



INTERNATIONAL
CONFERENCE ON
FOSSIL INSECTS,
ARTHROPODS &
AMBER
SANTO DOMINGO 2019

ABSTRACTS

Edited by Paul C. Nascimbene



Amber World Museum



INTERNATIONAL
PALEOENTOMOLOGICAL
SOCIETY

Contents

Abstracts organized alphabetically by author (* denotes the presenter)

IPS President's Address	Pages 3-5
Keynote Presentations	Pages 6-15
Talks	Pages 16-100
Posters	Pages 101-138

Fossil Achilidae (Hemiptera, Fulgoromorpha) more questions than answers?

Alicja M. Brysz & Jacek Szwedo*

Laboratory of Evolutionary Entomology and Museum of Amber Inclusions, Department of Invertebrate Zoology and Parasitology, Faculty of Biology, University of Gdańsk, 59, Wita Stwosza St., PL80-309 Gdańsk, Poland; e-mail: alicja.brysz@biol.ug.edu.pl

Achilidae Stål, 1866 is a planthopper family that is not very large and speciose, but has complex taxonomic subdivisions. It groups over 160 genera (6.6% of the Fulgoromorpha) and about 550 species (3.8% of the Fulgoromorpha). These taxa include extant and a few extinct representatives, and are distributed worldwide, but are more speciose in Northern Hemisphere's tropical and subtropical zones. All Achilidae are obligatory phytophagous, opophagous terrestrial insects; they mainly feed on host plants belonging to the following orders: Arecales, Asparagales, Asterales, Boraginales, Cornales, Cupressales, Ericales, Fabales, Fagales, Hamamelidales, Lamiales, Laurales, Malpighiales, Malvales, Myrtales, Pinales, Poales, Rosales, Sapindales, Vitales. The oldest fossil is known from the Lower Cretaceous (Aptian), and the highest number of extinct taxa are known from Eocene Baltic amber. Recently, a number of Achilidae and relatives were identified among Burmese amber inclusions.

Taxonomic history of Achilidae is complex, dependent on opinions and definitions of the groups in which it has been placed and which are placed within the family. The first fossils which need to be placed in the family were described in 1856 by Germar and Berendt, but were given as representing the genus *Cixius* of the family Cixiidae. During the following 135 years, another fossil from Baltic amber was named (Cockerell 1910), and also one from sediments (Cockerell 1922), then one more Baltic amber inclusion was described by Usinger (1939). Those fossils were treated in a family revision by Fennah (1950). The 1990's brought several discoveries and changes: the first fossil of the oldest Achilidae from the Aptian Crato Formation (*Acixiites* Hamilton, 1990); the extinct tribe Ptychoptilini from Baltic amber (Emeljanov 1990); and new opinions on content, subdivisions and definition of the family (Emeljanov 1991, 1992, Emeljanov & Flecher 1994). The 21st Century brought more fossils: some from the extinct tribe Waghildini (Szwedo 2006); plus more genera and species (Lefebvre et al. 2007, Emeljanov

& Shcherbakov 2009). The content and concepts of the family also changed – the status and placement of Achilixiinae, Bebaiotinae and Ptychoptilini as part of Achilidae were challenged. Discoveries of fossils in mid-Cretaceous amber from Myanmar brought more questions and challenges. Several fossils which could be placed in recent tribal classification were found, but changed the view on times and sequence of separation of tribes. Other fossils cannot be placed in known tribes and could represent families related to Achilidae. Cenozoic fossil resins – the Oise, Baltic and Dominican ambers – brought new taxa and new challenges for revisionary and taxonomic studies. Achilidae belongs to one of the oldest lineages among Fulgoroidea, and the diversification and dispersion of the group, its relationships and evolutionary scenarios, all seem to be pieces of a circuitous puzzle that needs to be assembled.



TH

INTERNATIONAL
CONFERENCE ON
FOSSIL INSECTS,
ARTHROPODS &
AMBER

SANTO DOMINGO 2019



Amber World Museum



INTERNATIONAL
PALEOENTOMOLOGICAL
SOCIETY