, with the loss of a little caseous material. Frozen section showed unmistakable tuberculosis in all three. A thorough exploration was instituted: liver and gall bladder normal; spleen somewhat enlarged, hard, and lobulated; right kidney not well felt; left kidney unusually large, quite hard, and nodular; the mesentery contained many glands, hard, firm and soft, single and confluent; a stricture of the small intestine, level undetermined, was found lying near the cecum, above which the bowel was greatly distended, and below which it was collapsed; cecum, large intestine, rectum and bladder normal. Further attempts to free the gastric lesion were abandoned finally owing to very hard and close adhesions to the large vessels posteriorly, an inflammatory reaction that had obliterated part of the lesser peritoneal cavity. Posterior gastroenterostomy was done, and resection of the stricture of the small intestine with end-to-end anastomosis. Abdomen closed without drainage.

Post-operative diagnosis: tuberculosis of stomach, small intestine, mesenteric glands, and possibly spleen and left kidney. Pathological examination of the stricture showed tuberculosis of the small intestine and adjacent mesenteric glands.

Although the operation was very long (over 4 hours) the patient stood it well, and there was little post-operative reaction. Water and food were begun cautiously. The wound healed per primum. Convalescence was entirely satisfactory for 4 weeks. Then edema of the face and legs appeared. The urine was normal, and contained no tubercle bacilli; kidney function normal. There followed a gradual decline, with increasing edema, appearance of a small amount of fluid in the abdominal
cavity, fall in hemoglobin, and splashing in the stomach could be elicited, although there was no nausea, vomiting, or visible peristalsis. Seven weeks after operation he took a rapid turn for the better, however, and was discharged April 1st feeling quite well and much pleased. There was still slight edema of the right side of the face and neck above the scars, but no other signs or symptoms. His diet and activity were regulated for about 2 months through the Out-Patient Department, during which time he gained steadily in strength and weight, and remained symptom-free.

Case 2. Wang Sheo Ch'ien, F6139, a Chinese man of 23, a weaver by trade, was admitted May 13, 1929 complaining of vomiting for 7 months. Gradual onset with abdominal distention. No pain or nausea, but a sense of fullness in the epigastrium before vomiting. The symptoms had grown worse, especially during the last 3 months, so that at the time of admission he was bedridden, and unable to retain either food or drink. The vomitus was sour; sometimes it contained food, but more often it was merely dark fluid. No fresh blood vomited. No black stools. The patient stated that a few days after the onset of his illness he vomited several soft red masses, and again 10 days before admission ten pieces of the same substance, about 1.5 x 1.5 cm. in size, and cylindrical in shape. He was sure that these were neither food nor worms.

P.H. 2 years before admission he had attacks of vomiting every 5 or 6 days for 5 months. Also an attack of diarrhea about the same time. Not well since. No history of cough or hemoptysis.

Examination showed an emaciated pale sick young man. No fever. B.P. 68/20. A few moist coarse persistent rales at the right apex posteriorly. Striking visible peristalsis, showing clearly the entire stomach outline. As many as 5 waves could be seen at once progressing from left to right.

Urine and feces negative. R.b.c. 3,600,000. Hb. 70%. W.b.c. 4,800. Wassermann negative. Gastric contents: fractional (see Fig. 2); fasting, 140 cc., occult blood +, bile neg., free HCl 32%, combined acidity 16%. X-ray of lungs showed infiltration of both uppers, especially the left, almost certainly active tuberculosis. X-ray of stomach showed marked hyperactivity, complete obstruction at the pylorus, and a large flat filling defect (See Figs. 3 and 4).

Pre-operative diagnosis: Peptic ulcer with complete, or almost complete obstruction, possibly tuberculous; active bilateral pulmonary tuberculosis.
Operation on May 21st under regional anesthesia. High right rectus incision. The peritoneal cavity contained a small amount of almost clear straw-colored fluid, which clotted quickly. Stomach wall thick. At the pylorus there was felt a hard inflammatory mass the size of a hen-egg, with many surrounding adhesions, especially to the posterior abdominal wall. Through the stomach wall the finger could find no pyloric opening or definite ulcer crater. Many enlarged regional glands, two of which were removed for section, a small hard one adherent to the pyloric mass, and a larger, softer one a cm. or two inferior to the mass. Careful exploration of the entire abdominal cavity revealed no other abnormalities. A long and determined effort was made to free the pyloric mass in order to resect it, but this had to be abandoned finally, and a posterior gastroenterostomy resorted to.

Microscopic examination of the glands removed showed tubercle bacilli and tuberculous inflammatory reaction in both.

Post-operative diagnosis: Active tuberculosis of the lungs, bilateral; tuberculous ulcer of the pylorus, with obstruction.

The patient made a good recovery. The wound developed two small sinuses, which had not quite healed on his discharge. Tubercle bacilli were found in the sputum two weeks after operation. The patient was discharged very much improved on June 13, 22 days after operation. He was able to take soft diet without gastric symptoms.

Recent efforts to trace these two patients have been unsuccessful.

Footnote.—Since the writing of this article, R. W. Good's paper has appeared (Archiv Surg. March 1931), reporting an analysis according to Broder's classification, of the 33 cases of tuberculosis of the stomach reported since 1917, and 2 additional ones seen at the Mayo Clinic. Two of the 35 are to be considered proved, 24 probable, and 9 doubtful or to be rejected.

REFERENCES

FIG. 1.
F5742: Fractional Gastric Analysis.

FIG. 2.
F6139: Fractional Gastric Analysis.
Fig. 8
EXPERIMENTAL RESEARCHES ON ETIOLOGY
OF SCARLET FEVER

Presented as a Report by Dr. Toyoda to the Third Conference
of the Microbiological Association of Japan, held
in Tokyo, on April 6, 1930.

I. Is Hemolytic Streptococcus Always Detected in a Scarlet
Fever Patient or is Scarlet Fever Always Associated
with Hemolytic Streptococcus?

Drs. T. Toyoda, J. Moriwaki and Y. Futagi
The Japanese Government Isolation Hospital, Dairen, Manchuria

Out of 273 cases of scarlet fever in an early stage, especially
within 5 days of the onset, inclusive of cases of surgical scarlet
fever, 266 cases were found to show the positive hemolytic
streptococci on throat cultures. In other words, only seven of
the cases of surgical scarlet fever failed to show the hemolytic
streptococci in the throat. The rest were found positive to the
extent of 100%. Abundant colonies of hemolytic streptococci
were yielded to the extent of 14%. With the progress of the
disease, the hemolytic streptococci decreased in number. So did
the percentage of the positive throat cultures by degrees (on the
contrary, the non-hemolytic streptococci of a type appeared to
increase gradually). Even in the convalescent stage, the
percentage of the positive throat culture still remained at 44%.

In the blood cultures of 10 cases of normal type of scarlet
fever without sepsis in an early stage, the hemolytic streptococci
were negative, but in the culture of the focus of complication or
of the cadaver’s heart blood, the streptococcus was found positive
to the extent of 100%.

In the skin, the hemolytic streptococci were of course positive,
but since, if its splits were cultured after being washed repeatedly
in 1% kali soap, the negative result was obtained, the scale itself
might be considered to contain no streptococcus. In the rooms
of scarlet fever patients, more hemolytic streptococci were found
than in other rooms. By means of the blood agar plate left in
Rate of the positive cultures of hemolytic streptococci relating to scarlet fever

<table>
<thead>
<tr>
<th>Culture of</th>
<th>Remarks</th>
<th>No. of cases of culture</th>
<th>No. of cases of positive results</th>
<th>Rate (%) of positive results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throat swab</td>
<td>at the early stage</td>
<td>260</td>
<td>266</td>
<td>100.0%</td>
</tr>
<tr>
<td></td>
<td>(within 5 days)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Throat swab</td>
<td>at the convalescent stage</td>
<td>417</td>
<td>184</td>
<td>44.0%</td>
</tr>
<tr>
<td>Complicated focus</td>
<td>otitis med., adenitis, etc.</td>
<td>46</td>
<td>46</td>
<td>100.0%</td>
</tr>
<tr>
<td>Blood of the patient</td>
<td>at the early stage</td>
<td>10</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Localized focus of</td>
<td></td>
<td>7</td>
<td>5</td>
<td>70.0%</td>
</tr>
<tr>
<td>surgical scarlet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Throat swab</td>
<td>at the relapse of scarlet fever</td>
<td>2</td>
<td>2</td>
<td>100.0%</td>
</tr>
<tr>
<td>Throat swab</td>
<td>during the incubation of scarlet fever</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart blood of</td>
<td></td>
<td>6</td>
<td>6</td>
<td>100.0%</td>
</tr>
<tr>
<td>cadavers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>of the patients</td>
<td>3</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

the rooms, we found the hemolytic streptococcus colonies in 7 out of altogether 13 rooms. The seven cases of surgical scarlet fever consisted of four in which the hemolytic streptococci were found in the local focus, two cases in which staphylococci were found, and the remaining 1 in which both kinds of cocci were found isolated. In the stale focus, we often found that, as in the case of otitis media, the hemolytic streptococci had already disappeared, leaving the staphylococci only.

That, on the throats of scarlet fever patients of an early stage, the hemolytic streptococci were detected to the extent of 100% was proved by the cases not only treated in this Hospital, but also confirmed by the report issued by the Komagome Hospital (Dr. Kondo1), Tokyo.

REFERENCE

1. Kondo; The 19th Report from the Isolation Hospital, Komagome, Tokyo.
II. Are all the Strains of Scarlatinal Streptococci Capable of Producing Dick Toxin?

Drs. T. Toyoda, J. Moriwaki and Y. Futagi

The Japanese Government Isolation Hospital, Dairen, Manchuria

In the filtrate of the culture of the hemolytic streptococcus isolated from a scarlet fever patient is contained a toxin (Dick\(^1\) toxin) capable of producing a rash like a scarlet fever rash, if injected intermuscularly and, also capable of causing the positive skin reaction to a susceptible, if injected cutaneously to the amount of 0.1 c.c. of diluted solution (ordinarily 1,000 times).

In this Hospital, experiments were carried on to find out whether or not all the scarlet fever streptococci are capable of producing the Dick toxin and it was found that, out of 119 strains of scarlet fever streptococci, 89.1% were capable of doing so. The hemolytic streptococci obtained from the throat of the scarlet fever patient or the heart blood showed themselves to be specially possessed of such power, practically in all cases. However, the streptococci isolated from the old foci of otitis media or other complications were often found to have lost all such power.

We failed to note any close relation between the virulence of the streptococci and their toxin-producing power. To be more particular, while 5 mg. of streptococci of over 100th culture having a strong toxin-producing power could not kill a mouse in two days' time, on the other hand, even strains of violent virulence often proved to have only a weak toxin producing power.

The strains isolated especially from the viscera as the disease progressed so far as to increase the degree of individual immunization sometimes showed a variation in the Dick toxin-producing power. This point should be borne in mind in the preparation of the toxin (when the streptococci of a weak producing power are used for preparing the Dick toxin for the skin test, naturally a concentrated solution of not higher than 500 times will have to be employed. Accordingly the heat-stable endotoxin—nucleo-protein—will correspondingly increase in amount, increasing the pseudo-reaction. This point should be treated later on).
Rate of the capability of hemolytic streptococci to produce Dick toxin

<table>
<thead>
<tr>
<th>Streptococci isolated from</th>
<th>No. of strains</th>
<th>Positivity rate of Dick T. tested with 0.1 c.c. toxin diluted 1,000 times</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throat of Sc. f. pat. at early stage</td>
<td>70</td>
<td>93%</td>
</tr>
<tr>
<td>Scarlatinal adenitis</td>
<td>18</td>
<td>89%</td>
</tr>
<tr>
<td>Scarlatinal otitis media</td>
<td>11</td>
<td>81%</td>
</tr>
<tr>
<td>Scarlatinal mastoiditis</td>
<td>4</td>
<td>75%</td>
</tr>
<tr>
<td>Heart blood of sc. f. cadavers</td>
<td>4</td>
<td>100%</td>
</tr>
<tr>
<td>Throats of cases of sc. f. sine exanthemate</td>
<td>3</td>
<td>100%</td>
</tr>
<tr>
<td>Throats of healthy contacts with sc. f. cases</td>
<td>5</td>
<td>80%</td>
</tr>
<tr>
<td>Rooms of scarlet fever patient</td>
<td>4</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>119</strong></td>
<td><strong>89%</strong></td>
</tr>
</tbody>
</table>

REFERENCE


III. Identification of Scarlet Fever Rash with Experimental Rash Caused by Toxin of Scarlatinal Streptococci

DRS. T. TOYODA, J. MORIWAKI and Y. FUTAGI

The Japanese Government Isolation Hospital, Dairen, Manchuria

When the immunization against scarlet fever is conducted with hemolytic streptococcus toxin, in 2-8% of the cases, such symptoms as fever, vomiting and nausea, general rash, and even itching, similar to those of scarlet fever will be developed. According to the amount injected, sometimes the raspberry-like tongue, circumoral ring, and a marked rash attended with desquamation were produced. However, in such cases, no sore throat was observed. Nor could any hemolytic streptococci be found on the throat. Again, in ordinary cases, such symptoms appeared about a few hours or half a day after the injection of the toxin, quickly disappearing completely in about a day, which points enabled a professional to tell it easily from real scarlet fever.
We picked out three positive skin reactors to the scarlet fever streptococci toxin and separately injected intercutaneously each in the chest 0.2 c.c. of the serum of a scarlet fever convalescent and the scarlet fever streptococci anti-toxin, followed with the intermuscular injection of 0.4-0.5 c.c. (4,000-5,000 S.T.D.) culture filtrate of scarlet fever streptococci (Dick toxin). We observed the symptoms as tabulated under, that is, fever, vomiting, and nausea, marked rash, circumoral ring, raspberry-like tongue, in one of the cases accompanied with desquamation. Furthermore, the blood picture of two of them developed to a

