

31 (441)

A report on experimental poliomyelitis.By **SIMON FLEXNER** and **PAUL A. LEWIS**.

By employing as a virus the spinal cord from two human cases of epidemic poliomyelitis, it has been found possible not only to transmit the disease to monkeys, as Landsteiner and Popper¹ did, but by employing the intracerebral mode of inoculation, to propagate the disease successfully through a long series of monkeys. In this manner, epidemic poliomyelitis or infantile paralysis has been opened up to experimental study.

It has been proven conclusively that the symptoms and pathological lesions of epidemic poliomyelitis are identical with those occurring in the spontaneous disease of man. It has next been shown that the virus of poliomyelitis is effective in monkeys not only when introduced into the brain, but also when injected into a large nerve (sciatic nerve), into the circulation, into the peritoneal cavity, and beneath the skin.

In the inoculation, in any of these ways, of the virus, a definite incubation period is required before the disease develops. This period has varied in the experiments from four to thirty-three days. The symptoms which appear often arise suddenly, as they also do in the spontaneous disease of man. The experimental disease in monkeys is severe and often fatal. When recovery takes place, there usually remain residues of the paralysis, similar to the residues which have been observed in the recovery from the spontaneous disease of man.

The nature of the virus of epidemic poliomyelitis is indicated by the circumstances, first, that it withstands the action of pure glycerine for at least one week, and second, that it can be passed through a Berkefeld filter. In other words, the virus has, thus far, not been demonstrated certainly under the microscope. It is so small that it passes quite readily through a mechanical filter, and so resistant that it withstands the action of glycerine in a manner similar to the viruses of vaccinia and rabies. The present indications are, therefore, that this virus is like the viruses of the diseases mentioned and belongs to the group of optically invisible causes of disease.

¹ Landsteiner and Popper : *Zeit. f. Immunitätsforsch.*, Orig., 1909, ii, 377.