

R. Paul in 1946 in its 22nd passage, (3) a cotton rat passage strain of the Lansing virus, obtained from Dr. Hubert Loring in 1946, (4) the MV strain, and (5) the FW strain isolated by one of us (E.W.S.) from the stools of a poliomyelitis patient in 1941. All 5 of these strains failed to prove infectious for test animals after the 5th or 6th egg passages. Since the L₃ filtrate of the Lansing strain had failed to induce infection in mice, the egg passages in this series were initiated with 0.2 ml of an unfiltered 1% suspension mouse brain-cord tissue in half-strength Martin's peptone solution of the passage material, which did prove infectious for 5 out of 6 cotton rats.

After we had completed this work a paper by Riordan and Sá-Fleitas¹² appeared in which they also report having obtained negative results with certain "monkey pathogenic

¹² Riordan, J. T., and Sá-Fleitas, M. J., *J. Immunol., Virus Research and Exp. Chemotherapy*, 1947, **56**, 263.

mouse adapted strains" of poliomyelitis virus.

Summary. Further observations on the cultivation of the murine SK strain of poliomyelitis virus in fertile eggs are reported. This strain has now been carried through 30 passages in eggs. The virus has been found to be widely distributed in the infected embryo. It is easily transmitted from egg to egg by different routes. Embryos from 5 to about 14 days of age seem to serve equally well for the propagation of the virus, but those above 16 days of age fail to support its growth.

The murine MM strain was carried through 10 egg passages; a Stanford mouse passage strain, believed to be a high titer variant of the Lansing strain, tentatively labeled C(M) virus, was carried through 15 egg passages. The GD VII strain of Theiler's mouse encephalomyelitis virus was carried through 10 passages. It caused the lowest incidence of embryo deaths of the three viruses cultivated. Five strains of poliomyelitis virus failed to show growth in eggs.

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Ability of Diisopropylfluorophosphonate (D.F.P.) to Produce Antidromic Activity in Motor Nerves.

RICHARD L. MASLAND. (Introduced by D. W. Bronk.)

From the Department of Neurology, University of Pennsylvania, Philadelphia

Masland and Wigton¹ demonstrated antidromic activity in motor nerves, occurring in association with fascicular twitching of the muscles produced by neostigmin (Prostigmin), or by eserine. They concluded that the cholinesterase inhibiting action of these drugs led to an accumulation of acetylcholine, which stimulated the motor nerve at its ending, and initiated antidromic impulses. This work was further extended by Eccles, Katz, and Kuffler.² These investigators demonstrated that the antidromic activity observed

in the motor nerve sometimes originated in the muscle fibre, and at other times originated in the nerve ending itself.

In view of the development of new anticholinesterase drugs, it was of interest to determine whether the new drugs produce similar antidromic activity. A study similar to that previously reported with neostigmin has therefore been made using diisopropylfluorophosphonate (D.F.P.). The drug was injected intramuscularly or intraperitoneally in cats, in doses of 5 to 10 mg, as a 1% solution in peanut oil. Active fascicular twitching of the muscles was usually observed in about 40 minutes from the time of injection. When the drug was injected intramuscularly,

¹ Masland, R. L., and Wigton, R. S., *J. Neurophysiol.*, 1940, **3**, 269.

² Eccles, J. C., Katz, B., and Kuffler, S. W., *J. Neurophysiol.*, 1942, **5**, 211.

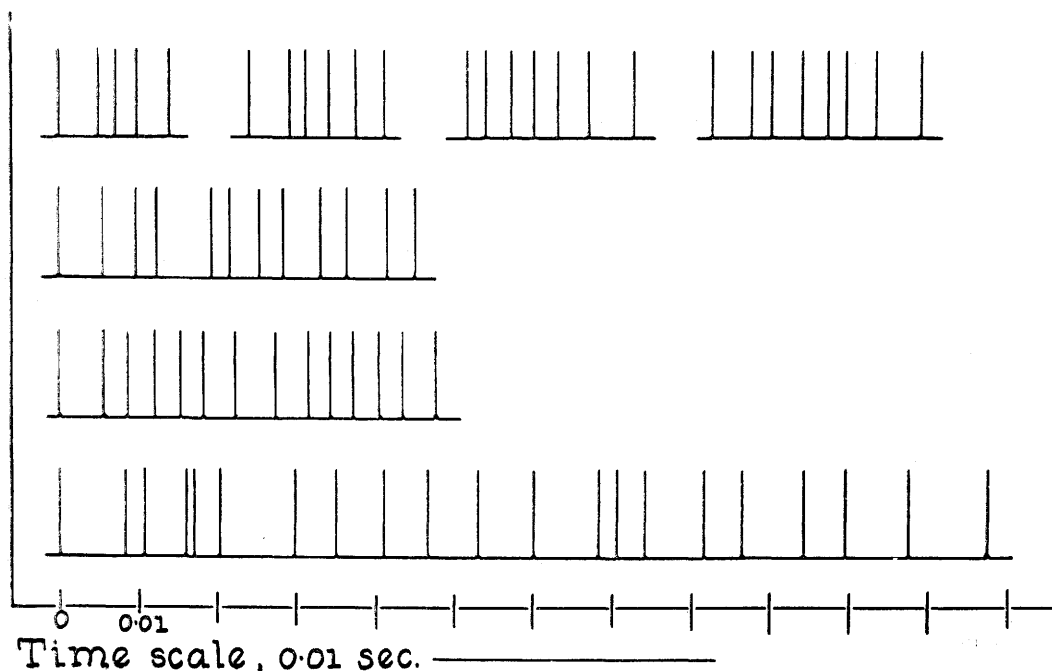


FIG. 1.

Diagram showing the spike frequency and the duration of 7 typical grouped discharges produced by D.F.P. and recorded from an anterior root of the cat. The bursts diagrammed contain from 5 to 21 spikes. Bursts consisting of a single spike, which also occurred, have not been indicated.

the twitching usually appeared first in the limb into which the drug had been injected. When recording electrodes were applied to the motor nerve roots within the spinal canal under these conditions, antidromic activity was recorded. The activity consisted of repeated bursts of nerve impulses, the impulses occurring in groups of 1 to 20, at frequencies up to 200/second during the bursts. The

activity appeared to be identical with that previously reported in connection with the administration of neostigmine. (Fig. 1).

These experiments provide further evidence of the similarity of action of eserine, neostigmine, and D.F.P., and support the view that the effect of these drugs on the neuromuscular system is a result of their common action as cholinesterase inhibitors.

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Galactose Excretion in Young and Hepatoma Rats Fed Skim Milk Diets.*

P. H. DERSE, C. A. ELVEHJEM, AND E. B. HART.

From the Department of Biochemistry, College of Agriculture, University of Wisconsin, Madison, Wis.

Adult rats receiving liquid skim milk ex-

crete as high as 35% of the ingested galactose in the urine. When whole milk or skim milk supplemented with 3 or 4% fat is fed, the urinary loss of galactose is greatly reduced.¹ Fat increases the utilization of galactose by

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¹Schantz, E. J., Elvehjem, C. A., and Hart, E. B., *J. Biol. Chem.*, 1938, **122**, 381.