ABSTRACTS OF COMMUNICATIONS.

Pacific Coast Branch

Thirty-sixth meeting.

San Francisco, California, February 14, 1923.

134 (2094)

An anaerobe from the mouth cavity of man and rabbits morphologically suggesting B. pneumosintes.

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One of us (W. L. H.) reported in 1919 the isolation of a minute anærobe out of material from the mouth of five consecutive persons not suffering from influenza, in Pittsburgh, Pennsylvania.

The material was cultured on cooked meat and other media, and the bacterium attracted attention because of the abundance of gas it produced in cooked meat medium, but more particularly on account of its small size and the chance of its being confused in direct smears and mixed cultures with *B. influenzæ*. It was thought at the time to be closely related to the *Staphylococcus parvulus* of Veillon and Züber, but the descriptions of this gram negative anærobe are too meager to permit complete identification. An anærobe, which we considered to be the same, was reported at the meeting of the Association of Pathologists and Bacteriologists in May, 1922, as "A very small anærobe giving gas in tissue." The site of infection in the neck of this patient was in direct communication with the mouth cavity, and it may well have been an accidental contamination or something more important. A non-hemolytic streptococcus was found associated with it.

Anærobes which we consider as identical with the six strains mentioned have been readily isolated from the mouth cavity of four of us in the laboratory at Stanford University, California. It would appear that this anærobe, or very closely related forms,

is commonly if not always present in the oral cavities of human beings.

The anærobe is very small, well under 0.5 micra long, by a little less in width. (Measurements under a half micron are not very accurate). It is smaller than *B. prodigiosus, B. bronchosepticus* and *B. influenzæ*. Illustrations of *B. pneumosintes,* as given by Olitsky and Gates in their earlier reports, indicate its size. This coccoid bacillus is non-motile, gram negative, occurs singly, often in pairs, and in irregular groups, depending on the medium, and is strictly and persistently anærobic. In Veillon agar shakes, its colonies, never growing nearer than 1 cm. to the surface, vary with the dilution used, and are remarkably uniform in any given tube. The size varies from very tiny colonies when crowded to large disks or compound disks when widely isolated. The same variation in size is true of surface colonies. They remain individual even when crowded, are raised, with a clearer sharp border and of a greyish white color. It is rather restricted in its test tube biological characters. In Veillon agar (containing sugar) gas production may be, and often is, absent. On occasions it may produce abundant gas. The conditions favoring or interfering with the demonstration of gas has not been determined, but it would appear to be independent of sugar content. The same is true in fluid media, using our (W. L. H.) modification of the Hall anærobic tube. There is no indication of acid production.

The gas production in cooked meat medium is constant and abundant, and is the outstanding test tube biological feature. The gas contains traces of hydrogen sulphide, but its analysis is not completed.

We have been able to pass this minute anærobe through a Mandler filter tested against *B. pyocyaneus,* but which allowed *B. prodigiosus* to go through under 20 pounds pressure. We are at present developing a method for more accurately testing filters before using them for bacterial filtration, following the method given by Bullock and Craw, and by Ferry. The work of Ferry on the filtration of *B. bronchisepticus* is important in this connection.

We have further been able to isolate this same tiny anærobe from the mouth cavity of two normal rabbits.

We consider this bacterium of importance for the following reasons: (1) It may easily be confused with *B. pneumosintes*

by its morphological appearance and its manner of growth. The failure of *B. pneumosintes* to produce gas does not help in the differentiation since the bacterium we are describing frequently fails to show gas. I do not believe the cooked meat medium was used by Olitsky and Gates. (2) It is filterable through tested filters. Olitsky and Gates do not give any method by which their filters were tested. (3) It is found in the oral cavities of man and rabbits, and thus could lead to confusion with *B. pneumosintes* from these sources. (4) Comparable experiments to those done by Olitsky and Gates will have to be carried out to determine whether this common, extremely small anærobe will alter the blood picture after intratracheal injection, or lower the resistance of the lung to secondary invasions by other common micro-organisms of the respiratory tract, or will show any serological or other relationship to *B. pneumosintes.*

135 (2095)

Anaphylactic reactions in isolated canine organs.

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If the isolated organs of horse serum sensitized dogs are perfused with Locke's solution containing 0.5 to 1 per cent. horse serum, the following reactions are observed:

(a) *Hind quarters*: Slight increase in perfusion resistance, reducing the rate of perfusion flow about five per cent. No demonstrable edema, except on genitalin (female).

(b) *Intestines*: Increased perfusion resistance, reducing the perfusion flow about twenty-five per cent. Increased peristaltic movements; distinct edema of intestinal wall; increased volume of intestinal contents.

(c) *Liver*: Increased perfusion resistance, reducing the perfusion flow about twenty-five per cent. Distinct hepatic edema.