

10416 P

Immunological and Serological Reactions of *Listerella monocytogenes*.*

L. A. JULIANELLE AND C. A. PONS.

From the Department of Ophthalmology, Washington University School of Medicine, St. Louis, and the Pathological Laboratory, Monmouth Memorial Hospital, Long Branch, N. J.

In order to identify by serological means a suspected strain of *Listerella monocytogenes* isolated from the blood of a patient with infectious mononucleosis, several strains of the organism† were obtained from different workers for the preparation of antisera. Since preliminary tests indicated that the strains were not all antigenically identical, the investigation was extended to include a possible classification of these organisms based on serological reactions. Antisera were accordingly prepared in rabbits with 6 of 8 strains collected for the study.

The different cultures were subsequently tested for agglutination in the antisera, which varied in titer from 1:1260 to 1:5120. It was found that 8 strains of *Listerella monocytogenes* were divided by the agglutinative reaction into 2 varieties or types. For convenience, it is proposed to designate the types, I and II. Type I appears to be composed of 2 rabbit strains and 2 human strains, while Type II consists of 3 strains from 3 different animals (*i. e.*, cow, sheep, goat), not including the rabbit, and 1 human strain. This bears out to a measure the results observed by Webb and Barber⁵ that 2 rabbit and 2 human strains and 1 gerbille strain tested by them fell into one group, which was as far as they went. It also corroborates and

* Aided by a grant from the Commonwealth Fund of New York to Washington University.

† We are indebted to the following for the cultures employed in this study: Dr. A. B. Wadsworth of Albany, New York, for strains No. 204 and No. 205, isolated from rabbits by Murray¹; Dr. C. V. Seastone for strains which he isolated from encephalitis of cattle (D82-N), sheep (1975), and goat (48)²; Dr. C. G. Burn for strain No. 128, which he isolated from human meningitis³; Dr. E. W. Schultz for strain A.T.₂, which he isolated from human meningo-encephalitis⁴.

¹ Murray, E. G. D., Webb, R. A., and Swann, M. B. R., *J. Path. and Bact.*, 1926, **29**, 407.

² Seastone, C. V., *J. Exp. Med.*, 1935, **62**, 203.

³ Burn, C. G., *Am. J. Path.*, 1936, **12**, 341.

⁴ Schultz, E. W., Terry, M. C., Brice, A. T., Jr., and Gebhardt, L. P., *Proc. Soc. Exp. Biol. and Med.*, 1934, **31**, 1021.

⁵ Webb, R. A., and Barber, M., *J. Path. and Bact.*, 1937, **45**, 523.

amplifies the observations of Seastone,² who showed that while strains from various animal sources, exclusive of the rabbit, were serologically the same, they were different from a single rabbit strain which he studied. More recently, it was shown by Schultz, Terry, Brice, and Gebhardt⁶ that 2 serological groups occurred among 11 different strains of *Listerella monocytogenes* derived from various animals, including man.

While the number of strains employed in this study is too small to indicate more than a possible eventuality, it is tempting to speculate whether it may not be that these types actually indicate the ultimate source of the organism—Type I, for example, being essentially derived from rodent animals (rabbit, gerbille⁷), and Type II from ruminant animals (sheep, cow, goat). If future work should confirm this hypothesis, then it may be predicated that human strains originate from some animal source, and the source in question may be surmised from the agglutinative type.

Preliminary experiments suggest that immunity to infection is broader than the type-differentiation demonstrable by agglutination. Thus, animals recovering from experimental conjunctivitis induced by *Listerella monocytogenes* become resistant to further infection following instillation of either the homologous or heterologous strain. In this connection, it is curious that while recovery from conjunctivitis insures resistance to conjunctival reinfection, intravenous immunization resulting in high agglutinin-titers (1:1260 to 1:5120), on the other hand, offers no similar protection. Conversely, the immunity localized in the conjunctiva is more frequently than not unaccompanied by circulating antibodies.

10417 P

Flocculation with Staphylococcal Toxin and Antitoxin.

S. EDWARD SULKIN. (Introduced by J. Bronfenbrenner.)

From the Department of Bacteriology and Immunology, Washington University School of Medicine, St. Louis

Bronfenbrenner and Reichert^{1, 2} found that antitoxin obtained by immunizing animals against toxic filtrates of 24-day cultures of *B.*

⁶ Schultz, E. W., Terry, M. C., Brice, A. T., Jr., and Gebhardt, L. P., *PROC. SOC. EXP. BIOL. AND MED.*, 1938, **38**, 605.

⁷ Pirie, J. H. H., *Pub. S. African Inst. Med. Research*, 1927, **3**, 163.