determinations were made immediately after withdrawing the fluid.

In testing for enzymes the following substrates were used: 1% sucrase solution, 5% peptone and olive oil. The sucrase activity was estimated by determining the amount of reducing sugars by the Schaffer-Hartman method. Peptone hydrolysis was estimated by the formol titration and lipase activity measured by titrating the fatty acids liberated with alcoholic KOH. Seventy-four ileal specimens were tested and 104 jejunal specimens. Sucrase and erepsin activity were demonstrated in 50% of the ileal specimens and in 75% of the jejunal specimens. Lipase was only occasionally present.

These results show that the fluid accumulated in a distended loop is not pure *Succus entericus*. Some factor has brought about abnormal secretion together with some filtration into the loop. Normal loops absorb all fluid leaving a slowly accumulating pastelike debris.

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Neutralization of Virus of Poliomyelitis with Serum of Healthy Porto Ricans.

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The geographic and seasonal incidence and variations of poliomyelitis have been among the most interesting problems in the study of the epidemiology of this disease. Further, the preponderance of cases in children under the age of puberty with also a tendency towards a larger proportion of cases in males than in females is striking. Friedberger, Bock and Furstenheim[1] have called attention to antibody rise in relation to age and one may logically inquire what, if any, may be the physiological factors involved which may modify the susceptibility or resistance to infection with the virus of poliomyelitis. The work of Aycock[2] and of Shaughnessy, Har-

[1] Friedberger, E., Bock, G., and Furstenheim, A., *Z. f. Immun. Forschung.*, 1929, **64**, 294.

[2] Aycock, W. Lloyd, *J. Prev. Med.*, 1929, **3**, 245; *Am. J. Hyg.*, 1928, **8**, 35; and Kramer, S. D., *J. Exp. Med.*, 1930, **4**, 457.

mon and Gordon[3] indicates that the serums of normal individuals, particularly adults, may in a high percentage of cases neutralize this virus. Aycock has suggested that different reactions to infection with poliomyelitis virus may be due to physiological variations in the host, rather than to variations in the virus itself. Further this author states that evidence that immunity to poliomyelitis is as common in warm climates as in cool climates led to the belief that the virus is probably as widely distributed in warm regions as in cool, and also that the lower incidence of the disease in warm regions is probably not due to a corresponding diminution of the virus in such regions. The work of the authors cited suggests that neutralizing substance for poliomyelitis virus found in the serums of normal people is of a specific nature and therefore due to exposure to the virus. This seems, of course, to be the most logical assumption.

The physiological effects of warm climates on man still constitute a subject for debate among scientists who have studied this problem. That such effects do exist seems now to be established but to what factors or combination of factors responsible for these effects we are still in ignorance. How these physiological modifications may influence man's response to infection, if at all, remains undetermined though we believe that certain diseases are definitely modified in tropical environments or, for some reason, do not exist at all. Scarlet fever, for instance, is a pertinent example.

Poliomyelitis is a disease chiefly of temperate climates and its incidence in warm climates, particularly the tropics , is exceedingly low. Yet cases of the disease, and even epidemics, have been reported in semitropical countries—but rarely so. Poliomyelitis is rare in Porto Rico. No clinical cases of this disease originating in the Island have been proved at autopsy. We have thought it of interest to test the serums of a group of healthy Porto Ricans for neutralizing substance for this virus. In all, 8 normal people have been studied. None of these individuals gave any history of contact with cases of paralysis nor did they have any history or symptoms of paralysis themselves. The serums from these cases were tested in dilutions as high as 1:30. Serums and virus were mixed in 0.5 cc. quantities and incubated for 2 hours at 37°C., placed in the ice box for 18 hours and then tested in *Macacus rhesus* monkeys by intracerebral injections of 1 cc. of the serum-virus mixture. Control animals received similar dilutions of both filtered and unfiltered virus following 2 hours' incubation and 18 hours in the ice

[3] Shaughnessy, H. K., Harmond, P. H., and Gordon, F. B., *J. Prev. Med.*, 1930, **4**, 463.

box. The control animals developed symptoms of poliomyelitis on the ninth day while the test animals remained entirely well for over 3 months during which time they were under daily observation. The serums employed from the healthy individuals therefore contained neutralizing substance for the virus of poliomyelitis. Are such neutralizing antibodies in the serums of such individuals specific? Are they due to acquired immunity through coming in contact with the virus of poliomyelitis? Or are such antibodies (if they are true antibodies) due to physiological factors as yet unknown? Should such phenomena be classified under the head of "physiological immunity"? It is true the experiment reported is based upon a small number of cases but they were chosen at random and they represent a 100% result. They are reported at this time simply to raise the question of specificity. The appearance of neutralizing substance for poliomyelitis virus in adult Porto Ricans may be of specific nature but we feel that certain physiological factors should also be studied in connection with this problem.

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Effect of Acid Extract of Anterior Pituitary on Iodine Content of Blood and Thyroid in Guinea Pigs.*

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Loeb, Bassett and Friedman, Siebert and Smith, and Martin Silberberg[1, 2, 3, 4, 5] have shown that injections of acid extract of cattle anterior pituitary produce changes in the guinea pig which bear

* These investigations were in part carried out with the aid of a grant for research in science made to Washington University by the Rockefeller Foundation.

† We are indebted to Miss Hilda Friedman for her assistance in these experiments.

[1] Loeb, Leo, and Bassett, R. B., PROC. SOC. EXP. BIOL. AND MED., 1929, **26**, 860; 1930, **27**, 490; Loeb, Leo, Bassett, R. B., and Friedman, Hilda, *Ibid.*, 1930, **28**, 209.

[2] Siebert, W. J., and Smith, R. S., PROC. SOC. EXP. BIOL. AND MED., 1930, **27**, 622.

[3] Siebert, W. J., and Smith, R. S., *Am. J. Physiol.*, 1930, **95**, 396.

[4] Silberberg, M., PROC. SOC. EXP. BIOL. AND MED., 1929, **27**, 166.

[5] Silberberg, Martin, *Krankheitsforsch.*, 1930, **8**, 171.