**Cases of experimental scarlet fever caused by the scarlatinal streptococcus toxin**

<table>
<thead>
<tr>
<th>Symptoms caused by injecting Dick toxin</th>
<th>Case I</th>
<th>Case II</th>
<th>Case III</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>7</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td><strong>Result of skin test</strong></td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td><strong>Amount of toxin injected</strong></td>
<td>0.4 c.c.</td>
<td>0.45 c.c.</td>
<td>0.5 c.c.</td>
</tr>
<tr>
<td><strong>Fever</strong></td>
<td>39° C.</td>
<td>38.8° C.</td>
<td></td>
</tr>
<tr>
<td><strong>Vomiting</strong></td>
<td>5 times</td>
<td>3 times</td>
<td></td>
</tr>
<tr>
<td><strong>Scarlatiform general rash</strong></td>
<td>++</td>
<td>++</td>
<td>±</td>
</tr>
<tr>
<td><strong>Circumoral ring</strong></td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td><strong>Raspberry tongue</strong></td>
<td>+</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td><strong>Hyperaemia in the throat</strong></td>
<td>-</td>
<td>±</td>
<td>-</td>
</tr>
<tr>
<td><strong>Desquamation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Interval between injection and pyrexia</strong></td>
<td>3 hours</td>
<td>4 hours</td>
<td>5 hours</td>
</tr>
<tr>
<td><strong>Duration of fever</strong></td>
<td>12 hours</td>
<td>36 hours</td>
<td>24 hours</td>
</tr>
<tr>
<td><strong>Blanching phenom. tested with serum of scarlet fever convalescent</strong></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td><strong>Blanching phenom. tested with scarlet fever streptococcus antitoxin</strong></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td><strong>Result of Dick test at the convalescent stage</strong></td>
<td>±</td>
<td>±</td>
<td>±</td>
</tr>
<tr>
<td><strong>Interval between pyrexia and blood examination</strong></td>
<td>16 hours 7 days</td>
<td>20 hours 10 days</td>
<td>20 hours 10 days</td>
</tr>
<tr>
<td><strong>No. of leucocytes</strong></td>
<td>18,400</td>
<td>7,800</td>
<td>27,000</td>
</tr>
<tr>
<td><strong>Neutrophilia</strong></td>
<td>82% 57%</td>
<td>74% 51%</td>
<td></td>
</tr>
<tr>
<td><strong>Eosinophilia</strong></td>
<td>0.8% 0</td>
<td>3.3% 6%</td>
<td></td>
</tr>
<tr>
<td><strong>Lymphocytes</strong></td>
<td>8% 40%</td>
<td>18.4% 34%</td>
<td></td>
</tr>
<tr>
<td><strong>Mononucl. &amp; transitional type</strong></td>
<td>8% 3%</td>
<td>1% 6%</td>
<td></td>
</tr>
<tr>
<td><strong>Basophilia</strong></td>
<td>0 0</td>
<td>0 0</td>
<td>8% 0</td>
</tr>
<tr>
<td><strong>Plasma cell</strong></td>
<td>1.7 0</td>
<td>0 0</td>
<td></td>
</tr>
<tr>
<td><strong>Döhle's body</strong></td>
<td>+ -</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
remarkable degree of leucocytosis and particularly neutrophilia, while, in one of the cases, more or less eosinophilia was noticed, and in still another case, even Döhle's body appeared. All these are the symptoms noticed in a scarlet fever case.

The fact that this artificially produced rash is identical with scarlet fever rash was demonstrated by the fact that the skin area, that had been previously treated with the sera of the two kinds above mentioned before the injection of the toxin, was entirely free from the rash. In other words, the hemolytic streptococci toxin should be considered as neutralized by means of a scarlet fever convalescent's serum (although the serum obtained from a patient in early stage has no neutralizing power as stated later on), attended with complete absence of rash. On the contrary, the scarlet fever rash was blanched when injected with the scarlet fever streptococcus antitoxin serum. In other words, it produced the positive Schultz-Charlton's phenomenon, as is widely known.

We might infer from the above that the scarlet fever rash was caused by the resorption of the scarlet fever streptococcus toxin in the throat, but that its neutralization with the antitoxin caused it to blanch.

**Experiments on identification of scarlatinal rash with experimental rash caused by scarlatinal streptococcus toxin**

<table>
<thead>
<tr>
<th>Blanching phenomenon test</th>
<th>With serum of scarlet fever convalescent</th>
<th>With antitoxin immunized with scarlatinal streptococcus toxin</th>
</tr>
</thead>
<tbody>
<tr>
<td>On the rash of scarlet fever patient</td>
<td>+ (blanched)</td>
<td>+ (blanched)</td>
</tr>
<tr>
<td>On the rash caused by streptococcus toxin</td>
<td>+ (without the appearance of rash)</td>
<td>+ (without the appearance of rash)</td>
</tr>
<tr>
<td>Of toxin contained in the blood of scarlet fever patient</td>
<td>+ (neutralized)</td>
<td>+ (neutralized)</td>
</tr>
<tr>
<td>Of toxin of scarlet streptococcus</td>
<td>+ (neutralized)</td>
<td>+ (neutralized)</td>
</tr>
</tbody>
</table>

We have also experimentally proved that the serum or urine of a scarlet fever case of early stage contains the Dick toxin, and that the intercutaneous injection of such serum or urine in a
Dick positive reactor will give the positive skin reaction. However, if the serum or urine of a patient in early stage which had previously been treated with the streptococcus antitoxin was used, the skin reaction was negative, whatever toxin was contained therein having been neutralized by the antitoxin, as indicated in the following table:

Neutralization test of toxin contained in the blood serum or urine of scarlet fever patient at early stage with different kinds of sera

<table>
<thead>
<tr>
<th>No. of test tubes</th>
<th>Toxins contained in</th>
<th>Sera and amount applied</th>
<th>Result of D.T. tested with the mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5 c.c. serum of sc. f. patient (A) on the third day from the onset</td>
<td>3 drops of serum of sc. f. patient (B) at early stage</td>
<td>+</td>
</tr>
<tr>
<td>2</td>
<td>&quot;</td>
<td>3 drops of serum of sc. f. convalescent (B)</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>&quot;</td>
<td>2 drops of anti-streptococcus toxin serum diluted 8 times</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>&quot;</td>
<td>2 drops of normal horse serum</td>
<td>+</td>
</tr>
<tr>
<td>5</td>
<td>&quot;</td>
<td>2 drops of physiol. salt solution</td>
<td>+</td>
</tr>
<tr>
<td>6</td>
<td>0.5 c.c. urine of sc. f. patient (A) on the third day from the onset</td>
<td>2 drops of anti-streptococcus toxin serum diluted 8 times</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>&quot;</td>
<td>2 drops of physiol. salt solution</td>
<td>+</td>
</tr>
</tbody>
</table>

Judging by the results of the above neutralization and Schultz-Charlton's phenomenon tests, it has been made quite plain that the scarlatiniform rash developed by the scarlatinal streptococcus toxin is identical with scarlet fever rash, and also that the scarlet fever rash was caused through the streptococcus toxin. To cite a few more practical instances, we generally conducted the skin test in the fore arm with streptococcus toxin, while the positive reactors, if any, were immunized with the same toxin, this time in the upper arm.

In some cases, in which the children so immunized became infected with scarlet fever, we noticed that the site of the fore arm or the upper arm at which the injection of toxin had been
made was free from the rash (blanching phenomenon at the site of the previous positive Dick test).

By inference, we may regard both the toxin in the serum of an early stage patient and the streptococcus toxin are essentially the same, having the same antigenic character. Similarly, a case of scarlet fever that became infected while in the convalescent stage of furunculosis or some other suppuration of the skin was found free from rash at the local site or focus, presenting a spontaneous blanching of the scarlet fever rash. It fell to our fortune to observe in one of the cases the blanching area of 8-10 c.m. in diameter at the left nipple of a patient in the convalescent stage of furunculosis. This might be ascribed to the absence of the rash through the local immunity produced by suppurative streptococcus toxin.

Thus, we have tried to demonstrate that the scarlatiniform rash and other symptoms caused artificially by the hemolytic streptococcus toxin are identical with those of scarlet fever.

REFERENCES
1. Dökle; Zbl. f. Bact. Orig. 1912, Bd. 61, and 63.

AFTER FIVE YEARS
H. G. Wyatt, M.B., B.S., Taiyuanfu. B.M.S.

Under this title I record some of the tips that I have learned during my first five years of practice in China. Seniors are hereby warned that there is nothing new here. Those who have only recently arrived out East may find some simple facts so obvious to older men as to have sunk into the subconscious.

It is very helpful when starting practice to make sure that you are working alongside a senior man. His tips will save much trouble to you, and afford him pleasure if you are tactful. If he stops you from doing a gastrostomy or a colostomy on a
patient who does not want it, and cannot get suitable nursing, he will have done much good. You will find that under his influence you will save more limbs than you thought possible. It is done at some risk to life, but one must remember that there are no poor law institutions out here into which the poor disabled can retire.

I am writing from North China, so that the fascinating sub-tropical diseases will not be mentioned.

Under Surgery let me mention first dental sinuses. While there is not much decay of teeth, there is a large amount of infection and destruction of the peridontal membranes. This accounts for the frequency of dental sinuses discharging on the cheeks. Extraction of the offending tooth gives a quick cure when the mouth can be opened, but this is not always the case. For the same reason osteomyelitis of the lower jaw is quite common. The patient has usually been suffering for some time before he comes to you, and is very grateful to have the sequestrum removed. Mal-erupted lower wisdoms are common, and they also are frequently complicated by sinuses. Those who are handy with their fingers will find the dental elevator very useful for making them pop out. The space granted you is not always sufficient to use forceps.

Carcinoma:—Most carcinoma comes too late for sustained cure, but the humane doctor will find much to do for relief and palliation. It is often possible to remove a filthy breast, and get the skin to unite over the wound, or to do a skin graft. Carcinoma of the penis is frequently seen, and appears on an average at hospital a year after the patient has discovered it. It is obvious that not only should the growth be removed with a fair margin to say the least, but also that the inguinal glands should be tackled. I have tried removing the inguinal glands first; because if the main operation is done at the same time, the groin wounds go septic. But after this little operation the patients get homesick, and take the cancer back with them, still in situ. I have tried removing the cancer first, but that being removed, have never succeeded in getting a patient to submit to operation on the groins. Therefore the only practical alternatives are to leave the glands alone, or to remove them at the same time as the main operation. If the penis is amputated anywhere near the base, it is to the advantage of the patient to bring the urethra to the surface in the perineum behind the scrotum.
The same treatment of the urethra is useful in those patients in whom a dense urethral stricture is likely to be recurrent after the primary operation. Your patient is poor, lives some way from the hospital, and is somewhat obtuse. You tell him to return for treatment with bougies, but you see him next in a years time with many septic fistulae and uraemia, if you do not short-circuit his urethra. The bringing of the urethra to the surface of the perineum behind the stricture may seem drastic, but it is the only way in these patients to save life and bring the treatment within the means and patience of the sufferer.

Oesophageal obstruction is common, probably due to the lifelong custom of taking hot foods and drinks, for the majority of the cases are progressive and must be carcinomatous.

In all abdominal emergencies beware of opium. It is almost invariably taken for the acute pain, and the way in which it will mask appendicitis and other abdominal catastrophes is simply marvellous. The patient is at ease. The abdomen is soft. The pulse is quiet. The temperature is not high. Do a blood count.

Operations for anal fistulae, fissures, and piles are humble affairs, but the amount of relief they afford make them well worth doing with care. Remember the tuberculous cases of fistulae, and those connected with malignant disease. While nothing can be easier, I find I am still a learner. An excellent article for reference on anal fistulae has appeared in the May number of the Practitioner, by Ernest Miles, F.R.C.S. I find that most patients do not take kindly to injections for piles that require frequent and repeated visits to hospital. For the same reason the injection treatment of varicose veins rarely goes on until proper relief is obtained by this method. For the same reason one should always avoid two stage operations wherever possible.

Thrombo-angiitis Obliterans is more common out here than in England. It is a problem anywhere, and we have yet to find the cause and the cure. When pain in the calf begins to keep the patient awake, insist on amputation. The only corollary is that the longer you let the patient keep his pain, the more thankful will he be to you for the amputation. At this stage, however careful we are in our explanations, patients will never return to us unless we can give an absolute and immediate cure. On
returning home, if we have not amputated, and when the condition progresses, they take Chinese medicine and particularly opium in quantity but never return to a hospital which they feel cannot cure. It is the Shansi mentality which forces us to this position; certainly I would not stand by it in the same way where one has the intelligent trust of a patient with modern education. When doing the amputation, be sure that the main artery bleeds at the site at which you cut. Flaps should be stumpy and without tension. That denies to you the more fancy flaps of the text books. In diagnosis, the Oscillometer is of course of use in determining the extent of the damage. Most hospitals do not have this instrument, but the magnitude of the pulsations of the needle of a sphygmomanometer will reveal more than the finger on the artery.

Eye operations are a delight to the fortunate few who have steady hands, and a nightmare to everyone else. There is a class of patient who it is very easy to dismiss from outpatients curtly. I refer to those who have extensive opacities of the cornea. Many of these are benefited by a well planned iridectomy. Usually good sight cannot be obtained, but the patient who knows what to expect, is always grateful for slight improvement in his vision. I remember one poor boy who had been peppered by gunpowder. He was extremely grateful, not for full sight, but because he could once more distinguish the colours of large objects.

Owing to the common use of the Chinese date as an article of diet (棗), embedded in 'kao' (糕), one often sees cases with these stones stuck in the oesophagus. The ends of the stones in these cases are usually sharp; the oesophagus is soon pierced, and death is a common sequel. The early cases can often be relieved of the stone by the probang. But owing to the frequency of this accident, and the frequency of small ill-fitting dentures which are easily lost in the throat, it is most essential to have an oesophagoscope. In the hands of the novice this is a dangerous instrument, but it can hardly produce such a rate of mortality as the impacted date stone left to its own evil ways.

Our seniors ought to write more articles on the treatment of neglected dislocations and fractures in China. Those with these accidents often wait in their country homes until the swelling and pain has gone, just to see if the condition will right
itself. Much can be done for these cases with a little ingenuity; but one is usually hindered in the aftertreatment by the unwillingness of the patient to stand any pain or discomfort. This is especially abhorrent to them if it involves repeated pain, as in exercising limbs which have adhesions. I remember in this connection an eager young doctor who soon after his arrival on the field excised a tubercular elbow for a patient. All went well until after the operation when the patient was helped to move the limb. The next day he was not to be found, having run off in his hospital clothes.

