seen to consist of a large lower bulbous portion, a somewhat indistinct neck, and an elongated extremity. The surface of the stone is almost smooth. In length it measures 2.75 inches, while its greatest diameter is 1.5 inches. Some particles removed from the outer surface give the chemical reaction for phosphates. When the stone was removed from the urethra it was found to be lying in a widely distended urethral canal. The large globular mass rested in the bulbar urethra, the slim end extended towards the bladder. The wall of the urethra was inflamed but showed no sign of actual ulceration.

The larger stone (Fig. 2) was presented to the museum in 1929 by Mr. Guy Brunton, who found it in the grave of a man of the early 18th Dynasty, while he was undertaking archaeological research some twenty miles south of Assiut. The stone was found in the neighbourhood of the pelvic bones. The stone, though larger in every way than that previously described, bears a very strong family likeness to it. This specimen weighs 110.5 grams, in length it is 3.75 inches, while its greatest diameter is 2.75 inches. It consists also of a bulbous lower portion, a neck, which is marked by a very evident sulcus, and an elongated extremity. The surface is rough, as if it had been lying in a septic cavity. Scrapings from the surface give the phosphatic reaction.

In comparing the two specimens so similar in shape and moulding, one might suggest that as the former is known to have occupied the urethral canal of a boy of 8, the other might well have occupied a similar position in the man of the 18th Dynasty. The sulcus, which is very evident and forms the neck of the stone obtained from the adult, is present to a lesser degree in the stone from the boy, and has probably been produced by the pressure of the anterior layer of the triangular ligament. We also know that a stone weighing 41.5 grams can be accommodated by the urethra of a boy of 8 years without causing any grave inconvenience. Could not the adult urethra accommodate a calculus of 110.5 grams? In this case, however, the roughened outer surface of the stone suggests that a considerable urethral discharge was present, due to some inflammatory disturbance about the area occupied by this calculus.

PNEUMONIA AND EMPYEMA DUE TO A NON-LACTOSE-FERMENTING BACILLUS.

BY

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THE following is an account of a case of pneumonia and empyema apparently caused by a non-lactose-fermenting coliform bacillus possessing special biochemical and agglutinative characteristics.

HISTORY OF CASE.

The patient, a man aged 21, was admitted on January 19th, 1929, as a case of "influenza." He gave a history of pain in the back and limbs, headache, sore throat, and slight cough commencing suddenly twenty-four hours previously. His temperature was 103° F., his pulse rate 98, and his respiration rate 24. No abnormality was detected on examination of the chest. He was treated with antipyretics.

On January 21st the temperature fell, and the patient felt better. Four days later he had pain in the left side of the chest and a dry cough. His temperature was 103° F., his pulse rate 88, and his respiration rate 30. Pleural friction and a small area of dullness appeared below the left scapula. Within one week the temperature had settled, and the patient's general condition was rapidly improving.

On February 3rd he developed pain in the right side of the chest and frequent dry cough. His temperature was 102° F., his pulse rate 94, and his respiration rate 40. The patient felt and looked very ill. Pleural friction was present on the right side. Dullness of the right base developed, and slowly increased during the next few weeks. A temperature of the swinging type persisted.

On February 23rd a needle was introduced into the right pleural cavity and 35 ounces of fluid were aspirated. On four more occasions pus was aspirated, and finally the patient was sent to the surgical side for rib resection and drainage of the pleural cavity. Uninterrupted recovery followed. During the whole illness there were no signs of intestinal disturbance.

BACTERIOLOGICAL EXAMINATION.

Three specimens of pus aspirated from the pleural cavity on different dates were examined, and a Gram-negative bacillus was isolated on each occasion, giving the same biochemical and agglutination reactions.

Morphology and Fermentation Reactions.

A profuse growth on agar was obtained in twelve hours of colonies having the typical appearance of the coliform group and consisting of highly motile Gram-negative bacilli about 4 μ long and 0.5 μ broad, showing the following reactions when observed over a period of thirty days.

