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***Amberobyrsa brandti* gen.n., sp. n. from Dominican amber (Hemiptera, Heteroptera, Tingidae)**

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A b s t r a c t

Although the Miocene Dominican amber is very rich in insect inclusions, so far only five species belonging to three extant genera (*Eocader*, *Leptopharsa*, *Stephanitis*) were described. A well preserved inclusion contains a Tingid-taxon which superficially resembles the Neotropical genus *Planibyrsa* DRAKE & POOR, 1937; however, it differs in shape and essential structures, and is described and illustrated below as *Amberobyrsa brandti* gen.n., sp. n.

Key words: Heteroptera, Tingidae, *Amberobyrsa* new genus, new species, Dominican amber, Miocene

Z u s a m m e n f a s s u n g

Dominikanischer Bernstein ist sehr reichhaltig an besonders gut erhaltenen Insekteneinschlüssen. Doch von der Familie Tingidae (Netzwanzen) sind bisher nur 5 Arten, welche drei rezenten neotropischen Gattungen zugeordnet wurden (*Eocader*, *Leptopharsa*, *Stephanitis*), bekanntgeworden. Nun liegt eine Inkluse mit einer weiteren Tingide vor, welche habituell der Neotropischen Gattung *Planibyrsa* DRAKE & POOR, 1937, nahe steht, sich jedoch durch wesentliche Merkmale unterscheidet und nachstehend als *Amberobyrsa brandti* gen.n., sp. n. beschrieben und abgebildet wird.

I n t r o d u c t i o n

Amber from Dominican Island is known to be very rich in perfectly preserved insect inclusions, and to date more than 400 insect species have been described. The heteropteran family Tingidae is so far represented by five species assigned to three extant genera (*Eocader* -1 sp., *Leptopharsa* - 3 spp., *Stephanitis* - 1 sp.) (GOLUB & POPOV 2002, ARILLO & ORTUÑO, 2005).

The age of Dominican amber is still controversial; however, it seems now to be agreed that it is Lower- to Middle Miocene age, that is 17 – 20 million years (GRIMALDI 1994, ITURRALDE-VINET & MAC PHEE 1996, GRIMALDI & ENGEL 2005).

Therefore it is somewhat unexpected that four of the five fossil tingid species are placed into the species rich and widespread genera *Leptopharsa* and *Stephanitis* and one into the neotropical genus *Eocader* containing only two species from Cuba and Brazil, respectively.

Now an inclusion with a small tingid could be studied, which shows characters different from members of the habitually closely related extant neotropical genus *Planibyrsa*

DRAKE & POOR, 1937, and as it does not fit to any of extant genera it is described below as *Amberobyrsa brandti* gen.n., sp. n.

Measurements were taken with a micrometer eyepiece, 40 units = 1 mm unless otherwise stated.

Amberobyrsa gen.n. (photo 1, fig. 1)

Type species: *Amberobyrsa brandti* sp.n.

D i a g n o s i s.

Small species with broad rounded anteriorly extending paranota with large hyaline areolae or cells reaching basal half of antennal segment II. Antennae slender, beset with long setae. Pronotum flat with posterior triangular projection reaching $\frac{1}{2}$ of abdomen; surface with small cells. Hemelytra laterally and posteriorly expanded also with large hyaline cells as the paranota; the part covering the abdomen is only slightly convex and its cells are small and dense as on pronotum; lateral margins of hemelytra and paranota without spines.

D e r i v a t i o n o m i n i s. Gender feminine, referring to its amber origin and “byrsa” nondescriptive to indicate its similarity to several tingid genera.

D i s c u s s i o n

The general outline of the new genus is at first glance similar to the extant Neotropical genus *Planibyrsa* DRAKE & POOR, 1937, containing at present 4 species, all recorded from mainland South America. This genus has been separated from *Leptobyrsa* STÅL, 1873, to which the type species of *Planibyrsa*, *P. splendida* (DRAKE, 1922), and a second species *P. elegantula* (DRAKE, 1922) were originally assigned. The main difference between these two genera refers to the distinct pronotal hood or vesicula of *Leptobyrsa*, which is lacking and not developed in *Planibyrsa*.

Amberobyrsa gen.n. differs from *Planibyrsa* by the narrower but anteriorly much longer paranota, by hemelytra not projecting anteriorly, and most strikingly by the presence of only small cells on the hemelytral part covering the abdomen which corresponds to the sutural, discoidal, and subcostal areas. In *Planibyrsa* the whole hemelytra consist of large polygonal cells or areolae which are of the same size and structure, even on the part covering the abdomen. Furthermore the lateral margins of the hyaline expansions of paranota and hemelytra are without “long slender spines” as in *Planibyrsa* species (fig.2,3,4)

The new genus seems to fit into the subfamily Tinginae tribe Tingini. However, the second tarsal segment is distinctly longer and broader than segment I and of ovate shape in lateral view. This character is representative for the tribe Litadeini (FROESCHNER, 2001). Because it cannot be excluded that the tarsal segments and the flattened legs are artefacts caused by a natural process (or cleared by heating?), it cannot be decided to which tribe this taxon can be assigned.

Amberobyrsa brandti sp.n. (photo 1, fig.1)

Holotype female. Inclusion in Dominican amber (most probably from La Toca). The piece of amber is of light yellowish colour and transparent, its size about 13 x 8 mm, 5 mm thick. Deposited in the collection of the author.



Photo 1. *Amberobyrsa brandti* gen.n., sp.n., dorsal view of the inclusion.

D e s c r i p t i o n .

