In a further case *asthma* alternated with urticaria and vaginitis, and the examination of sputum, urethral, vaginal, urine, and faecal specimens suggested an intestinal origin of the whole condition as probable; subsequent treatment seemed to confirm this conclusion.

A case of severe subacute *infective arthritis* gave a history of commencing as a result of puerperal infection accidentally contracted at a first confinement. Post-nasal, tonsil, cervical, urine, and faecal specimens were examined, and it was found that in spite of there being many organisms present in the ordinary cultures which might have been accredited as likely infective agents in such a case, the only strain that the patient's blood selected from them all was the comparatively simple *Streptococcus faecalis* from the faeces. It is, however, most likely that this would be the organism capable of infecting her at the confinement, and against which she had not yet regained an adequate immunity. It is further suggestive that this is so, in that she has proved disturbingly sensitive to the smallest doses of a simple autogenous vaccine prepared from this organism, but is slowly improving under this treatment.

In conclusion, the findings in over 600 examinations by the pathogen-selective culturing method confirm the opinion expressed by Solis-Cohen, that:

1. Cultures as ordinarily made fail to differentiate organisms that are pathogenic for the host from those that are non-pathogenic for him.
2. Ordinary cultures may fail to isolate the etiologic factor in an infection in certain cases.
3. In the pathogen-selective culture the patient's fresh blood is used to inhibit organisms that are non-pathogenic for him, thus permitting the free growth of organisms that are pathogenic for him.
4. To these I would add, that this form of culture will also differentiate between foci in the same patient, and indicate those which contain organisms that are pathogenic for the patient and which are only of local infective importance.
5. That such positive pathogen-selective cultures when obtained from dental, tonsillar, or sinus material indicate the need for radical removal of such a focus of infection, if this is clinically possible.
6. That when similar positive findings in intestinal specimens are associated with any clinical evidence of appendicular trouble the same radical attitude should be adopted.
7. That negative pathogen-selective cultures suggest that the focus of infection from which the specimen was collected, while probably requiring local treatment, is not causal of systemic infection if such exists.
8. That this pathogen-selective culturing method is *only* applicable to the bacteriological examination of cases in which some focal infection is causal of a systemic infection. Where the condition is a purely local infection, as occurs in many cases of chronic catarrh, cystitis, or colitis, the negative selective cultures will demonstrate this fact, and for such, if vaccine treatment is to be employed at all, the preparation should be made from the ordinary direct "A" cultures. Nor does this method apply to the preparation of ordinary prophylactic vaccines. It is essentially a means by which the selected pathogen represents the required antigen for the patient concerned.

The pathogen-selective culture method is therefore suggested as a valuable contribution to clinical bacteriological investigation, both as regards the presence of focal infection and as a guide to the treatment required for such a condition.

I wish to thank my colleagues of the Southport Infirmary and the Liverpool Eye and Ear Infirmary, and the many clinicians who have allowed me to examine their cases by this method; also, I wish to express my appreciation of the detailed and accurate work of my two assistants, Mr. P. H. Osmond and Mr. L. H. Bennett, which has added value to the conclusions drawn from these "pathogen-selective cultures."

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A CASE OF PERTHES'S DISEASE OF THE HIP.

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THE patient in the case here recorded was a boy, aged 8½ years, who attended for examination on June 20th of this year.

The family history is good. He has a brother aged 5, and a sister aged 4, both of whom are fit. His father and mother also are well. There is no history of a similar condition in any other member of the family.

History of Present Condition.—His mother states that eighteen months ago, while running and playing about, he strained his left thigh and complained of pain in his left knee, and limped a little. He was kept resting in the house for a week, and had massage. At the end of a fortnight he appeared quite well again. Three weeks ago he stumbled over a molehill, and has complained of pain in the left thigh and knee ever since, and the limp returned. Some nights the pain has been severe enough to make him cry. Eight weeks ago he walked a distance of two miles, and the pain and the limp have since been worse.

The general condition of the patient on June 20th was good. He is a little undersized for his age. He walks with a definite limp on the left side, but he is able to walk and even run about with comparative ease. His mother states that he complains of pain around the knee, and over the middle of the thigh in front. There is a quarter of an inch wasting of the left calf, and three-quarters of an inch wasting of the left thigh. No definite shortening of the left lower limb could be made out. While resting on the couch it was noticed that the left thigh was held slightly flexed and rotated outwards. Marked muscular spasm could be detected on manipulating the left hip, but the patient did not complain of any pain, and appeared quite cheerful. Flexion and extension of the hip were good, but definite limitation, though slight in extent, could be made out on careful examination. Abduction and external and internal rotation of the hip were very limited.

X-Ray Examination.—The x-ray appearance of the left hip-joint, as shown in the radiograph, is typical of Perthes's disease. The epiphysis of the head of the femur is much flattened and elongated; it appears to creep over the outer part of the neck of the femur. There is x-ray evidence of fragmentation of this epiphysis, the normal single ossific nucleus being broken up into numerous nuclei, which vary in density and shape. Towards the centre of the epiphysis can be made out a large and markedly dense bony nucleus, and on either side are tiny nuclei scattered irregularly. When compared with the normal

side it can be seen that the outline of the acetabulum on the affected side is distinctly irregular. There is definite increase in the vertical depth of the neck of the femur. General rarefaction of the neck can also be seen. The whole of the shaft of the femur shows rarefaction.

Treatment.—Mr. J. B. Haycraft, who also examined the patient, was of opinion that complete fixation of the hip in plaster was not necessary; he advised that a walking calliper splint would give all the necessary rest to the joint and protection from weight-bearing.

Conclusion.

