



SHORT NOTE

First Record of the Genus *Mycetarotes* (Emery, 1913) (Formicidae: Myrmicinae) from Colombia

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Article History

Edited by

John Lattke, Universidad Nacional de Loja, Ecuador

Received 01 December 2014

Initial acceptance 20 February 2015

Final acceptance 21 February 2015

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Abstract

We report the first record of fungus-growing ant genus *Mycetarotes* (Formicidae: Myrmicinae) in Colombia, with the species *M. parallelus* (Emery, 1906).

Keywords

Fungus growing ant, biodiversity, ants, oil palm, Colombia Llanos.

Introduction

To date in Colombia there are about 330 species of myrmicine ants, and of these 40 are fungus-growing ants (Fernández & Sendoya, 2004). Members of the fungus-growing ants belong to the *Atta*-genus group or “Attine ants” in old sense (after Ward et al., 2014) and its geographical distribution range covers Central and South America and southern North America (Mayhé-Nunes & Jaffé, 1998). They characterized by having a mutualistic relationship with a fungus (in most cases a Leucoprineaceae), where obligately depend on the cultivation of the fungus for food and the fungus, in return, gain protection (Mehdiabadi & Schultz, 2009). These are some of the most ecologically important ants, and include among their number some of the dominant herbivores in the Neotropics (Wilson & Hölldobler, 1990).

The ant genus *Mycetarotes* is represented by four species, all neotropical: *M. acutus* Mayhé-Nunes 1995; *M. carinatus* Mayhé-Nunes, 1995; *M. parallelus* (Emery, 1906), and *M. senticosus* Kempf, 1960. The workers are monomorphic and can be distinguished from other members

of fungus-growing ants by the presence of tridentate occipital corners (in frontal view the occipital spines project between the outer spines of the occipital margin and supraocular spines), subparallel frontal carinae that terminate near the occipital margin, lateral margins of frontal lobes little expanded laterally and bluntly angular or rounded, and the absences of clearly delimited antennal scrobes. Their mandibles are finely and longitudinally striolate, with 5-6 teeth on the masticatory margin (Kempf, 1960; Mayhé-Nunes & Brandão, 2006).

Kempf (1960) carried out the first revision of the genus and recognized two species *M. senticosus* and *M. parallelus*. Before this, it was initially described as a subgenus of *Cyphomyrmex* by Emery (1913). Forel (1913) questioned the validity of this taxonomic rank, and Borgmeier (1950) elevated it to genus. Mayhé-Nunes & Brandão (2006) reviewed the genus, with synoptic descriptions of workers and known reproductives of the four known species and updated information about the distribution records, nest architecture, and biology. Here we observe for the first time the presence of the myrmicine ant genus *Mycetarotes* in Colombia.



Material and methods

The material examined comes from a study comparing the biodiversity of several taxa in forest, oil palm plantations, and cattle pastures in the Colombian llanos (Gilory et al., 2014). We sampled ants using pitfalls traps, following Agosti et al. (2000). We based our measures on those used by Mayhé-Nunes and Brandão (2006), and carried them out using a Leica (80x) stereomicroscope at 60x magnification with an ocular micrometer. We measured: TL, total length; HL, head length (except mandibles); HW, head width (including eyes); IFW, inter frontal width (distance between the lateral margins of frontal lobes); ScL, scape length; WL, Weber's length (alitrunk length); CI, cephalic index (HW/HL x 100); and FLI, frontal lobes index (IFW/HW x 100).

Results and Discussion

Subfamily Myrmicinae

Mycetarotes parallelus (Emery, 1906)

Material examined: 2 workers, COLOMBIA, Meta, Cabuyaro, 4°17'36.3"N 72°57'38.1"W, 189m, 12-feb-2013, Pitfall trap in oil palm plantation, G.W. Prescott leg. [IAvH-E-143891]. Deposited and preserved point mounted, in the entomology collection of the "Instituto de Investigación de Recursos Biológicos Alexander von Humboldt (IAvH)" Villa de Leyva, Colombia.

The workers analyzed share all the diagnostic characters listed by Kempf (1960) and Mayhé-Nunes and Brandão (2006) for the genus *Mycetarotes*. We identified it as *M. parallelus*, which can be clearly distinguished by the following characters: two pairs of spines on the mesonotum (where other members of the genus have three pairs), well developed petiolar spines, postpetiole without a tooth near each side of the lateral anterior margin, weakly marked outer frontal carinae branches, and a deep circular impression on the dorsal surface of the postpetiole (Mayhé-Nunes & Brandão 2006). Additionally the specimen has an opaque integument, reddish-brown head color, yellowish legs and mesosoma, dark gaster with erect hairs absent and sparse appressed hairs. We further corroborated the identification with photographs of the type species provided by the online database AntWeb v5.9 (AntWeb, 2014). The measurements taken from one of the workers (in mm) are: TL= 3.4; HL= 0.80; HW= 0.91; IFW=0.26; ScL= 0.85; WL= 1.02; CI= 113.75; FLI= 28.58. In general these measures are within the expected range or very close, except for the CI index which is a bit higher and FLI index is more lower than that reported by Mayhé-Nunes & Brandão (2006).

All published records of *Mycetarotes* to date have been from South America, with most records from Brazilian Amazon to southeastern Brazil and northern Argentina (Solomon et al., 2004; Mayhé-Nunes & Brandão, 2006). In addition

to their distribution in Brazil (described by Mayhé-Nunes & Brandão, 2006), the genus has recently been recorded in Venezuela (Goitia & Jaffé, 2009), French Guyana (Dias-Ferreira et al., 2012), Ecuador (Salazar & Donoso, 2013) and Guyana (Schultz & Sosa-Calvo, 2006). Our record of *Mycetarotes* is the first report from Colombia and matches an expected pattern of distribution, where the records in Venezuela and Colombia possibly correspond to the northern boundary of genus.

The *M. parallelus* is the most widespread and common of all species of the genus (Mayhé-Nunes & Jaffé, 1998), in contrast to the other species of the genus which are uncommon and whose distributions are restricted to specific conditions (Mayhé-Nunes, 1995; Mayhé-Nunes & Lanziotti, 2004). Unlike other *Mycetarotes* species *M. parallelus* commonly lives in open habitats, gallery forest, secondary forest, and disturbed habitats (Solomon et al., 2004). This trend is corroborated by our discovery of *Mycetarotes* workers in a mature oil palm plantation, located in the Colombian Llanos (a seminatural system dominated by grasslands interspersed with wet and dry forests) (Gilory et al., 2014).

The ant fauna of Colombia is very rich (see Fernández & Sendoya 2004; Pérez et al., 2009; Vergara-Navarro & Serna, 2013), but more comprehensive sampling will be needed to fully understand its richness and distribution across Colombia. The presence of *Mycetarotes* is a clear example of what remains to be known.

Acknowledgments

We thank the staff of the Instituto de Investigación de Recursos Biológicos Alexander von Humboldt for their logistical support. Fernando Fernández for help with identification of the ants. Plantation managers at Palumea Ltda, Copalma Ltda, and Guajcaramo S.A. for allowing access to their land, and to Apolinar Rojas of Asohumea for helping us to coordinate our research. Finally, we thank two anonymous reviewers who made valuable comments and useful suggestions that improved the quality of the manuscript.

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