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The Pselaphinae of Madagascar. II. Redescription of the genus *Semiclaviger* Wasmann, 1893 (Coleoptera: Staphylinidae: Pselaphinae: Clavigeritae) and synonymy of the subtribe Radamina Jeannel, 1954

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Abstract

The enigmatic Madagascan genus *Semiclaviger* Wasmann is among the most morphologically distinct members of the obligately myrmecophilous pselaphine supertribe Clavigeritae. Here, the genus is redescribed, and the lectotype of the type species *S. sikorae* Wasmann is designated. We present a detailed study of the morphology of *Semiclaviger*, which supports its uniqueness among the Clavigeritae. The systematic position of the genus, and the validity of its subtribe Radamina, are discussed leading us to place Radamina in synonymy with Clavigerodina.

Key words: Staphylinidae, Pselaphinae, Clavigeritae, Radamina, *Semiclaviger,* redescription, Madagascar

Introduction

The pselaphine supertribe Clavigeritae is a large group of strictly myrmecophilous genera, distributed in all major biogeographic regions except New Zealand. The taxon reaches a remarkable level of diversity in Madagascar, where 30 genera are found, all except one of which are believed to be endemic. As a group, Clavigeritae show extreme morphological variation, and exhibit numerous adaptive characters for life as highly-integrated symbionts of ant colonies. One Madagascan genus however, *Semiclaviger* Wasmann, is particularly unusual. Unlike other clavigerite genera, it displays an apparent 'limuloid' body plan with an enlarged pronotum that extends anteriorly to shield the head. Such morphology is more typical of non-integrated myrmecophiles that employ physical defense to withstand attacks from hosts (Kistner, 1979). Yet, like other Clavigeritae, *Semiclaviger* possesses the trichomes and reduced mouthparts diagnostic of organisms well-assimilated into colony life, and thus presents a seemingly paradoxical array of morphological attributes.

Semiclaviger is currently placed in the subtribe Radamina, but examination of its morphology reveals many differences with other genera of Radamina, indicating that the genus may be rightfully placed elsewhere. The availability of newly-collected material from Madagascar has provided us with the opportunity to explore the morphology of the genus with great resolution, enabling us to produce a detailed redescription of the genus, which we present herein. We further discuss the systematic position of the genus, as well as the doubtful monophyly of Radamina. The lectotype of the type species, *Semiclaviger sikorae* Wasmann, is designated.

Material and methods

Dry-mounted specimens were relaxed in warm water and macerated in 10% NaOH solution at room temperature

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Clavigeritae, and the unique, transverse head shape, which dorsally lacks both a neck and an occipital constriction. The form of the occipital constriction has long been used as an important character to separate subtribes of Clavigerini. A neck region, clearly separated from the head capsule by an occipital constriction or carina is always present in Clavigeritae (with the exception of *Kurbatoviella* Hlaváč, 2010, where there is no constriction or carina but the neck region is very long and expanded posteriorly). The absence of a neck-region thus may represent a plesiomorphic character shared with no other Clavigeritae, but may just as likely reflect an autapomorphy of *Semiclaviger*. The absence of the neck has also been recently described and discussed in the aenictopecheid bug *Ulugurocoris grebennikovi* Štys & Baňař, 2013 (Heteroptera: Enicocephalomorpha: Aenictopecheidae), a member of the basalmost clade of Heteroptera. The Authors of that paper assumed that the absence of the neck may represent symplesiomorphy shared with some other non-heteropteran Hemiptera (Štys & Baňař, 2013). The structure of the aedeagus of *Semiclaviger*, with the apical lobe not separated from the basal bulb, is also very rare in Clavigeritae, but again, it is unclear whether this is evidence of the phylogenetic separation of *Semiclaviger* from other Clavigeritae, or merely represents a derived character state. The availability of fresh material from Madagascar has allowed us to extract DNA from multiple clavigerine genera, including *Semiclaviger.* Our provisional analysis based on four loci (to be published elsewhere) supports the inclusion of *Semiclaviger* among a monophyletic radiation of Madagascan genera. Although the exact placement within this assemblage is currently unclear, such a position nonetheless argues against a basal position for *Semiclaviger* within Clavigeritae. Rather, we believe the remarkable morphology of *Semiclaviger* should be considered derived, with the taxon representing a radical departure from the typical clavigerine body plan.

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