

## 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

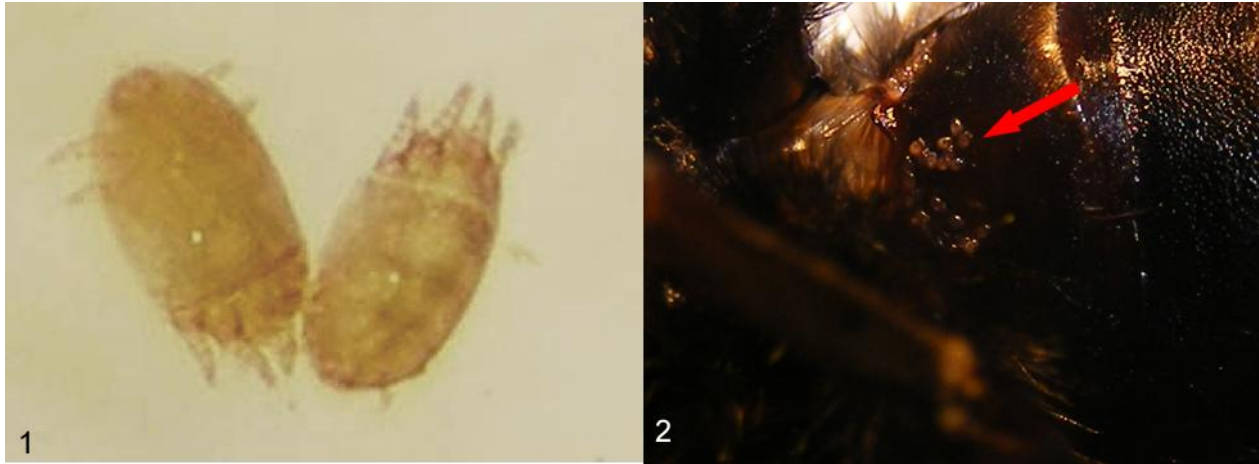
#### Resumen

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.



**Figure 1-2.** *Kuzinia laevis*. Figure 1, Phoretic deutonymphs (hypopi) of *K. laevis*. Figure 2 mites between the metasomal pleuras of *B. terrestris*.

Figura 1-2. *Kuzinia laevis*. Figura 1, Deuteninfas foréticas (hypopi) de *K. laevis*. Figura 2, ácaros entre las pleuras metásomicas de *B. terrestris*.

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*,

*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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