

lanatoside C, scillaren A and ouabain—in doses which are known to be effective in intact animals.

The authors acknowledge the technical assistance

of T. D. Harris. They are also indebted to Professors L. S. Goodman, W. S. Loewe and T. F. Dougherty for advice and encouragement.

Received April 2, 1951. P.S.E.B.M., 1951, v77.

Morphologic Observations by Electron Microscopy of the Leon Strain of Poliomyelitis Virus. (18671)

REGINALD L. REAGAN, DOROTHY M. SCHENCK, AND A. L. BRUECKNER.

From the Maryland State Board of Agriculture, Live Stock Sanitary Service Laboratory, University of Maryland, College Park, Md.

Electron microscopy studies conducted on the Brunhilde strain of poliomyelitis virus have been reported(1). The following study was undertaken with the Leon poliomyelitis strain. The Leon strain of poliomyelitis virus, which was isolated in Los Angeles in 1937 by Dr. John F. Kessel, was furnished by Dr. Jonas Salk and Major Byron Bennett of the Poliomyelitis Research Center, Municipal Hospital, University of Pittsburgh, Pittsburgh, Pa. The particular pool used, Leon Gen. XXI, has a 50% end point of $10^{-4.2}$ in rhesus monkeys by intracerebral inoculations.

Procedure. The rhesus monkeys used in the current study were healthy and were negative to the tuberculin test. They weighed approximately 5 lb each. Two monkeys were inoculated intracerebrally with 1.0 cc of a 1/50 dilution of poliomyelitis virus (Leon strain). Typical symptoms of poliomyelitis were noted on the 6th day after inoculation and the monkeys were sacrificed. The spinal cords were removed aseptically and pooled. Two monkeys were inoculated intracerebrally with 1.0 cc of a 1/50 dilution of normal monkey spinal cord which had been removed 8 days earlier, ground, and kept in the deep freeze at -40°C . No symptoms of central nervous system disorder were evidenced and both monkeys were sacrificed the 6th day post inoculation. The spinal cords were removed aseptically and pooled. The infected and normal pools were each ground with alundum and diluted to a 20% suspension with physio-

logical saline. The 2 suspensions were then subjected to 5 minutes centrifugation at 1,000 rpm in an angle centrifuge. The supernatants were removed from the 2 specimens and filtered through a type ST size L3 Seitz filter. The filtrates from the 2 suspensions were then subjected to centrifugation under refrigeration in a Spinco ultracentrifuge for $3\frac{1}{2}$ hours at 50,000 rpm. The temperature of the refrigerated outer jacket stayed constant at -14°C during the centrifuge run. After the $3\frac{1}{2}$ hour centrifugation period, the supernatants from the specimens were discarded, and the sediment from each specimen was resuspended in 1.0 cc of physiological saline. A small drop of each suspension was placed on several film supports. After all excess fluid had been removed with small capillary pipettes, the films were dried and shadowed with chromium(2) at arc tangent $1/6$ and examined under the RCA electron microscope, type EMU.

One monkey was inoculated intracerebrally with 0.4 cc of the concentrated normal material, and each of 2 monkeys was inoculated intracerebrally with 0.4 cc of the concentrated infected material. The monkeys receiving the concentrated infected material showed typical poliomyelitis symptoms after a period of 6 days and were sacrificed. Histological sections of the cords and brains showed typical pathological lesions of poliomyelitis. The monkey receiving the concentrated normal monkey cord appeared normal during a 30-day

1. Reagan, R. L., Schenck, D. M., and Brueckner, A. L., *J. Infect. Dis.*, 1950, v86, 295.

2. Williams, R. C., and Wyckoff, R. W. G., *Proc. Soc. Exp. Biol. and Med.*, 1945, v58, 265.

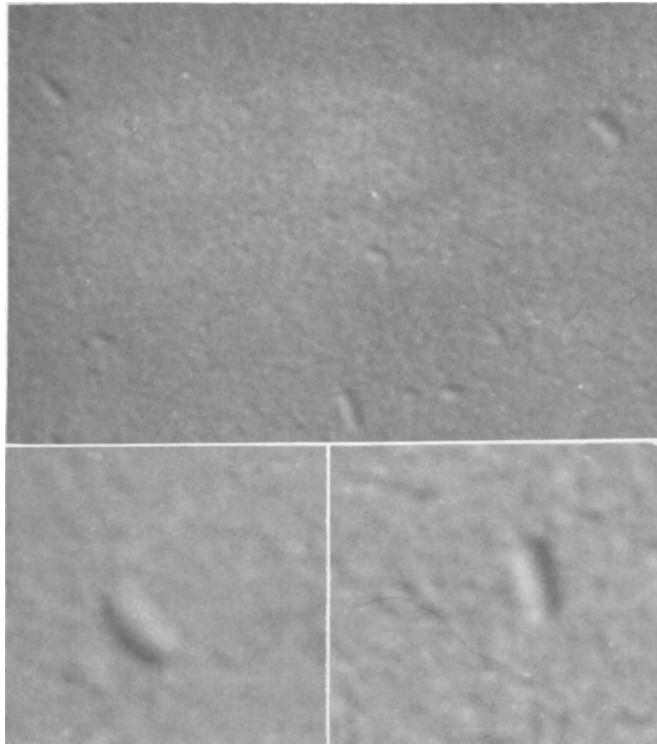


FIG. 1.
Poliovirus particles (Leon Strain) shadowed with chromium at arc tangent $1/6$. Top $\times 75000$; bottom both $\times 152000$.

observation period.

Electron microscope examination of the concentrated virus suspension revealed virus-like particles as shown in Fig. 1. These particles were small and rod-shaped, ranging in width from 12-15 $m\mu$. Upon examination of the concentrated suspension of the normal spinal cord no such virus particles were seen.

Summary. Studies by electron microscopy of the spinal cords of monkeys infected with

poliovirus (Leon strain) showed rod-shaped, virus-like particles ranging in width from 12-15 $m\mu$. These bodies could not be demonstrated in normal monkey cords.

The authors express their appreciation to Lincoln Watkins for technical assistance and to Dr. Carl Smith of this laboratory for the histological examinations.

Received April 4, 1951. P.S.E.B.M., 1951, v77.

Comparison of Leukocyte Response to ACTH and Bacterial Pyrogen.* (18672)

BURHAN SOYLEMEZOGLU† AND J. A. WELLS.

From the Department of Pharmacology, Northwestern University Medical School, Chicago, Ill.

Bacterial polysaccharides, referred to as "pyrogens", induce characteristic alteration of

the number of circulating white blood cells.

and the National Institutes of Health, U. S. Public Health Service.

* This investigation was supported by research grants from Baxter Laboratories, Morton Grove, Ill.

† Hematology Research Foundation Fellow.