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Why so scarce? Dictyopharidae from Madagascar (Hemiptera: Fulgoromorpha)

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Abstract

A new genus and species of Dictyopharidae from Madagascar—*Tupala occulta* **gen. et sp. nov.** is described and illustrated. It is the third known dictyopharid and the second representing tribe Dictyopharini. Two other taxa with taxonomic problems ascribed to Dictyopharidae are discussed. The question of paucity of Dictyopharidae of Madagascar is raised and several possible explanations are presented.

Key words: new genus, new species, Dictyopharini, Madagascar, faunistics, biogeography

Introduction

Dictyopharidae Spinola, 1839 is a moderately large family of planthoppers (Hemiptera: Fulgoroidea) with 167 genera and 739 species recorded (Bourgoin 2015). It comprises medium-sized insects gathered in two subfamilies: Dictyopharinae Spinola, 1839—generally macropterous and larger (10–26 mm long), usually with anteriorly prolonged head; and Orgeriinae Fieber, 1872—brachypterous (flightless) and smaller (up to 10 mm), with thickened short tegmen and rounded body. The Dictyopharinae is of worldwide distribution (Melichar 1912; Metcalf 1946; Emeljanov 1983; Bourgoin 2015), while Orgeriinae, being a distinct lineage, is mainly characterized by morphological reduction and adaptation to arid conditions and distributed in the Holarctic (Emeljanov 1969, 1980, 2006, 2007; Emeljanov *et al*. 2005; Bartlett *et al*. 2014).

Analyses of the phylogenetic relationships among the higher taxa of the family as a whole are lacking (Donovall & Bartlett 2005), however some indications were proposed. The classification and relationships within Dictyopharinae are still poorly known, whereas those within Orgeriinae are well supported by morphological (Emeljanov 1980), cytogenetic (Kuznetsova 1985; Kuznetsova *et al*. 2009), and preliminary molecular (Emeljanov *et al*. 2005) data.

Members of Dictyopharinae are dorsoventrally compressed, with head narrower than pronotum, often greatly produced in front of compound eyes, tegmina membranous, venation regular with a number of cross veins, costal area with numerous cross veins, aedeagal complex semi-sclerotized, with membranous and sclerotized apical processes. The Dictyopharinae are usually collected from herbs, grass, and shrubs, but little is known about their life habits. Majority of them feed on the phloem of woody or herbaceous plants (Wilson *et al*. 1994). Dictyopharinae are primarily distributed in arid, semiarid, and tropical zones worldwide.

The subfamily Dictyopharinae is subdivided into 12 tribes: two extinct—Netutelini Emeljanov, 1983 and Worskaitini Szwedo, 2008, and 10 recent ones—Aluntiini Emeljanov, 1979, Capenini Emeljanov, 1969, Cladodipterini Metcalf, 1938, Cleotychini Emeljanov, 1997, Dictyopharini Spinola, 1839, Hastini Emeljanov, 1983, Nersiini Emeljanov, 1983, Orthopagini Emeljanov, 1983, Phylloscelini Emeljanov, 1983 and Scoloptini Emeljanov, 1983 (Emeljanov 1969, 1983, 1997, 2007, 2008; Szwedo 2008; Kuznetsova *et al.* 2009).

Subfamily Orgeriinae comprises four tribes (Emeljanov 2004, 2007, 2008; Emeljanov *et al*. 2005; Szwedo 2008; Kuznetsova *et al*. 2009): Almanini Kusnetzov, 1936, Colobocini Emeljanov, 1969, Orgeriini Fieber, 1872 and Ranissini Emeljanov, 1969.

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