

On the Taxonomic Position of *Issus reticulatus* Bervoets, 1910 (Hemiptera: Fulgoroidea: Issidae) from Baltic Amber¹

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Abstract—A new genus *Bolbossus* gen. n. is erected in the tribe Parahiraciini for *Issus bervoetsi* Gnezdilov et Bourgoïn, nom. n. pro *Issus reticulatus* Bervoets, 1910 (nom. praeocc., non *Issus reticulatus* Herrich-Schäffer, 1835) described from the Baltic amber of Kaliningrad Province in Russia. The genus *Issites* Haupt, 1956 is assigned to the nominotypical subtribe of the tribe Issini Spinola. *Bolbossus bervoetsi* (Gnezdilov et Bourgoïn) is the first species of the Oriental tribe of the family Issidae discovered in Europe. This finding implies the dispersal of taxa from the Oriental Region to the Western Palaearctic during the Eocene. Other fossil Issidae are briefly discussed.

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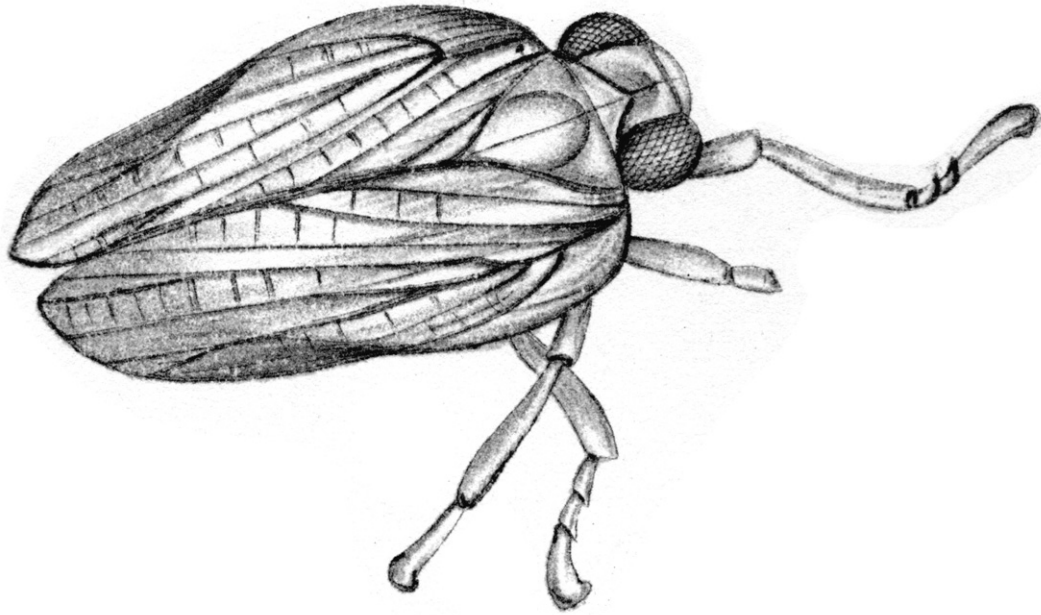
The first fossil representative of the family Issidae, *Issus reticulatus*, was described early in the XX century by Bervoets (1910) from the Baltic amber of Kaliningrad Peninsula (Samland), based on the material of Prof. R. Klebs' collection. R. Bervoets dated this material to the Oligocene, but Szwedó and co-authors (2004) later assigned the finding to the Eocene and also noted the conventional nature of the placement of *Issus reticulatus* in the genus *Issus*. The position of this taxon has remained uncertain until now.

One more genus and species of Issidae, *Issites glaber* Haupt, 1956, were described 50 years later by Haupt (1956) from the Middle Eocene (Lutetium) of Germany, based on an impression of the forewing. By the type of venation (R 2 M 2 CuA 2) (Haupt, 1956, fig. 8) *Issites* may be considered close to the genera *Issus* Fabricius, 1803 and *Latissus* Dlabola, 1974 and provisionally placed in the subtribe Issina Spinola. It probably belongs to the group of genera *Issus sensu* Gnezdilov (Gnezdilov, 2016a), which diverged basally on the tree of the Western Palaearctic taxa and was one of the first groups to colonize the proto-Mediterranean communities of the Ancient Mediterranean in the Eocene (Gnezdilov, 2016b).

