

Notes on the bionomics of the adult *Cerambyx lamed* Linnaeus (Coleoptera, Cerambycidae, Lepturinae)

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Abstract. Rare occurrence of the beetle *Pachyta lamed* (Linnaeus) in the Bohemian Forest (Czech Republic) with a comment on the systematics of the family Lepturinae.

Key words. Cerambycidae. Lepturinae. Lepturini. *Pachyta lamed* (Linnaeus). Faunistic note.

Introduction

Larry Bezark's splendid website presents 9 Holarctic species in the genus *Pachyta* (Rhagiini).¹ *Pachyta lamed* (L.) has a large distribution area and several subspecies have been described (e.g., subsp. *liturata*, subsp. *sasakii*). *P. lamed* is a very rare species of Longhorn beetle: "...*P. lamed*, a North-Holarctic boreomontanne species with large area of occurrence from Central/North Europe to Japan, has been described from "Europa" as *Cerambyx lamed* by Carl Linné in 1758. In Central Europe, *P. lamed* is one of the very rare and local inhabitants of preserved spruce stands of medium and higher altitudes. *P. lamed* larvae feed subcortically in roots of freshly dead conifers (*Picea abies* is strongly preferred). In oviposition, females prefer free-standing trees with well developed root collars. Adults, active from July to August, can be observed in flight around host trees or they can be found on felled trees/logs, they do not visit flowers ..." (www.cerambyx.uochb.cz/pachyta_lamed.php)

A very recent discovery of *Pachyta lamed* in the Šumava Mountains

This article was written based on information found in the literature (see e.g. Sláma 1998), where it was stated that *P. lamed* cannot be found on flowers. *P. lamed* (L.) is an endangered species of European beetles (see e.g. Långhorningar in artfakta). More complete data on the occurrence of this species in the Czech Republic (including Šumava localities) were provided by Sláma (1998), but these are data obtained mainly from the past. Current data on the occurrence of this species in the Czech Republic are not available on the Internet.

The author of this article has been visiting Šumava (especially the Železnorudsko, Prášílsko and the surroundings of Modrava) every year for many years, usually on several excursions, focused on different seasons. *P. lamed* was discovered this year in July. Two days before the observation of this species, there was a strong thunderstorm with heavy rain at night. The night before the observation was almost half-clear, rather warmer. On the day of the observation, it was already clear from the morning, with an afternoon temperature at the site of occurrence of this species of 24.5 degrees Celsius. Around 2:30 p.m., the sky became slightly cloudy, and at 6:00 p.m., there was a weaker thunderstorm with a rain shower at the site of occurrence. Beetles appeared on *Aegopodium podagraria* flowers between 3-4:00 p.m. Individuals of both sexes were observed, females were more abundant, always sitting on flowers, either on the edge of the flower from the side (females), or directly on the top of the flower (males). Beetles were not observed during copulation. This species was not observed in flight. As soon as the sky became cloudy after 4 p.m. (the sunlight was completely gone), the beetles gradually and relatively quickly

¹ The author of this paper purposely does not give the name of the author of the genus for some generic names, because all too frequent changes in the supraspecific classification (and frequent changes in the names of the authors of the genera) needlessly confuse potential readers of this article.

disappeared from the flowers, although other Lepturinae species (e.g. *Anastrangalia sanguinolenta* (L.), *A. dubia* (Scop.), *Pseudovadonia livida* (F.), *Pachytodes cerambyciformis* (Schrank)) could still be found on the flowers, or flew from flower to flower. Evening and nighttime exploration of the site was not carried out due to the difficult accessibility of the locality with occurrence of *P. lamed*. Only 10 days later, a very similar meteorological situation occurred (without the afternoon storm, however), and the *P. lamed* no longer appeared at this location.