While results in this class of case are so poor to the man used to practising in the West, a great deal can be done, and should be attempted. An excision of the head of the radius, a levering back of the lower jaw condyles in old standing dislocation, an osteotomy, excision of the head of the humerus in old dislocation, and the like are all useful on occasion. I have seen several bad cases of contractures and scarring up of the muscles around the mouth, so bad that the teeth cannot be separated in the slightest. Wolf bites afford the most dramatic cases. At least two have sipped all their nutriment through the closed teeth for over twenty years. Plastics, removal of teeth, and wooden wedges worn between the teeth, bring back much of the power of opening the mouth. It is interesting to notice that in these cases, if the contraction has occurred before the eruption of the permanent teeth, the molars will be found with their crowns pointing towards the tongue. Haemangiomata turn up of immense sizes, and should be treated with much respect by the beginner.

It must be accepted as policy not to perform postmortems unless you have the backing of a powerful institution, and full permission of the relatives in writing. The lack of postmortems in most inland hospitals is a distinct disadvantage to the keen worker.

For Anaesthesia of the Chinese patient in an average case, and with a young hopeful learning to anaesthetise with interest but little learning, there is nothing to beat the old A. C. E. mixture. While not suitable for everything, it is remarkable how little trouble it gives under these circumstances. I think I am right in saying that there is nothing which quite fills the place of Nitrous Oxide yet.
**Medicine.** The great majority of the Chinese people believe in Western Surgery on occasion, but this is not the case with modern medicine. There is much propaganda work to be done here, the propaganda of good work well and faithfully done. It is probably the real but unexpressed idea that any good treatment acts rapidly, that militates against the rapid substitution of rational treatment for the old empirical drugging. Where, as in Kala azar, rapid cures are obtained, the native is not slow to come for treatment. Your medical qualifications count for little with the unlettered. All they want is a speedy cure without inconvenience.

The average man from the West fights shy of the common expressions for illness and fever, resting as they do on erroneous theoretical ideas. But we cannot wait till the patient has modern theories at heart before he may have our sympathy. These expressions are in fact no more objectionable than for example our 'colds' or 'bilious attacks.'

Tuberculosis and Syphilis are the great medical diseases all over the land. Doctors in England may set much value on a climate which is dry and sunny, and where respiratory diseases are few and light. And yet here Tuberculosis in all its manifestations is rampant. The two main causes are constant infection and the poor quality of the food. The food factor is interesting, because in early cases an adequate diet combined with suitable treatment will often bring about a recovery. I remember, as a typical case among several, a schoolmaster who was living in a state of semistarvation in order to pay off a debt. He developed tuberculosis of the testicle, and by the time I saw him there was abscess formation. Yet surgical removal, good diet, and sunlight, transformed the man within three months. There was no sign of disease, and he was energetic and well and had put on pounds of flesh. He remains well.

In the busy moments of outpatients when one is so liable to become stereotyped, one must be on guard not to mistake the blood spitting of heart disease for phthisis, and the diarrhoea of consumption for chronic dysentery.

It is not economically possible to feed large numbers of poor patients with tubercular disease with a steady supply of Cod Liver Oil. A good diet would possibly be even better, but
I doubt if a few hurried words on a busy day carry enough conviction to make any appreciable change in the usual diet. In these cases I have been using recently an emulsion of one ounce of peanut oil to five of native malt with a dram of calcium lactate. It is rather an addition to the diet than a effective substitute for Cod Liver Oil. The native malt I use is made from huang mi (yellow millet), and the peanut oil is made by pressure only and not with heat. It must not be adulterated. It is cheap, mixes well, and is pleasant to take. It should contain vitamines A and B and possibly some of D.

The sad case of syphilis, and of all venereal disease, is that the patients can practically never be persuaded to go on to complete cure. "My illness is not worth throwing away fifteen dollars to have it cured," said a patient in passing out of the gate house recently; and that is the common attitude. Cases of syphilophobia are found, but they are all too few.

Syphilis affords a very wide field for diagnostic acumen. When examining heart cases do not forget this disease. Rheumatic hearts must be uncommon, but those with a syphilitic taint are always turning up. The Western textbooks are a very good guide to syphilis as seen in the Chinese. In spite of what may have been said in the past, the various forms of infection of the nervous system are fairly common; though I have not yet seen typical G. P. I. Many of those delightful cases of dramatic recovery fall in these classes. I think of a case of myelitis who came to us bedridden, and who we had walking after a fashion in a few days; and of another case of cerebral syphilis whose one symptom was very bad headache. From a man who was in the throes of anguish, he became within a very few days a man who could face the world with a smile.

Since the modern arsenicals are so expensive, mercurials must be relied on to a great extent. The old-fashioned mixture of Hydrarg. Perchlor, and Pot. Iod. rarely fails to drive out of sight the deformities of tertiary syphilis. An emulsion of Bismuth Salicylate in liquid paraffin is cheap, easily made, and easily given. The mixture should be sterilised by heat, and stirred with a glass rod before use. One must keep the syringe well cleaned, as otherwise the Bismuth corrodes, and one injects copper as well.
From stories that I have heard, there must be a number of foreign doctors who have contracted this disease during their work. Midwifery is probably the most dangerous occupation, because here one is caught unawares.

Trachoma seems an almost universal affection amongst the poorer classes. They only come for treatment when owing to some adverse condition there is a flare up. A season of dust storms will often bring a crop to hospital. The danger with trachoma is that it may blind the diagnostician to the presence of other causes of disease in or about the eye. About February of each year mild cases of xerosis appear. Unless one has the possibility in mind one treats simply for the trachoma that is almost always present as well, and which is the presenting symptom. Dr. Lossouarn has taught North China that an egg a day is the specific for this condition. It is not very wise to treat your trachoma cases too severely when first seen, as otherwise they are not seen again. Even if one drastic treatment could cure this condition, which I doubt, the patients are open to reinfection on every hand. At other times when an eye with phlyctenules or trachomatous conditions is slow in responding to treatment, an enquiry will often reveal that the patient has a history of chronic dysentery. These cases often show a dry skin with a few dry comedones on the face. On the assumption that the vitamine margin of absorption from the intestine is below safety, I give Cod Liver Oil to these cases. The theory may be wrong but it seems to have a beneficial effect.*

From what I have seen of faeces in chronic diarrhoeas, I feel that more attention should be paid to infections with *Giardia Intestinalis* and similar organisms. The condition is very weakening and not easy to clear up; and yet it is dismissed in a paragraph by most textbooks.

Some medicals seems to make it their object to eliminate *Ascaris* whenever they meet it, oblivious of the fact that their patients promptly reinfect themselves. However there are many cases of abdominal discomfort and disorder where Santonin is the specific cure. Where propaganda can be made effective, as in the case of schools, much good work can be done on this as on trachoma, with the assurance that one is not acting over again the story of King Canute.

*See Elliot's *Tropical Ophthalmology* Sec. 10, Chap. III Dysentery.
The Anaemias and leukaemias turn up occasionally. Pernicious anaemia is not common. As it is not easy to diagnose with certainty, the halometer is an added aid which gives a reading of the size of the red cells. As most hospitals will not have a halometer in working order for these very occasional cases, the naked eye method of performing the observation is quite accurate enough for clinical use. One simply observes the comparative sizes of the coloured rings of normal and abnormal blood films when held close to the eye before a common candle. For details see ‘The Direct Comparative Diffraction Method of Demonstrating Megalocytosis’ by J. H. Malloy in the *British Medical Journal* July 19, 1930, page 96.

Westerners coming East are often alarmed when they find that mothers are feeding their babies when they are two and three years old, and there is the temptation to forbid this. Before doing this the practitioner must ask himself what the baby will get as an alternative. A visit to the local dairy, or the use of a specific gravity meter in the milk commonly sold by the dairies, will cause him to think again. One should never lightly tamper with native customs, without adequate forethought. Apropos of babies it is very interesting to observe foreign and Chinese babies growing up in the same towns. The foreign baby is usually raised in a pseudoscientific manner that would have given its grandmother fits. It learns to eat food with distaste. It often suffers with a Cod Liver Oil dyspepsia, and it usually has catarrh, due to living most of the day in the winter time at a semi-tropical temperature. If children are kept near red hot stoves or other forms of great heat during the rigours of the Northern winter, they should not be allowed out of doors at all. ‘Tonsils’ are not common, but the foreign mother will often manage to grow large and typical samples in the throat of her child. The Chinese child, when it survives the rigours of its more natural life, is usually a healthy specimen. To those who disagree with my remarks on diet I recommend a trial for a week only of the food the baby gets; more especially quantities of water from boiled greens with Cod Liver Oil t.d.s.

The Opium Habitue will meet you before you have been in practice long, and you will soon get to know him well. As to treatment, this ideally should be directed to his morals. For the root of the problem lies here—that he knows nothing better in life. The patient who comes to break off his opium because
After Five Years

of the importunities of his relatives is not going to make a permanent cure, nor is the gentleman who comes because he is short of cash. As for drugs, I think that gradual withdrawal of the drug is usually practised now. I like to see other drugs given not as a routine, but as indicated in each case. For sleeplessness a combination of Pot. Brom., Chloral Hydrate, and Tinct. Cannabis Indica, gives some relief. For stomach discomfort Belladonna will often relieve. Our practice is to insist on a residence in the general ward for at least a month. The patient is free to go at any time, but does not get his money back. Those who remain the whole month have then acquired a certain amount of self-discipline.

Hysteria in minor degrees is quite common. In this university city, students who study long hours and take little exercise often produce odd pains and ailments, especially near an examination. Some are of course conscious malingerers.

One of the great opportunities out here is to cure by rational methods patients who have been the unfortunate subjects of malpraxis. One must be careful with this word however, for if it is taken to mean failure to use the right method, we are all guilty of it to some degree at some time. One has seen onions and other irritants applied to simple skin conditions, producing marked dermatitis. These cases usually yield promptly to proper treatment, and bring the doctor much kudos. One has seen alcohol burns as treatment for a bruised leg, antiseptic burns from ignorance of the strength to use, and mercurial poisoning in the treatment of venereal disease. It is distressing to see the number of cases of tubercular bone disease, cold abscesses, and tubercular adenitis, which are treated by incompetent persons by incision under unsanitary conditions. Empyemas are commonly not found, and carcinomas are treated medically as long as the patient will foot the bill. Opium is much prescribed both openly as such, and in mixtures. For instance an elderly man with high blood pressure and the sleeplessness of a tired heart, was advised to take to the opium pipe. It would have been good treatment if there were no such thing as habit formation. The vogue of intravenous and hypodermic injections is still with us, and it is wonderful to notice the resistance the human body has to these repeated insults. Native needling has been frequently written up in medical literature.
It still causes much professional hot temper. I think the climax for me was reached when I was visiting and preaching the gospel one morning in a village near by. I was taken to see a woman who was lying sick of abdominal trouble, and was asked to pray for her. A huge needle was sticking deeply into the epigastrium. It needed all the Christian grace I could muster up to carry out the part I was asked to play.

One may well include under malpraxis the shameful wounds of the thighs commonly caused by beating. This form of punishment should be abolished from any country that claims to be civilised. The incapacity caused hardens the defaulter by making it impossible for him to do honest work for a lengthy period.

When treating the dysenteries never forget arsenical poisoning.

Happy the doctor who has his patients confidence. Without this he can do very little. The habit of going from doctor to doctor as an illness gets more serious is very prevalent, and is born of the fact that ignorant doctors are in excess of those who have acquired by honest study and observation a little knowledge. When confidence cannot be obtained it is often better to give up the case to some other hands. I think for instance of a case of acute and serious dysentery. The patient was brought to me under the idea that the X-ray apparatus that we possess might do some good. On my refusal to use this, the patient was withdrawn from hospital though much collapsed.

In conclusion, the young practitioner is fortunate if he can get his hands on some indexed and bound copies of the C. M. J. for the last few years. There have been some very helpful articles, especially before the specialists took up some of the space, and frightened many of those who have less current literature at their elbows to quote. After all, the all round practitioner is a specialist in bringing approved methods of cure within the reach of the great masses of the common people, and in this he holds a position of much importance; and his practical observations are of great value. The cream of this knowledge is extracted for you in Maxwell’s “Diseases of China.”
The classification of few diseases can have caused such prolonged controversy as has that of Nephritis, and of recent years under the aegis of the British Medical Research Council we have been treated to another based on sound enough work but introducing yet another nomenclature. Into most of the recent classifications has crept the conception of Nephrosis, a syndrome first over-emphasised, then criticised or ignored, and now reduced to the proportions of an exceedingly rare disease entity of obscure aetiology.

To recapitulate briefly the main features of Nephrosis, and making no special reference to the pioneer work of Muller and of Epstein, the scanty post-mortem material hitherto available demonstrates that the first stage of lipoid infiltration of the Renal Tubule cells is slowly followed by their degeneration, and a subsequent interstitial tissue fibrosis with secondary contraction;\(^1\) so late do the typical signs of Renal Insufficiency occur that most of the cases have come to autopsy as a result of secondary infections such as Pneumococcal Peritonitis. In a recent communication\(^2\) Izod Bennett has raised the issue as to whether glomerular damage may not ensue.

Clinically, as seen in the retinae, as judged by the blood-pressure and heart findings, the Cardio-vascular System is normal. Though of doubtful differential diagnostic value the Basal Metabolism is low. There is massive oedema especially of the lower extremities with attendant effusion in the body-cavities. In spite of intense albuminuria, no epithelial casts are found; and though haematuria in the gross sense is absent Izod Bennett in the above communication reports finding erythrocytes repeatedly in carefully centrifuged specimens of urine.
Except for water the threshold substances of the urine are not altered. Blood-urea and Blood Non-protein Nitrogen are unaltered, though the Blood Cholesterol is much increased. The Blood Chlorides show no significant alteration. It has been suggested that the heavy albumin loss is due to a change in the nature of the Blood-Albumin rendering it more permeable to the glomerular cells: other workers feel that the leakage of albumin is rather due to certain as yet undemonstrated alterations in these same cells. A most significant fact is that similar lipoid deposits take place in the cells of the liver and other organs, which would seem to place this disease in a similar class to Diabetes Mellitus and Diabetes Insipidus, where the urinary changes are secondary to alterations in metabolism. Perhaps evidence may someday be available to expand this analogy, and attribute Nephrosis too to some endocrine defect.

