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A new species of *Geodiscelis* Michener & Rozen (Hymenoptera: Colletidae: Xeromelissinae) from Peru

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Abstract. A new species of the bee genus *Geodiscelis* Michener & Rozen, 1999, *G. antiminera* **sp. nov.**, is here described and illustrated. This is the sixth species of the genus, and the second recorded from Peru. The combination of malar area ~1.5x longer than wide, wing veins dark-brown, metepisternum nearly glabrous, and medioventral process on gonocoxa conical and well-developed, separates *G. antiminera* **sp. nov.** from all other *Geodiscelis* species. An updated identification key for all known species is provided. Phylogenetic analyses show that *G. antiminera* **sp. nov.** belongs to the subgenus *Nazcoediscelis* Packer & Dumesh, 2014 and is sister to the other three species in the subgenus.

Key words: bees, identification key, Neotropical region, phylogeny, taxonomy

Introduction

Geodiscelis Michener & Rozen, 1999 is one of the five genera recognized in the subfamily Xeromelissinae (Colletidae) (Packer, 2014) and includes five valid species: *G. megacephala* Michener and Rozen, 1999 (type-species), *G. thaumaskelos* Packer, 2009, *G. nazcalinea* Packer & Dumesh, 2014, *G. longiceps* Packer, 2005, and *G. phisquiri* Packer & Dumesh, 2014. The first two species are known from Argentina, and the last two from Chile; *G. nazcalinea* is the only one recorded from Peru (Fig. 1). Recently, Packer & Dumesh (2014) provided diagnoses, illustrations and a taxonomic key for all species of the genus. *Geodiscelis* are ground-nesters (Michener & Rozen 1999) and forage on Boraginaceae (Michener & Rozen, 1999; Packer, 2009; Packer & Dumesh, 2014). The monophyly of *Geodiscelis* and its sister-group relationship with the genus *Xeromellisa* Cockerell, 1926 have been supported in recent phylogenetic studies based on morphological, molecular and combined data (Almeida *et al.*, 2008; Packer, 2008, 2014; Packer & Dumesh, 2014).

The goals of this paper are to describe and illustrate the sixth species of *Geodiscelis*, *G. antiminera* **sp. nov.**, and to provide an updated identification key for all known species in the genus. Also, the data matrix of Packer & Dumesh (2014) is updated by adding the new species and the implications for the subgeneric classification of *Geodiscelis* derived from the phylogenetic analyses are briefly discussed.

Material and methods

Specimens were studied under a Nikon SMZ1000 dissection microscope (maximum magnification of 112x). The male was relaxed overnight prior to extraction of the terminalia, which was then cleared in 5% KOH for six hours and then stored in glycerine. Images were taken with a Visionary Digital BK Plus system, using a Canon 5D Mark II camera with a Canon 65mm lens. Image slices were amalgamated using Helicon Focus and final images were edited in Adobe Photoshop. The distribution map was drawn in Adobe Illustrator.

Terminology for morphology follows Packer & Genaro (2006). Some features are measured in terms of the diameter of the median ocellus (MOD). Puncture spacing is given in terms of the relative sizes of the interspaces (i) and puncture diameters (d). Measurements were taken as follows: 1) body length – measured as the sum of the metasomal length and the distance between the posterior margin of mesosoma and the disc of clypeus in lateral view; 2) head width – measured as the largest distance between the external margins of the compound eyes in frontal view; 3) forewing length – measured as the distance between the posterior margin of tegula and the tip of the wing. Metasomal terga and sterna, and antennal flagellomeres are referred to as the letters T, S, and F, respectively, followed by numbers. In the section