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Taxonomy of '*Euconnus* complex'. Part V. Review of type species of *Euconnus* subgenera *Tetramelus*, *Paratetramelus* and *Heteroconnus* (Coleoptera, Staphylinidae, Scydmaeninae)

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Abstract

Morphological structures of the type species of *Tetramelus*, *Paratetramelus* and *Heteroconnus*, subgenera of *Euconnus*, are described and illustrated in detail. These three taxa, showing many similarities, are retained as separate subgenera within *Euconnus*. They probably form a natural group characterized by gradually thickened antennae, head and pronotum with thick bristles, pronotum bell-shaped, broadest in anterior half, and prosternum about as long as half length of prothorax. *Tetramelus* shows adaptations to edaphic life, such as lack of wings and associated structures, reduced eyes and often lightly pigmented body; these are also possible pre-adaptations that have enabled several highly specialized species to inhabit caves. *Paratetramelus* differs from *Tetramelus* primarily in the 'anthiciform' head with large eyes, and developed hind wings; *Heteroconnus* is unique in narrowly separated metacoxae and modified pronotum in males, bearing presumably glandular structures. These three subgenera show a broad distribution (*Tetramelus* worldwide; *Paratetramelus* in Africa, Madagascar and Nepal; *Heteroconnus* in Africa and New Caledonia) and therefore further study is required to verify the placement of species inhabiting locations remote from those where the type species of each subgenus occur.

Key words: Insecta, Coleoptera, Staphylinidae, Scydmaeninae, Cyrtoscydmini, *Euconnus*, *Tetramelus*, *Paratetramelus*, *Heteroconnus*, taxonomy

Introduction

Among 37 subgenera of the monstrously large genus *Euconnus* Thomson, 1859 (nearly 2500 nominal species (Newton & Franz 1998)), *Tetramelus* Motschulsky, 1870 is one of the most distinct and easy to identify on the basis of the body form. The antennae gradually thickening distally, the small and typically elongate head with long clypeus and usually small eyes, the pronotum broadest in front of middle and with dense thick bristles, and the elytra without humeral calli or subhumeral lines, at base not broader than the pronotal base (a consequence of reduced wings and associated structures, e.g., the metanotum) in European species allow for assigning species to *Tetramelus*. Additionally, aedeagi in this subgenus are typically heavily sclerotized, so that it is often difficult to see internal structures through thick and darkly pigmented walls of the median lobe, and the aedeagus is often strongly elongate, in lateral view strongly curved at base, with complex assemblage of endophallic sclerites. Specialized edaphic or even cavernicolous species can be found within *Tetramelus*, not only wingless, but with slender body, elongate legs and antennae, reduced or absent eyes and light pigmentation (Vít & Hlaváč 2005; Hlaváč & Jalžić 2009; Orousset 2014). Over 180 species of *Euconnus* distributed worldwide have been so far placed in *Tetramelus* (Newton & Franz 1998 and later descriptions), mostly solely on the basis of the general appearance and dorsal structures, while fine ventral characters have never been described or illustrated in detail for this subgenus. Many species from other continents only remotely resemble European *E. oblongus* Sturm, 1838, the type species of *Tetramelus*, and diagnostic limits of this subgenus remain unclear. Moreover, some subgenera apparently similar to *Tetramelus* were established, as *Paratetramelus* Franz, 1963 and *Heterotetramelus* Franz, 1971, with similarly diffused and unclear diagnoses. Some of them (e.g., *Heterotetramelus*) do not even have the keel-like, narrow and high mesoventral process, the hallmark of *Euconnus*; they will be treated separately in future parts of the '*Euconnus* complex' series (Jałoszyński, in preparation). Having already redescribed and redefined *Euconnus* s. str., the

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