Izod Bennett has placed on record several cases in which through severe ascites or chronic ulceration the albumin of the blood has been lowered to the same extent as in Nephrosis, resulting in a similar degree of oedema.\(^3\) In both conditions there is little alteration of the Blood Globulin and Fibrinogen.

Another peculiar feature of this syndrome is its occurrence in young and previously apparently healthy adults, with very unsatisfactory evidence of any focus of chronic infection sufficient to account for the gravity of their symptoms.

In the case-note which follows an apology is due for the inadequacy of the biochemical findings, the necessary chemicals having been delayed in transit at the time by local fighting. The absence of any report on the faeces was due to a misunderstanding on the part of those concerned with the routine.

*Yen Yuin Leo, Soldier, Aged 29. Widower. Home:—Chongchiang, Sze.*


*Discharged.* May 30th, 1931. Slightly improved.

History preceding admission.

- 12 years ago. High fever for about one month.
- 10 years ago. Dysentery off and on for forty days.
- 6 months ago. Acute Gonorrhoea—about one month.
- 20 days ago. Slight indigestion, constipation, diminished urine.
- 18 days ago. Swelling of eye-lids on awaking, improving later in the day, still constipated.
15 days ago. Ascending swelling of legs, in five days reaching lumbar region. Still constipated.


2 days ago. Slight diminution in swelling.


Personal History. No excesses admitted.

Condition on Admission. Except as below a perfectly normal well built man of medium intelligence.

Head and Neck:
- Retinae. Normal.
- Mouth. Mild Pyorrhoea Simplex. One plated tooth.
- Throat. Tonsils and Pharynx slightly inflamed.
- Tongue. Slight fur.

Thorax:
- Lungs and Pleurae. Occasional medium-pitched dry rales heard all over. Pleural Effusion both bases.
- Heart. Following on massive digitalisation occasional extrasystoles. No enlargement or venous pulsation in Jugular Veins.

Abdomen. Medium distention, oedema, and shifting dullness with fluid thrill. Liver and Spleen not palpable. No tenderness nor tumour palpated.

- Genitals and Anus. Normal except for oedema.


Blood-pressure. 112/82.
- Pulse and Respiration. Normal.

Temperature. Normal remittent, with an occasional rise (quite unexplained) to 100 degrees Fahrenheit.

Symptoms. No symptoms of Uraemia on interrogation. Patient just complains of not being quite fit physically. No sputum.

Laboratory:
- Culture. Negative.
- Centrifugalisation. No acid-fast or other organisms found.
- Night urine. 175 cc. Specific Gravity 1028.
Water-test. 8.3% excreted in 2 hours after ingestion of one litre water. Specific Gravity 1016.

Phenolphthalein Excretion. 65% in 130 minutes.

Blood:
Non-protein Nitrogen ...................... 38 mgms.%
Creatinine ........................................... 1.25 mgms.%
Kahn Test ........................................... Negative
Erythrocytes 4,790,000. Leucocytes 10,050 per cmm.
Haemoglobin 75%. Colour Index. 0.78.

Differential:
Immature Neutrophils .................... 2,900 per cmm.
Mature Neutrophils ......................... 4,500 " 
Eosinophils (of which ¼ were immature!) .... 1,100 " 
Lymphocytes .......................... 1,750 " 
Monocytes .................................. 300 " 

Basal Metabolic Rate (Benedict-DuBois) 27.8%.

In view of the paucity of findings presented I feel somewhat embarrassed to venture on any discussion of the case. Apart from the rarity of the occurrence of this condition, the chief interest of it lies in the fact that the haemocytological investigations show definite evidence of sub-acute infection or infestation, as seen in the decided "shift-to-the-left" of the Neutrophil Leucocytes, the greatly increased number of Eosinophils of which one quarter were immature, and the very slight leucocytosis and Secondary Anaemia. The occasional slight rise in temperature could conceivably be due to the condition of the Tonsils.

What metazoon? There comes to mind the oedema of the lower extremities seen in round-worm infestation, but I can find no record of such infestation in the reported cases of Nephrosis.

No note has been made as to treatment. Some slight improvement can be said to have followed the exhibition of Ammonium Chloride 2.0 gms. per day, but of all the other medication used including heavy dosage with Thyroid Gland, it cannot be said that diminution in the oedema could be attributed to anything but the rest in bed with restricted fluids and salt intake.

Hope has not yet been abandoned of getting the patient again into hospital for further investigation, so that the many blanks in the findings to date may be filled.
I have to thank the Departments of Pathology, Biochemistry, and Physiology, of the West China Union University, for much valued assistance in the necessary Laboratory investigations.

**BIBLIOGRAPHY**

1. Shapiro “Lipoid Nephrosis” Archives Internal Medicine, July, 1930, p. 137 seq.
2. Izod Bennett “The Conception of Nephrosis” Quarterly Journal of Medicine, January, 1931, p. 239.

**IN GENERAL—**

Izod Bennett “Nephrosis” Lancet, January 17th 1931, p. 115


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**MUCOCELE OF THE LEFT FRONTAL SINUS AND ETHMOIDAL CELLS**

Dr. A. S. Wong, Union Hospital, Hankow

W. S. Wu, age 47 years, admitted to Union Hospital, Hankow, October 11th, 1928.

*History.* Patient had a fall when he was three years old which left a scar on the left upper eyelid. Eleven years ago he noticed a swelling that appeared above and on the inner side of his left eye, and since then it had has steadily increased in size. Except for the deformity it has given him no trouble all these years. But for the last six months he has had headache and felt the left eye might drop out at any moment. Now he cannot see at all with his left eye.

He has had no pain nor vomiting. There was diplopia when he was able to see with the left eye.

The deformity caused the patient to be much depressed. He was quite willing to do anything to improve his condition,
so that there was no trouble in getting his consent to an operation.

Examination. The swelling measured 5" from side to side, 4" above downwards, and the highest part was about 2".

The eyelid was not discoloured nor was it edematous, and there was an entire absence of inflammatory mischief.

The left eyeball was very much displaced down and out. The movements of the eyeball were not too bad, but there was mechanical limitation medially and upwards.

On palpation tenderness was not elicited and the skin was freely movable over the swelling. Pressure would not reduce it. The medial edge of the swelling was hard, producing the impression of bony thickening. The more projecting part was elastic to the touch, and the prominence appeared to yield under the pressure.

Nasal examination found the lateral wall in the middle meatal area projected into the nasal cavity blocking the whole of the left side of the nasal cavity. There was epiphora.

X-ray finding. The left frontal sinus was much larger than the right frontal sinus. The anterior wall of frontal sinus left side was very thin, part of it being pushed out. The orbital margin was not complete and there was absorption of bone of the upper and inner margin.

Operation, October 11, 1928. Morphia $1/4$ gr. and atropine $1/100$ gr. half an hour before operation. General anaesthetic was used.

Nasal pharynx packed. An eyebrow incision of 3" long over the most prominent part of the swelling. Skin reflected and the bony prominence chiselled away. Absence of the upper and medial part of the L. orbital margin. Cyst was full of greenish and gelatinous fluid under slight pressure. There was no foul smell nor pus. The floor of the Left Frontal Sinus was absent, and communicated with the swelling inside the nose. There was absence of the medial wall of the orbit, most part of the lesser wing of the sphenoid and inner part of the great wing of the same bone. The optic foramen was intact. The optic nerve was very much stretched and one could put a finger right
Mucocele of Frontal Sinus before and after operation.
Unusual Foreign Body in Rectum
round it. The dura of the floor of the Left Frontal Lobe being exposed together with the apex of the Left Temporal Lobe. Strange to say one could almost view the contents of the orbit from behind. All the ethmoidal cells were affected, the Sphenoidal sinus escaped, but there was considerable bulging into the Left Antrum.

Through the nose the projecting ethmoidal wall was broken down and a large opening established.

The nose was packed with gauze and the external wound closed. October 19, 1928, Patient left the hospital and was told to report at the end of six months.

April 1929. Patient reported. He was very pleased with the result of the operation. He had no more headache and with the left eye could recognise faces at a distance of 14 feet away.

AN UNUSUAL FOREIGN BODY IN THE RECTUM

Hwang Yu, M.D. and J. C. Thoroughman, B.S., M.D.

Changchow Hospital Case No. 31—289. Mr. K. age 40, a public surveyor by occupation, came to the out-patient department the morning of April 14th presenting his complaint in the form of a paper which stated that since a childhood experience of sodomy he had had itching of the rectum. To relieve this itching, two days before admission he inserted a “stopper” in his rectum which he was unable to extract. At this time the patient refused to give any details of the nature of the foreign body, or the circumstances attending its insertion. He seemed unable to walk or sit in an upright position, and had had no bowel movement for two days.

On rectal digital examination in the knee-chest position a smooth hard object apparently metal or glass was felt with the tip of the gloved finger. On speculum examination this appeared to be the end of a bottle about 4.5 cm. in diameter. Although it
could not be extracted with fingers or instruments a piece of paper label was detached which, however, was insufficient to identify the object. The patient was admitted to the hospital for a further attempt at extraction.

In the afternoon ether anesthesia was administered, and through the relaxed abdominal wall the other end of the object could be felt just above the umbilicus. The anal sphincter was thoroughly dilated with the fingers, and by pressure on the abdomen and manipulation from below an attempt was made to deliver the object both digitally and with instruments. At this time it was learned that the patient had told one of the interns that the object was a "'Florida Water' bottle." An attempt to snare the neck with a wire loop was also unsuccessful. The rectum was then incised in the midline posteriorly from the anus to the tip of the coccyx, but efforts at extraction were fruitless. After attempted delivery that lasted well over an hour the patient was removed to the ward, and prepared for a laparotomy.

At 9:30 p.m. a left paramedian incision was made under novocain anaesthesia. The bladder was abnormally high but contained only 200 cc. of urine on catheterization. The mouth of the bottle was felt in the upper sigmoid halfway from the umbilicus to the xyphoid. The bottom was impinged against the inner surface of the symphysis pubis. At this stage the patient was given ether and put in the lithotomy position. With the assistance of Dr. Paty who guided the bottle from below, it was extracted with considerable difficulty after manipulation over a period of fifteen minutes. No external injury to the intestine was demonstrated.

The bottle was one third filled with its original fluid; the stopper was intact, and the label partially legible. The height was 18.5 cm., bottom diameter 4.4 cm., mouth diameter 1.9 cm., length of neck 7.5 cm.

The patient made an uneventful recovery.

Da Costa cites examples of a valve of a steam radiator pipe, a gallipot, and a boar's tail in the rectum, and refers to "Anomalies and Curiosities of Medicine" by Gould and Pyle as having a list of others. Dr. Chen Shun-Ming told us of two foreign bodies similar to the one reported here which he saw in Peking.
CASE OF INFANTILE SCURVY IN THE NEWBORN

K. B. Liu, M.D.

Hospital No. 1930—537. A Chinese woman of 27 years, multipara, was admitted to the Wuhu General Hospital on June 7, 1930, for delivery. First birth was nine years ago—a dry birth. Child is alive and well. No miscarriages. Denies venereal disease for herself and her husband. Patient usually enjoys good health. On admission, physical examination was essentially negative. Measurements ample. Child in vertex position. Urine negative. Normal male infant was born at 9:45 p.m. June 8th. Birth normal. Postpartum course uneventful.

Child was perfectly all right until 7th day after birth when it began to show temperature of 100.2°F (R). It went up to 101.6 next day. During its stay in the hospital it varied from 100 to 101. Simultaneously with the rise in temperature, the nurse in charge noticed that the right knee was swollen and the right leg was drawn up. Child cried continuously while straightening the leg or touching the knee. It was perfectly all right when left alone. Feeding was not disturbed.

An examination then revealed nothing except that the right knee was a little swollen and that the child screamed while it was being manipulated. There had been no injury to the child. Urine was negative. Blood count on June 24th was as follows: W.B.C. 17,800, with 82 neutrophils, 11 small monos., 7 large monos., parasites negative. X-ray of right knee “shows no abnormality” on June 25th.

Mother and child were discharged on June 30th, against advice, with the following discharge note by Dr. Watters: “Reason for baby's continued temperature, still a puzzle. Abdomen soft. Patient discharged to-day. To bring baby back if any trouble develops.”

Baby was brought in by mother on July 12th, 33 days after birth with the following picture: Both legs and feet are swollen. Both legs are everted. Two swellings about 3½” in diameter each appear on left occipital region. Swelling of the middle phalanx of two fingers, one on each hand, and also swelling of legs just above, the knee joints is noticed. Suggested, on palpation,
thickening of the shafts of the bones involved. Child is pale but not wasting—gums are not spongy.

Continuous crying when trying to straighten the legs, or when pressing on the lumps. Temperature was then 100.8. Mother says that child has been getting worse since discharge with more swelling of legs. Gradually swellings as described are developed and are increasing in size. Occasionally vomits. Further history at this point discloses the fact that the first girl child had bleeding from gums for a few months after eruption of teeth. This cleared up of itself.

Physical examination at second admission revealed nothing except phimosis and condition as above described. Temperature went up to 101.8 once while in hospital.

Physical findings fit in quite closely with Barlow's Disease. Started treatment with orange and lemon juice each day, and raw tomato juice. Mother left hospital with baby, against advice, five days later, but condition of child was much improved. Crying not so continuous and hard when straightening the leg. Swelling subsiding a little. Treatment was continued by mother at home and child improved every day. About two or three months later when child father came into hospital for treatment we were informed of the good result of the fruit juice treatment—the swellings and lumps had all disappeared and the child seemed well.

This case presents a few interesting features:

1. Hess, in Cecil's Textbook of Medicine, writes: "Among breast-fed infants scurvy is exceptionally rare. So rare that the diagnosis should be made with great hesitation." Also Holt writes, "Scurvy is not likely to follow unless an improper diet is continued for a long period, usually several months." This is certainly an exception to the above rule.

2. Here is a typical case of infantile scurvy in a new-born child, correlated quite closely in part with Barlow's original description of the disease.

3. The disease set in, in this case, within seven days after birth, which is rare. Regarding age incidence, Holt writes, "Age is an important factor. More than four-fifths of the cases occur between the 6th and the 15th month, and half of them between the 7th and the 10th month."