Glucose, mannite, maltose, sorbite, and galactose: formation of acid and gas.

Lactose, saccharose, dulcitol, salicin, inulin, adonite, and raffinose: no change.

Litmus milk: slight acid and curdling by fourth day; alkaline from eighth day onwards.

Lead acetate: no blackening.

Gelatin: not liquefied in six weeks.

Indole reaction: negative.

The organism therefore differed biochemically from the salmonella group only in its failure to attack dulcitol. Most members of the salmonella group produce acid and gas in inositol, but some, like this organism, do not. Blood culture yielded no growth. This was taken when the temperature had fallen, too late to be of much value.

Agglutination Tests.

A Widal test yielded the following results:

Patient's serum + *B. paratyphosus* A = no agglutination.

Patient's serum + *B. typhosus* = agglutination up to 1 in 15.

Patient's serum + *B. paratyphosus* B = agglutination up to 1 in 120.

Patient's serum + unknown organism = agglutination up to 1 in 3,200.

The organism was then typed against stock antisera for *B. typhosus* B, *Paratyphosus* A, and Gaertner's bacillus, but no agglutination was obtained. The results of typing against antisera for *B. paratyphosus* B and *B. aertrycke* (Glasgow) were as follows.

Emulsion of Organism.	Dilutions of <i>B. paratyphosus</i> B Antiserum.						
	100	200	400	800	1,600	3,200	6,400
<i>B. paratyphosus</i> B ...	+++	+++	+++	+++	+++	+++	+++
Unknown organism ...	+	+	±	±	-	-	-
<i>B. aertrycke</i> (Glasgow) ...	++	+	+	+	±	-	-

Emulsion of Organism.	Dilutions of <i>B. aertrycke</i> (Glasgow) Antiserum.							
	400	800	1,600	3,200	6,400	12,800	25,600	51,200
<i>B. aertrycke</i> (Glasgow) ...	+++	+++	+++	+++	+++	+++	+++	+++
<i>B. paratyphosus</i> B ...	++	+	±	±	-	-	-	-
Unknown organism ...	+	±	±	±	±	±	-	-

+++ quite clear, complete sedimentation.

++ not quite clear, almost complete sedimentation.

+ not clear, definite sedimentation.

± and ± slight degree of sedimentation.

A vaccine was made containing 500 million of the unknown organism per c.cm. and injected intravenously into

Emulsion of Organism.	Dilutions of Antiserum to unknown Organism.						
	160	320	640	960	1,280	2,560	5,120
<i>B. typhosus</i> ...	-	-	-	-	-	-	-
<i>B. paratyphosus</i> A ...	-	-	-	-	-	-	-
<i>B. suispestifer</i> (Lister Institute)	+	+	-	-	-	-	-
<i>B. aertrycke</i> (Smethwick) ...	++	++	+	-	-	-	-
<i>B. paratyphosus</i> B ...	++	++	+	+	-	-	-
<i>B. aertrycke</i> (Beveridge) ...	+++	++	++	+	+	-	-
Unknown organism ...	+++	+++	+++	+++	+++	+++	++

a rabbit at five-day intervals in doses of 0.1, 0.2, 0.5, and 1 c.cm. The rabbit's blood was drawn off twelve days after the last injection and set up against emulsions of various organisms.

DISCUSSION.

These tests show that while the organism has, antigenically as well as biochemically, something in common with *B. paratyphosus* B and *B. aertrycke*, it is distinct from these organisms.

The clinical course of the infection bears a striking resemblance to that of many cases of psittacosis. The sudden "influenzal" type of onset, the dry cough, the slow pulse and respiration rate compared with the high temperature, are found in psittacosis, but there is no history in the case of contact with a parrot, and the organism differs from the strains which used to be considered the cause of psittacosis.

