

## About *Aenictosoma doenitzi* Schaufuss, 1891

(Coleoptera, Cerambycidae, Scydmaenidae)

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*Aenictosoma doenitzi* Schaufuss, 1891, a beetle included in the Baltic amber and doubtfully described as a cerambycid, has all typical characters of Scydmaenidae, Mastiginae, Clidicini, to which tribe it is herewith transferred. Hypotheses of its palaeological history are outlined.

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### Introduction

Old descriptions of fossil beetles often bring the problem of misconceptions about the ancient Fauna. Some entomologists, diverted by the very quick evolution of Mammalia, also considered the amber Microfauna very different from the current one. Moreover, being unaware of Wegener's theories and the glacial events, they did not research the extant descendants of fossil species in areas where it was more logical to find them. Although eminent coleopterists (Reitter, Wickham, Zang) noticed that most amber Microfauna had close affinities with the recent fauna, some non-specialists described fossil species tending to create absolutely original genera.

*Aenictosoma doenitzi* Schaufuss, 1891 belongs to this category: originally described as an unusual longhorn beetle (its name means "doubtful body"), it has no cerambycid characters and belongs actually to another, quite different family.

### Material and methods

Schaufuss (1891) described *Aenictosoma doenitzi* according to one specimen (n. 87) belonging to Dr. Otto Helm's collection, at that time deposited in the Museum of Danzig (today Gdańsk). Later, Helm himself (1897) and Handlirsch (1907) recorded this species without adding systematic considerations. Korschefsky (1939) provided the drawings of Schaufuss's types that their author did

not publish for unknown reasons by then, but *Aenictosoma doenitzi* is not included. Still Spahr's (1981) and Carpenter's treatises (1992) reported this species as cerambycid.

In Danzig Helm's collection is no longer present today (Szadziewski in litt.). Most eastern German collections were transferred to other German Museums during World War II but in Berlin, Hamburg, Göttingen and Stuttgart this collection has not been found (Bechly, Reich, Neumann, Waitschat in litt.). Even if still present somewhere, the type could be no longer recognisable as such. Nonetheless, its accurate description permits a good identification of this species.

In this paper the geological dates agree with the GeoWhen Database of Physics Department, University of California at Berkeley (USA), according to the 2004 time scale endorsed by the International Commission on Stratigraphy.

### Discussion

Already to Schaufuss *Aenictosoma doenitzi* looked like a very unusual longhorn beetle: he selected for it the name *Aenictosoma* and doubtfully inserted it within Cerambycidae.

Only at the first reading this species should not evidently belong to this family. Its palpi with "apice acuminato" could let one suppose that this is a representative of the subfamily Lamiinae but other characters take off all doubts.

Its antennae "geniculatae ... articulo ... 2°-10°

*elongatis, filiformibus ... longitudine decrescentibus, latitudine vix crescentibus*" (elbowed, antennomeres II-X elongated, progressively shorter and enlarged toward the apex) are never found within Cerambycidae.

Its 5-jointed tarsi with "*primi quattuor decrescentibus, conici ... angulis auticis utrinque acutis*" (tarsomeres I-IV progressively shorter, toothed at each apex) clearly indicate its belonging to a pentamerous family.

Its very long maxillary palpi are very typical: palpomere II long, thin, club-shaped; palpomere III perpendicularly inserted on the II one, slightly shorter than the II one, elongate-conical, enlarged at the apex; palpomere IV shorter and a bit thinner than the II one, acuminate at the apex. They do not remind those of Cerambycidae but those of some terricolous families (Carabidae, Staphylinioidea).

This black species, 7.3 mm long, is also characterised by constricted neck, globose thorax, very small scutellum, deeply striated and convex elytra, club-shaped femora and abdomen with 6 ventrites. This character set does not correspond to any known cerambycid genus.

The general habitus suggested to Schaufuss a feeble resemblance with the genus *Moluris* (Tenebrionidae, Pimeliinae). Nonetheless, for unknown reasons he preferred to insert it among Thomson's "Metaulacnemiten" Cerambycidae (Lamiinae, Dacodionini, Parmenini, etc.).

