nature of the cyst contents, and the physical signs presented, are features which together seem to form a very unusual clinical picture.

A female child, aged 1 year 8 months, was admitted to the Children's Infirmary, Liverpool, on January 31st, 1899.

History.—About four months previously the mother noticed that the abdomen was enlarged, and brought the child to the out-patient department. She attended until admission. The notes then taken record that she was a well-nourished child, and that her abdomen was largely distended with what appeared to be free fluid. There was no complaint of pain. The abdomen measured $23\frac{1}{2}$ inches in circumference 2 inches above the umbilicus. The thoracic organs were healthy, the appetite good, the bowels irregular, the urine normal. The condition was thought to be probably one of tuberculous peritonitis. On March 8th, 1899, the abdomen was tapped with a Southey's trocar; this remained in for forty-eight hours, and 32 ounces of fluid were drawn off. The fluid was of a dark-brown colour, and contained "a little blood." The child was discharged from hospital on March 17th; she was readmitted on November 21st, 1899; the general health had been fairly good since leaving hospital, but on November 16th she complained of abdominal pain and lost her appetite. The bowels had been loose. The circumference of the abdomen was again $23\frac{1}{2}$ inches. On December 9th, a Southey's trocar was again introduced and left in for thirty hours. Forty-eight ounces of a dark fluid were removed. During the three weeks she remained in hospital at this time the temperature, with the exception of one day, was not elevated; the exception being on the night after the trocar was removed, when it rose to 101.8° .

The child was again admitted on August 7th, 1900. The general health had remained good, the appetite healthy, and she had had no pain. The abdomen was again tapped, and 40 ounces of fluid removed; this was dark reddish, alkaline, specific gravity 1020, and contained blood.

For the fourth time she was admitted on October 26th, 1900. She was then well nourished but anæmic. The mother could give no history of any illness other than or antecedent to that for which she had been under treatment. The bowels had latterly been regular, the appetite healthy, and sleep undisturbed. On October 27th a Southey's trocar was inserted in the mid-abdominal line between the umbilicus and the symphysis. Sixteen ounces of fluid came away, which on examination appeared to consist of pure blood. The next day, as no more fluid came away and the abdomen was still tense, an ordinary trocar and cannula was used. Before using this the abdomen appeared to be evenly distended with free fluid; both flanks were dull to percussion, and the dullness reached in the middle line from the symphysis to midway between the umbilicus and the ensiform. Twenty-eight ounces were removed by the trocar. In the middle line below the umbilicus a highly blood-stained fluid was obtained; it did not run freely, and some obstruction kept blocking the end of the cannula. The trocar was reintroduced at a point midway between the umbilicus and the right anterior superior spine; here an ounce of clear serous fluid was obtained but no more. Both samples contained a large number of cholesterine crystals.

Laparotomy.

After the fluid was removed, the left flank was noticed to be comparatively resonant as compared with the right, the child lying on her back. It was clear that the fluid was not free in the abdominal cavity, the possibility of there being a cystic growth of some kind present was discussed, and it was decided to open the abdomen. This was done on November 1st. A median incision was made, and subsequently enlarged to extend 2 inches above and 2 inches below the umbilicus. On opening the peritoneum a thin-walled cyst immediately presented, dark red in colour, and showing numerous vessels coursing over the wall. A trocar was inserted into this, and the wall grasped and pulled forwards. The growth was then found to consist of one large and many smaller cysts. Some of the larger secondary cysts had to be tapped before they could be delivered. When the greater part had been brought outside the abdomen, there were two attachments found, one in the right iliac fossa, and the other, forming a broad pedicle for the whole mass, consisted of the omental attachment to the greater curvature of the stomach. The adhesions in the iliac fossa were severed with scissors, as, though they appeared to be adventitious, the condition of the child did not permit of a prolonged dissection to free them. A few vessels were here tied individually. The omentum was then ligatured in sections along the greater curvature, and the growth freed. After sponging out some of the cyst fluid which had escaped into the abdominal cavity, the wound was closed by a single layer of silk-worm-gut sutures. While there was some tension on the pedicle, the child suffered considerably from shock, but when the operation was completed the condition was fair. A pint of hot saline solution was administered into the rectum immediately on return to bed.

