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Review of the southern South American Macroductylini (Coleoptera: Scarabaeidae: Melolonthinae) with descriptions of new genera and species

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Abstract

The tribe Macroductylini (Coleoptera: Scarabaeidae: Melolonthinae) is reviewed from southern South America. A total of 13 genera and 33 species were found in the study area consisting of Argentina from Neuquén south and Chile from IV Región de Coquimbo south. The following three **new genera** are described: *Extenuoptyophis*, *Insimuloissacaris*, and *Neuquenodactylus*. The following 11 **new species** are described: *Ampliodactylus elguetai*, *Ampliodactylus guinezi*, *Ampliodactylus inusitus*, *Ampliodactylus panguipullensis*, *Extenuoptyophis horridulus*, *Extenuoptyophis metropolitanensis*, *Insimuloissacaris nahuelbutensis*, *Issacaris falsa*, *Issacaris sola*, *Neuquenodactylus ramus*, and *Phytholaema fenestra*. The species *Schizochelus modestus* Philippi, 1861 is transferred to the genus *Ampliodactylus*. Lectotypes are designated for the following five species-group names (species names given in their original combination): *Dicrania aeneobrunnea* Philippi, 1861, *Modialis prasinella* Fairmaire & Germain, 1860, *Phytholaema elaphocera* Redtenbacher, 1868, *Phytholaema herrmanni* Germain, 1901, and *Schizochelus modestus* Philippi, 1861. Neotypes are designated for the following four species-group names (species names given in their original combination): *Acanthosternum splendens* Philippi, 1861, *Areoda mutabilis* Solier, 1851, *Issacaris petalophora* Fairmaire, 1889, and *Phytholaema flavipes* Philippi, 1861. The genera *Modialis* Fairmaire & Germain, 1860 and *Phytholaema* Blanchard, 1851 are here transferred to the tribe Macroductylini. The species-group names *Phytholaema pallida* Saylor, 1937 and *Phytholaema peccans* Blackwelder, 1944 are placed in synonymy with *Phytholaema herrmanni* Germain, 1901. Descriptions or diagnoses, keys, and distributional data are given for all species.

Key words: Chile, Argentina, *Ampliodactylus*, *Issacaris*, *Macroductylus*, *Modialis*, *Phytholaema*, *Plectris*, *Pristerophora*, *Pseudodicrania*, *Ptyophtis*, *Pusiodactylus*.

Introduction

The tribe Macroductylini is a very diverse group with 47 genera and 1025 species and subspecies occurring in the New World. Most of what is known about the species in this tribe was published over a half century ago in the form of species descriptions with limited and often inadequate information. A recent generic-level review by Katovich (2008) coupled with cataloging efforts by Evans (2003) and Evans & Smith (2009) have helped to make generic-level identifications and the names and general distributions more accessible. There have also been a few efforts to review some genera regionally, especially from Mexico, Central America, and southern South America (*e.g.*, Smith 2008; Fuhrmann 2012). However, nearly all genera are badly in need of taxonomic revisions and the identities of most species are verified only by studying the types. It is also clear that there are numerous new species already in institutional collections awaiting description.

It is well documented that southern South America has a distinct flora and fauna with high rates of endemism and forms a discrete biological region. We use the definition of Morrone (1996, 2001) for southern South America, comprised of the Central Chilean, Patagonian, and Subantarctic biogeographical provinces of Argentina and Chile. This corresponds with Regions IV–XII in Chile and the Argentinean provinces of Mendoza (but only in the Andean section), Neuquén, Río Negro, Chubut, Santa Cruz, and Tierra del Fuego. This paper is a continuation of our efforts to survey and inventory the Scarabaeoidea of southern South America (*e.g.*, Smith & Skelley 2007; Mondaca & Smith 2008) by providing a taxonomic review and identification guide to all species of Macroductylini occurring in this region.

The tribal classification of the genera *Modialis* Fairmaire & Germain, 1860 and *Phytholaema* Blanchard, 1851 have only been discussed peripherally in the literature, and they have been placed in various tribes without any detailed character analysis. Arrow (1903) placed *Modialis* and *Phytholaema* in the tribe Heteronychini and von Dalla Torre (1912), Blackwelder (1944), and Gutiérrez (1944) placed them both in Liparetrini. Evans (2003) placed *Modialis* in Melolonthini and *Phytholaema* in “incertae sedis” without explanation but in partial recognition that Liparetrini is an Australian tribe and that the New World genera in this tribe needed to be placed elsewhere. Liparetrini is now considered to be endemic to Australia and all New World taxa formerly placed in the tribe are now classified in other tribes. Katovich (2008) reviewed all of the Macroductylini genera but only mentioned *Modialis* incidentally. The placement of *Modialis* and *Phytholaema* within Macroductylini here was done through the process of elimination of the other Melolonthinae tribes and with character support. A more detailed phylogenetic analysis is necessary to confirm this classification.

All of the genera treated in this paper are placed in the Macroductylini based on the following characters: labrum not visible in dorsal view of head and located below the clypeus, propygidium and fifth tergite at least