was removed to the Leeds General Infirmary soon afterwards as she had had threatenings of labour. As in the previous case the pelvis was blocked with an ovarian tumour which so far as could be made out did not extend upwards into the abdomen. The cervix which was high up above the pubes could only be reached with difficulty. The fundus uteri was felt about 3 in. above the umbilicus and the patient was probably about seven months pregnant. She was kept in bed or sitting up in the ward for six weeks as there were no urgent symptoms of any kind and I thought it better to wait till the child was more likely to live. It was found, however, that the ovarian tumour was growing more quickly than the uterus and at the beginning of September, 1898, the upper edge could be felt above the fundus uteri. The pelvis, however, was completely blocked as before. It was therefore decided to operate at once. This was done on Sept. 6th. The operation closely resembled that described in Case 1 except that the placenta was attached to the upper and posterior part of the uterus and was not cut into by the incision. In this case as in the other a pair of very strong scissors was used to divide the uterine wall after it had been opened sufficiently by a scalpel to allow of this operation. I think this plan is better than a scalpel and director, as the uterus is more rapidly opened and the operator is less likely to injure the child. The child was found to present with its right shoulder and it was removed shoulder first. The placenta and membranes came out with it as the membranes accidentally caught on the child. The wound in this case was closed with 2 to the inch green chromic catgut. This catgut is very strong and I believe it is not absorbed so rapidly as the ordinary yellow catgut. In order to ensure proper adaptation of the sides of the wound the first suture was of course placed in the middle. The ovarian tumour was then removed. As in Case 1 I sewed the peritoneum over the uterine sutures. The patient made an uninterrupted recovery. The child, who was not quite at full term, unfortunately died in about twenty-four hours from atelectasis or non-expansion of the lungs.

It is difficult to make any remarks upon this operation which would be new as so much has been written upon the subject. It is, however, probably the most fascinating and interesting operation in surgery. The dangerous condition of the patient, the impossibility of relief in any other way, the certainty of death if it is not done when, as in such cases as these, delivery in any other way is impossible, and lastly the complete triumph over disaster by removal of the child in this way, together with the rapidity of the process, present to the mind a tragedy ending, however, in a complete and successful issue. The history and literature of the operation which is one of great antiquity is full of tragedies. For instance, in the year 1647 the operation was done by a bull which gored a woman eight months advanced in her sixth pregnancy. An abdominal wound was made from one sacro-iliac spine to the other. The intestines fell out between the thighs and the uterus was torn open. During the process of washing the intestines a living child came out through the wound in the uterus. The patient, however, recovered without a bad symptom and was out of bed in a month. There are at least 6 cases reported in which the patient did the operation upon herself and 5 of these resulted in recovery. Probably the most interesting of these cases is the following an account of which I abbreviate from THE LANCET of May 22nd, 1886, where it is related in full and attested by two medical men of Viterbo in Italy. A peasant woman aged twenty-three years and unmarried was pregnant at full term. Having been much annoyed by the remarks which were made as to her condition she determined to end the matter summarily. With a common kitchen-knife, not too sharp, she opened her abdomen on the right side of the umbilicus and then cut into the uterus. She drew out the arm of the child and cut it off. She then pulled out the head and amputated it. She then was able to remove the rest of the body and also the placenta and membranes. She bound herself tightly round with a broad band, and having hidden the foetus in a straw mattress she dressed and walked into Viterbo which was rather less than a mile from her house to visit a sister, with whom she breakfasted on bread and coffee and a cup of broth. She then walked about the town for some time in order, as she stated, to show herself and to put an end to the current talk about her pregnancy, and returned home at 10 A.M., having been on her feet for about five hours. Some time after this, when at home, she vomited and fainted. One of the two medical men whose names are attached to the narrative

was sent for and he found nearly all the intestines outside the body, and he states that he believed them to have been outside for at least six hours. With the assistance of his colleague the intestines were carefully washed and replaced, a drainage-tube was put in and the abdominal wound was closed. It is not stated whether sutures were put into the uterine wound or not. The wound healed and the patient rapidly recovered. In a previous comment in an annotation in THE LANCET of May 8th, 1886, upon this incident, as reported in *La Gazzetta degli Ospedali*, it was remarked that the "fearless bravery" of the old Romans evidently still survives.

