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Review of the species of *Pelodiaetodes* Moore (Coleoptera: Carabidae: Bembidiini: Anillina) of New Zealand

IGOR M. SOKOLOV
6360 Sevenoaks Avenue, Baton Rouge, LA, 70806, U.S.A. E-mail: igbembi@yahoo.com

Abstract

Four new species of the formerly monotypic genus *Pelodiaetodes* are described from New Zealand. Three of them: *P. constricticollis*, **sp. n.**, *P. moorei*, **sp. n.**, and *P. aldermensis*, **sp. n.**, occurring on the North Island, are morphologically similar to the type species, *P. prominens* Moore. The fourth species, *P. nunni*, **sp. n.**, occurring on the South Island, is morphologically distinct from the nominotypical species group. A new subgenus, *Monosetodes*, **subgen.n.**, is proposed to accommodate *P. nunni* within *Pelodiaetodes*. Redescriptions of the genus and the type species are given based on new morphological data, and a taxonomic key as well as a distribution map for all known species are provided. Some biogeographical aspects of the evolutionary history of *Pelodiaetodes* and its morphological relatives from Madagascar, Australia and New Zealand are discussed.

Key words: Adephaga, *Pelodiaetodes*, Carabidae, Coleoptera, new species, new subgenus, New Zealand, southern Gondwana pattern

Introduction

The genus *Pelodiaetodes* was erected by B.P. Moore (1980) for peculiar anilline carabid specimens, collected in the northern part of the North Island of New Zealand. These specimens demonstrated the distinct elytral longitudinal groove, while possessing a complete number of setae in the elytral series of umbilicate marginal pores. The only known New Zealand anillines with grooved elytra at that time were representatives of the genus *Pelodiaetus* Jeannel. Externally, members of both genera are similar and this similarity was reflected in the name of the new genus *Pelodiaetodes* (from *Pelodiaetus* and the Greek "eîdos", meaning "resembling *Pelodiaetus*"). Moore (1980) proposed the following list of diagnostic characteristics to distinguish representatives of *Pelodiaetodes*: complete (*Pelodiaetodes*) or incomplete (*Pelodiaetus*) elytral umbilical series of pores, slightly (*Pelodiaetodes*) or strongly (*Pelodiaetus*) inflated penultimate maxillary palpomere, and the presence (*Pelodiaetodes*) or absence (*Pelodiaetus*) of an auxiliary tubercle anterior to the posterior angles of the pronotum. Until now, the genus *Pelodiaetodes* included only one species: *P. prominens* Moore.

Presence of longitudinal grooves on the elytra is not a common character within representatives of the Anillina. Thus far, only six genera with grooved elytra have been described among the more than 80 genera of anillines known to date (Lorenz 2005; Giachino 2005, 2008; Giachino & Vailati 2011; Sokolov 2013). In addition to New Zealand's *Pelodiaetus* and *Pelodiaetodes*, one genus, *Illaphanus* Macleay, is from the Australian continent (Jeannel 1937, 1963; Giachino 2005), and three genera, *Malagasytyphlus* Giachino, *Malagasydipnus* Giachino, and *Bulirshia* Giachino, are confined to Madagascar (Giachino 2008). Their listed ranges correspond to the territories of the ancient East Gondwanan continent (Seton *et al*. 2012; Gibbons *et al*. 2013), suggesting the Gondwanan origin of this group of anillines if monophyly of the group is supported.

I had the opportunity to investigate the material of Anillina from the New Zealand Arthropod Collection and the private collection of J.T. Nunn, who used numerous collecting methods including a soil-washing technique, which greatly enriched the number of subterranean species available for study. After preliminary sorting of the material of the genus *Pelodiaetodes* it was discovered there were in fact five species, four of which were new to the scientific community. This increase in the number of species in the formerly monotypic genus made it necessary to

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