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Mature larva of *Stenichnus collaris* (Müller & Kunze) (Coleoptera: Staphylinidae: Scydmaeninae)

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Abstract

The mature larva of *Stenichnus collaris* is re-described on the basis of a shed larval skin. This is the first description of an immature *Stenichnus* identified by rearing to an adult beetle, and not only by collecting the larva in association with adults, as in previously published works. New data on the life history of *St. collaris* are provided, and possible serial homology of chaetotaxic structures across body segments is discussed. The structures of immature Nearctic *St. turbatus*, the only *Stenichnus* larva described with focus on the chaetotaxy, are compared with those of *St. collaris* and possible homologies are indicated.

Key words: Coleoptera, Staphylinidae, Scydmaeninae, Cyrtoscydmini, *Stenichnus*, larval morphology, Palaearctic.

Introduction

Larvae of less than 0.5% of named Scydmaeninae species have been described (Jałoszyński & Kilian 2012), and morphological structures of most of them are known insufficiently. Modern standards of accurate illustrating and precise mapping chaetotaxic structures were met only in a few descriptions, while the majority of papers containing larval characters give only fragmentary and often imprecise details. Even immature stages of Central European Scydmaeninae are poorly known, and in some cases descriptions of the same species published by various authors show structures different to such an extent that their identifications seem dubious. The genus *Stenichnus* Thomson, 1859 is such an unclear case.

Stenichnus in Central Europe is represented by several species, but only three of them are common and often abundantly co-occur in deciduous forest leaf litter: *St. collaris* (Müller & Kunze, 1822), *St. scutellaris* (Müller & Kunze, 1822) and *St. godarti* (Latreille, 1806). Paulian (1941) was the first author to describe the larva of *St. collaris* based on specimens collected in Germany; he illustrated the head in dorsal and partly ventral view, the mouthparts, the fore leg, the thorax and abdomen in dorsal view, and the abdominal segment X in ventral view. Later some details of the same species were described or illustrated by several authors. Kasule (1966) illustrated the maxilla; Brown & Crowson (1980) illustrated the mandible and tarsal claw; Schmid (1988a) illustrated the mandible and later (Schmid 1988b) also the dorsal habitus, the head in dorsal and ventral views, the mouthparts, all legs and spiracles; and Newton (1991) again provided an illustration of the mandible. Interestingly, the most detailed and amply illustrated descriptions by Paulian (1941) and Schmid (1988b) differ markedly in the head shape and the pattern of epicranial setae, suggesting that these two authors dealt with larvae of different instars or even different species. Brown & Crowson (1980) identified their larvae using Paulian's description and association with co-occurring adults ("specimens agreeing completely with his description and figures have been found commonly (...), frequently in company with adults of *S. collaris*"). However, Paulian (1941) did not explain how his larval material was identified, and such information is also missing in the remaining, fragmentary descriptions. Brown & Crowson (1980) mention that larvae of *St. collaris* have mandibles that "may or may not be serrated". This information suggests that the larvae belonged to two different species, as it seems unlikely that such a remarkable variation occurs in one species. An alternative explanation is that different instars may show such differences in mandibles, but Brown & Crowson (1980) do not give any measurements that might help to clarify this question.

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