



Description of a new species of *Osmia* (Hymenoptera: Megachilidae) from southwestern North America, with a redescription of the enigmatic species *Osmia foxi* Cameron

MOLLY G. RIGHTMYER* & TERRY GRISWOLD

USDA-ARS Bee Biology and Systematics Laboratory, BNR 244 UMC 5310, Utah State University, Logan, UT, 84322-5310 USA;
molly_rightmyer@yahoo.com; terry.griswold@ars.usda.gov

*Corresponding author

Abstract

The *Osmia* of southwestern North America are not well known. A new species, *Osmia (Acanthosmioides) palmula*, and the enigmatic *Osmia (Melanosmia) foxi* Cameron, known only from the male holotype, are described and figured in both sexes, with additional comments on their distribution and biology. A checklist and key to the known *Osmia* species from Cochise County, Arizona, Hidalgo County, New Mexico, and adjacent counties in the United States are presented.

Key words: Bee, Apoidea, Osmini, Sierra Madre pine-oak forest ecoregion

Introduction

Osmia currently has nine recognized subgenera in North America (Michener 2007), although previous workers recognized additional subgenera (e.g., Sandhouse 1939, Sinha 1958, Sinha & Michener 1958) that have since been partially or entirely subsumed into the large subgenus *Melanosmia* (Michener 2007). Herein we describe a new species of *Osmia* in the subgenus *Acanthosmioides*, and redescribe a species in the subgenus *Melanosmia*, in order to make their names and identities available for ecological publications. The species have thus far been found in the states of Arizona and New Mexico, USA, and Sonora, Mexico, and appear to be most closely associated with the Sierra Madre Occidental pine-oak forest ecoregion.

Melanosmia is a holarctic and possibly paraphyletic subgenus, whose included species are diagnosed mainly by the lack of distinguishing features of other subgenera (Michener 2007). The *Melanosmia* species redescribed herein is one of about 23 species found primarily in western North America with bright metallic blue, green, and/or purple integument, resembling the bright metallic look of chrysidid wasps (Chrysididae) (TG, unpublished data). It was, until very recently, considered to be a new species that had multiple manuscript names associated with it.

The subgenus *Acanthosmioides* is restricted to North America and can generally be distinguished by the apically enlarged female mandible and, often, by the presence of a protuberance on the second metasomal sternum of the male. The subgenus was revised by White (1952). However, the exact circumscription of *Acanthosmioides* has changed with varying authors (e.g., Sandhouse 1939, White 1952, Sinha 1958, Michener 2007), and there exist groups of *Melanosmia* species whose mandible resembles that of undisputed members of *Acanthosmioides* [e.g., Sinha's (1958) Group II of *Nothosmia*, and many of Sinha and Michener's (1958) *Centrosmia*] (Michener 2007). Herein we follow Michener's (2007) concept of *Acanthosmioides*.

In order to further clarify the *Osmia* species found in this geographic region, we provide a checklist (Appendix I) and key (Appendix II) to all species that we were personally able to confirm as occurring in the following counties: Cochise, Graham, Greenlee, Pima (eastern half only), and Santa Cruz, Arizona, and Grant, Hidalgo, and Luna, New Mexico. We chose these counties because they roughly overlap with a major