What has struck me more than anything else is the safety of the operation provided the patient is in a condition to bear it. Beyond exhaustion there is really nothing for her to die from except it be hæmorrhage or sepsis. The hæmorrhage is perfectly under control by nipping and at the same time evertting the edges of the wound by the fingers. This is more easy because the bleeding does not come from the whole extent of the wound but from two or three points only. It is venous hæmorrhage at very low pressure and is arrested quite easily. Of course it is completely stopped when the wound is brought together. I think it is an improvement in the technique of the operation to close the upper end of the incision the last and just before putting in the last two sutures to syringe the uterus well out into the vagina so as to ensure that it is free from clots of blood. It is very important to place the sutures near together and not, as recommended by Saenger, at intervals of an inch or so with superficial sutures between. If green chromic catgut is used in tying the knots I think it is also important to pass the end through the loop twice in making the first half of the knot. A knot so made with catgut is secure, otherwise it is not secure. There was an interesting case recorded in the year 1885 in which the sutures in the uterus gave way from vomiting and a clot was forced from the uterus into the peritoneal cavity. Catgut was used but probably the knots were not made in the way mentioned. Active contraction of the uterus, it must be remembered, is not necessary to stop hæmorrhage as the condition known as retraction is sufficient. When a contracted womb relaxes it becomes in a state of retraction, in which condition hæmorrhage does not occur. It is only when the womb expands or opens that bleeding takes place.

It is a well-established rule that in ovarian tumour with pregnancy the tumour ought to be removed at once. Pregnancy by this plan will not be interfered with and will go on normally. It may be suggested that I ought to have followed this rule, but in neither case was it possible to do so as the pelvis was blocked by the tumour and the womb lay completely above and anterior to it. In the second case, as stated, towards the end it was found that the tumour extended higher behind the womb than was supposed, but when the abdomen was opened it could not be removed or even seen, as the womb lay entirely in front of it.

I have either actually attended, or seen in consultation, or been responsible for, between 11,000 and 12,000 cases of midwifery. This large number of cases is greatly accounted for by 600 cases a year on the average attended in the maternity department of the Leeds General Infirmary and it has only been necessary to do Cæsarean section twice. We have, however, escaped it in 3 cases by doing symphysiotomy when the conjugate diameter has been 2½ in. or over. I am afraid, however, that even now craniotomy is done when symphysiotomy would suffice. This latter operation is very satisfactory, for of the 3 symphysiotomy cases all the mothers recovered, and 2 of the children lived.

Leeds.

THE "BLIND FLY" AND THE LOCUST IN THE EVOLUTION OF THE MALARIAL PARASITE.

By ARTHUR DUNLEY-OWEN, B.Sc., M.R.C.S. ENG.,
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IN a paper on Malaria published in THE LANCET of Sept. 24th, 1898, I stated that I had made cultivations of the malarial parasite. My attention has been drawn to the following paragraph in Manson's "Tropical Diseases" page 2, "Hitherto all attempts to cultivate the parasite have failed." I only obtained Dr. Manson's book in October, and

when I wrote my article my general knowledge of the subject was from "Fagge's Medicine." It is possible, therefore, that a brief description of the experiments which led me to contribute my notes to THE LANCET may prove of interest.

Rhodesian farmers have often told me that by keeping horses in during certain hours they prevented them from falling victims to "horse-sickness," and on investigating the subject I found, as I have mentioned before, that they were correct in their statements. This led me to inquire what there was in the herbage or the soil which could produce "horse-sickness" and I made microscopical examinations of dew, grass, and soil, but without any discovery. I then tried to make cultivations in the usual way on potato and with glucose gelatin, but again with no satisfactory result. On examining the blood of a horse suffering from "horse-sickness" I found the red blood corpuscles occupied by an amoeboid body containing a black substance which I took to be melanin and also multitudes of sporules free in the blood serum. I examined the blood from 4 horses in this way and saw the amoeboid bodies containing pigment and the free sporules in 3 cases. I did not, however, then find any crescentic bodies. This result being so similar to that which obtains in malarial blood in man I thought "horse-sickness" might be an analogous disease and with the hope of proving it I made the following experiments:—

A. "*Blind fly*."—I caught a number of that species of *Tabanus* which has a large grey-striped body, greenish-yellow eyes, and entirely transparent wings. This is locally termed the "blind fly" and it feeds on blood. I kept these in a cage of mosquito netting and at different times made the following investigations: 1. I examined several of the "flies" and found ?-curved bacilli in one case. 2. I allowed four of the "flies" to bite me during a malarial attack from which I suffered and examined them at intervals. (a) Two hours afterwards sporules and pigmented cells were to be found in the stomach contents. (b) In twelve hours pigmented cells were found in the stomach walls; and (c) on the fifth day while examining a third specimen I found deposits of pigment in the stomach walls and sporules and crescentic bodies in (?) lymph channels of the fly. 3. I allowed several "blind flies" to bite healthy horses but nothing abnormal was found in the contents of the stomachs. 4. I allowed others to feed on a horse suffering from "horse-sickness." The stomach contents of both the healthy horses and the "sick" horse showed sporules and pigmented cells. In one instance I found crescentic bodies.