4. Can it be that scurvy sometimes develops ante-partum?
A GOOD TYPE OF COMMON STOOL COMMODE

E. G. E.

A commonplace thing, this stool commode, but an astonishing amount of good design has gone to the making of it; and there are few hospitals that will not find two or three of them a real addition to their nursing service,—particularly in the private wards, where they may be concealed behind a screen, and removed for clearing, or in the general wards, where they can be wheeled or carried to and from the bedside for many conveniences.

The stool is built around the pan,—preferably of white glazed china or earthenware, and measuring about 12"×12" or 14" inside. These can be bought in Kiukiang for about $3. Failing this, the stool may be built around any kind of glazed pot or bowl, not less than 12" in diameter. Its depth matters less. For laboratory specimens the stool may be designed to take a bedpan, or special labor bowls or trays.

The base of the commode is the stool, four-legged, with a circular top, in the midst of which the bowl stands on the crossed rails as shown. The stool-top rim is circular, about 2" wide × 1" thick, and bears the legs which are cut out of 2" × 1½" stuff. The height from the floor to the stool-top is about 10" or 11".

Superimposed on the stool is the racquet-shaped “main
The "main deck," whose sole function is to support the hinged seat and lid. The "handle" of the racquet should be about 7½" wide, by about 7" long—i.e. in addition to the width of the rim. The rim should be about 2½" wide, by 1" thick, and, for appearance sake, should project slightly beyond the stool-top, to which it is solidly attached by screws—three screws to each quadrant. The screws may be inserted either from above downwards, or invisibly, from below upwards. The stool should be so planned that the top of the actual bowl rim lies flush with the top of the "main deck," in order that the overlying seat may form a fairly closely fitting joint upon it. The opening in the "main deck" should fit snugly round the rim of the bowl; as a refinement it may even be rebated (i.e. have a recess cut around the top of the opening) to the depth of the bowl rim, which will then lie very comfortably in it. Two finger recesses (shown in the sketch) are provided to enable the sanitary woman to get her fingers under the rim to lift out the bowl.

The seat (½" stuff), and the lid (½" stuff) are cut to exactly the same racquet pattern as the "main deck"—the seat being about 1/3" larger all round, and the lid as much smaller. These different projections layer after layer are to give the appearance of mouldings. The edges of both seat and lid should be well rounded, especially on top.

The seat opening corresponds in size with the inner diameter of the bowl (about 12¾""). The seat rim therefore becomes about 3½" wide underneath, though narrower on top by reason of the rounded outer edge, and the bevelled edge of the opening. The usual circular stopper lid is provided to fit closely into the opening.

The "racquet handle" of the seat is sawn off 3" from the end, and the 3" block is screwed down to the "handle" of the "main deck." Onto it the rest of the seat is then hinged (vide sketch). Similarly a 1½" hinge-block is sawn from the lid, and screwed into the top of the seat-block. To this in its turn the lid is hinged.

The commode is both compact and light. Any woman can lift it, and any coolie carry it with ease. To make it still more mobile a small, low, flat truck set on castors or small rubber-tyred wheels will enable the nurse, or the sanitary woman to
move it from place to place at will. It is commonly so used in the home hospitals.

I may add that after a quarter of a century's study of this problem, I know no solution of the sanitary problem in China hospitals so finally effective—all factors considered—as this same white glazed Kiangsi bowl, either covered or uncovered, set simply on the floor. This for all indoor closets or latrines. Yet for private ward work, this more elaborate commode commends itself. It looks well, it closes well, it is comfortable, it is easily cleaned, and, after all, it is used by only one person at a time.

Footnote.—Will anyone take up "E. G. B.'s" challenge? Should anyone think he has a better sanitary device, I. H. T. will be delighted to hear of it.

Address:
The Director, I. H. T.
Union Hospital,
Hankow.
THE CHINESE MEDICAL JOURNAL

In the section of this issue devoted to the China Medical Association will be found an announcement of the amalgamation of the China Medical Journal with the English Section of the National Medical Journal. This is the culmination of some two years of friendly negotiations and will take effect from the beginning of next year.

The new Journal is to be named:

THE CHINESE MEDICAL JOURNAL
English Section

and the first number will be issued in January, 1932.

There cannot but be a feeling of real regret among our members that the China Medical Journal after forty-five years of faithful service to the Association should in a sense disappear. The Journal has been a child of the Association and has grown mightily under its care, which is hardly surprising when we remember that among its past editors it has had such men as Jefferys and Merrins. That a sense of loss comes to every home when the child leaves it for wider service is natural but it only tempers the joy of realising the larger sphere which lies before him. In this sense any loss that we feel in the change should be little to the knowledge of gain that this amalgamation brings.

There is a further aspect of the change in which we particularly rejoice in that it shows the growing solidarity of the best part of the medical profession in China and heralds still closer bonds between the members of the medical profession in this country. There is something very fine in being able to take so large a share in the formation of the national journal in this great country to which we have given the work of our lives, and when the Chinese Medical Journal takes its full place among the other great national medical journals of the world as it
must do, we shall feel very proud of the share that we have had in its origin.

The Executive Committee of our Association has, in the course of the negotiations for amalgamation of the Journals, stressed the importance of the clinical side of the Chinese Medical Journal for the sake of so many of our members working in the smaller hospitals to whom this side makes an especial appeal. This, as will be seen, has been fully met in the final agreement for amalgamation. We feel it incumbent here to state, however, that the success of the Journal from this point of view depends far more on the individual members of the Associations than it does on the editors. The editors are not sort of fierce guardians of the gate frightening would-be contributors of less elaborate material away. The reverse is really the truth; rather we go round as beggars with cap in hand and despite this suffer some very lean days. As a practical example of this the present editor of this Journal, impressed with the importance of the diseases of famine conditions in China and the little that was known about them, has appealed again and again for papers on this subject from those working in the affected regions and has written many private letters asking for such contributions. Some two years efforts have so far drawn an absolute blank. Now we are again facing terrible famine conditions in Central China and the help that such papers might have given is not forthcoming.

It will be noted that the new Chinese Medical Journal is to be published in Peiping for the present at least. Many of us have felt that Shanghai would have been the better centre for this, but under present conditions there is no doubt that a considerable saving in the incidental costs of producing the Journal can be secured by publication in Peiping and at the present time of economic difficulties and depreciated exchange every item of cost has to be very carefully considered.
HOSPITAL PRACTICE

We welcome a paper by Dr. Wyatt in this issue entitled "After Five Years." We willingly acknowledge that there is too little of the commonplace in the pages of our Journal, but we refuse to kneel at the stool of repentance on that account. The Editor can at best only publish the material which he receives and he would call attention to a rather peculiar phenomenon that he observes in letters accompanying many of the articles that reach him. The specialist sends his paper in with pride, the writer of the commonplace sends his with an apology. We agree with Dr. Wyatt that more material dealing with the problems that form the everyday work of the hospital doctor are required, and we gladly appeal for such. They want however as carefully working up as do those dealing with the more exceptional cases and should as a rule be confined to one group of cases. Occasional papers, like this, reviewing hospital practice in general are valuable but those dealing with one special group of cases illustrating the problems of one of the more common diseases are even more so.

Dr. Wyatt in this paper refers but too briefly to the removal of sequestra from the jaw. These are only too common as he points out. To the writer when he first came East they were a positive nightmare. The bleeding is often for the time being very profuse, the opening of the mouth may be a serious difficulty and the dread of the patient inhaling the blood was to him at least a very constant trouble. The newcomer may therefore value a note on the simple routine that removed these cases from the list of surgical worries.

The patient was deeply anaesthetised, the anesthetic removed and the man rolled over on the affected side with the mouth just over the edge of the table. The sequestrum was then rapidly removed and an assistant with a finger hooked in the cheek depressed the lower edge of the mouth so that all the blood flowed out of the mouth into a pail below until the surgeon had time to pack a long strip of gauze into the cavity. This was always an easy thing as the cavity left had firm periosteum on both sides. The end of the strip was left outside the mouth until the patient had regained consciousness by which time almost all hemorrhage had ceased.
DR. F. F. TUCKER

We have withheld comment on the Techow incident in this Journal until the legal case arising therefrom was settled, which we understand is now the case.

As is well known, after repeated thefts of a large amount of hospital money and material for the care of which Dr. Tucker was personally responsible, he took radical steps to try and secure the thief. Injured himself in the ensuing struggle Dr. Tucker fired on the man when attempting to escape, with the result that the thief was wounded and eventually died.

We understand that no case stands against Dr. Tucker for this action and it would be very surprising if it did seeing that scarcely a week passes in this city without the Chinese police taking similar action often with unfortunately similar results for the robbers.

There may be honest differences of opinions as regards the methods employed but there can be no hesitation in expressing our sincere and affectionate sympathy with the Drs. Tucker in their troubles. For very many years they have given their lives in whole-hearted service for China. Not only has their medical work for this people been pre-eminent but their service in the cause of the famine stricken has been remarkable, and their efforts for the suffering have on more than one occasion been carried through at the risk of their own lives.

We greatly regret that Dr. Tucker's troubles should have been added to by the contemptible and cowardly action of certain members of his own Mission, twenty-seven of whom issued a "manifesto" condemning Dr. Tucker and calling for his resignation, declining even to wait for fuller evidence, when so requested, before making public this "manifesto." We understand that twenty-six out of the twenty-seven preferred to remain anonymous. We are not surprised that men who would commit themselves to such a cowardly attack on a colleague should be unwilling to allow their names to be published. Luckily for them they are in China and not in England where heavy fines if not imprisonment would have been the punishment of such contemptible conduct. It would seem that Mission
Boards at home might still exercise a little more wisdom in their choice of men for work out here; a sense of elementary justice is surely not uncalled for in those sent out on missionary service.

We greatly regret that they have so far succeeded in their efforts to oust Dr. Tucker from his post in that the doctor has sent in his resignation, but we hope and trust that this country may still profit from his services in some other post in China.

HOSPITAL TECHNOLOGY SECTION

With this number we begin again the brief notes on simple hospital equipment, etc., by the Director of the Institute on Hospital Technology. The issue of these was suspended during Dr. Hadden's absence on leave. These notes have received a warm welcome from our readers in the past and are on very strictly practical and simple lines. We are very glad to be able to commence the publication of a new series.

DAVENPORT MEMORIAL

Under "Announcements" in the Association Section of this issue, we publish an appeal for subscriptions to a memorial to our former President Dr. C. J. Davenport. We can imagine no form of memorial that would be more gratifying to our old friend were he still with us, and we very heartily support this appeal. We trust that all who knew Dr. Davenport, and to know him was to love him, will respond by gifts however small to his memory.
China Medical Association Section

ANNOUNCEMENT

THE CHINESE MEDICAL JOURNAL

After prolonged consideration by the Executive Committees of the National Medical Association and the China Medical Association, it has been decided to amalgamate the English Section of the National Medical Journal and the China Medical Journal to form a new publication under the title of the Chinese Medical Journal—English Section.

The terms of amalgamation have been agreed upon as follows:

1. That the name of the Journal be The Chinese Medical Journal—English Section.

2. That it be published under the joint responsibility of the National Medical Association of China and the China Medical Association.

3. That a copy be supplied free to each member in good standing of the China Medical Association and to such members in good standing of the National Medical Association as prefer the English to the Chinese edition.

4. That the Journal be conducted by two Editors, each Association appointing one.

5. That the Editors, subject to the control of their respective Associations, be solely responsible for the material inserted in the Journal and the arrangement thereof.

6. That an Editorial Board be appointed at the next Conference of the Associations to be a Board of Reference for the Editors in respect to any problems arising as to the policy or material contents of the Journal.
7. That the material of the Journal include Original Articles, Review Articles, Clinical Articles including material dealing with Hospital Technology, Editorials, Book Reviews, Reports of Branches and such other subjects as the Editors may think fit.

8. That the purpose of the Journal be to meet the needs of all classes of physicians in China and that the special requirements for clinical articles of those in isolated situations as well as the need for fostering the scientific aspect of medicine be kept in mind.

9. That the Journal be published monthly.

10. That the price of the Journal to non-members of either Association be not less than the following:

   (a) In China and the Far East, Mex. $12 per annum or Mex. $1.20 per single copy, postpaid.

   (b) For other countries, G$6 or £1-4/- per annum or G$0.60 or 2/-6 per single copy, postpaid.

11. That for the present the Journal be published in Peiping.

12. That this agreement take effect as from 1st January, 1932.

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BRANCH REPORTS

WEST CHINA UNION UNIVERSITY, MEDICAL-DENTAL FACULTY.

Clinical Meeting, 29th May 1931.

In the Men's Hospital, Chengtu, an interesting clinical meeting was presided over, by Dr. E. C. Wilford, on May 29, 1931. Several case reports were presented by members of the staff.

The first, Nephrosis, in a young soldier, was outlined by H. G. Anderson, M.B., M.R.C.P.A. A full report of this case
is to be published. The patient conformed in all particulars investigated, to the classical description of the disease, with its massive albuminuria and oedema. There were negative findings as regards the normal pictures of renal or cardio-vascular-renal diseases. The chief point of interest aside from the rarity of the condition was the presence of a chronic infection, as evidenced by both fever and haematological findings. In view of a high eosinophile count it was suggested that this might be protozoal in nature. Unfortunately up to that time no examination of blood or feces for parasites, had been made. One thinks of oedema of the legs associated with round worm infestation and wonders if possibly a new route to the etiology of this disease may have been opened up.

Dr. C. C. Canright then followed with the report of a case of pyaemia. The patient a man in his twenties, came to the hospital suffering with a large abscess of the forearm. This abscess was opened and later other abscesses appeared at various points on the man's body. At time of presentation of the case, some of these were still draining, but as no new ones had occurred for some time it was hoped that a complete recovery would take place.

In the discussion which followed Dr. R. A. Peterson remarked that the otologist faced the problem of potential pyaemia, in every case of lateral sinus thrombosis. In his experience of four cases of pyaemia following lateral sinus thrombosis which had been treated by ablation of the lateral sinus and ligation of the internal jugular vein, the staphylococcus was recovered from the abscess in two cases. In one case of these two, streptococcus was isolated from the lateral sinus and staphylococcus alone from the pyaemic abscess.

Dr. Anderson instanced a case of pyaemia following a staphylococcic subperiosteal whitlow, in which all the secondary abscesses were staphylococcic.