The recognition of Perthes's disease as a pathological entity became possible only through x-ray examination. Practically all our information regarding it has been arrived at by radiological investigation. Previously these cases were not recognized, and were usually classified as

tuberculous joints. It is very probable that some of the cases diagnosed as osteo-arthritis of the monarticular variety occurring in adult life have been cases of Perthes's disease, and that the secondary arthritic changes have been due to using an injured point.

In my opinion the case recorded, if examined a year and a half ago, would have shown changes in the hip-joint, and the prognosis would have been more favourable. The symptoms in this case are comparatively slight, but serve to bring into prominence the importance of an x-ray examination of any joint trouble in a child. I hope to examine this patient at six-monthly intervals for several years, and at a later date to give an account of the changes that have taken place in the joint.

I am indebted to Dr. William Murphy for his kind permission to publish this case.

Memoranda :

MEDICAL, SURGICAL, OBSTETRICAL.

AN UNUSUAL CAUSE OF PAIN AND HAEMATURIA.

THE ultimate fate of a "buried" silk ligature is that it becomes encysted, extruded, or absorbed. The last result has only been observed in the case of very fine silk ligatures, such as the four "O" size. Excision of the tissue in which this silk had been placed twelve months previously, with subsequent microscopical examination, failed to discover any trace of the ligature material.

It is very well recognized that any infection of a ligature will lead to its ultimate extrusion. In the case of an

Cystoscopy.—The mucous membrane of the bladder was healthy. About half to three-quarters of an inch above the right ureteral orifice the ends of a ligature could be seen projecting into the bladder, like a villous papilloma. The ligature was coated with crystals, and the appearance is well shown in the beautiful drawing by Mr. Thornton Shiells. With a ureteral forceps, used through an operating cystoscope, the ligature was seized and removed without much difficulty. This was followed by a moderate amount of haemorrhage. In withdrawing the ureteral forceps the ligature was dropped in the bladder; but was voided by the patient shortly afterwards. Since the removal of the ligature the patient has been quite free from pain, and has had no recurrence of the haematuria.

It must be very seldom that one has the opportunity of seeing a case similar to that described above, although I have removed from the bladder a calculus the nucleus of which was a silk or linen thread ligature. The patient in this case had had hysterectomy performed four years previously.

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infected ligature near the skin surface, a "stitch" abscess results; but if the ligature is in proximity to a hollow viscus, and originally included either the mucous or submucous coats, then, if it becomes infected, it will ulcerate through into the lumen of that viscus.

In the case to be described the ligature must have been passed through the mucous or submucous coat of the bladder.

On July 5th, 1926, Dr. Churchill Davidson of Camberley referred to me a patient who had had hysterectomy performed for fibroids in February, 1925.

History.—The patient, a woman aged 49, stated that she had suffered from severe pain on micturition from the day of her operation. The pain was paroxysmal in character, worse after micturition, with occasional haematuria. For six weeks after the operation the pain was very severe, but after that time it became gradually less severe, and almost entirely disappeared till March, 1925, when the pain returned and persisted.

The patient stated that she suffered from an aching pain, lasting from five to ten minutes after micturition, and that lying down eased the pain. There was no increased frequency. The urine on examination was "smoky," and microscopically red blood cells and many triple phosphate crystals were seen.

THYMOMA SIMULATING ABDOMINAL TUMOUR.

THE rarity of the condition to be described and its clinical features make it of special interest.

A male child, aged 2 years and 5 months, was admitted to the Falkirk and District Infirmary with a history of progressive swelling of the abdomen of one month's duration. Three weeks before admission the child had fallen and bruised the anterior abdominal wall.

When first seen the child, who was very well developed, was sleeping peacefully. The respirations were slightly increased and mainly thoracic in type. The abdomen was markedly and uniformly distended. Palpation of the abdomen showed it to be neither rigid nor tender, but on deep pressure a mass could be felt, which resembled enlarged abdominal glands. The note all over the abdomen was tympanitic. There was some dullness, and rales were heard at the bases of both lungs posteriorly. The pulse rate was 112 per minute and the volume good. There was no sign of bruising of the anterior abdominal wall. A provisional diagnosis of enlarged abdominal glands with broncho-pneumonia was made, and medical treatment was prescribed.

The subsequent clinical history presented no features inconsistent with this diagnosis. There was no diarrhoea or vomiting, and the temperature was irregularly febrile. On the second day in hospital fluid of a serous nature was withdrawn from both sides of the chest, a total of 20 c.cm. being obtained. By this time the respirations had become very laboured, and the child had to be propped up in bed. The abdomen was still much distended, but there were no signs of free fluid. The patient grew rapidly worse, and died on the fourth day of residence in hospital.

At the necropsy there was found in the abdominal cavity a globular mass, of fairly firm consistency and pale appearance, stretching from the vertebral column and occupying the mesentery of the small intestine. There was no increase of fluid in the abdomen. Both lungs were collapsed, and there was much serous fluid in the cavities. Pale-coloured tissue resembling that found in the abdomen was present in the anterior mediastinum, although the mass was not much larger than a normal thymus gland; it was adherent to the pericardium and the diaphragm. The spleen and liver were apparently normal, but a nodule of the same pale tissue was found in the cortex of the left kidney. Portions from the abdominal and mediastinal masses, from a discrete gland in the mesentery, and from the nodule in the left kidney were sent to the Royal College of Physicians, Edinburgh, and the following pathological report was received.

"Sections show the tumour to be a sarcoma (thymoma) with origin in the thymus (reticulum), with metastases to mesentery, glands, and kidney. The tumour cells are large in parts, and the picture in many respects resembles that of Hodgkin's granuloma."

Besides the fact that the clinical picture in this case was dominated by the abdominal mass due to lymphatic