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Systematics of the bee subgenus *Systropha* (*Austrosystropha*) (Hymenoptera: Halictidae): Description of a new species and proposal of a new sex association

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Abstract

Systropha is a small genus of bees belonging to Rophitinae (sister-group to all remaining Halictidae). Three subgenera are recognized in *Systropha*: *Austrosystropha* and *Systrophidia* that are sub-Saharan endemics, and *Systropha s.str.*, which occurs in Africa and Eurasia. As a result of the rarity of *Systropha* specimens in collections and the difficulty in associating males and females due to sexual dimorphism, there remain numerous undescribed or unassociated sexes in *S. (Austrosystropha)*. The present paper gives the descriptions of a new species *Systropha oti* sp. n. (from Kenya) and the previously undescribed female of *S. aethiopica*, both in the subgenus *Austrosystropha*. We further discuss the diagnostic features of the subgenus with regard to these new taxa and update the previous key to species.

Key words: Apoidea, Rophitinae, taxonomy, Africa, Convolvulaceae

Introduction

The bee family Halictidae contains 4326 valid nominal species (Ascher 2009) and represents more than 20% of the global diversity among bees (Michener 2007). This family is usually divided into four subfamilies: Halictinae, Nomioidinae, Nomiinae, and Rophitinae. Halictinae and Nomiinae are the most speciose subfamilies with 80% and 12% of the species; Nomioidinae, by contrast, contains only 2% of the species (Danforth *et al.* 2008). There are 257 recorded species of Rophitinae (6% of the Halictidae) classified into 13 genera and distributed Worldwide. The Rophitinae constitute the basal sister-clade to all remaining halictid lineages (Danforth *et al.* 2006, 2008; Patiny *et al.* 2008).

Rophitinae are distributed worldwide, except in Australia. There is a nearly complete separation between the New and Old World faunas of Rophitinae. Only the genus *Dufourea* occurs in both faunas. The genus *Systropha*, which is the focus of the present paper, comprises 27 species that are endemic to the Old World (Patiny 2004; Patiny & Michez 2006, 2007). This genus is very distinctive among Rophitinae, being characterized by some conspicuous traits: (i) the unique folding of the male antennae; (ii) the shape of the male sterna; (iii) the female's strict oligolecty on morning glory (Convolvulaceae: *Convolvulus* for temperate bees, *Ipomoea* and *Merremia* for tropical bees). Based on phylogenetic analyses, Patiny & Michez (2006, 2007) recognized the monophyly of three subgenera within the genus *Systropha*: *Systropha s.str.* (comprising 17 Eurasian species), *Systrophidia* (comprising only *Systropha glabriventris* Friese, 1922), and *S. (Austrosystropha)*. The latter subgenus currently contains nine described species distributed in the driest parts of sub-Saharan Africa, including the Indian Ocean islands (Patiny & Michez 2007). According to the diagnosis presented by Patiny & Michez (2006), the following features characterize *S. (Austrosystropha)*: (i) male forefemur usually enlarged dorso-ventrally and laterally; (ii) male T7 always laterally toothed; (iii) male T1–T5 with angular or spiny graduli in *S. aethiopica* and *S. arnoldi*; (iv) inner hind tibial spur of female curved and coarsely toothed in two ventral rows; (v) pilosity of female metasomal sterna densely developed, less downy, coarse in several species.