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So small insects, so important record: Fossil Sternorrhyncha in Eocene Baltic amber

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The Sternorrhyncha are hemipteran plant feeders, unique in having their mouthparts (rostrum) located between the bases of fore legs. The species diversity of these insects in Baltic amber is surprising (many unique forms have not survived to recent times) and contradicts the widespread opinion that the Eocene fauna differed only slightly.

The first information about fossil scale insects comes from the mid-19th century with classic works of Berendt, Germar, Koch and Menge. After almost 100 years Ferris (1941) 'rediscovered' fossil scale insects by describing a collection of 20 coccids from Baltic amber. For many years coccid palaeontology has been neglected. Scale insects were unattractive for collectors and coccidologists didn't appreciate the potential of knowledge on scale insect morphology and phylogeny hidden in fossil resins. The real bloom of coccid palaeontology has come with the late Professor Jan Koteja, who revealed a great biodiversity of ancient scale insects. Till now from the Eocene Baltic amber we know 12 families and 29 species of Coccidomorpha.

Concerning aphids, their fossil record in the Eocene Baltic amber comprises 12 families and 101 species so far (Heie & Wegierek 2011). Only one family – Elektraphididae – is extinct, the other groups are still represented in the extant fauna. The first descriptions come from of the mid-19th century, with the milestone in knowledge of the Aphidomorpha from Baltic amber marked with the monograph of Heie (1967). The taxonomy of the Baltic amber aphids seems to be the best elaborated among Sternorrhyncha, but far from complete.

The first species of fossil psyllids was described by Enderlein in 1915. Subsequent descriptions appeared 80 years later, in works of Klimaszewski (1993, 1997) and Drohojowska (2011) and the Palaeogene fauna has been reviewed by Ouvrard et al. (2013). Psylloidea from the Eocene Baltic amber are represented by 8 described species, attributed to extinct genera of the extant family Aphalaridae. Recently about 20 additional specimens of psyllids have been acquired, all of them currently being studied in detail.

There are only two species of whiteflies (Aleyrodomorpha) known from Baltic amber: '*Aleyrodes aculeatus* Menge, 1856 of uncertain systematic position, and *Paernis gregorius* Drohojowska et Szwedo, 2011. Over 80 specimens of Aleyrodidae are under study now and awaiting formal descriptions.