After-History.

The following evening the pulse was 166, respirations 64; there was no sickness and no pain; at 8 P.M. the temperature was 101.6° . During the next day the temperature fell gradually, and on the evening of November 3rd it stood at 98° ; there was no subsequent rise. On November 15th she left hospital with a firm linear cicatrix, the abdominal walls being very lax.

She was seen by one of us on December 12th, and nothing abnormal could be detected in the abdomen. The appetite was good, bowels regular, and there was no trace of the anæmia which was present before operation.

Description of Cyst.

Examination of the mass removed showed it to consist of a large, thin-walled cyst capable of containing about 10 pints, and a number of independent smaller cysts, varying in capacity from about 8 ounces to a drachm. The fluid in some of the smaller cysts was a clear serum, but in all the larger was deeply tinged with blood. The secondary cysts were arranged as a fringe beyond the limits of the large cyst, but none were interposed between the latter and the line of section along the attachment to the stomach. Throughout the walls of the cysts, and especially that of the large cyst, were numerous ramifying, and anastomosing tortuous vessels.

The interval between the upper border of the large cyst and the greater

curvature of the stomach was about $1\frac{1}{2}$ to 2 inches; the transverse colon was not seen before the removal of the whole mass, it having a separate investment of peritoneum distinct from the omentum. Such an arrangement is a recognised variety (Luschka, Holden) of the disposition of the peritoneum in this region.

Histologically the wall of the large cyst showed externally an endothelial covering, internally a coat of fine connective tissue containing numerous blood channels. The walls of the smaller cysts showed the same structure, but the connective tissue coat was represented by a well-marked layer of fibrous tissue, the support given to the blood vessels being therefore firmer than in the large cyst, where the vessels were large and thin-walled.

Pathology.

The anatomy of the growth suggests an origin in some inflammatory condition in the lesser sac of the peritoneum. The several layers of the omentum, however, were not traceable in the cyst walls, and the growth cannot be properly described as consisting of encysted fluid in the lesser sac. Its proper designation is multilocular cystoma of the omentum, but the anatomy and histology furnish little clue to the exact pathology.

In the distended condition of the cysts there were no physical signs to indicate that the fluid was otherwise than free in the abdomen; both flanks were occupied by the growth, and from symphysis pubis to a point about midway between umbilicus and ensiform there was complete dullness to percussion.

When first seen, at the age of 16 months, the growth was sufficiently large to cause great distension of the abdomen; it must, therefore, have originated at a very early age or—perhaps more probably—have been congenital. The great vascularity of the cyst walls lends support to the suggestion of some inflammatory condition being associated with their origin, and such a process, antenatal, offers the most probable explanation of their etiology.

THE CAMPAIGN AGAINST AGUE.

By HERBERT E. DURHAM, F.R.C.S.

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THE importance of an efficient means of clearing districts of ague may now be said to be fully recognised. But the means whereby this is to be effected are by no means satisfactorily determined as yet. Some authors have urged measures specially directed against ague-bearing gnats, and others have summed up in favour of destroying the malaria parasite within its human host; furthermore, there are the advocates of isolation of ague-infected persons. In any scheme for the extermination of malaria the protection of the individual from gnat-bites, as by means of nettings, etc., will probably take but a small share in effecting the desired object: for the persons whom it is most desirable to protect are generally ignorant, and more or less uncivilised, as well as careless if not lazy, and they cannot be depended on to carry out any systematic self-protection. Many also of the more educated and intelligent inhabitants of a district cannot be trusted to afford their aid: however, here in Pará, there is a fairly general distaste for the familiarities of the gnat, and there are some who do not regard the so-called "mosquito theory" of the spread of ague as a mere fantasy.

