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VACCINE TREATMENT OF CANINE LEPTOSPIRAL JAUNDICE.

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Inada Noguchi and others have shown that an active immunity against leptospiral infection can be induced by the use of dead and attenuated cultures of *Leptospira icterohæmorrhagiæ*.

Since demonstrating the association of leptospira with canine jaundice ("yellows"), we have attempted to immunise dogs actively in the laboratory and also under field conditions. The antigen used has been a saline emulsion of the livers of guinea-pigs infected with a strain of *Leptospira* from the rat or dog. Guinea-pigs are infected by intraperitoneal inoculation or by scarification of the skin. In seven to ten days classical symptoms of the infection are usually evident. Just before death the guinea-pigs are killed and the livers are removed with aseptic precautions and ground up in a mortar. Saline solution is added so that one liver will yield about 10 c.c. emulsion and the whole is strained through sterile gauze or cotton wool. To the filtrate phenol is added to make a 1 per cent. solution, and after standing at room temperature for twenty-four hours the antigen is inoculated into guinea-pigs intramuscularly in doses of 1 c.c. Failure to infect guinea-pigs is accepted as an indication of the safety of the antigen for use on dogs. The dose used on dogs has been 1 c.c. throughout, and one two or three inoculations have been given at intervals varying from seven days to five weeks.

Two dogs were given two inoculations of 1 c.c. of vaccine at seven days' interval: five weeks later when tested with 1 c.c. of emulsion of infected liver, one died and one lived. Four other dogs were given 1 c.c. of vaccine, seven days later 1 c.c. and five weeks later 1 c.c.: when tested three weeks later with 1 c.c. of infected emulsion which killed six control animals, all four vaccinated animals survived without symptoms.

Two results from kennels are available. In the first kennel ninety-four dogs were given two inoculations of 1 c.c. of vaccine and thirty-four were left as controls, all living under the same conditions in an infected kennel. Of the ninety-four, none died; of the thirty-four controls eight (23·5 per cent.) died. In another kennel seventeen dogs were left unvaccinated, while seven were vaccinated twice and twenty-eight once. Of the seventeen, eight died (47 per cent.); of the seven, none died and of the twenty-eight, two.

We have already shown (*Vet. Journ.*, vol. lxxxi. No. 1) that antileptospira serum made in horses from the rat strain will protect guinea-pigs against infection by dog strains of the organism.

We wished to find whether a serum would prevent the development of the disease when given to dogs many hours after infection. Eleven dogs were injected intraperitoneally with an emulsion of infected liver. Doses of 10 c.c. of serum were given to two of the dogs twenty-four hours later, to two others forty-eight, and to two more seventy-two hours after infection. All lived. Four dogs received serum at ninety-six hours; these, and the remaining dog which received no serum, died. Thus serum protected up to seventy-two hours after infection.

These results have been confirmed in canine practice where in some instances complete recovery has followed the use of serum even in cases where jaundice was already well developed. Serum gives the best results when used prophylactically on healthy "contact" dogs in infected kennels.

Summary.

Dogs can be actively protected against jaundice with vaccine and passively protected with antileptospiral serum.