The scanty later findings of fossil planthoppers from the subtribe Thioniina Melichar of the tribe Issini, dated to the Early and Middle Miocene, are known from the Mexican and Dominican ambers that include representatives of the recent Neotropical genera (Wu, 1997; Poinar and Poinar, 1999; Grimaldi and Engel, 2005; Stroiński and Szwedó, 2008), in particular, the genus *Thionia* Stål represented by *Th. douglundbergi* Stroiński et Szwedó, 2008.

The description and drawing published by Bervoets (1910, Pl. 1, fig. 1) leave no doubt that *Issus reticulatus* belongs to the family Issidae; however, its placement in the genus *Issus* Fabricius should be regarded as a mistake. The species clearly differs from representatives of the genera *Issus* and *Latissus* in the straight anterior margin of the coryphe (angularly protruding in *Issus* and *Latissus*), the convex metope (flat in *Issus* and *Latissus*), and very narrow paradiscal fields of the pronotum behind the eyes (relatively wide in *Issus* and *Latissus*) (Gnezdilov et al., 2014, pls. 12, 13). Based on the embossed longitudinal veins and the convex metope, this species may be considered close to representatives of the tribe Parahiraciini Cheng et Yang, in particular the genera *Bardunia* Stål, 1863, *Tetricodes* Fennah, 1956, and *Paratetricodes* Zhang et Chen, 2010. It should also be noted that the bifurcate anterior cubitus present in *I. reticulatus* is more typical of the Oriental genera than of the Palae-

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Bolbossus bervoetsi (Gnezdilov et Bourgoïn), total view (after Bervoets, 1910).

arctic ones (Gnezdilov, 2016b). On this basis, *Issus reticulatus* Bervoets, 1910 should be placed in a separate new genus within the tribe Parahiraciini.

Since the name *Issus reticulatus* Bervoets, 1910 is the primary homonym of *Issus reticulatus* Herrich-Schäffer, 1835 (Herrich-Schäffer, 1835), we give this taxon a new name *Issus bervoetsi*, as a tribute to R. Bervoets.

The finding of a representative of the Oriental tribe Parahiraciini in the Baltic amber in the recent territory of Europe partly supports Gnezdilov's earlier hypothesis that Issidae started to disperse from the Oriental Region westwards, to the Palaearctic, and north-eastwards, via the Beringian isthmus to America, as early as the Eocene (Gnezdilov, 2016b, 2016c). The Beringian pathway of their migration from Asia is indirectly marked by the presence of *Rhombissus harimensis* (Matsumura, 1913), also belonging to the tribe Parahiraciini, in the recent fauna of Japan (Honshu, Kyushu) (Gnezdilov and Hayashi, 2016).

Family **ISSIDAE** Spinola

Subfamily **Issinae** Spinola

Tribe Parahiraciini Cheng et Yang

Genus ***Bolbossus*** Gnezdilov et Bourgoïn, gen. n.

Type species: *Issus bervoetsi* Gnezdilov et Bourgoïn, nom. n. pro *Issus reticulatus* Bervoets, 1910,

nom. praeocc., non *Issus reticulatus* Herrich-Schäffer, 1835.

Metope smooth, convex (see figure), with median carina, distinctly dilated above clypeus. Coryphe transverse, its anterior margin straight, its posterior margin concave forming obtuse angle. Ocelli absent. Paradiscal fields of pronotum behind eyes very narrow. Mesonotum with distinct lateral and median carinae, lateral carinae forming an arc. Forewings noticeably longer than abdomen, dilated in basal third, with embossed longitudinal veins and numerous transverse veins between them; anterior cubitus bifurcate (CuA 2). Hind tibia with 2 lateral spines in distal half.

Bolbossus bervoetsi (Gnezdilov et Bourgoïn),
comb. n.

Issus bervoetsi Gnezdilov et Bourgoïn, nom. n. pro *Issus reticulatus* Bervoets, 1910 : 125.

According to J. Szwedo (pers. comm.), the location of the type material of *I. reticulatus* is unknown.

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