



<http://dx.doi.org/10.11646/zootaxa.4044.3.7>

<http://zoobank.org/urn:lsid:zoobank.org:pub:1B4E52BC-270F-496B-928B-FCFAF20C9D2D>

On the systematic position of *Electrocrania* Kusnezov, 1941 with the description of a new species from Baltic amber (Lepidoptera: Micropterigidae)

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Abstract

A new fossil species of *Electrocrania* Kusnezov is described, i.e. *Electrocrania michalskii* **sp. nov.** The male moth in Baltic amber is in a sufficiently good condition to allow its assignment to the family Micropterigidae on the basis of four recognized autapomorphies of this family (Kristensen 1998). The unique venation of the specimen places it in the genus *Electrocrania* **stat. rev.** and allows a redescription of that genus that has recently been treated as synonym of *Micropterix* Hübner. It is argued that *Electrocrania* is a distinct genus within Micropterigidae that is not associated with *Micropterix*, but probably can be assigned to the “Northern Hemisphere genera”-lineage of Micropterigidae.

Key words: *Micropterix*, *Electrocrania michalskii* **sp. n.**, fossil, Baltic amber, Eocene

Introduction

Fossil remnants of Lepidoptera are generally rare, due to their delicate morphology, e.g., their comparatively thin integument. Even in amber—the best medium for the preservation of the fine structures of fossils—lepidopteran specimens are only seldom visible in such a way as to exhibit taxonomically important characters (Kristensen 1998, Mey 2011). Therefore, to date, few amber Lepidoptera have been named and only a small portion of the named taxa can be assigned to an extant family or genus with certainty. In the last few years, two new species have been described, which have been proven to belong to the family Micropterigidae, the most basal extant family of Lepidoptera (Kurz & Kurz 2010, Mey 2011).

Amber has been collected along the Baltic coasts and traded across hundreds of kilometers for thousands of years. In recent decades, it has been mined industrially in large amounts, especially from the so-called “Blue Earth” deposit near Kaliningrad, Russia. On-line vendors have made it easy to acquire a great variety of insect inclusions in Baltic amber. Lepidoptera inclusions however, are still rare and the chance to get an inclusion of a micropterigid moth in sufficiently good condition has been estimated to be less than 1:1.000.000 (Kurz 2010). Nevertheless, I have had the good fortune to buy a second piece with a micropterigid inclusion and report on that specimen here. The genus *Electrocrania* was described by Kusnezov (1941) on the basis of a single badly preserved specimen, for the species *E. immensipalpa* Kusnezov. Unfortunately, the sample was destroyed during examination, when the piece of amber cracked after 5 days in toluene (Kusnezov 1941). *Electrocrania* was originally assigned to Eriocraniidae, but Kozlov (1988: 26) synonymized the genus with *Micropterix* Hübner on the basis of an assumed preapical position of R5 in the forewing and consequently transferred it to Micropterigidae. This placement in Micropterigidae however was rejected by Kristensen & Skalski (1998) because of the stated presence of a single mesotibial spur, a unique character within Lepidoptera. The wing venation of the specimen was hardly discernible and allowed different interpretations as shown by Kozlov (1988). It was stated, however, already by Kusnezov (1941: 20) that the type specimen of *Electrocrania* had the Sc and R1 of the forewing unforked, a unique character within Micropterigidae, which is known so far only from an undescribed dwarf-species from New Caledonia (Kristensen 1998). The newly acquired specimen also has the Sc and R1 of the forewing unforked, but can undoubtedly be assigned to Micropterigidae on the basis of four recognized apomorphies. This specimen closely resembles *E. immensipalpa*, but differs from it in the position of several veins of the forewing, especially of R5, which is exactly apical, whereas in all proposed drawings of *E. immensipalpa*, R5 is preapical.