Notes on the origin of the names *Leptura* and *Strangalia*

In connection with this interesting find, the author of this contribution had the opportunity to study in more detail some important, more comprehensive taxonomic studies focusing on Cerambycidae and especially Lepturinae, Lepturini: Linnaeus (1746, 1758), Audinet-Serville (1835), Dejean (1833-36), Westwood (1838-40), J. Thomson (1860, 1864), Lacordaire (1869), Ganglbauer (1882, 1884), Aurivilius (1912), Boppe (1921), Swaine and Hopping (1928), Linsley and Chemsak (1972, 1976), Cherepanov (1988), Schapker (2017). The relatively large number of works dealing with the systematics of Lepturini mostly represent only partial revisions, often dealing with a group of species in a certain area, and only exceptionally does a work appear that synthesizes the data regarding conclusions from the perspective of the global Lepturini fauna. Of the works mentioned, J. Thomson (1860, 1864), Lacordaire (1869) and Boppe (1921) should be highlighted, who tried to study mainly the morphology of Cerambycidae imagoes of the world. At present, I am not aware of any new significant work (studying both morphology and genetics of imagoes) focused on the taxonomy of Lepturini worldwide (I have not found such a work on the Internet). So far, rather rare contemporary phylogenetic studies focusing on the systematics of Lepturinae with an evaluation of the morphology and genetics of imagoes (e.g. Zamoroka et al. 2022); or important works also dealing with longhorn beetles taxonomy biology and distribution (e.g. Sama 2002, Monné 2006, Ślipiński and Escalona 2013, 2016, Wang 2017, Gutierrez et al. 2020, Rossa and Goczał 2021), have brought only partial progress in mastering the systematics of Lepturinae (i.e., mainly from the point of view of the systematics of the very complicated tribe Lepturini).

Although the author of this contribution is currently focusing mainly on the systematics of Cetoniinae (Krajčák 2024, 2025), and in a minority also on the history of imaging in systematic entomology (Krajčák 2023), several interesting facts were deduced based on the study of the above-mentioned Longhorn beetles works: the current systematics of the tribe Lepturini from a global perspective still lacks high-quality studies focusing on the detailed morphology of imagoes and larvae, including an assessment of genetic diversity taxa. Apparently, based on a correct understanding of generic and subgeneric names in the context of the development of knowledge of the systematics of Lepturini (see e.g. Lacordaire, J. Thomson, Ganglbauer, Linsley and Chemsak, Bezark), it is necessary to reevaluate and defend the huge number of generic names of this tribe. Before such an assessment, it will be necessary to well define the type species of all genera of Lepturini (for some ideas see e.g. Agatha et al. 2021), as some inconsistencies need to be more exactly explained (see the type species of the genus *Leptura* Linné, and the genus *Strangalia* Dejean 1835).

Linnaeus (1746) was at the origin of the use of *Leptura* in systematics. However, it cannot be ruled out that the name *Leptura* could have been used earlier by Johann Leche, Isaac Uddman or De Geer.² Linnaeus, following the rules of zoological nomenclature, defined the genus *Leptura*

² Most likely (and Dejean accepted it) the author of the name *Strangalia* was Audinet-Serville, which was also accepted for a long time in all major systematic works on Cerambycidae, although now the authorship of *Strangalia* has been changed in favor of Dejean. Which is a classic example of how according to the rules of the ICZN we do everything right but devalue the quality of the works of previous authors.

(1758), in which he listed a total of 22 species (including *Leptura 4-fasciata* and *L. attenuata*, (but perhaps surprisingly *L. maculata* Poda 1761 was missing)). The type species of the genus was not determined by Linnaeus. In 1838-40, John Obadiah Westwood published a two-volume book *An Introduction to the Modern Classification of Insects*, which was apparently not very popular among prominent systematic entomologists, although this book included (at the end of the second volume) an appendix, in which Westwood published a synopsis of the genera of British insects and also defined the type species of all the genera he listed. On page 41 of this appendix, among other things, he defined the family Lepturinae Leech (with the type genus *Leptura* Linnaeus). Although on page 369 of this book he mentioned inaccurately the genus *Leptura* with the illustration of *Strangalia elongata* De Geer, in the appendix (on page 41) he defined the genus *Leptura* with the type species *L. quadrifasciata* Linnaeus, and for the genus *Strangalia* Serv., he defined the type species *L. elongata* De Geer. As already mentioned above, the important successors of Westwood (e.g. J. Thomson, Lacordaire) overlooked this type designation, and later inaccurately established new (different) names as type species of both mentioned genera. However, in 1956 the ICZN recognized valid Westwood's type designation for both above-mentioned genera, and so in the context of all the above-mentioned data a problem arises here, which needs to be properly resolved in the context of the history of entomological systematics and the ICZN.

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