



New insights on the distribution and floral choices of *Systropha* Illiger, 1806 in Africa (Hymenoptera, Apoidea), with description of a new species from Sudan

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Abstract

In the present paper, we describe a new species, *Systropha martiali* **sp.nov.** from central Sudan and we present additional records for two other species: *Systropha norae* Patiny and *Systropha ugandensis* Cockerell. The phylogenetic topology previously inferred for the genus is revised including the new species. A phylogenetic tree is presented with the known floral choices and distribution mapped upon it. This highlights a geographical component to the pattern of floral choice in *Systropha*.

Key words: Rophitinae, *Systropha*, Sahelo-Sudanian, biogeography, endemism

Introduction

The Rophitinae (Halictidae) include 13 genera and roughly 200+ species distributed worldwide except in Australia (Michener 2000). Five genera are found in the Old-World: *Dufourea* Lepeletier, *Morawitzia* Friese, *Morawitzella* Popov, *Rophites* Spinola and *Systropha* Illiger. Reviewing the latter, Patiny and Michez (2006) recorded 26 species subdivided into three subgenera: *Systropha* s.str., *Austrosystropha* Patiny and Michez and *Systrophidia* Cockerell. Each of these occurs in only one part of the African continent. *Systropha* s.str. is Palaearctic and restricted, in Africa, to the north Saharan belt (including Mediterranean and north Saharan steppe ecosystems). *Systrophidia* is endemic to southern Africa: Namibia, South-Africa and Zimbabwe. *Austrosystropha* is limited to sub-Saharan Africa. Within this latter subgenus, only three species (among the eight described), *S. bispinosa*, *S. norae* and *S. ugandensis* are recorded in the area between the Equator and the Sahara.

In the present paper, we describe one new species of *Austrosystropha*, *S. martiali* **sp. nov.**, and we report additional data for *S. norae* and *S. ugandensis*. In addition, we present an updated phylogenetic topology for *Systropha* (with a main focus on *Austrosystropha*). The mapping of floral choices and global distribution onto the tree, supports a discussion of the geographical patterning of species floral choices. The geographical patterns are compared to those of *Meliturgula* Friese (Andrenidae) and *Uromonia* Michener (Meganomiidae).

Material and methods

Illustration and mapping of biogeographical data

The microphotographs of both *S. martiali* sp.nov. and *S. norae* were made using a Nikon D70 mounted onto an Olympus microscope (Fig. 1).