

Poliomyelitis in *Sigmodon hispidus littoralis* Rats.*

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Recently, Armstrong¹ reported that he produced poliomyelitis in *Sigmodon hispidus hispidus* rats (Eastern cotton rats) by injecting poliomyelitis virus (Lansing strain). He was unsuccessful when other strains were used. It is almost impossible to distinguish this animal from *Sigmodon hispidus littoralis*, an animal more common in the South and relatively inexpensive.

Ten rats (*Sigmodon hispidus littoralis*) were given a 10% suspension of Flexner's M.V. strain, 5 getting purified and eluted virus and 5 unpurified virus. Armstrong's technic was followed, the doses in each instance in the following experiments being 0.06 cc intracerebrally, 0.06 cc intranasally and 0.5 cc subcutaneously. Two of the animals which received unpurified virus died 5 days later. Pathologically, the central nervous system showed nothing that resembled poliomyelitis. A suspension of the brain and cord obtained from these animals was injected into 5 rats. These remained normal after nearly 3 months of observation.

Nine virus strains [Flexner's M.V., Toomey, Flexner (Phil., Wolman), Kramer, Harmon, Howitt, Trask W.E., Flexner W.E., Australian] were each injected into 5 rats. One rat given Flexner M.V. virus died the second day after injection; 1 given Flexner (Phil.) virus died the sixteenth day; 1 Kramer, the sixth day; 1 Harmon, the second day; 1 Harmon, the ninth day; 1 Howitt, the fifth day; 1 Flexner W.E., the fourth day; 1 Australian, the fifth day. There was nothing found in any of the cord sections from these animals that resembled experimental poliomyelitis. The animals that died during the first few days after injection had some local intracerebral hemorrhage. Their deaths were probably due to trauma.

After these 8 animals died the cord and brain of each were emulsified and injected into 3 rats (24 in all). After 2 months of observation the animals were still alive.

Nearly 3 months after the original experiment with the Flexner M.V. virus strain or 2 months after injecting the other 9 poliomyelitis strains, 59 of the 74 surviving rats were injected with Arm-

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¹ Armstrong, Charles, *Pub. Health Rep.*, 1939, **54**, 1719.

strong's Lansing virus strain. Concomitantly, 10 rats never previously injected were used as controls. The animals began to die within 4 days after the injection. Every animal but one of the 69 succumbed within 10 days. The rats showed all types of paralyses, the most common one being bulbar. There were some which had incoördination and peculiar rolling or circling movements as well. The pathologic findings were the same as those described by Lillie and Armstrong.² However, there was not much perivascular infiltration.

Armstrong's virus (Lansing) was carried through 5 generations of rats in only 22 days, transmission being made every fourth day.

Conclusion. The Lansing strain of virus isolated by Armstrong easily produces disease in *Sigmodon hispidus littoralis* rats. Thus far, we have been unable to produce poliomyelitis with any of the 9 stock virus strains carried in our laboratory and named in this paper.

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Quantitative Alteration in Renal Corpuscles of Salamanders Through Variation in Hypophyseal Tissue.*

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Previous reports have shown that increasing the amount of hypophyseal tissue in an amphibian embryo by grafting gives rise to an increase in the thickness of the basement membrane of the renal glomerulus.¹ It has been pointed out that this thickening is similar in appearance to the thickened membrane in human cases of hypertension.^{1, 2} The size of the heart, vasoconstriction, reduced heart rate and other conditions in these test animals simulate a hypertensive state.³ The hypophysectomized individuals show the opposite results of hypotension and may now be stated to have correlated with this a thin basement membrane.

² Lillie, R. D., and Armstrong, Charles, *Pub. Health Rep.*, 1940, **55**, 115.

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¹ Blount, Raymond F., *Anat. Rec.*, 1936, **65**, 1.

² McGregor, Leone, *Am. J. Path.*, 1930, **6**, 347.

³ Blount, Raymond F., *J. Exp. Zool.*, 1935, **71**, 421.