



Two sibling species of *Leiopus* Audinet-Serville, 1835 (Coleoptera: Cerambycidae) from Europe: *L. nebulosus* (Linnaeus, 1758) and *L. linnei* sp. nov.

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Abstract

The common European cerambycid *Leiopus nebulosus* (Linnaeus, 1758) is herein split into two sibling species. The male genitalia characters, as well as spermathecae in females, were examined and found to provide strong support for this separation. A new species, *Leiopus linnei* sp. nov., is based on specimens mainly from Scandinavia. The establishment of the new species is supported by DNA barcoding of Scandinavian specimens of *L. nebulosus*, *L. linnei* sp. nov., and *L. punctulatus* (Paykull, 1800). There are significant genetic differences between all these species. The geographical distribution and the bionomy of *L. nebulosus* and *L. linnei* sp. nov. are described. The type of *Cerambyx nebulosus* Linnaeus, 1758 is lost. A neotype of *Cerambyx nebulosus*, currently *Leiopus nebulosus* (Linnaeus, 1758), is designated and a redescription of *L. nebulosus* is presented. A key for the identification of *L. nebulosus* and *L. linnei* sp. nov. is provided. The varieties *L. nebulosus* var. *dissimilis* Pic, 1889, *L. nebulosus* var. *unifasciatus* Pic, 1891, and *L. nebulosus* var. *siculus* Pic, 1924 are considered as junior synonyms, **syn.nov.** of *L. nebulosus*.

Key words: Acanthocinini, *Leiopus linnei* sp. nov., sibling species, *Leiopus nebulosus* (Linnaeus, 1758), *Leiopus punctulatus* (Paykull, 1800), Palearctic Region, DNA, barcoding

Introduction

The cerambycids of Northern Europe are among the most thoroughly studied insects (c.f. Sama 2002; Ehnström & Holmer 2007). However, there are still a number of unanswered taxonomical questions regarding the family in Northern Europe. We believe that some of these questions can only be answered by more thorough studies of the genitalia, and use of DNA-analysis. We also believe that such studies will uncover new sibling or cryptic species. Once discovered and thoroughly studied, the latter, according to Mayr (1969), are usually found to have previously overlooked morphological differences. The sibling species concept requires that the genetic divergence is evident, and that they occur sympatrically (Mayr 1979).

The genus *Leiopus* was erected by Audinet Serville (1835), although *L. nebulosus* (Linnaeus, 1758) was first designated as the type species of the genus by Thomson (1866). *Leiopus nebulosus* (Linnaeus, 1758) is known to be a highly variable species with respect to external morphological characters such as coloration, punctuation and size (Bense 1995; Cherepanov 1991; Freude *et al.* 1966; Sama 2002; Villiers 1978; Vives 2000). It is also known to be a highly polyphagous species exploiting a wide range of host trees, including both deciduous and coniferous trees (Demelt 1966; Bense 1995; Sama 2002; Heliövaara *et al.* 2004). It has an extensive geographical distribution (Sama 2002), with geographical variations and morphological differences between populations. The hypothesis that the species "apparently has failed, during the process of speciation,