

25TH ANNIVERSARY OF
MUSEUM OF AMBER INCLUSIONS
UNIVERSITY OF GDAŃSK



**Fossil Record
in Resins and Sediments**

BOOK OF ABSTRACTS

UNIVERSITY OF GDAŃSK
23-26 MAY, 2023



FossilRRS Conference



**Fossil Record in Resins
and Sediments**

**25th Anniversary
of Museum of Amber Inclusions
University of Gdańsk**

BOOK OF ABSTRACTS

**University of Gdańsk, Faculty of Biology
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**Organizer:**

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, PL80-308 Gdańsk, Poland

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Jacek Szwedo – University of Gdańsk

Karolina Cierocka – University of Gdańsk

Błażej Bojarski – University of Gdańsk

Editors: Jacek Szwedo, Błażej Bojarski, Karolina Cierocka, Elżbieta Sontag

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WELCOME

The Museum of Amber Inclusions University of Gdańsk is pleased to invite you to celebrate its 25th anniversary and attend the conference *Fossil Record in Resins and Sediments*, which will be held in Gdańsk, Poland, from 23rd-26th May 2023.

Twenty-five years ago, the natural history collection of amber and inclusions, started from modest beginnings – scientific collection of the Diptera inclusions of Professor Ryszard Szadziewski. What revolutionised the collection was the donation of 50 kg of raw Baltic amber, which completely changed the view on amber, its inclusions and its amber taphocoenosis. The uniqueness of the scientific collection of the Museum of Amber Inclusions is in its positioning within the structures of the University. We are not a collection of specimens, musealia that cannot be touched, but a collection where amber is the basis of scientific discovery and research. Twenty-five years ago, we were at the point when interest in inclusions was developing, and the amber market was growing, and we were present at the Amberif Fair, among the amber workers and collectors, at the centre of the amber (and inclusions) fever. The scientific backbone of the Museum is its collection, research facilities and friends among scientists. The flesh is a collaboration with amber workers, collectors and enthusiasts of amber and inclusions. The blood is the circulation of information, data, ideas, and opinions.

New technologies allow us to look more and more closely into worlds hidden millions of years ago in the solidifying drops of resins. It is the 21st century and we are discovering new pages written in the books of amber, its inclusions and its deposits, but also in the stone books of palaeontology. We will not be able to answer more and more questions on our own – cooperation, exchange of information and experience of geologists, palaeontologists and biologists is needed.

The Conference, which is being held at the University of Gdańsk and supported by the Ministry of Education and Science, will offer an outstanding scientific programme thanks to the participants. It is an opportunity to share the current state of knowledge, new working hypotheses, to debate new findings and new tools, to discuss and find new interpretations of existing data and opinions.

It is with great pleasure that we invite all of you in the spring of 2023 to this Conference, we encourage scientific openness, warm discussions, collaboration, and a shared reading of palaeobiology in fossil resins and sediments. We trust that your stay in Gdańsk – the World Capital of Amber and Museum of Amber Inclusions will be a memorable opportunity for both professional and personal satisfaction.

HONORARY PATRONAGE



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Fossil Record in Resins and Sediments

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ABSTRACTS



CROUCHING DISPARITY, HIDDEN DIVERSITY – WHITEFLIES IN THE EOCENE RESINS OF EUROPE

J. Drohojowska^{1,*} & J. Szewo²

¹*Institute of Biology, Biotechnology and Environmental Protection, Faculty of Natural Sciences
University of Silesia, Katowice, Poland; ☎ 0000-0002-7668-2242*

²*Department of Invertebrate Zoology and Parasitology, Faculty of Biology,
University of Gdańsk, Gdańsk, Poland; ☎ 0000-0002-2796-9538*

**jowita.drohojowska@us.edu.pl*

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Whiteflies (Hemiptera: Sternorrhyncha: Aleyrodidae) are small insects, most species with a wingspan of less than 3 mm and a body length of 1 mm to 2 mm, but "giant whitefly" species exist, some of which may exceed 5 mm in size. Whiteflies name is due to the presence of powdery secretion preened over the bodies and wings of the adults of almost all species. These insects as larvae, puparia and adults typically feed on the undersides of plant leaves. Fossil record of Aleyrodidae reaches back to the Late Jurassic. Most of fossils known come from resins, including the first fossil described by Menge in 1856, under the name '*Aleyrodes aculeatus*' from the Eocene Baltic amber¹.