Dr. S. D. Du gave a short resume of the work he has been doing in the study of Trypanosoma Lewisi as it appears in the blood of the rat. The speaker had first studied the parasites in Peking and since his return to Chengtu, has been studying them in rats found in Szechuan. He used Romanowsky stain. The parasites were described as to shape, size and structure.
Dr. T. H. Williams, pathologist of the hospital gave a concise and clear outline of the important points in the differential diagnosis of Chronic Mastitis, Adenoma and Carcinoma of the breast. He pointed out that a surgeon should be able to tell macroscopically what he is dealing with at operation.

The concluding paper of the evening was read by the chairman, Dr. E. C. Wilford, on Prepupial Calculus Balanolith. A recent case undergoing operation was described and the stone shown, as well as some others previously removed at operations. The speaker quoted A. D. Wright as saying that the Balanolith is almost a monopoly of the east and that this is probably due to poor hygienic conditions prevailing. Reference was made to a case reported by Dr. Wilford in the C. M. J. August 1925, where a stone the size of a ping-pong ball had been removed. The dangers of subsequent malignancy, and the more frequent occurrence in non-Mohammedans of the East, were points noted.

Several cases of infected elbow joints were reviewed, the technique of the operation described briefly and a case at the present time under treatment shown.

Arrangements were made for the subsequent meeting and the gathering adjourned.

Secretary.

E. K. CUNNINGHAM.
Announcement

PROPOSED MEMORIAL TO DR. C. J. DAVENPORT.

The rebuilding scheme of the Chinese Hospital in Shantung Road is almost complete, and in a few months the hospital will be occupying its new quarters. This building was the dream and hope of Dr. Davenport's later years; he only lived to know the certainty of its accomplishment, but not to see the building itself. Shortly after Dr. Davenport's death in September, 1926, a sum of money was contributed by those who knew him and honoured his work, and with this two free hospital beds were endowed in his memory, these will always stand in the wards as a remembrance of him.

It is felt, however, that some special memorial might be put into the new building which should serve more particularly to remind the Staff of his many faithful years of work and witness in the old hospital. The suggestion has been made that this might well take the form of the provision of certain furniture for the room in which Staff prayers will be held. In this room, we want to create an atmosphere of reverence and beauty, and one which will not feel "foreign" to the Chinese Staff. A sum of $300—$400 Mex. (at present exchange rates, £15—£20) would suffice, it is thought, to provide a small platform, a Chinese style carved long table (for Communion Table) and two chairs, together with a screen, also in the Chinese style, and a brass plate or a scroll as a memorial tablet. Any surplus money that might be contributed might be used to provide Chinese shades for the lights, or scrolls for the walls.

We hope that this proposal will commend itself to those who knew and honoured Dr. Davenport, and that many friends, both Chinese and foreign, will feel moved to contribute to the Memorial. Subscriptions of any amount, however small, will be welcomed and may be sent to Dr. Paterson, the Medical Superintendent, at the above address. We should be glad to receive all contributions by the end of October 1931, if possible.
A list of subscribers will be afterwards sent to Mrs. Davenport and the family.

A. T. Zung
T. Chen
P. R. A. Sharpe

Committee for the Memorial.

Hospital Reports

KWANG CHI HOSPITAL, CHE. 1930. C. M. S.

Nurses: Eight Foreign and 11 Chinese graduate nurses

Inpatients 2931  Outpatient attendances 40,615.
Leper Hospital 65.

This report of the hospital now in its sixtieth year of work is a fine record of steady growth and a splendid example of the vitality of our Mission Hospitals in their recovery from the almost overwhelming troubles of the past few years. Financially there have been the universal difficulties resulting from depreciation of exchange and oppressive Customs duties but the hospital closes the year with a small balance in hand.

The amenities of the hospital have been greatly improved in the past year by adapting the former college building for use as a women's hospital and by the installation of central heating. To changes in the leper hospital we shall refer later.

The surgical work of the hospital shows steady progress and the successful treatment of a perforated typhoid ulcer.
speaks well for its technique. In the medical department typhoid fever and malaria seem to have been especially prevalent and much cerebro-spinal meningitis was encountered. The electrical and light department which has for some years been a strong feature of the hospital's work reports a busy year.

The maternity department had 14 pupil-midwives in training and graduated twelve of these. The total of births were 182 in the hospital and 27 outside. It is interesting to note that there were only six operation cases in this number—Forceps 4, Craniotomy 1, Embryotomy 1.

The hospital is carrying on a very fine leper work, the only provision for such patients in this province. We feel therefore that a fuller report of this activity should be given. As it is the information about this side of the work appears only in different paragraphs throughout the report. This is hardly fair to the remarkable progress that has recently been made. The men's department has been rebuilt and additional accommodation provided, a fine chapel for the lepers has been completed, regular treatment is showing its effect in symptom-free patients and as a result of this the pressure on the beds is becoming very serious.

The report contains a very excellent analysed list of diseases covering both out-patients and in-patients. This is one of the most valuable we have seen.

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**GENERAL HOSPITAL HUCHOW, CHE. 1930. M. E. S.**

*Staff: Drs. Manget, Patterson, Ts'en, Tongs, Yao and Chu.*
*Nurses: One Foreign and 16 Chinese graduate nurses, 38 pupil nurses.*

**Inpatients 2711**  **Outpatient attendances 13,206**

This is one of the best of the Hospital reports which reaches us and we regret that space will not allow of more than touching on a few of its interesting features.

The financial position is satisfactory despite an unusually difficult year and despite also that the cost of drugs from abroad
has risen 80 per cent owing to depreciation in exchange and increased customs charges.

We note with interest and satisfaction the replacement of men by women nurses which has largely been accomplished throughout the hospital.

The following urgent needs for the improvement of the work are mentioned and will we trust soon be met.—A heat and power plant, the great urgency for which was brought home during the specially cold weather of the last winter; a laundry and drying room, for during the winter the clothes frequently freeze instead of drying; and a roof garden for the treatment of tuberculous patients.

Separate brief reports are given of the different departments and are all of much interest. The report of the obstetrical department, however, would have done with better paragraphing.

The medical report is largely devoted to the important question of triple typhoid infection, and relapse in meningococcus meningitis. The surgical report deals with special cases, among which one of cancrum oris associated with typhoid fever in an adolescent is of special interest. Keratomalacia and the treatment thereof is stressed in the report of the Eye, Ear, Nose and Throat department and various cases of interest are reviewed in the obstetrical report. Perhaps the most interesting report of all is that of the pathological laboratory which is accompanied by very full and extensive tables which are of very special value. One weakness of this is that it is difficult in some cases to know what proportion positive examinations bear to the total. For example, we have the very important record of 56 cases of filarial infection but this loses much of its value from our ignorance of how large a series of examinations was undertaken and how far these cases were associated with symptoms of disease.

The report closes with very valuable tables of diseases, and a brief report in Chinese is appended.
EYE, EAR, NOSE AND THROAT HOSPITAL, CHENGDU.
1929, 1930 M. E. F. B.

Staff: Drs. Peterson, Den, Lee, Lo, Cunningham.
Nurses: 9 permanent and 5 temporary graduate Chinese nurses.

Inpatients, 1929 925 Outpatient attendances, 1929 37,010
1930 999 1930 52,861

We welcome very heartily the first report of this hospital, not only for its intrinsic value but as being the first report of a hospital specialising in these departments in China as far as we are aware. The staff as noted above, is a strong one, the material that they handle is enormous and the contribution that such should be able to make to the progress of this side of medicine in China should be great.

The report opens with a brief history of the development of the hospital which was only finally handed over to the head specialities in the beginning of 1929. The account of the work here given covers the two opening years. In the first year especially the hospital had to meet considerable political opposition from outside but the attacks on it failed and the future prospects of the work are bright.

Patients are drawn to the hospital not only from the extreme limits of the province but from such distant places as southern Yunnan and northern Kansu, and the plans for the future of the work include the undertaking of extension work in related hospitals in remoter parts of the province as motor roads are developed.

The report contains some very interesting observations by the staff on various manifestations of disease met with in the course of the year. Notice is paid to the frequency of Trachoma, it being estimated that about 25 per cent of the general population is affected. Attention is called to the close relationship of trachoma to the general state of the health especially in its nutritional aspects.

We note with interest the rarity of acute mastoid disease as compared with the frequency of acute and chronic suppurative
conditions of the middle ear. This struck us very much in our own hospital work.

Diphtheria and Vincent's angina appear to be on the increase corresponding with a rapid increase in the facilities for travel.

Excellent tables of classification of Diseases of In-patients and of Operations close the report.

HACKETT MEDICAL COLLEGE AND AFFILIATED INSTITUTIONS, CANTON. 1930. P. N.

This is a combined report of the Hackett Medical College, the David Gregg Hospital and the Turner Training School for Nurses, also the Yau Tsai School of Pharmacy.

The School of Medicine qualified eleven students in the course of the year and has at present 58 under-graduates. The smaller number of admissions this year is due to the Government regulations that only those holding diplomas from registered senior middle schools should be admitted to medical schools.

The School of Nursing graduated 21 nurses and has at present 52 pupils.

The School of Pharmacy, the only one in South China, is in the early stage of its development and had no graduates this year. There are, however, now 12 students in the school.

The hospital has had a busy year despite the fact that during the winter months the number of patients was greatly decreased due apparently to a better-than-average health of the community during the cold weather. During the spring and summer, however, Canton was visited by an unusually severe epidemic of typhoid fever which kept the hospital very full.

The greater part of the report of the hospital is taken up by tables of classification of diseases of inpatients which are very complete. Some of the figures given are very striking. The peculiarly different proportion of typhoid and paratyphoid
in various parts of China has already been noticed in reviews of other hospital reports. In the figures here given typhoid numbers 70 cases and paratyphoid, A and B together, only 5. Hankow, it may be remembered, reported 18 typhoids to 32 paratyphoids while Shanghai General Hospital gave its numbers as typhoids 144, paratyphoids 60. The proportions of the infections vary it will be seen very widely and the reason for this would be of considerable interest.

We note the heavy incidence of beri-beri in Canton, 164 cases, and the great frequency of Fasciolopsis infestation, 96 cases. The latter is quite a surprise to us as they far outnumber the cases of Clonorchiasis (29) for which Canton is famous.

It would be of great value if this report of the hospital was expanded a little to supply information on some of the more interesting cases. For example, 10 cases of Eclampsia are entered without any information as to the mortality or the methods of treatment employed.

TEMPLE HILL HOSPITAL, CHEFOO. 1930. P. N.

Staff: Drs. Dilley, Bryan, Berst, Bi, Yen, Chang, Liu and Djang.
Nurses: Two Foreign and five Chinese graduate nurses and 38 pupil nurses.

Beds 85 Inpatients 1195 Outpatient attendances 15,342

No fighting, no interference by official restrictions or regulations, no trouble lodged by individuals nor by families of patients and an increasingly friendly attitude on the part of the people makes an excellent and a not too common basis for a report of the past year.

It is very interesting to note that the increase in the number of medical patients in 1930 was due to the influx of kala-azar cases from the country districts, a total of 202 having been
treated during the year. In addition to those treated in the hospital many other cases are being dealt with by Chinese practitioners in the city. This brings up again the very important question whether the disease is spreading in China or whether the larger numbers being treated in so many places is due only to the attraction of improved methods giving better results. Unfortunately it is impossible to get a satisfactory reply but the problem is one of considerable importance.

There are interesting little reports of each department of the hospital's activities and very carefully prepared statistics. The division of these tables under each department detracts however from their value for study as a whole.

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TUNGKUN HOSPITAL, 1930. RHENISH MISSION

Medical Superintendent, Dr. Hueck.

Inpatients 778. Men 479  Women 299  Increase of 212
Outpatient attendances 8343
Lepers: Ambulant cases 19 men 12 women 474 injections
Inpatients 40. 1,064 injections

The hospital reports a year of uninterrupted progress; repairs and extensions have been made to the buildings. A new house for lepers has been built and was opened in July.

The building of the Sanatorium for Tuberculous cases will be completed next year (1931).

The hospital needs an X-ray plant but funds for this are lacking at present.

Special reference is made to the work of the Chinese nurses who are taking increased responsibility for the work.

The report closes with a statistical table of the diseases treated during the year.
GOODWILL HOSPITAL, NANHSUCHOW, ANHWEI.
APRIL 1930-MARCH 1931. P. N.

Medical Superintendent: Dr. W. H. Turner, Jr.
Inpatients 336 Outpatient attendances 11,965

We have received a very brief type-written report of this hospital from which we gather that the hospital had to deal with a severe epidemic of Typhus early last year. Kala-azar appears also to figure largely in the list of hospital patients.

The hospital buildings have been improved and extended in the course of the year.
ALKALI TREATMENT OF NEPHRITIS

DR. W. F. CROLL

At a meeting of the Aberdeen Medico-Chirurgical Society held on 15th January, Dr. W. F. Croll described the course of a case of mixed nephritis, in which the main interest lay in the excellent diuretic response to the administration of alkali.

The patient, an unmarried woman, aged 42, was admitted to his wards on June 17th, 1930. She complained of back-ache, swelling of face, trunk and limbs, and of scantiness of urine. The symptoms commenced with swelling of the lower eyelids six weeks prior to admission. Headaches had been troublesome, and she also complained of shortness of breath, slight nose bleeding, and blurring of the vision. The family history was excellent, and the patient had no previous illness, apart from what she described as abscesses of the legs three weeks before the onset of the present complaint, lesions which might have been of some etiological significance. On admission there was marked pallor and great oedema of the whole body. The pulse rate was 92, respiratory rate 22, temperature 98.6°F., blood pressure 110/80, blood urea 32 mg. per cent., urea concentration 1.9 per cent. The urine was cloudy, acid, with specific gravity 1011 to 1022, and contained 0.7 per cent of albumin and only a trace of chloride, the centrifuge deposit contained casts, pus cells, and a few red blood cells. The eye grounds showed no evidence of renal or vascular disease.