Eighteen months previously the patient had been inoculated with T.A.B. vaccine, and this might account in part for the high agglutination of *B. paratyphosus* B by his serum, but the group relations demonstrated between the infecting organism and *B. paratyphosus* B are more likely to account for this agglutination.

The organism is therefore closely allied to the *paratyphosus* B-*aertrycke* group, but differs materially from these organisms in failure to ferment dulcitol and in its specific serological qualities.

I wish to thank Dr. Logan for his advice and interest during the study of this organism, and Dr. Goodall for permission to use the case notes. The expenses of the investigation were defrayed by a grant from the Moray Fund.

CONGENITAL DISLOCATION OF THE KNEES TREATED BY MANIPULATION.

BY

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THE case under consideration is that of a baby girl who was brought for treatment with double congenital dislocation of the knees when only 16 days old. With the exception of this congenital deformity she was normal and well developed. The delivery was a non-complicated vertex. The knees could manually be acutely hyperextended on the thighs, but could not be flexed. A photograph taken

Before treatment.

After treatment.

reveals hyperextension with resultant folds on the dorsum of the limb above and below the knees. The left leg was in a position of valgus with eversion; the right did not have this malposition.

Manipulation was started on the right knee, and the limb placed on a malleable posterior splint, which was bent to the required angle after each manipulation. Daily massage was ordered for the posterior muscles of the limb. Treatment of the left knee was started a fortnight later; the right was then progressing favourably. The sittings were twice weekly for the first month and later once weekly, without any anaesthesia. When flexion was advancing, the posterior splint had to be changed for an angular malleable anterior splint. In four weeks the right knee was completely reduced, and later the child resisted any hyperextension, and cried when this was attempted. The left knee was more troublesome owing to the eversion of the leg. This, however, has now been reduced. The child has been under treatment for the last eight months, and can be supported on her limbs, the knees being quite stable.

Radiographs were taken before and after treatment, the latter showing reduction of the dislocation. The left limb shows traumatic separation of the periosteum produced by the forcible correction of the eversion.

Left knee before treatment.

Left knee after treatment.

Right knee before treatment.

Right knee after treatment.

Such cases as the one here recorded are comparatively rare, and, when not complicated by the congenital abnormalities, are undoubtedly due to malposition *in utero*, and should yield excellent results with simple conservative manipulation without anaesthesia when taken in hand early.

Memoranda : MEDICAL, SURGICAL, OBSTETRICAL.

THE VITAMIN A CONTENT OF GHEE.

GHEE is the clarified fat of cow's milk or buffalo's milk. According to E. R. Bolton,¹ "it is prepared by inoculating freshly boiled milk (usually buffalo) with sour milk, and after curdling has taken place, churning in a rather primitive manner. The fat so obtained is skimmed off, allowed to become somewhat rancid, and then heated in earthen pots until the water has evaporated. The fat clarifies on standing, and when sufficiently clear is run off from the sediment and constitutes 'ghee.'" This heating or "rendering" is in some cases followed by a second similar treatment, or "re-rendering." Ghee is an important constituent of Indian dietary; its vitamin content is consequently a matter of considerable interest.

In 1922 Ghose² recorded some observations on ghee, in which he found vitamin A to be present. His results were obtained before vitamin A had been distinguished from vitamin D. They are therefore subject to the same inconsistencies of interpretation as are all results of investigation into the fat-soluble vitamins before that distinction had been recognized. By the courtesy of Dr. F. N. Moos of the Goculdas Tejpal Hospital, Bombay, we were recently put in possession of five samples of Indian ghee. The first example was of unspecified origin, and was not further examined. The remaining samples, Nos. 1, 2, 3, and 4, came each from a different hospital in or near Bombay.

¹ Bolton, E. R.: *Oils, Fats, and Fatty Foods*. Churchill, 1928, p. 129.

² Ghose: *Biochem. Journ.*, 1922, xvi, 35.