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Nesting ecology of *Megachile* (*Sayapis*) *mendozana* Cockerell and its synonymy with *Megachile* (*Sayapis*) *santiaguensis* Durante (Hymenoptera: Megachilidae)

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Abstract

We synonymized *M. santiaguensis* Durante with *M. mendozana* Cockerell based on individual siblings of different sex obtained from a trap-nest. Similarity in morphology between individuals of both sexes of *M. mendozana*, as well as the overlapping distribution, provides further evidence to support this synonymy. Also, we report aspects of nesting ecology and analyze the pollen in cell provisions and/or feces of 11 samples of 4 different trap-nests. Additionally, floral host, associated organisms, and new geographical records are provided.

Key words: Megachilini, leafcutter bees, Argentina, trap-nests, *Melittobia*

Introduction

Bees included in *Megachile* Latreille s.l. constitute a large and diverse genus of Megachilidae and are represented by approximately 1561 solitary species present in all continents, except Antarctica (Ascher & Pickering 2011). In the New World, the history of this genus has undergone numerous changes. Recently, Michener (2000; 2007) recognized a large genus *Megachile* and grouped the subgenera into three informal groups. The subgenus *Sayapis* Titus has an incomplete cutting edge in the second interspace and could be a member of Group 1 in spite of its elongated body. Michener (2000; 2007) considers *Sayapis* related to the monotypic Palearctic subgenus *Eumegachile* Friese, but such a relationship is not supported in the phylogenetic analysis of Gonzalez (2008), in which the monotypic South American subgenus *Schrottkyapis* Mitchell is synonymized with *Sayapis*.

The subgenus *Sayapis* ranges across North America to Argentina and about 25 species are currently known (Ascher & Pickering 2011). Durante & Díaz (1996) revised the Argentinean species under the generic name *Eumegachile* and recognized a total of eight species. All species are known from either the female or the male, except for *M. planula* Vachal which is known from both sexes. This fact could be due to the great sexual dimorphism exhibited in most species.

Megachile mendozana was described by Cockerell (1907) based on three females from Mendoza, Argentina. Later, Durante described *M. santiaguensis* (Durante & Díaz 1996) from two males from Santiago del Estero, Argentina. Both taxonomic entities are widely distributed in Argentina: *M. mendozana* occurs in the Provinces of Catamarca, Chaco, Córdoba, La Pampa, La Rioja, Mendoza, Misiones, San Juan, Santa Fe, and Santiago del Estero; *M. santiaguensis* occurs in Mendoza, Misiones, San Juan, and Santiago del Estero (Durante & Díaz 1996, Raw 2007).

Recently, specimens of both species were obtained from the same trap-nest taken from agroecosystems in Pampean grasslands. This finding, in addition to the morphological and distributional similarity, suggests that both species are the same entity. Thus, in this paper we synonymize *M. santiaguensis* with *M. mendozana* and provide information about the nesting ecology, associated organisms, as well as new geographical and floral records for this species.

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