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***Mesodiplatys venado* sp. nov. (Dermaptera: Diplatyidae), probable evidence of contact between Neotropical and Malagasy faunas**

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Abstract

A new earwig of the Malagasy genus *Mesodiplatys* **stat. nov.**, *M. venado* **sp. nov.** (Dermaptera: Diplatyidae) is described from Peru (Departament Junin, Satipo Province). The diagnosis and composition of the genus *Mesodiplatys* **stat. nov.** are discussed. A detailed morphological description of the new species is given. The possible biogeographical significance of the find as evidence of link between South American and Malagasy fauna is briefly considered.

Key words: earwigs, historical biogeography, morphology, Madagascar, Peru, South America

Introduction

The family Diplatyidae Verhoeff is a well-defined group of earwigs (Dermaptera). It is readily recognizable by the following character combination: head with large eyes, presence of well developed post-ocular carinae and a cylindrical abdomen, which is apically widened in males of most taxa (Hincks 1955; Sakai 1982, 1985).

Diplatyidae is one of the early derivative groups of earwigs (Haas 1995; Haas & Klass 2003; Engel & Haas 2007) known at least from the Early Cretaceous (Engel 2011). The phylogenetic position of this family is rather obscure because links among the most archaic families of earwigs (Karschiellidae, Diplatyidae and Pygidicranidae) are unclear and inclusion of these families in Protodermaptera Zacher is based on symplesiomorphies (Grimaldi & Engel 2005).

Extant diplatyids are distributed in regions with wet, warm climates: Central and South America, Africa, Madagascar and southern and southeast Asia (Hincks 1955; Sakai 1982, 1985; Popham 2000).

At present, the Malagasy fauna includes nine species of Diplatyidae (Brindle 1966; Jamet *et al.* 1999). Most of them belong to the genus *Haplodiplatys* Hincks, 1955 (subgenus *Mesodiplatys*); the taxonomic position of one species *?Diplatys viator* Burr is unclear because its males remain unknown.

The Neotropical fauna of Diplatyidae is represented by the genera *Diplatys* Serville and *Cylindrogaster* Stål. Representatives of the genus *Mesodiplatys* had never been recorded in this region before.

In this paper I describe a new species of diplatyid from Peru belonging to the Malagasy genus *Mesodiplatys* and briefly discuss this unexpected record in South America.

Material and methods

The material studied was collected by the author during an expedition in Peru in 2008. It was preserved in 70% ethanol. The male genitalia were processed with alkali by means of a standard procedure (Anisyutkin *et al.* 2013) for 12–24 hours for maceration of the soft tissues. The illustrations were sketched by means of a drawing tube on a Leica MZ 16 binocular microscope; further drawing and examination were made with an MBS–10 binocular microscope.

The same type of geographic distribution has been postulated for some pelomedusoid turtles (Pelomedusoides) (Vargas-Ramirez *et al.* 2008; Noonan 2000), snakes of the family Boidae (Noonan & Chippindale 2006), lizards of the family Iguanidae Gray (Zug *et al.* 2001), extinct elephant birds of the genus *Aepyornis* Hilaire (Aepyornithidae) (Yoder & Nowak 2006) and some planthoppers of the family Cixiidae (Emeljanov 2007 and pers. comm.).

At present it is not possible to eliminate any of these hypotheses from consideration. Further investigations in South America coupled with a molecular comparison of species from South America and Madagascar are needed to elucidate the origin and distribution of the family Diplatyidae, including *Mesodiplatys*.

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