A new species of the palaeartic genus *Dasypoda* Latreille 1802 (Hymenoptera: Dasypodaidae) from the Great Rift Valley in Ethiopia

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Abstract

*Dasypoda* is a genus of solitary bees previously recorded as endemic in the Palaeartic region from Portugal to Japan. We describe here a new species of *Dasypoda* (Hymenoptera, Apoidea, Melittidae), *Dasypoda riftensis* sp. nov., collected from Ethiopia, Great Rift Valley, Gallo. This species is the first record of the genus *Dasypoda* in Sub-Saharan Africa and is of phylogenetic importance. We discuss biogeographical implications of the record in Ethiopia.

Key words: Melittidae s.l., sub-Saharan Africa, biogeography, hotspot

Introduction

Melittidae s.l. is one of the smallest groups of bees (198 species among ~20000 described bees) (Michez et al. 2009). Its monophyly and phylogenetic position among bees are still debated even though Danforth et al. (2006) recently consolidated the hypotheses of a basal position and paraphyly of Melittidae s.l. Danforth et al. (2006) followed the taxonomic proposition of Alexander and Michener (1995) acknowledging three melittid families (Dasypodaidae, Melittidae s.s. and Meganomiidae) based on a morphological dataset. In this hypothesis, Dasypodaidae is the sister group of all others bees. The study of Dasypodaidae is therefore crucial to understanding the early evolution of bees.

Dasypodaidae can be distinguished among other bees by a unique combination of several features: short tongue with all segments of the labial palpus similar to one another, paraglossa reduced, submentum V-shaped and two submarginal cells with the first submarginal crossvein at right angles to the longitudinal vein (Michener 1981). Dasypodaidae are relatively species-rich (101 species) in xeric areas of both the Old World and the Neartic region (Michez et al. 2009, 2010, Fig. 1). *Dasypoda* is the only widespread genus, which occurs from temperate to the xeric areas of the Palaeartic. *Dasypoda* determines the northern limit of Dasypodaidae to 62 degrees north (Michez et al. 2004a). The other Dasypodaidae genera, *Capicola*, *Eremaphanta*, *Hesperapis*, and *Samba* are each endemic in different Old World and Neartic semi-deserts.

Most *Dasypoda* are longer than 15 mm while the other Dasypodaidae are less than 10 mm. *Dasypoda* share a few apomorphies: black body, vertex elevated, no basitibial plate, female scopae strongly developed and absence of keirotrichia (Michener 1981; Michez 2004a, b). Michez et al. (2004a, b) and Michez (2005) listed 33 species and described four subgenera based on morphological cladistic analysis: *Dasypoda* s.s., *Heterodasypoda*, *Microdasypoda*, and *Megadasypoda*. Diagnostic features are numerous at specific level: sculpture of outer surface of galea, punctures of elyptus, length of malar area, scopae colour, appressed setae on female pygidial plate, shape of male hidden sterna and genitalia.

Dasypoda species are common in the Palaeartic region but most species are west-palaeartic (Michez 2002, 2005, Michez et al. 2004a, b). The diversity centres of each four subgenera are restricted to one of the following parts of the Mediterranean region: Balkan, Morocco and Spain.