On the contrary, all characters suggest its likeness to the Scydmaenidae (antlike stone beetles). The not-clubbed antennae indicate relations to the subfamily Mastiginae, while big size, elytral punctuation and elongate palpomere III suggest its relations to the tribe Clidicini.

The lack of the type does not allow to exactly locate the genus; nonetheless, the original description allows to draw some systematic considerations.

The lack of the bisetose cuticular projection on the maxillary palpomere II separates it from *Leptochromus* Motschulsky, 1855. Bigger size, elongate antennomeres II-X and elliptic maxillary palpomere IV separates it from *Palaeoleptochromus* O'Keefe, Pike & Poinar, 1997. The elongate shape of the antennomeres II-X and of the maxillary palpomere III separates it from *Clidicus* Laporte, 1832. Deeply striate elytra and elongate antennomeres II-X separates it from *Papusus* Casey, 1897. The longer scape (as long as the antennomeres II-IV together) separates it from *Palaeomastigus* Schaufuss, 1890.

Therefore, *Aenictosoma doenitzi* is here transferred

to the Scydmaenidae Mastiginae Clidicini, near the genus *Leptochromus*. Nevertheless, other characters are too doubtful or not precise enough to allow further considerations. It is interesting to note that Schaufuss (1890) himself described one *Clidicus* and one *Palaeomastigus*-species from Baltic amber belonging to Helm's collection. Curiously, he did not notice the resemblance with these genera. Actually, Schaufuss himself revealed that he did not know the European *Mastigus*-species (= *Palaeostigus* Newton, 1998) but only the South-African ones. Moreover, *Aenictosoma* is difficultly classifiable in the systematics proposed by Schaufuss (1884, 1890) since he was not aware that some Mastiginae-genera could have an acuminate palpomere IV.

Already Schaufuss (1890) reported the presence of fossil Clidicini in Baltic amber through the description of *Clidicus balticus*. Although current entomologists have not checked if this (lost?) species effectively belongs to this genus, it is probable. According to O'Keefe (2002), *Clidicus* has been displaced from Europe to South-eastern Asia, where it is today widespread, during Late Eocene to Early Oligocene (37-28 Myr BP).

According to this author, the differentiation of American and Eurasian Clidicini occurred during Cretaceous or Tertiary. However, the presence of Clidicini-genera closely related to *Leptochromus* in Europe during Eocene (56-34 Myr BP) seems to be probable.

Recent distribution of Clidicini in America seems to correspond more with a Vancouverian areal than with an Alleghenian one, as one should expect. Nevertheless, the recent areal of *Leptochromus* (Central and northern South America) could be interpreted as a tropical refuge, relict of an Alleghenian palaeotropical areal. In fact, the presence of *L. palaeomexicanus* O'Keefe, 2002 in Mexico during the Late Oligocene-Early Miocene (28-16 Myr BP) suggests that this genus was displaced from Alleghenian before this epoch. Likely, this fact occurred as consequence of the climatic cooling of the Early Oligocene (34-28 Myr BP).

In conclusion, *Aenictosoma doenitzi* was a Clidicini-species that lived in Baltic forests during Eocene. It was closely related to the American *Leptochromus*, a genus diverged from it during Cretaceous or Early Tertiary. As consequence of the Early Oligocene climatic cooling, it was displaced toward south-eastern Asia with *Clidicus* and many other Baltic genera. But, differently from this genus, it became extinct in following epochs.

## Zusammenfassung

*Aenictosoma doenitzi* Schaufuss, 1891, ein baltisches, ursprünglich als Bockkäfer beschriebenes Fossil, weist alle typischen Merkmale der Familie Scydmaenidae, Unterfamilie Mastiginae, Tribus Clidicini auf, wohin es hiermit gestellt wird. Die vermutliche Entstehungs- und Verbreitungsgeschichte dieser fossilen Art wird diskutiert.

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