

DISCUSSION ON TABLE.

I. The most striking point in the table is the constant presence of streptococci in the diseased joints. Moreover, there is a predominating type, a hæmolytic streptococcus, or one having the power to destroy red blood cells. This organism was found in pure culture in 15 out of the 18 cases in which growth was obtained. It will be noticed also, that in 11 out of the 15 cases the hæmolytic streptococcus is of type "II." The difference between types II, III and C is fully discussed later.

II. Another interesting point is, that every case from which type "II" was isolated proved fatal.

III. Cases 13 and 19 are interesting, in that both were practically moribund when seen, yet blood cultures were negative and in the latter case no bacteria could be isolated from the joint, although same was badly swollen. In case No. 13 only a few colonies were obtained. Such cases seem to die from exhaustion, the result of prolonged pain and inability to nurse rather than from toxæmia.

IV. Cases Nos. 20-23 inclusive, are interesting. The foals were recovering, which fact was evidenced by the change in the consistency of the synovia. Also, there was freedom from infection. With convalescence the synovia becomes darker in colour, more tenacious, and does not tend to coagulate, in other words becomes normal.

V. Number 17 is an unusual case, the foal being infected with both hæmolytic and non-hæmolytic streptococci. These organisms have retained their original characteristics so far. This was undoubtedly a mixed infection with two different types of streptococci.

CHARACTERISTICS OF THE STREPTOCOCCI ISOLATED.

MORPHOLOGY.—There was generally marked uniformity in the size of the organisms. The arrangement was frequently in pairs except when grown in broth.

STAINS.—The organism stains well with all aniline stains and is Gram positive. However, occasionally there was irregularity in reaction to the latter strain.

CULTURE CHARACTERISTICS.—It will have been noticed that the streptococci have been tentatively grouped in types II, III and C, the cultural characteristics mentioned are common to all unless stated otherwise.

NUTRIENT AGAR (+ 8 to Ph.). Growth generally good, not heavy and frequently consisting of a mass of confluent colonies, rather than a uniform surface growth.

NUTRIENT BROTH (+ 8 to Ph.). Growth slight and almost always attached to the side of the test tube.

HÆMOLYTIC POWER.—In order to compare the hæmolytic power of different strains, the following method of preparing blood agar was employed.

To every 10c.c. of Nutrient Agar 1.0c.c. of defibrinated blood was added. This was well mixed and then poured into petri dishes of similar capacity. The organism to be tested was streaked across the plate and incubated for a definite period of time.

Organisms of type "II" cause very pronounced hæmolysis, there being a clear space of five or six m.m. between the border of the growth and that of the hæmolytic zone. Another interesting point is that there is never any "staining" of the agar underneath the growth, which commonly occurs in the organisms of