TREATMENT OF GNATS.

Each locality in which *Anopheles* is found to breed in must be treated according to the possibilities of the situation. Thus the places in the outskirts of the city where I have met with *Anopheles* larvæ have been mere localised puddles, well adapted for the use of culicidal agents; on the other hand, drainage would have been impossible. It may be noted that cases of ague actually occurred in the neighbourhood of these pools. I was much struck by the apparent extreme localisation of *Anopheles* larvæ in one situation. This was a series of pools, where sand had been removed, in the near neighbourhood of some brickworks. Five of these were situated within a space of about 150 yards; they were similar shallow pools, of small extent. Only in one of these were *Anopheles* larvæ to be seen or caught, although all were inspected frequently, and the net used on several occasions during several weeks. The chief difference between this pool and the others was the absence of green growth, the water being thick and muddy. Before the pool dried up the *Anopheles* disappeared; but about this time they were to be found in another of the pools, the water of which had diminished considerably, and from which the green matter had largely gone (there was

abundant volvox in all the green pools). In fact, all the pools in which I have met with *Anopheles* larvæ here have been muddy and without manifest green growth.

In undertaking the use of chemical culicidal agents, it appears that the most profitable time for their employment would be during the dry season, especially at its close. During the wet season, with heavy rains such as are experienced here, much actual washing away or dilution would occur; however, Nature's own culicicides, in the form of tadpoles, waterbeetles, etc., may be enabled to spread from pool to pool, and assist in the destruction of the *Anopheles* larvæ. Two small pools in one neighbourhood were completely cleared of these gnât larvæ shortly after the advent of the rains, concurrently with the appearance of abundant tadpoles.

TREATMENT OF MAN.

Koch, I believe, has been the chief advocate of the proposal to effect the riddance of ague by means of quinine. This scheme has been adversely criticised as equally impracticable as the Utopian destruction of all gnâts; for besides the difficulties of administration, the amount and cost of the required quinine would be enormous. But there is another and, to my mind, a more serious objection to a proposed universal cinchonisation of a community. This may be embodied in the question, Is quinine the proper drug to employ? It is generally admitted that although the administration of quinine causes a rapid disappearance of the malaria parasite in its asexual form from the blood, the sexual forms—for example crescents—can still be found, even after long periods of quinine taking. The search for the sexual forms in the blood of patients under quinine may be facilitated by the use of the centrifugal machine. By this means I have been able to find crescents or, on one occasion, tertian parasites (mostly exflagellated) in centrifugised specimens when a search over several ordinary blood films was negative.

The blood is immediately diluted with citrate of soda solution (say three parts blood to one part of 1 per cent. sodium citrate and 1 per cent. NaCl) in a coarse capillary, centrifugised or allowed to sediment. Specimens are made from the leucocyte layer and the neighbouring red blood corpuscles. I found the method of considerable use in demonstrating the presence of the malarial or tsetse-fly parasite in the blood of animals when it was otherwise apparently absent.

It is clear, therefore, that some better drug than quinine is needed for stamping out ague, inasmuch as it is by the sexual forms that the disease is spread by means of the gnât. I believe that arsenic is the drug which has best repute for compassing the destruction of these forms; I do not know whether phosphorus, which also acts upon the hæmatopoietic organs, has been given a trial.

In the treatment of an individual suffering from ague in a region where he is likely to be a danger to his fellow men, every endeavour should be made to prevent the development of sexual parasites in his system; the site of which development is in his bone marrow, spleen, etc., according to the Italian observers. For the patient's own safety he must be given quinine in some form or other; at the same time, for the safety of the community, the administration of some drug such as arsenic should be commenced. It is not impossible that this may also redound to the benefit of the patient himself. I merely mention arsenic as the drug to be given for want of knowledge of anything better. But, as has been pointed out already, an effective and rapidly acting drug which would prevent the formation of sexual forms is calculated to be of material help in banishing ague from a district. So far as drug treatment may be feasible in conjunction with other means, it is to the aid of such a drug, and not quinine, that we must look with hope towards the attainment of victory in the campaign against ague.

