FIRST RECORD OF THE MITE KUZINIA LAEVIS (DUJARDIN, 1849) (ACARINA: ACARIDAE) IN CHILE

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Abstract

We report for the first time in Chile the presence of the European mite Kuzinia laevis. We obtained specimens of the mite from a hibernating queen bee of Bombus terrestris in the city of Santiago, Metropolitan Region. Implications of the species introduction are discussed.

Key words: bumblebees, mite, Acaridae, Bombus terrestris, biological invasions, Kuzinia laevis.

Primer registro del ácaro Kuzinia laevis (Dujardin, 1849) (Acarina: Acaridae) en Chile

Resumen

Se registra por primera vez en Chile, el ácaro europeo Kuzinia laevis, a partir de especímenes asociados a una reina hibernante de Bombus terrestris, los ejemplares fueron colectados en la ciudad de Santiago, Región Metropolitana. Se discute la presencia de este ácaro introducido y sus posibles implicancias.

Palabras clave: abejorros, ácaros, Acaridae, Bombus terrestris, invasiones biológicas, Kuzinia laevis.

The mite genus Kuzinia includes 8 described species that are associated with bumblebees (Delfinado & Baker, 1976; Halliday, 2002). Kuzinia laevis is probably the most studied species in the genus. It is a European species whose life cycle includes or is involved with several species of European bumblebees (Delfinado & Baker, 1976; Schwarz & Huck, 1997; Halliday, 2002; Allen et al., 2007). Kuzinia laevis has become relatively important due to its association with Bombus terrestris a native bumblebee of Eurasia. B. terrestris has been introduced to many new countries world-wide, where it is now feral (Goulson, 2003; Montalva et al., 2008). For example in Tasmania and New Zealand, K. laevis has been registered associated with the introduced B. terrestris (Halliday, 2002; Goulson, 2003; Allen et al., 2007). Furthermore in Argentina, K. laevis has been observed on native bumblebees — Bombus atratus Franklin, 1913; Bombus morio (Swederus, 1787), and Bombus bellicosus Smith, 1879 (Maggi et al., in press). Here, we describe the presence of K. laevis on feral B. terrestris in Chile.

Ten mites were taken from a hibernating queen of B. terrestris (Figure 1-2) on October 31, 2008, collected in the Jardín Botánico Chagual (33°24’17.28” S, 70°36’23.4” W). All specimens, including the bee, are deposited in the bee collection of the Pontificia Universidad Católica de Valparaíso.
Specimens of *K. laevis* are characterized by having a flattened body with reduced mouthparts, short legs, large empodial claws on tarsi I-IV, small dorsal body setae and completely closed and widely separated coxal fields III. Coxal suckers are lacking; these are replaced by tiny setae. The gnathosoma is hidden ventrally, divided distally and may be segmented (Delfinado & Baker, 1976; Halliday, 2002).

In Chile, *Bombus terrestris* was introduced in 1997 for the purpose of pollinating greenhouse tomatoes (Montalva et al., 2008). Today, this species is feral and distributed broadly (Montalva et al., 2011). When first introduced, import regulations required careful sanitary control of the samples. The stipulations were mainly in place to prevent inadvertent pathogen introduction that could affect native species and/or species of economic importance such as *Apis mellifera* Linnaeus, 1758 within Chile (Montalva et al., 2008). However, the introduction of the parasitic mite *Locustacarus buchneri* (Stammer, 1951) in Japan, points out the ineffectiveness of import restrictions. The introduced mite has brought many native species to the brink of extinction (Goka et al, 2001; Goka et al, 2006).

*K. laevis* is likely to impose no great risk to native bee species since it is a commensal species feeding only on the pollen of its hosts. However, the presence of this mite raises the possibility that other more dangerous agents associated with *B. terrestris*, such as *Locustacarus buchneri*,
Kusinia laevis en Chile

Crithidia bombi Lipa & Triggiani, 1980 and Nosema bombi Fantham & Porter, 1914, among others may also be present in Chile, having hitchhiked on B. terrestris (Goka et al, 2001; Goulson, 2003; Goka et al., 2006; Montalva et al., 2008).

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References


