

A review of the European species of *Monochamus* Dejean, 1821 (Coleoptera, Cerambycidae) – with a description of the genitalia characters

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The male and female genitalia characters of the European species of *Monochamus* Dejean, 1821, are described and compared in detail for the first time. The sclerites inside the median phallomer (internal sac) of *M. sutor* (Linnaeus, 1758) and *M. galloprovincialis* (Olivier, 1795) differ from those of all other examined species, and appear to be the best characters to separate *M. sutor* from *M. galloprovincialis*. There are no differences between the male or female genitalia characters of *M. sartor* (Fabricius, 1787) and *M. urussovi* (Fischer von Waldheim, 1805). Thus, *M. urussovi* is regarded as a subspecies of *M. sartor*: *M. sartor urussovi* **nov. stat.** The present results also support that the previously considered subspecies *M. galloprovincialis pistor* (Germar, 1818) is a true junior synonym of *M. galloprovincialis galloprovincialis*. No sclerites occur inside the internal sac of *M. saltuarius* (Gebler, 1830). The internal sac of *M. sartor sartor* (Fabricius, 1787), *M. sartor urussovi* and *M. impluviatus impluviatus* (Motschulsky, 1859) are distinctly different from the other European species of *Monochamus*: there is an elongated tube (terminal segment) inside the internal sac containing two very small and weakly sclerotized plates in *M. sartor sartor* and *M. sartor urussovi* and a larger sclerite in *M. impluviatus impluviatus*. A key to the European species and subspecies of *Monochamus*, incorporating male genitalia characters, is provided.

Key words: Taxonomy, Cerambycidae, Lamiinae, *Monochamus*, genitalia characters, Palearctic Region, Europe.

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Introduction

The main objective of this paper is to provide a detailed morphological description of all genitalia characters in males and females of all European species of *Monochamus* Dejean, 1821, and to find reliable characters for identification. Apart from the very brief descriptions by Pershing & Linit

(1985) and Tomminen & Leppänen (1991), there are no detailed genitalia descriptions available for the genus *Monochamus* describing e.g. the small species-specific sclerites found inside the internal sac in males. Koutroumpa *et al.* (in press) used specimens of *M. sutor* (Linnaeus, 1758) and *M. galloprovincialis* (Olivier, 1795) from central Europe, in a comprehensive genetic and