SUCCESSFUL VACCINATION.—Dr. Edward J. Sheppard, Public Vaccinator for the Clifton District of the Bristol Union, has been awarded for the seventh consecutive time the Government grant for efficient vaccination; and Dr. Thomas Livingstone, of Stanhope, has received the special grant for successful vaccination in the Weardale Union.

PRESENTATION.—A testimonial, consisting of a cheque for 55 guineas with an illuminated album containing the names of 475 subscribers, was recently presented, on his retirement, to Dr. R. Reynolds, who has practised at Steeple Bumpstead, Essex, for over forty-two years.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

TREATMENT OF ACNE PUSTULOSA.

Few diseases cause more distress of mind and body than does pustular acne, especially when the subjects are young women and the disease occurs on the face, and, if there exists a simple, rapid, and permanent cure for it, no apology is required for bringing it to notice.

The treatment is simple in the extreme, but very particular attention to minute details is absolutely necessary, otherwise the patient will refuse to submit to it through the unnecessary pain inflicted, or the result will be a failure through disfigurement left by scars caused by bungling applications.

The requirements are few: Nitric acid, turpentine, some small wooden sticks, blotting-paper, vaseline, and a sharp penknife. The procedure is this: The end of a little stick, having been carefully cut to a fine point, is dipped in fuming nitric acid; any superfluous acid is taken up by the blotting-paper. The base of the pimple having previously been smeared with vaseline, the sharp point of the stick is by a quick prod inserted into the pustule to its base; a few rapid turns drill fashion are then given to the stick so as to attack the walls of the pustule, and the operation is completed.

The wood of the stick must be hard enough to take a very fine point and soft enough to soak up the acid, and for the purpose a box of Bryant and May's matches answers admirably. A fresh match must be used for each pustule, for the acid quickly eats its way into the wood and destroys the rigidity of the point, which is very prone to give way and bend if much resistance has to be overcome or if there is any delay in prodding the pustule after dipping the match in the nitric acid. When this occurs a fresh stick should be prepared and the damaged one discarded.

The little operation is painful, but the pain is not severe, and not more than patients are quite prepared to undergo to get relief from their discomfort and disfigurement. Much depends, however, on the situation, the chin and the forehead being by far the more sensitive parts, and there not more than five or six pustules should be attacked at one sitting; on the other hand, twenty may be attacked on the shoulders and back at one time. The remaining part of the treatment consists in thoroughly painting the face all over with turpentine at least twice daily, and on some skins oftener. At the same time I give iron, arsenic, and quinine pills, with cod-liver oil. The duration of the treatment depends on the extent of the disease and on the fortitude of the patient, but in the worst cases I have had not more than from ten to fifteen sittings were required. It must be carefully noted that not a single pustule must be left remaining, or the disease will surely return, and the patient from the first ought to be made aware of the fact.

Manchester. H. LESLIE JONES, M.D., M.Ch., F.R.C.S.I.

V - A CASE OF PANCREATIC DIABETES.

S. S., a youth of 18 years, came to me on January 11th complaining of indigestion. He was a tall boy in fairly good condition. I had known him for some years. I found nothing but a coated tongue and some constipation. He had some ordinary aperient mixture. On January 15th he did not feel so well and stopped his work. His tongue was no better, but the constipation had disappeared. I gave him some bismuth. On January 22nd I was sent for to see him. He was complaining of great prostration and thirst and looked very ill. He said that during the past night he had passed a gallon of urine. No questioning either of himself or his mother could elicit any history of his having previously passed an unusual amount of urine, nor of excessive thirst. I examined a sample of urine passed during the night—the specific gravity was 1045. It was loaded with sugar. I gave instructions as to diet.

On the following day he was much worse, passing large quantities of sugar-loaded urine, and had wasted in the most alarming and extraordinary manner. He could only take fluid nourishment. During the evening he became delirious