The patient was put on a milk diet. She grew rapidly worse, and for a few days was critically ill. The oedema increased, and it looked as if she were to be drowned in her own fluid. The conjunctivae even showed marked oedema. The amount of urine passed during the first week was 84 ounces. One week after admission an Epstein diet was prescribed consisting of fish, lean meat, lean ham, white of egg, lentils, oysters, peas, rice, oatmeal, bananas. Fluids were restricted to two pints, and salt was excluded. Almost immediately there was a decided improvement, the daily volume of urine increased
and the oedema diminished. Three weeks latter urea was given (15 grams thrice daily) as a further stimulant to diuresis, but, having no effect, it was discontinued. Six injections of novasurol were given at intervals of three or four days, but there was no marked response. Nephritin was tried next in a dosage of two tablets four times daily. There was at first an increase in the urinary output, but this was followed by a decided fall, which more than counter-balanced the initial increase. Furthermore, the amount of albumin passed was greater. It was then decided to try the effect of alkali administration, as advocated by Osman.

Dr. Croll said that some decrease in the plasma bicarbonate appeared to be the rule in all cases of chronic nephritis, and that Osman recommended the administration of alkali in the form of equal parts of potassium citrate and sodium bicarbonate by mouth, in amounts sufficient to maintain the plasma bicarbonate at normal level. . . . . . The carbon dioxide combining power of the plasma in the present case was 42 volumes per cent., a value somewhat below normal. The dose of alkali given was actually much smaller than that used by Osman. At first the patient took 50 grains of alkali thrice daily, and four days later the dose was doubled. The response could be described as dramatic. The volume of urine increased, and in six weeks the body weight was reduced from 161 to 108 pounds, and the patient was now well and active. Dr. Croll said that the mode of action of the alkali was somewhat obscure, but that, according to Fischer, the colloid proteins of the body cells had the property of absorbing or parting with water in response to alterations in the reaction of the surrounding medium. In nephritis there was a move to the acid side and the reduction of the plasma bicarbonate owing to the retention of phosphates. Fischer regarded the oliguria and albuminuria as being directly due to the swelling or oedema of the kidney cells. The oedema of the tissues he considered to be due to the associated acidosis, occurring independently of the renal lesion.

THE TANNIC ACID TREATMENT OF EXTENSIVE ABRASIONS

Major W. Bligh, R. A. M. C., points out that the large abrasions resulting from motor accidents lay bare many sensory terminals, producing pain on every movement. Ordinary dressings are not satisfactory. Ointments may soothe, but they prevent drying and encourage the formation of granulation tissue. Antiseptics and astringents, useful on small abrasions, are less successful on large ones. Dry dressings stick, and their removal is difficult. Healing under moist dressings is slow. Exposure to the sun would perhaps be the best treatment, but this is not always possible. It therefore occurred to Major Bligh to try the tannic acid treatment which has proved so successful for burns. A man who had his thigh abraded from hip to knee in a motor-cycle accident spent an unhappy night under a dry dressing. Then the thigh, naked under a cradle, was sprayed hourly with 2.5% solution to tannic acid. In a few hours a tannate scab formed, and he was quite happy and sank into sleep. In 48 hours the scab was tough enough to permit gentle movement about the ward, and in a few days he returned to duty.

The Clinical Journal, May 6, 1931.

TREATMENT OF DISSEMINATED SCLEROSIS BY LIVER

ALEXANDER GOODALL, M.D., F.R.C.P.Ed.
Physician in Ordinary, Royal Infirmary, Edinburgh

AND

JAMES K. SLATER, M.B., F.R.C.P.Ed.
Assistant Physician, Royal Infirmary, Edinburgh

It has been shown by Ungley and Suzman and others that treatment by liver is followed by a remarkable improvement in the combined degeneration of the spinal cord associated with pernicious anaemia. It occurred to us that other affections of the nervous system might be benefited by similar means.
In pernicious anaemia there is no relationship between the degree of blood defect and the severity of the nerve affection, and either may appear before or without the other. The nerve symptoms are not a consequence of the anaemia, but may be the result of the same or a concomitant deficiency in a hormone or vitamin. The latter view is suggested by Mellanby, who considers that the anaemia is benefited by a water-soluble factor, while experimental nerve lesions have been cured by a fat-soluble factor. On these grounds we began the treatment of cases of disseminated sclerosis with liver. So far only whole liver, lightly cooked, has been employed, and patients have been advised to consume half a pound daily. There is not the difficulty in connexion with digestive disturbance which so often occurs in pernicious anaemia. We have not yet employed liver extract or preparations of stomach. Our observations extend over a period of seven months only, but the results already obtained seem to us to justify the publication of abridged notes of our first five cases. These cases are consecutive. We hope to extend the list with several later cases now under treatment.

Here follows the history of five Cases

Disseminated sclerosis is notoriously a difficult disease in which to assess progress. It would, however, be remarkable if all five consecutive cases should show spontaneous remissions to an extent which is beyond our previous experience of the disease. Moreover, it is unusual to find natural remissions in disseminated sclerosis in the colder months of the year. Our experience of later patients appears to confirm the favourable results obtained in the five cases now reported, but the time they have been under treatment is not sufficient to permit of maximum improvement.

We submit that we have at least presented a case for inquiry and trial, and it seems probable that, as in pernicious anaemia, it may be no longer necessary to search for an unknown organism to explain a disease of unknown etiology. It is further possible that the etiology may be explained in terms of a food factor deficiency.

Summary

1. We record five consecutive cases of disseminated sclerosis of carrying duration and severity, treated with whole liver with remarkable improvement.
2. Two of these patients, previously totally unfit, have returned to work, as a mechanic and a farm hand. One man unable to stand is now walking briskly. One woman who could walk only with assistance can now walk well. One young woman who had given up games for two years can now play hockey.

3. Promising results have been obtained in later cases of too short duration to justify record.

4. It is suggested that disseminated sclerosis may form an addition to the list of deficiency diseases.

_B. M. J., May 9, 1931._

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**SCIATICA ITS DIAGNOSIS, CAUSES AND TREATMENT**

_Bruce Maclean, M.D., M.R.C.P., Lond._

**SUMMARY**

The term “sciatica” is used too much like that of “gastritis,” _i.e._ without defining its pathogenesis. A pressure neuritis is more often the cause of a chronic sciatica than an interstitial neuritis. Statements to the contrary arise, because it is believed that pain on stretching the nerve and on pressure along the course of the nerve are diagnostic features of a primary neuritis.

The following points, apart from the obvious ones already mentioned, assist one in diagnosis of a _pressure_ factor:

1. The distribution of pain mainly in the area of skin supplied by the 5th lumbar root and in this area may be the first appearance of sciatic pain.

2. Pain felt locally in the region of the sacroiliac joint or lumbo-sacral articulation, on testing by movement or pressure.

3. A contralateral list, rigidity of the erector spinae, impaired movement in the spine of flexion, extension and lateral
movements. (Where the sacrum is prominent and there is obliteration of the lumbar curve, then suspect sacro-iliac disease in particular.)

If homolateral and contralateral scoliosis alternate at different intervals, then the condition is due to bilateral arthritis of the lumbo-sacral joint and the patient relieves each side alternately.

4. The persistence of an ankle-jerk points to a secondary neuritis.

5. The presence of palsies, much wasting (not globar in character), trophic lesions, point to pressure.

TREATMENT

Successful treatment can be obtained only where the causal factors are found. Palliative treatment relieves pain, but this is temporary only; we must eradicate where possible the cause. Hence the importance of removing every focus of infection and treating existing toxic disturbances. Examination involves the following: Teeth, tonsils, sinuses, bowels, urine, and for evidence of venereal disease.

As regards essential or primary sciatica, the severe or acute cases require rest in bed, but splinting the limb is rarely tolerated. Greatest relief is obtained from application of heat, especially radiant heat to the referred area of pain and diathermy to the local lesion.

Electricity, either in the form of the simple constant current or by means of ionization, has many supporters, but I have more faith in diathermy.

Counter-irritation by blisters, ointments, etc., is useful, but appears of small service in the severe forms of sciatica.

In the early stages of acute neuritis massage is definitely contra-indicated; later it may be useful to stimulate muscle atony.

As regards drugs, we all have our own favourites—mostly salicylates and iodides. I favour a mixture of aspirin, pyramidon and codein phosphate for relief of pain; or compral (Bayer). Russell Brain advocates X-rays in sciatic neuritis.
The chronic cases will require additional treatment, such as stretching the nerve under anaesthesia, injections of oxygen subcutaneously to form a cushion over the nerve down the thigh, or lastly injections of saline into the nerve itself; the best sites for the latter method are just below the sacro-sciatic notch, and at a point on a level with the tuberosity of the ischium.

As regards a central sciatica, i.e. a neuritis of the nerve-roots (neurodicitis, or radicular neuritis), whether due to a primary toxic factor or pressure, temporary relief can be obtained by an epidural injection, the needle being made to enter the sacro-coccygeal foramen, and solutions containing saline, novocain or 40% antiprine (10-20 c.c.) being allowed to bathe the nerve-roots. The tract should be anaesthetized first, the patient being placed in the genu-pectoral position or on the affected side. It is obvious how useless are injections into the nerve-trunk when employed for a central sciatica, and therefore such should be used only for primary peri-neuritic lesions.

Regarding arthritic conditions, manipulation is of value in freeing the nerve from pressure of bony outgrowths or concomitant adhesions. Such must be carried out under anaesthesia and with great care, for damage to the knee-joint can easily be done while the patient is relaxed under the effects of an anaesthetic, or even the bones of the leg be broken. To attempt manipulation under gas and oxygen anaesthesia is unwise, for relaxation is not sufficient only under a general anaesthetic.

Local therapy by radiant heat, especially diathermy, is indicated, but no massage should be attempted at the site of the affection.

Curative treatment must be directed at elimination of the source of infection, and building up the resistance of the patient. It is then that actinotherapy is helpful, and vaccines have their place in the therapeutic armamentarium. Intramuscular injections of thiohistamine and of contramine are sometimes very successful, and no doubt act by reducing the swelling of a fibrositis or an arthro-fibrositic lesion. I have known the pain from sciatica due to arthritis in the sacro-iliac joint clear up after two injections of contramine.

The Clinical Journal, May 18, 1931.
OVERCROWDING IN
THE SPREAD OF CEREBRO-SPINAL MENINGITIS

The recent outbreaks of cerebro-spinal meningitis have called attention to the discovery, made during the war, of the importance of overcrowding in spreading the disease. In the *Times*, Dr. M. H. Gordon shows how the lesson was learnt from the continuous weekly determination of the carrier rate of the meningococcus in large London barracks from 1915 to 1919. During the summer months the general carrier rate of the troops was below 5% and cerebrospinal fever was absent. In December, 1916, the carrier rate rose suddenly to 20% and by the end of the month an outbreak had begun. Contacts of two cases now gave carrier rates of 43 and 71% respectively. What was of even more significance, a sample of the non-contact troops gave a carrier rate of 72.5%. It was clear therefore that isolating the contacts would have been futile as a preventive measure.

Subsequently Capt. J. Alison Clover, now of the Ministry of Health, noticed that the carrier rate in various huts corresponded inversely with the distance between the beds. If this interval was less than 1 ft. a carrier rate of 20% was usually found, and if less than 9 in. one of 28 to 30% was usual. When the distance between the beds was as much as 2½ ft., however, the carrier rate was at the normal level of 5% or under.

These results explain the mode of spread of cerebro-spinal fever. It was known before that droplets sprayed from the nose and mouth and liable to carry infection are subject to gravity and rapidly fall, but here was a practical measure of the actual range over which they are most effective. A distance of 2½ ft. was found to be sufficient to limit the spread of a disease borne in this fashion. In other words, the most important factor in the spread of cerebro-spinal fever is not cubic space or ventilation as such, but floor space.

*The Clinical Journal, May 20, 1931.*
ON THE CAUSES OF ANAEMIA IN ANKYLOSTOMIASIS
A. J. Huart

From a most valuable critical survey of the apposite literature and from his own experiments, Huart concludes that the anaemia of ankylostomiasis, at least in the dog, is the result of persistent intestinal bleeding. His conclusion rests on the following. The literature shows that blood is present in the worms if these are examined immediately after death, although a few hours later they contain none. Again the anterior part of the worms contains an anticoagulin, which must make for bleeding; but there is no clear evidence for a haemolytic substance in them. Certainly alcoholic and ethereal extracts of worms may produce haemolysis, but the same effect may be produced by all normal organs living or dead. That a toxin is excreted by the worm and absorbed by the host is made certain by the occurrence of eosinophilia, and by the frequent occurrence of nephritis and chloride retention with oedema in cases of severe ankylostomiasis in man; but that it causes the anaemia there is no proof.

Huart used dogs 1 to 2 months old each weighing about 3 kg. Each received many larvae of *A. caninum* and *A. braziliense* in a gelatin capsule. In about 10 days an acute fulminating anaemia set in; in one case it was immediately fatal; it was not proportional to the number of worms recovered after death; it was accompanied by no sign of increased haemolysis, by no bilirubin in the serum; no complement fixation was detected. Onwards from the ninth day after infection spectroscopic examination of the faeces showed much haemochromogen, although the dogs had been for a week on a diet free from meat and chlorophyll. There was often so much haemochromogen as to imply a very considerable loss of blood. Haematoporphyrin was rare. A typical postmortem finding is the following. Before infection red corpuscles were 5,870,000, twenty days after infection 1,930,000. This dog died on the 34th day; immediate autopsy showed 1,876 full grown ankylostomes, 75 per cent. of them being full of blood; there was a large amount of coagulated blood in jejunum and ileum, and the mucous membrane was sown with haemorrhagic bites. In four of five cases in which it was examined, the bone marrow of the femoral shaft consisted of fatty tissue to the extent of only one-quarter to one-third, and had blood-forming tissue richly distributed in this.

AN INTRODUCTION TO GYNECOLOGY. By C. J. Miller. Published by C. V. Mosby Co. Price $5.00.

This book is intended to be an introduction to gynecology for the use of students, and as such it fills a distinct place of its own. For the modern student confronted with one or the larger text books of gynecology may find it difficult to pick out the essentials, and discard, for the time at least, the trimmings. Beginning with a section on the anatomy and physiology of the pelvic organs it also gives a short account of the commoner anomalies. Menstruation is clearly and fully treated. The next section deals with the glands of internal secretion and a clear up to date account is given of the various glands, and their functions.