Family Aleyrodidae is usually divided into four subfamilies, extinct Bernaeinae, Aleyrodinae and Aleurodicinae, and the status of Udamoselinae is still disputable. Current classification of Aleyrodidae is mainly based on puparia, and disparity of imagines is very weakly recognized². Contrary, fossil Aleyrodidae are mostly preserved as imagines, while fossilized puparia are very rare. Imagines of Aleyrodidae have well-developed antennae, which in most species in this family are seven-segmented; two ocelli, placed at the anterior margins of the compound eyes; compound eyes themselves are rather remarkable in recent taxa: many have a distinct constriction between the upper and lower halves, and in some species there is a complete separation; both sexes have functional mouthparts; two pairs of membranous, functional wings; the hind wings are neither much reduced, nor modified, but venation is scarce on both pairs; legs well developed and fairly long, but gracile; tarsi two segmented, tarsomeres subequal; the pretarsus composed of paired claws, with an empodium between³. One of unexplored area of morphological disparity of whiteflies is structure of thorax, which appeared to bear numerous useful taxonomically features⁴.

The Eocene fossil resins of Europe comprise the Lowermost Eocene amber from Oise (Paris Basin, France) and younger resins collectively named 'Baltic amber', aged variously (Lutetian to Priabonian). The broad concept of 'Baltic amber' in respect to inclusions should be abandoned, as deposits were alimented from geographically independent sources. Current knowledge of Aleyrodidae from the European Eocene fossil resins counts 5 species from Amber of Oise (Aleurodicinae), 4 species from Gulf of Gdańsk amber (Aleurodinae and Aleyrodicinae), and one species from amber from Rovno (Aleurodicinae)¹. In the material now at our disposal much more specimens are available, including first records of whiteflies from other localities in Europe. There are 19 inclusions in amber of Oise under elaboration. New material from Gulf of Gdańsk covers 114 specimens of Aleyrodinae and Aleurodicinae, partly elaborated, with at least 12 new taxa.

Inclusions from amber from Rovno covers 35 specimens under study now. There are two inclusions of Aleyrodidae from Bitterfeld amber, and another, new species is identified in amber from Lusatia. Amber collected in Denmark comprises 11 specimens representing a new genus with 7 species. These figures clearly indicate that taxonomic diversity and morphological disparity of whiteflies preserved in European resins is very high.

