

**Population ecology of the invasive lancet liver fluke, *Dicrocoelium dendriticum*, in lambs, *Ovis sp.*, on Salt Spring Island, BC.**

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The invasive lancet liver fluke, *Dicrocoelium dendriticum*, is a parasite of lambs (*Ovis sp.*) that has successfully colonized many regions of North America following its introduction in 1931. Recently, upon inspection of lamb livers from producers on Salt Spring Island (SSI), British Columbia, this parasite was observed for the first time. The objective of this study was to determine the prevalence, intensity, and degree of aggregation of *D. dendriticum* on SSI. Liver flukes were palpated and exuded from the biliary ducts of liver slices and counted under a dissecting microscope. *Dicrocoelium dendriticum* was prevalent (93.5%) and abundant ( $\bar{x} = 94.0 \pm 101.1$  (SD); Range: 2-359) in the lambs sampled (n=31). This high prevalence may be due to repeat introductions over many years, favourable environmental conditions, and the availability of suitable intermediate and definitive hosts. The variance-to-mean ratio was 118.7 indicating that the fluke was extremely aggregated in this lamb population. This high degree of aggregation reflects a combination of inter-related factors including lamb behaviour and immunity. Ecological factors such as the manipulation of ant behaviour and chance predation on heavily infected ants may also play roles. Juvenile intensity was positively associated with total intensity of infection ( $F = 124.5$ ,  $df = 30$ ,  $p < 0.0001$ ). *Dicrocoelium dendriticum* was also found in lambs from three other SSI lamb producers. For the first time, *D. dendriticum* was documented in lambs at high infection levels in British Columbia. Consequently, more research at the intermediate and definitive host levels is necessary given the potential pathogenicity of this invasive fluke.