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 dulcitate 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.