

Letters

CANINE DISEASES

Canine trombiculosis and seasonal canine illness

DURING each of the autumns of 2009, 2010 and 2011, there have reports of dogs becoming seriously ill, sometimes fatally, after walking in woodland, particularly in Norfolk and Nottinghamshire (www.aht.org.uk/sci). Symptoms are rapid in onset – often within 24 hours of walking the dog – and cases have mainly occurred in the last two weeks of August and the first two weeks of September. Symptoms are: severe vomiting, diarrhoea, shaking, trembling and, in some cases, pyrexia. The condition has been termed seasonal canine illness (SCI) and the causative agent is currently unknown. Putative aetiological disease agents have included woodland exotic plants, fungi, poisons, plant toxins, bracken spores and blue-green algae, the protozoan *Tritrichomonas* and the harvest mite *Neotrombicula autumnalis*, the larvae of which are known to parasitise a wide variety of hosts, including people. Veterinarians dealing with SCI cases have noted lesions due to infestation by harvest mites following clipping the dogs' hair in preparation for injections (Nottingham County Council 2011), but not all dogs appear to be affected and a definitive epidemiological link between infestation and onset of SCI has yet to be described.

We wish to draw attention to cases with symptoms fitting the case definition of SCI in two Yorkshire terriers from the Bolton area, which resulted from a very long walk and picnic in Delamere Forest, Cheshire. One dog died. Both dogs were severely infested by *N. autumnalis* (Shaw 1790), which had formed into several hundred orange clusters, each containing 50 to 100 mites; these plaques were widely scattered over the legs, sternum, perineum, at the base of the ears and were particularly dense on the abdomen and between the digits. The duration of the visit and the small size of the dogs are factors that lead to the acquisition of large numbers of mites from herbage. The chronology and synchronicity of events strongly indicated that the condition was a consequence of severe infestation and exposure to salivary secretions from large numbers of feeding mites. We suggest that this disease association may not always be evident because mites in clusters may

have already fed and left their host (this can take as little as 48 hours) while symptoms of SCI are still evident. Whether or not the cases were due to a severe allergic host response to salivary proteins or the result of the transmission of a new and emerging trombiculid-borne pathogen is not known.

The levels of mite challenge may have been particularly high in recent years. Just as populations of *Ixodes ricinus* ticks have increased in the UK and across western Europe in the past decade (Scharlemann and others 2008), trombiculid mite populations too may now be much higher due to changes in climate, environmental conditions and an increased local abundance of reservoir feeding hosts, which include woodmice, bank voles, rabbits and ground dwelling birds such as pheasants. Unlike *I. ricinus*, a notorious disease vector often coinfecting with several pathogens, however, *N. autumnalis* larvae are not implicated as important vectors of animal or human pathogens. Even so, capacity as a disease vector cannot be excluded; studies in Germany, the Czech Republic and Spain have demonstrated the presence in unfed larval mites of *Borrelia burgdorferi* sensu lato (Kampen and others 2004), other *Borrelia* genotypes (Literak and others 2008) and *Anaplasma phagocytophila* (Fernandez-Soto and others 2001), respectively. Feeding on mammals during the larval stage only, such infections will have persisted transtadially through the non-parasitic nymph and adult and then passed into eggs.

We have acquired samples of mites from the dogs in the present case, which we intend to screen for pathogens at the Centre for Genomic Research, University of Liverpool. The findings, together with full details of the cases outlined here, will be published in due course.

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Seasonal canine illness. Communities and the Environment publication

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