

Scientific Correspondence

Confirmation of the occurrence of the chewing louse *Bovicola (Lepikentron) breviceps* (Insecta: Phthiraptera: Trichodectidae) on alpacas (*Lama pacos*) in New Zealand

Alpacas (*Lama pacos*) were first introduced into New Zealand from South America in 1878, but did not become established (Wodzicki 1950). Subsequently, some were brought in to be kept in zoological gardens. The first major shipment of alpacas and llamas (*Lama glama*) of about 1,200 animals, introduced into New Zealand to develop the production of a high-quality wool fibre, arrived from Chile in 1989 (Corrin and Burnett 1989). It was divided into two groups, one sent to Omarama, Central Otago, and the other to Flock House, Bulls, to check their ability to adapt to high- and low-land conditions, respectively. Shortly thereafter, the first major shipment of alpacas imported by private investors arrived on farms around Palmerston North (FI Hill¹, pers. comm.).

In their native range in the mountains of Perú, Chile, Argentina and Bolivia, alpacas are parasitised by two species of host-specific lice: the blood-sucking louse *Microthoracius mazzai* Werneck, 1932 (Cicchino et al 1998) and the chewing (or biting) louse *Bovicola (Lepikentron) breviceps* Rudow, 1866. Besides alpacas, *B. (L.) breviceps* parasitises two other species of South American camelids, the llama and the guanaco (*Lama guanicoe*) (Price et al 2003).

Notwithstanding quarantine regulations and procedures, which include treatments to remove internal and external parasites until animals are proven clear before release, lice of the species *B. (L.) breviceps* were evidently introduced into New Zealand with their alpaca hosts and now appear to have become established in at least some herds here. Suspicions of the occurrence of this louse species were first reported on a llama and an alpaca in the South Island of New Zealand (McKenna 2001, 2003). However, these latter records were based on the presence of eggs and nymphs only, thus preventing their specific identity from being established with any certainty. Here, we now provide confirmation of the presence of *B. (L.) breviceps* in New Zealand. This confirmation is based on the examination of a large number of nymphs and, more importantly, at least 10 adult female lice collected from a Huacayan alpaca on a property near Palmerston North on 28 October 2005. While there were other alpacas accompanying this particular animal that may have carried lice too, none showed symptoms of lousiness to the same extent and were not examined.

Slide-mounted females of *B. (L.) breviceps* can be easily identified and distinguished from other species of *Bovicola* by the morphology of their ventral terminalia, in particular the shape of the gonapophyses (= gonopods) and the configuration of their pigmented sclerites (Lyal 1985). The identification of adult *B. (L.) breviceps* in conjunction with nymphs in the current case made it possible to confirm that this louse species was also present in the sample containing only nymphs reported by McKenna (2003). However, we have no further specimens or information that would allow a positive identification of the species in the material from the llama reported by McKenna (2001).

Despite being called a 'biting louse', *B. (L.) breviceps* does not bite the host skin, but feeds by chewing on skin scurf; hence the name 'chewing louse' is more accurate. The presence of these lice may reduce the value of an alpaca fleece but, even in animals with heavy infestations, they do not appear to have detrimental effects on the quality of the fleece or represent a health risk for alpacas (Vaughan and Carmichael 1999). Eradication of *B. (L.) breviceps* may be a viable option in some instances but requires repeated treatments with a suitable insecticide and isolation until treated animals can be declared parasite-free (Vaughan 2004). Treatment with cypermethrin (Cypercare; Ancare New Zealand Ltd, Auckland, NZ) at a dose rate of 10 mg/kg was found to be effective in the louse-infested animal reported here. Although two treatments were made within a 14-day interval, the second was only a back-up, there being no indication of live lice after the first treatment. Accordingly, we suspect that a single treatment may generally be adequate, especially if all animals from an infested herd are treated at the same time.

Voucher specimens, representative of the two records of *B. (L.) breviceps* from alpacas in New Zealand, have been permanently slide-mounted in Canada Balsam and deposited in the entomological collection of the Museum of New Zealand Te Papa Tongarewa, Wellington.

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