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Distemper in the silver fox (Culpes vulpes).

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In a previous communication[1] there was reported the isolation of organisms belonging to the genus *Salmonella* from foxes dying of an epidemic disease. These organisms have been shown to be very pathogenic for foxes. When injected into healthy foxes a disease is consistently produced, death usually occurring in from 14 to 20 days. The organism has been isolated from the spleen of an animal killed 5 days after injection, but no gross pathological changes had yet occurred. In artificially infected foxes the pathology at necropsy is characterized by an intestinal inflammation and enlargement of the spleen, lungs usually being normal. The spleen is sometimes enlarged 20 times, by weight. The same picture has been produced by a direct injection of material from carcasses of ranch animals.

Further experimental work has been carried out in vaccination of ranch animals with these organisms, and further studies of disease occurring in these animals, using for transmission experiments foxes which also have been immunized with a *Salmonella* vaccine. An epidemic on a large ranch had previously been studied in which the picture of a *Salmonella* infection was the characteristic pathology. The organisms were isolated from many animals. Vaccination of the entire ranch of more than 500 animals appeared to control the epidemic, which was mainly among foxes 4 months old.

[1] Green, R. G., Proc. Soc. Exp. Biol. and Med., 1924, xxii, 546-548.

During the ensuing months there were a few scattered deaths, and 6 months later there was an increase in the number of deaths sufficient to indicate the presence of a mild epidemic. In the second epidemic quite a different picture was presented from the one previous. There were no external signs of disease. Some animals were found dead; others were found in convulsions, dying shortly afterward, and a few were sick for several days before death. In most cases necropsy showed no marked gross pathology. The lungs were normal and intestinal inflammation was not present. Extensive efforts to transmit the disease from a dead animal were unsuccessful, except in possibly one case. A few foxes were obtained before death and blood and nasal washings taken. Blood serum was diluted and filtered through Berkefeld N filters, as were also the nasal washings. By the use of such materials a similar condition has been produced in a few healthy animals under well controlled conditions. Filtered blood serum from these artificially infected animals has also proved infectious.

The foxes used in these transmission experiments had previously been vaccinated with a *Salmonella* vaccine. The experimentally infected foxes have shown the same general picture exhibited by animals dying on the ranch under conditions of natural infection. Pneumonia and intestinal lesions were absent. No organisms of any kind could be isolated from the blood, and tissues of the ranch animals from which the infective material was obtained, and all similar cultures from the artificially infected animals were likewise sterile. The transmission of a disease by the use of filtered material indicates a filterable virus as the infective and fatal agent in those animals showing the absence of any gross pathological findings at necropsy. It is, therefore, indicated that there are at least two pathogenic agents concerned in the epidemic diseases of foxes.