B. *Locusts*.—I made the following experiments at different times with *Acridium purpuriferum* or the migratory locust: 1. I found flagellated bodies in the stomachs in 3 per cent. of locusts taken in early morning from the wet grass. 2. On keeping similar locusts for twelve hours I found sporules and crescentic bodies in the stomach walls in 1 case out of 50 which were examined. I considered these analogous to the malarial parasite because they were similar to acknowledged forms as seen in human malarial blood; but I dare say my conjectures are wrong.

C.—I injected rats with blood from a horse with "horse sickness" and produced rigors, elevation of temperature, and other signs of fever. On examining the blood of these rats I found amoeboid bodies containing pigment and sporules, and in some cases in blood taken at a later period I saw many crescentic bodies. Other rats injected with blood from healthy horses showed only slight elevations of temperature, due, I take it, to the act of injection, and on examination their blood proved normal in every instance. Rats injected with the stomach contents of a "blind fly" which had been fed on my own blood showed the characteristic plasmodia in their blood five days afterwards. Rats injected with the "juice" of locusts caught in early morning showed symptoms of fever, but only once in 12 cases was I able to detect plasmodia in their blood.

I now see that I was in error in considering the crescentic bodies to be "bacilli"; I thought these were the active factors in true malaria and that the amoeboid bodies were phagocytic in function.

Enkeldoorn, Rhodesia.

A Mirror OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

NORTH-EASTERN HOSPITAL FOR CHILDREN.

A CASE OF INDURATIVE MEDIASTINO-PERICARDITIS IN A YOUNG INFANT.

(Under the care of Dr. J. H. SEQUEIRA.)

THE following case is an excellent example of a rare condition which has received but scanty recognition. The first case seems to have been described in 1854 by Griesinger and up to the present about twenty-five cases have been recorded. There is much uncertainty about their etiology though it is not improbable that many are associated with tubercle. It is possible also that some of these cases start from a septic mediastinitis. For the notes of the case we are indebted to Dr. J. Blumfeld, late senior resident medical officer.

A male infant, aged fifteen months, was admitted to the North-Eastern Hospital for Children on Oct. 1st, 1896, with the history that in August there had been an attack of bronchitis and in September swelling of the face and legs. The case was sent to hospital as one of meningitis owing to a peculiarity in the child's cry. On admission the infant was pale but otherwise apparently healthy; he cried constantly unless he was nursed but he did not appear to be in pain. The temperature was 99° F., the pulse was 80, regular, and of fair size, and the respirations were 20. The tongue was clean.

On examination of the chest the area of cardiac dulness was found to be enlarged upwards on the left side reaching to the upper border of the second intercostal space; it extended also beyond the middle line of the sternum except over the manubrium. The heart sounds were everywhere normal. There were no adventitious sounds or bronchial breathing and the movements of the chest were normal. The liver and spleen were not palpable below the ribs. There was no tenderness or rigidity of the abdomen and there was no evidence of fluid; the feet and legs felt cold and pitted slightly on pressure. The urine was of specific gravity 1015, acid, clear, and contained no albumin. The infant took his food and slept well. He usually sat up but while sleeping he lay on his back.

The patient's condition remained unchanged, except that on some days there was blueness of the lips and ears, until Nov. 3rd. There was then an obvious amount of fluid in the abdomen, the arms and legs were cold and blue, and the legs were considerably œdematous. There was no cardiac murmur and no albumin was present in the urine. Distension of the veins of the neck was noticed. On the 10th the edge of the liver was palpable 2½ in. below the costal arch and on the 23rd there was extreme ascites with much œdema of the abdominal wall. The urine contained phosphates and about one-eighth albumin. On the 30th there was much diarrhœa and on Dec. 2nd the infant died with all the symptoms of cardiac dilatation.

Necropsy.—A post-mortem examination was made fourteen hours after death. When the sternum was removed the mediastinal tissues were seen to be greatly thickened and adherent. The anterior mediastinal glands were enlarged and presented foci of caseation. The left lung was adherent to the chest-wall at the apex and over the posterior surface of the lower lobe was some thickened and adherent pleura. The pericardium was about three-quarters of an inch thick, fibrous, and adherent everywhere to the heart, and the fibrous tissue spread upwards around the great vessels. Firm adhesions united the pericardium with the thickened anterior and posterior mediastinal tissues. The left pleura was adherent to, but separable from, the pericardium. The valves of the heart were all healthy. Both ventricles were

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