A NOTE ON THE VIABILITY OF MENINGOCOCCI ON YEAST AGAR MEDIUM

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In 1918, the writer showed that a simple yeast medium (extract of baker's or brewer's yeast) could be used for prolonging the viability of the meningococcus. The medium possesses the advantages of requiring no meat infusion or meat extract or peptone. It is prepared with agar as a base and is to be used in the solid or semi-solid form. Observations at the time were extended over a period of six, and in several instances over a period of eleven weeks. More than twenty strains of meningococcus, recent and old, representing normal, irregular and para types isolated from the spinal fluid and the nasal mucosa, were tested on the solid medium and were found fully viable after six weeks on the average and for some strains which were observed beyond that time, for eleven weeks, when stored at 37°C. At room temperature, observations were made for one month only and at the end of this time, cultures were still viable. It was believed that a semi-solid medium was best adapted for unusually prolonged viability of organisms such as the meningococcus and other species.

Some recent observations which I wish to report, point to yeast media as a valuable adjunct in routine bacteriological work, particularly in view of the fact that others, notably Ayers and Rupp recently, have confirmed the adjuvant properties of yeast extracts in culture media.

Representatives of the normal, irregular and para types of meningococcus were seeded in semi-solid yeast agar prepared as described in earlier articles by the writer, and stored at 37°C. and at room temperature (24° to 26°) after a preliminary incu-
bation over night at 37°C. Transplants were made to glucose agar at monthly intervals. Luxuriant growth was obtained with all of the strains studied for a period of five months, after which the tests were curtailed. It is preferable, perhaps, to store cultures at incubator temperature in order to maintain a “body environment,” but insofar as viability is concerned, there seems to be no difference between the two methods, for the time observed.

No tests have been made to determine the effect of such storage on virulence. A few experiments, however, have been designed with a view to disclosing any possible changes in agglutinogen or agglutinin content of meningococcus. The results indicate that monovalent sera obtained with strains grown on yeast medium for several months do not differ in agglutinating properties from sera developed with cultures which have been grown on the usual media. Similarly, cultures which have been growing on yeast media for a long time are agglutinated by polyvalent sera to the same extent as are cultures grown on other media.

SUMMARY AND CONCLUSIONS.

Meningococcus cultures in semi-solid yeast agar when stored either at room temperature or in the incubator at 37°C., were still fully viable after five months.

In all likelihood the antigenic nature of the organisms remains unaltered as may be indicated by comparative agglutination tests.

REFERENCES