Methods of examination are well described, and there is a warning against expensive, and useless laboratory studies which are not directed to a definite end. One is glad to see the student warned that a perfectly normal ovary is sensitive to pressure, for it is often forgotten. No sufficient warning is given of the dangers attending Rubin's and Lipiodol tests, and it is questionable whether these tests are not better done after a few days interval, rather than immediately after menstruation.

There is a very good and clear section on the gonococcus, and gonorrhoea; and a warning is given that leakage of mineral paraffin preparations from the anus sometimes sets up a vulvitis. Some authorities would question the aetiology of Esthiomene which is given, and also the statement as to the resemblance between this and vulvar elephantiasis.

A special place is given to inflammations and infections of the vagina, cervix and uterus, and one is glad to see these classified together. Vaginitis due to Trichomonas infection and senile vaginitis are well described. Chronic and acute endometritis are discussed, and clearly distinguished from hyperplasia.

Next the author groups together inflammations of the tubes, ovaries, and parametrium; and isthmic nodosa is rightly stressed as a cause of occlusion of the canal, whilst the course of an attack of acute salpingitis ending in a chronic pelvic inflammation is well given. The author makes the statement that there is no instance on record of conception after tuberculosis of the tubes has occurred. The reviewer thinks this statement too sweeping. It depends altogether on what evidence is accepted as proof of the existence of tubercle in these organs.
There is a good section on obstetric injuries, clear, and well illustrated, and the remarks on laceration of the cervix are full and to the point.

This leads on to the consideration of malpositions, both unassociated and associated with prolapse. Inversion is also shortly described.

New growths of the urethra, and vulva, are discussed, and the tendency of vulval carcinoma to be multiple is noted. It is a question whether vaginal cysts arise from Müller’s ducts. Fibroids are fully described, the degenerative processes taking place are given, and the associated pathology of these growths. Warning is given that, on opening the abdomen, it may be difficult to distinguish from the appearance alone, a pregnant uterus from a soft myomatous uterus. This is very true.

Carcinoma of the cervix and body of the uterus are described, and there is a short discussion of the various theories of the causation of cancer. Martzloff’s classification of cancer cells is given, and the importance of microscopical examination of tissues taken from the cervix is stressed. The reviewer agrees with the author that “no other diagnostic method is safe for the average man.” It might also be added that sometimes the microscope proves a fairly confident diagnosis of malignancy to be wrong.

Chorio-epithelioma is carefully described, and it is noted that in these cases the Zondek-Ascheim test is strongly positive.

Tumours of the tubes, broad and round ligaments, and cysts of the parovarium come in for a brief notice. One naturally scans the section on endometriosis with interest as the aetiology of the disease is by no means settled. Sampson’s theories, and Novak’s criticisms thereon, are well given, but the author does not clearly state his own views of this question.

New growths of the ovary are fully treated, and also the question of Krukenberg tumours. The origin of embryomata is discussed, and the symptomatology is given in detail.

An interesting book is closed by sections on dysmenorrhoea, the origin of which is carefully discussed; sterility, in which endocrine dysfunction and diet are given their place amongst its causes; irregularities of menstruation, in which one is glad to see the author insisting on proper care being taken to secure a full examination in cases of metrorrhagia; and ectopic gestation. The statement, however, that abdominal pregnancy is always secondary to tubal or ovarian pregnancy is incorrect, though it is very rare.

The book can be heartily recommended. It is well printed, on good paper, well illustrated, with an adequate index and a useful table of references after each chapter.

J. P. M.

This is a book which is an interesting one. If one, however, is to have a true estimate of it, one must remember that the writer works in a provincial town, and in a land where from his book one gets the impression that relations between the country and the town doctor are more or less strained.

The author starts from a postulate which many will hesitate to accept, i.e. that the normal labour is a painless one; that all pain in labour is pathological; and that pain is an indication of uterine inertia.

Through the book he makes assumptions, which, however thought provoking, are not strictly borne out by the facts of the case. The author is perfectly right in insisting on the influence of diet, and the toxic influences of bad teeth, but his evidence scarcely justifies the sweeping assertions he makes about the influence these have on difficulty in labour and on the incidence of puerperal sepsis, which he considers to be now mainly autogenous; and one deplores a statement such as the following (page 150):—“These measures” (i.e. Listerian) “did not reduce the death rate in private obstetric practice” for it is simply not true. He does not seem to realize how poorly antenatal care is still carried out by many private practitioners. And when we come to the author’s tables one finds that he is dealing with a very small series of cases, and one which is abnormal in many ways. 27% of pyelitis in any set of cases is far beyond the usual figure; and the figure of 69% of albuminuria quite abnormal, and makes one wonder how the figure would have looked had a catheter been used in every case.

But there is no doubt that the author is right in pointing out how little has been yet accomplished in the regulation of diet during pregnancy, and in attention to septic teeth, pyorrhoea etc., in the mother, but surely this is a most potent plea for thorough antenatal care.

The book is well printed and has an adequate index.

J. P. M.


To anyone who has studied the first edition of this work, published two years ago and reprinted later, there will be no need to dwell on the excellence of this second edition.
Some additions and subtractions have been made, but in the main the book remains what it was—one of the best of its kind available.

Its scope is avowedly such as to benefit especially the general practitioner, but for specialists also it will be of great value, if only to teach them how much they have forgotten.

The book can be recommended highly.

J. L. H. P.

CLINICAL DIETETICS. A Textbook for Physicians, Students and Dietitians. By Harry Gauss, M.S., M.D., F.A.C.P., assisted by E. V. Gauss, B.A. Published by The C. V. Mosby Company, St. Louis. Price G$8.00.

This work, which is dedicated to Professor Sippy, gives a clear account of the principles and practice of rational feeding in health and disease, in a form suitable for students and practitioners of medicine, and for dietitians. The dietary plans of hospitals, and the needs of the private household are both kept well in mind.

As a whole the book forms one of the most readable on dietetics which the reviewer has met.

To doctors and nurses dealing with patients whose normal diet is very different from that of the normal American the lists of diets are not of great value, but the notes on the rationale of dieting are excellent, and most useful.

Greater emphasis might well be placed on the need for investigation of the individual patient's diet when in health. In some patients a history of diet is as essential as a history of subjective symptoms. In the Far East we meet with very many patients whose diet has been for years, or from birth, so specialised that the organs concerned in digestion naturally find it difficult to tackle successfully diets which are much more varied.

The book is well printed and bound.

J. L. H. P.

This book attempts the impossible and naturally fails. There are few subjects that can be handled satisfactorily for three entirely different classes of readers and to attempt it in a naturally difficult one is to court failure.

The first section is taken up with elementary anatomy and physiology that should already be familiar to the average medical student. The remainder of the book deals with the sexual impulse and its aberrations. This is dealt with in semi-popular language quite unsuited for material of this nature. The use of Latin sentences to cloak some of the more disgusting aberrant tendencies strikes us as particularly unpleasant and only succeeds, like scanty transparent garments on the nude, in drawing disproportionate attention to what it pretends to veil.

The book compares very unfavourably with a volume such as Max Hühner which we recently reviewed.

J. L. M.


In this work Dr. Bruce Williamson has attempted to produce in the smallest possible space a book which will meet the needs of undergraduate and graduate students. Each chapter carries at its head an index of the subjects dealt with in the chapter. Diseases of rare occurrence are not excluded. References to larger textbooks are frequent.

Space has been conserved almost ruthlessly at times. Though the book is avowedly a students' handbook, it is irritating to find that, for instance, under Cerebro-Spinal Fever the only reference is a statement that the symptoms etc. of the disease are the same in children as in adults.

Irritations such as these are, however, somewhat lost sight of in the many excellences of the work. The emphasis on the early discovery and treatment of conditions, that otherwise will harry the patient to the end of his days, is most helpful. We would call special attention to the introduction to the section on Cardiac and Circulatory Diseases as being very worth-while. After reading this we look forward with interest to a promised monograph by the same author on Clinical Cardiology.

A short but useful formulary of prescriptions is given at the end of the book.
We would like to congratulate the publishers on the excellent printing and binding they have produced.

J. L. H. P.

HELPING PEOPLE GROW. An Application of Educational Principles to Christian Work Abroad. By DANIEL J. FLEMING, Ph.D. Published by the Association Press, New York.

The specific aim of this valuable book is to call attention to certain approved educational principles and to facilitate their application to the task of building up Christian character and institutions.

While the book manifestly deals more with the educational side of missionary work than with the medical, the latter is not omitted from discussion in its pages. This is true at least as far as the organization of hospital work is concerned and the whole volume can be read with real profit by all of us.

As far as its conclusions go, there is room for some differences of opinion especially as regards the question of coercion and we could wish that the Author had elaborated this part of his subject a little more fully. He touches at one place on the necessity for such coercion in regard to infectious illnesses but does not seem to appreciate sufficiently, at least he fails to show it, that the absence of discipline does not lead to healthy growth. Its lack in some schools, foreign as much as Chinese, may render the pupils to the personal knowledge of many of us, at least as objectionable to their neighbours as if they suffered from an infectious disease. It is difficult to see how those who have never learned to obey can ever learn to control.

We feel that the problem just referred to needs much more thorough consideration. With this exception, the book is admirable and should be read by all those in charge of hospitals as well as those responsible for educational institutions.

J. L. M.

RESTORATION EXERCISES FOR WOMEN. By ETTIE A. HORNING. Published by William Heinemann, Ltd., London. Price 5/-.

The main objective of this book is to describe a series of general and local exercises for the preservation and restoration of Woman's body. If the Authoress had confined herself to this, the treatise would have been a valuable one, as the exercises given are simple and to the point, clearly described and well illustrated.
Unfortunately the writer, who appears to have no medical knowledge does not restrict herself to the main subject but expresses herself with great confidence on matters about which she evidently knows little.

Old and, as might have been hoped, dead bogies are duly trotted out again but we hardly expected to see the ancient and exploded idea, that the retroverted but seemingly normal uterus could press on the rectum and cause constipation and even obstruction, resurrected. We can well remember in our student days the contempt of our professor for those who held that an organ, which as he pointed out could be sent by letter post for a penny, could cause by its weight such dire effects.

The worst exhibition however of this sort of thing is on page 56 where, in leaded type, women are advised not to allow the exercises “usually prescribed by doctors and nurses after childbirth” to be imposed upon them! These are the exercises prescribed in the leading obstetrical text-books and which are of great value in ensuring a speedy and normal convalescence.

It is difficult, also, to see what an attack on the diet of the British Army has to do with restoration exercises for women but the pathetic picture of the crowds of ex-service men with their digestions ruined by excessive tea-drinking is at least amusing.

It is a pity that a book which might have been of real value is spoiled in this way.

J. L. M.


This book constitutes a report of Professor Bassler’s finding from research that has stretched over thirty years, and has involved the close examination of some 5000 cases.

Autointoxication has for long been one of the names upon which the would-be diagnostician falls back when in doubt, such as nerves, appendicitis, hysteria, rheumatism, influenza, etc. From this position Professor Bassler seeks to redeem it, and to clothe it with a more definite entity than has hitherto been possible. He is an enthusiast in this particular but very indefinite sphere of the medical art: so much so that not only does he feel able to trace an amazing variety of disease to an origin in the intestinal tract, but he is inclined to doubt if anyone before has realised its importance, or dealt with it in anything like a sufficient manner. Scorn is poured upon such treatments as colonic irrigations, B. bulgaricus, B. acidophilus, purgations, and the long list of so-called intestinal antiseptics.
The following quotations witness to the author's ideas on the importance and complexity of the subject. ‘I wish definitely to record, that the intestinal canal is the most important source of focal infection in the body, and its biologic disturbances are the greatest and most important causes of toxic factors in the human being.’ (Pages 46-47). ‘It must be stated definitely that there are no classic, individualistic or pathognomonic symptoms of intestinal toxemia. Diagnoses are made by suspecting its presence, and then utilizing the laboratory and engaging in study to prove or disprove its presence is the only way possible.’ (Page 49). The investigation of urine, blood and feces is dealt with thoroughly. Examination of feces alone is a long business, ‘usually about 200 tubes of media being employed for the one specimen of stool.’ ‘In some instances as many as a thousand tubes of media are necessary for complete study of the single case.’ (Page 113.)

Lists of the bacteria found in the intestine, and their characteristics are supplemented by four well produced charts.

While one cannot but admire the patience and hard work that has been put into this investigation, there seems to be an exaggeration of the importance of intestinal pathology. Certainly its investigation is entirely outside the time and powers of any but a research worker, and beyond the purse of any but a millionaire.

Treatments indicated are largely bacterial, though of course diet is an important factor.

J. L. H. P.
operation with plenty of illustrations, which should prove valuable in teaching these subjects.

Chapter XXII. "Don'ts in Eye, Ear, Nose and Throat Nursing" would save many accidents and diseases of these organs if well studied and practised not only by nurses but by mothers and teachers. This chapter would be valuable for Public Health teaching, or for instruction of parents of children suffering from any of the diseases of Ear, Nose or Throat.

This book would also be valuable as a reference book in Ear, Nose and Throat clinics. There are lists of articles required for the various operations, examinations, and treatments used in these clinics. Drugs used in the various treatments are given with clear directions for making, storing and sterilizing solutions.

The chapters on Anatomy of Eye, Nose, and Throat are clear, and concise, and should be easily understood by the student.

E. M. P.

MICROBIOLOGY AND ELEMENTARY PATHOLOGY FOR NURSES.
CHARLES G. SINCLAIR B.S., M.D. F. A. Davis & Co. Price $2.50.

This book is designed to meet classroom, and laboratory requirements in the Standard "Curriculum for Schools of Nursing" of the League of Nursing Education. The Author has prepared the book after many years experience in teaching these subjects to students in America, and has collected much valuable material.

There are one hundred and two illustrations, some in colors which are very good and should be helpful in teaching Bacteriology, and Pathology to student nurses. As a book for use by teachers or for library reference it is valuable, and should prove especially useful to students studying as technicians.

Chapters I, II, III, "Introduction to Bacteriology." "History of Bacteriology" and "Microorganisms" in our environment, would make a very interesting introduction to any course in Bacteriology, and would serve as a point of interest to simulate the student to desire further study.

Chapter X gives a very practical explanation of immunization, and the use and care of vaccines, and toxins. There is a chapter on animal parasites which is good both in text matter, and illustrations. The laboratory periods in pathology are very good for students who are taking the technician course.

E. M. P.
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