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Neutralization of Poliomyelitis Virus by the Serum of Liberian Negroes.

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Epidemiological studies of acute anterior poliomyelitis in the United States have suggested that the virus of this disease is more widespread than is indicated by the incidence of clinical cases (Frost,¹ Aycock²). Aycock and Kramer³ interpreted the high proportion of serums from "normal" persons of Georgia that neutralized the virus, as meaning that a large number of persons in the Southern United States are exposed to the virus, thereby acquiring an immunity with a low attack rate. They concluded that the extent of the distribution of the virus in warmer climates is equal to that in cooler climates. Soule and McKinley⁴ have reported that of 8 Porto Ricans without history of attack or exposure to this disease and whose serums were examined for their neutralizing property, all gave positive results.

The understanding of the epidemiology of poliomyelitis is assisted by studies in the geographical distribution of the disease. It occurred to us that we might get data by examining the serums of "normal" natives of West Africa for neutralizing properties. We obtained specimens through the courtesy of Dr. J. B. Rice of the Firestone Plantations of Liberia and Dr. W. A. Sawyer of the International Health Division of the Rockefeller Foundation. The technic is that which has been standardized for similar purposes in this laboratory, with the use of the virulent Rhoads' PMV strain of virus. One part of 1.25% suspension of monkey cord is mixed with 3 parts of serum; the mixture is incubated 2 hours at 37°C. and held in the refrigerator over night. Two cc. of the mixture is injected intracerebrally into *Macacus rhesus*. Temperatures and observations are recorded daily for 6 weeks.

Ten specimens have been examined. Eight of the test animals showed no symptoms and survived. A ninth monkey and the convalescent serum control monkey had a facial paralysis and survived

¹ Frost, W. H., *Hyg. Lab. Bull.*, No. 90, 1913, Washington, D. C.

² Aycock, W. L., *J. Prev. Med.*, 1929, **3**, 245.

³ Aycock, W. L., and Kramer, S. D., *J. Prev. Med.*, 1930, **4**, 201.

⁴ Soule, M. H., and McKinley, E. B., *Proc. Soc. Exp. Biol. and Med.*, 1931, **29**, 168.

without other symptoms or a febrile rise. The tenth animal and the virus control died of experimental poliomyelitis.

The age distribution of serum samples is: two 15 years, one 16, one 18, two 20, and one each of 23, 25, 26, and 35 years. The person furnishing the negative specimen was 25 years of age. An inquiry into the incidence of this disease in Liberia disclosed a lack of recorded data on the subject. Rice⁵ writes that he has not seen or heard of poliomyelitis cases but points out that his practice is confined to adult employees; he adds that the infrequent paralyzes seen might be interpreted as following this condition. Strong and Shattuck⁶ have encountered several cases of probable poliomyelitis in Liberia. Johnson,⁷ Director of the Medical and Sanitary Service of Nigeria, British West Africa, informs us that acute cases of poliomyelitis are occasionally observed in the natives of that region.

The significance of the neutralization test in this connection implies that it is a specific immune reaction, which has yet to be established.

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Effect of Pancreatic Juice on Absorptive Mechanism of the Gall Bladder.

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Wolfer¹ showed that pancreatic juice injected into the gall bladder of the dog caused marked histologic changes in the wall of the viscus. The possibility of this being the cause of cholecystitis clinically was thoroughly discussed by him. The secretory pressure of the pancreas is much higher than that of the liver² and in case of blockage of the ampulla by stone, anatomic arrangements are such in a high percentage of human subjects that the gall bladder might fill with pancreatic secretions.^{3, 4}

⁵ Rice, J. B., personal communication.

⁶ Strong, R. P., and Shattuck, G. C., *Harvard African Exped.*, 1926-27. Harvard Univ. Press, Cambridge, 1930, **1**, 360.

⁷ Johnson, W. B., personal communication.

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¹ Wolfer, J. A., *Surg., Gyn. and Obstet.*, 1931, **53**, 433.

² Dragstedt, L. R., personal communication.

³ Cameron, A. L., and Noble, J. F., *J. Am. Med. Assn.*, 1924, **87**, 1410.

⁴ Westphal, K., *Z. f. klin. Med.*, 1929, **109**, 55.