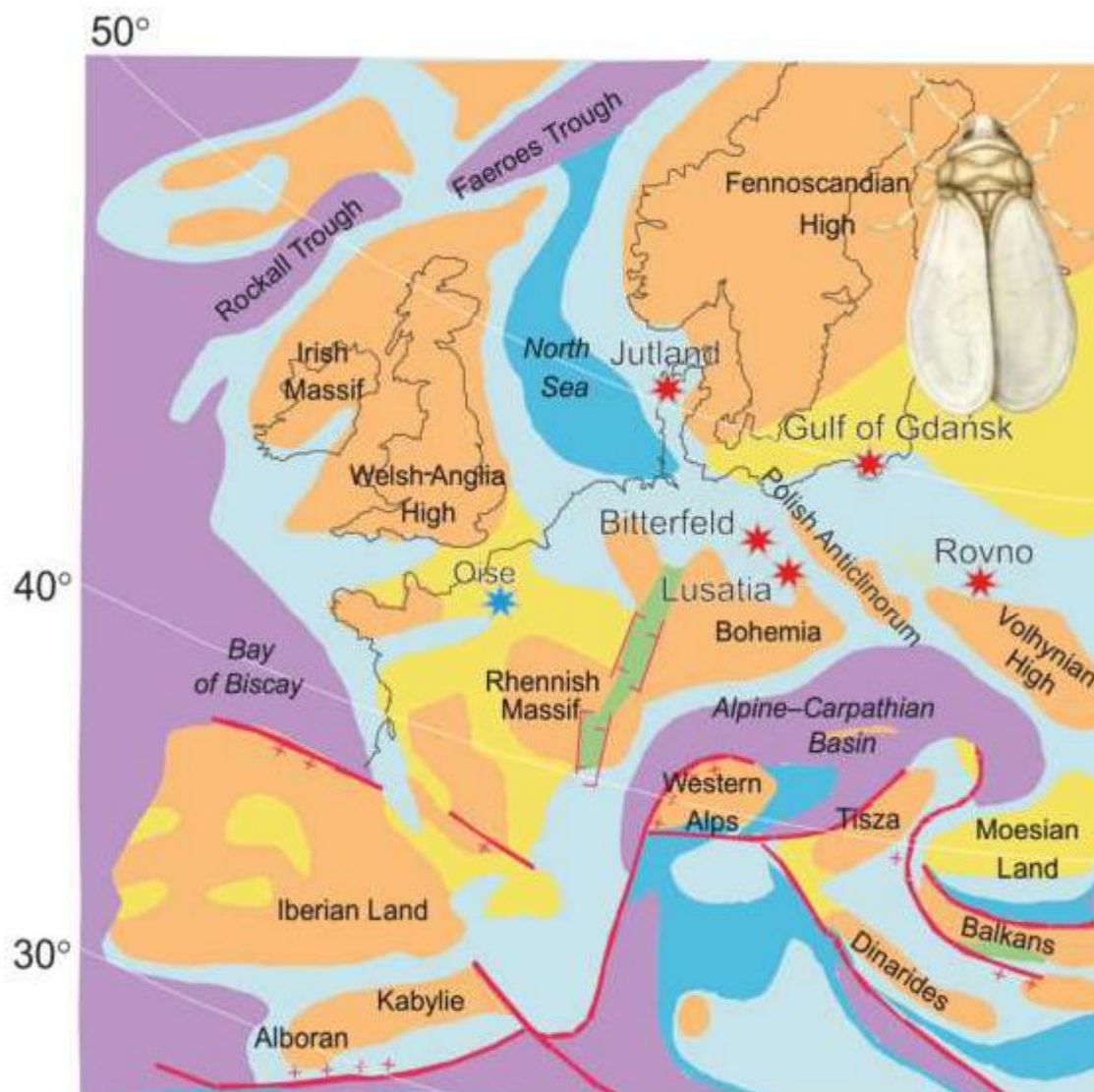
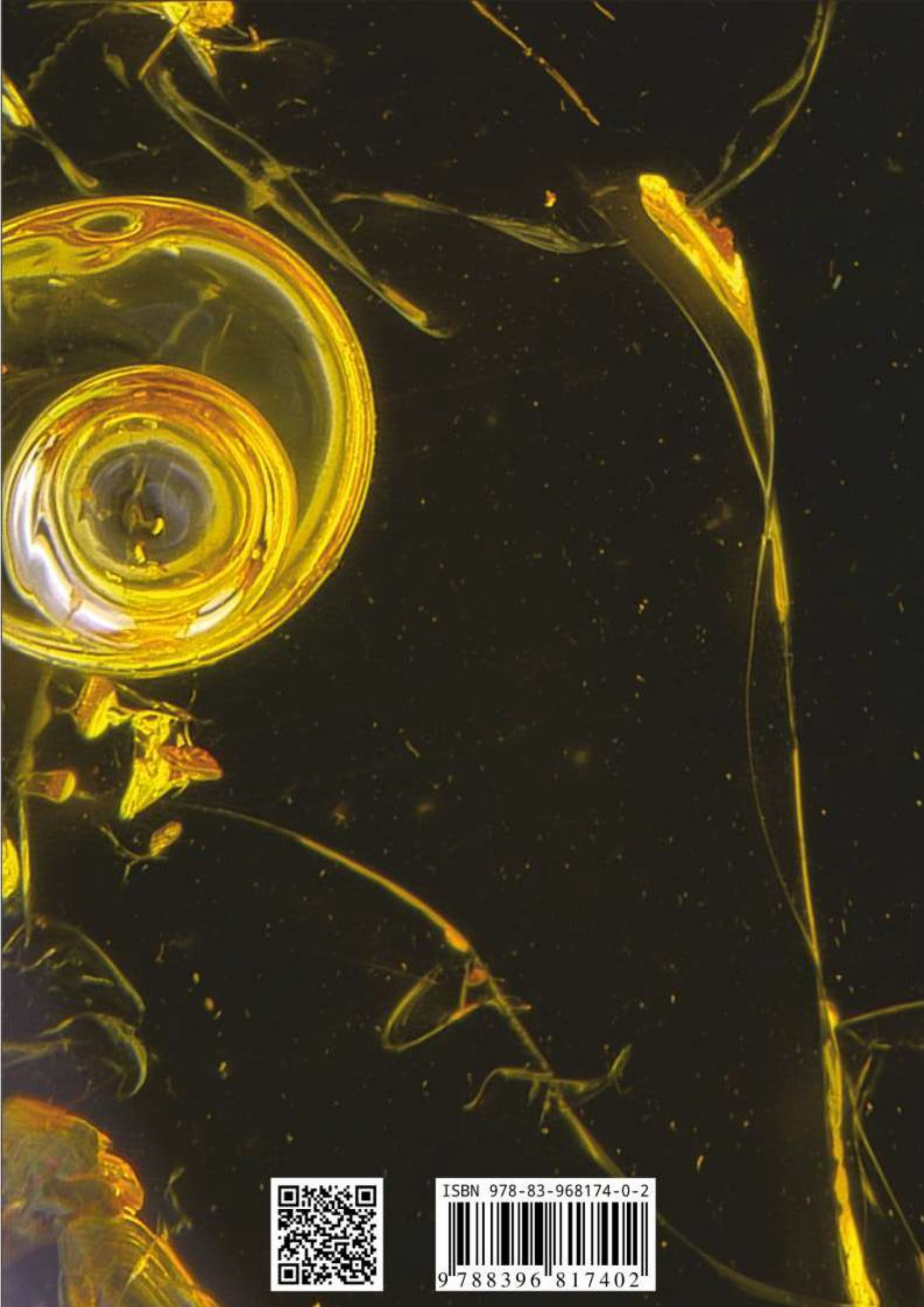


Fig. 1. Distribution of the Eocene fossil resins containing inclusions of Aleyrodidae.

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