NOTES ON INFECTIOUS ENTERITIS OF MINK AND ITS RELATIONSHIP TO FELINE ENTERITIS

by C. G. WILLS*

The symptoms and histopathology of a highly contagious enteritis of ranch mink, principally affecting kits, were described in 1949 by Schofield (1), who studied this apparently new disease in the Fort William district of Ontario. He ascribed its primary cause to a virus.

In 1950, in addition to the continuing epizootic at Fort William, two outbreaks having the same symptomatology and histopathology were noted in southern Ontario. Through the summer and early autumn of 1951, mink on 17 southern Ontario ranches were affected. Total ranch mortalities, which may or may not have been influenced by the use of tissue vaccines, ranged from 20 to 65 per cent. The disease was not reported to the Ontario Veterinary College as having reappeared in the Fort William district during 1951 and 1952.

In 1952, up to the time of writing (November), the mink on 10 ranches have become infected. Seven of these establishments were among the 17 also involved in 1951. Losses on these ranches were not regarded as serious.

An apparently identical condition is arousing concern in the United States (2).

The following notes summarize the results of experiments conducted by the author. All experiments were strictly controlled, with the number of control animal usually equalling the number in the test group. Experimental infection was induced by administering infective tissue emulsions through a stomach tube.

Several dozen cases were examined bacteriologically. Heart blood, lung, liver and spleen were bacteriologically sterile when cultured from freshly dead animals. A non-lactose-fermenting Gram-negative rod which was not Salmonella, Proteus or paracolon often exceeded *Escherichia coli* in numbers on intestinal cultures. Since, however, an occasional typical case exhibited *E. coli* in pure culture on MacConkey agar, this organism may be regarded as incidental.

Sulphathalidine, penicillin and streptomycin, administered by stomach tube, failed to prevent or alter the course of the disease. Aureomycin, given on first appearance of symptoms, was promptly vomited.

Bacteria-free emulsions of liver and spleen of infected mink readily reproduced the condition. A formalized emulsion of these tissues was found to be an effective vaccine when used experimentally, and on one closely-studied ranch sharply limited the morbidity and duration of an outbreak in a randomized vaccinated group. Following vaccination, 23.8 per cent of 202 vaccinates and 58.6 per cent of 123 controls became infected — a highly significant difference when measured by the chi square test. The incidence of new cases dropped sharply between the ninth and eleventh day following vaccination while the incidence of control cases continued to rise for another six days and was followed by a slow decline.

* Research Officer, Ontario Veterinary College, Guelph, Canada
Serum of mink recovered from infection of Fort William origin protected mink challenged with infective tissues from a southern Ontario outbreak. The same serum did not alter the course of the disease once symptoms appeared.

Leucopenia frequently accompanies the disease in mink, and, under strictly controlled conditions, tissues from infected mink produced leucopenia in kittens.

The administration of serum from recovered mink to kittens challenged with infective mink tissue prevented leucopenia. Litter mates which did not receive serum showed a markedly reduced white blood cell count and the histopathological picture was that of feline enteritis (panleucopenia).

Infectious enteritis in mink was prevented by the administration of commercial feline enteritis antiserum.

While the numbers of animals in the serum-protection tests were small, no exceptions to the responses in test versus control groups were encountered. It is concluded that the agent causing infectious enteritis in mink is the same as, or bears a close antigenic relationship to, the virus of panleucopenia of cats.

REFERENCES

(2) Black Fox Magazine and Modern Mink Breeder. 36 (August): 5. 1952.

OBITUARY

DR. IRVINE CHRISTIAN

While on a motor trip in the United States, the death occurred very suddenly of Dr. I. Christian of the Health of Animals Division, Edmonton, Alberta.

He was born at Dayton, Ontario on June 26th, 1883 and was graduated from the Ontario Veterinary College in 1905. He was one of a group of sixty Canadian Veterinarians who went to Chicago in 1906-07 to participate in a course of meat inspection put on by the United States Department of Agriculture. He was successful in passing the examinations and following his return to Canada accepted a position with the Canadian Health of Animals Division on September 3, 1907. He was one of the pioneers of the Health of Animals Division particularly in the meat inspection section.

Dr. Christian was in charge of packing plants in various centres throughout Canada and at the time of his death was Assistant District Veterinarian for the Province of Alberta. He had commenced six months retiring leave on April 14th last, his superannuation to become effective on October 23rd, 1952.

His death was a great shock to his former colleagues and friends and their sympathy is extended to his widow and children.