



The morphology of the pupae of six species of *Philonthina* (Coleoptera, Staphylinidae, Staphylinini) with taxonomic remarks

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Abstract

The pupae of *Bisnius fimetarius* (Gravenhorst, 1802), *Gabrius osseticus* (Kolenati, 1846), *Philonthus atratus* (Gravenhorst, 1802), *Philonthus carbonarius* (Gravenhorst, 1802), and *Philonthus debilis* (Gravenhorst, 1802) are described and illustrated for the first time. The pupa of *Philonthus decorus* (Gravenhorst, 1802) is redescribed and illustrated. Some modifications of the generic diagnosis for *Philonthus* and *Gabrius* pupae are provided. The subtribal diagnostic morphological characters of the *Philonthina* are discussed.

Key words: entomology, morphology, *Bisnius*, *Gabrius*, *Philonthus*, *atratus*, *carbonarius*, *decorus*, *debilis*, *fimetarius*, *osseticus*

Introduction

Morphology of pupae in the subtribe *Philonthina* is still poorly known. Until now, information on the pupal stages of only 43 species from 10 genera has been published (of 2593 species in 63 genera known in the world) (Table 1). This paper provides the first report of the pupal stages of *Bisnius fimetarius* (Gravenhorst, 1802), *Gabrius osseticus* (Kolenati, 1846), *Philonthus atratus* (Gravenhorst, 1802), *Philonthus carbonarius* (Gravenhorst, 1802), and *Philonthus debilis* (Gravenhorst, 1802). A redescription of poorly known pupa of *Philonthus decorus* is also provided (Verhoeff 1918). Hitherto, among 1255 (19 of which are doubtful) species of *Philonthus*, some information on the pupal stage of only 23 species are known. For *Bisnius* (66 known species) only the pupa of *B. nitidulus* (Gravenhorst, 1802) has been described, and for *Gabrius* (337 known species) only the pupae of *G. splendidulus* (Gravenhorst, 1802) and *G. astutus* (Erichson, 1840) have been described (Herman 2001; Staniec & Kitowski 2004; Staniec & Pietrykowska-Tudruj 2007; Pietrykowska-Tudruj & Staniec 2010).

B. fimetarius, *P. carbonarius* and *P. debilis* are a very widely distributed staphylinids, known from North Africa, Europe, Russia, Caucasus, Turkey, Kazakhstan, India, and Canada; *P. carbonarius* is also known from Iran, Uzbekistan, Nepal, China, and the United States, and *P. debilis* is also known from Libya, Israel, Iran, Afghanistan, Turkmenistan, Uzbekistan, Mongolia, China, Japan, and the United States. *B. fimetarius* and *P. carbonarius* are defined as ubiquitous and phyto-detriticolous species; *P. debilis* is reported as a eurytopic, synanthropic, and phyto-detriticolous species. They all inhabit rotten plants debris and animals manure in various biotopes, both dry and wet.

G. osseticus is known from Europe, Russia, Georgia, the Caucasus, and Turkey. It is a eurytopic, hygrophilous, and phyto-detriticolous species, inhabiting wet places in forests, sometimes in gardens or meadows, where it occurs in damp moss, leaf-litter, and rotten plants. *P. decorus* is a Palaearctic species distributed in Europe and Russia. It is a eurytopic, hygrophilous, silvicolous, and humicolous species inhabiting damp moss, leaf-litter, rotting mushrooms, and plants in wet forests. *P. atratus* is a Palaearctic species distributed in Morocco, Europe, Russia, Georgia, Azerbaijan, Turkey, Syria, Iran, Afghanistan, Turkmenistan, Uzbekistan, and China. It is a stenotopic, hygrophilous, ripicolous, and phyto-detriticolous staphylinid preferring slimy watersides and riverbanks where it occurs in detritus, wet soil fissures, and stones. In Poland all of the aforementioned species are rather common, each known from large areas of the country.