General outline elongate ovate, hemelytra laterally expanded about as long as wide; paranota about twice as long as wide; surface of paranota and costal area of hemelytra flat and reticulate with large hyaline cells.

H e a d . Longer than wide (11/9) without tubercles or spines; juga not reaching rounded apex of clypeus which bears a spine-like median projection; antenniferous lobes cup-like with acute apices; antennae slender, 4.27 x as long as width of head (38.5/9) with distinct

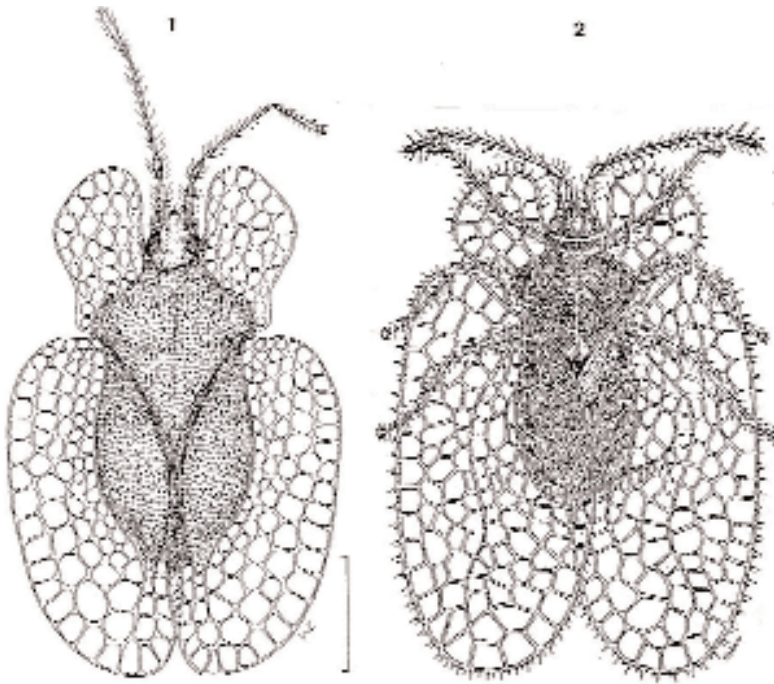


Fig. 1-2. 1 – *Amberobyrssa brandti* gen.n., sp.n., holotype reconstructed; 2 – *Planibyrssa splendida* (Drake), dorsal view (from DRAKE 1922). Scale: fig.1- 0.5mm; fig.2- 1 mm.

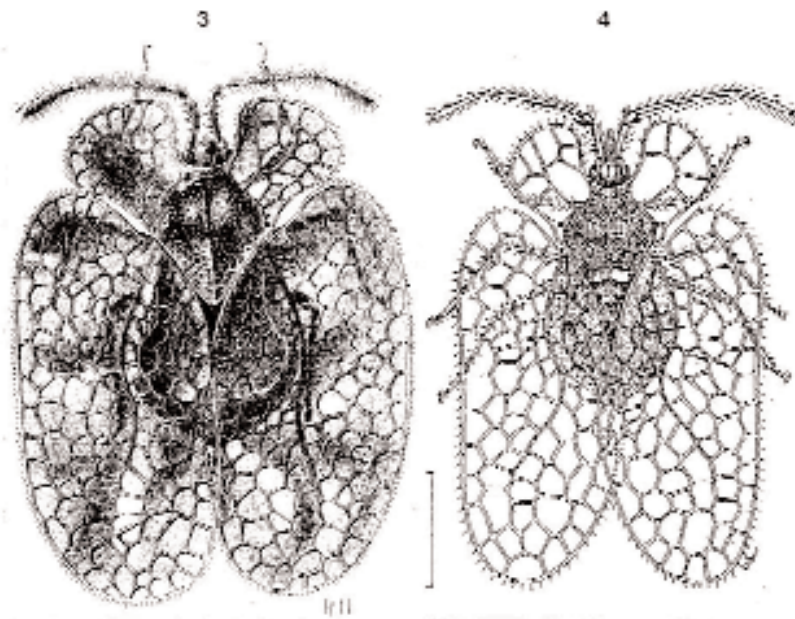


Fig. 3-4. 3 – *Planibyrssa montei* Drake & Hambleton, dorsal view (from DRAKE & RUHOFF 1965); 4 – *Planibyrssa elegantula* (Drake) dorsal view (from DRAKE 1922). Scale: fig.3,4 – 1mm.

long setae, segment I thickest, II slightly thinner and shortest, III thinnest and longest, IV thin and slightly enlarging apically; length of antennal segments I:II:III:IV = 7:4.5:16:11; eyes large and not protruding laterally; rostrum reaching to coxae of anterior legs.

P r o t u m. Lateral margins rounded at humeri then strongly converging anteriorly; anterior margin deeply concave, posterior triangular projection reaching $\frac{1}{2}$ of abdomen; surface nearly flat, with small round cells, some larger ones are transversally arranged on anterior $\frac{1}{3}$; a thin median carina extends from these larger cells to $\frac{2}{3}$ of the triangular posterior projection; paranota large and wing-shaped reaching $\frac{1}{2}$ of antennal segment II, basally with two, in total with 34 large subrounded transparent areolae (on both sides); lateral margins widely rounded and without setae or spines; a longitudinal row of 3-4 smaller cells is present on anterior inner margin of paranota.

H e m e l y t r a. As long as wide together (59/59), the two wings slightly overlapping on posterior half; lateral margin evenly rounded, anteriorly not produced over posterolateral margin of pronotum; laterally expanded costal area wider than fused discoidal and subcostal areas, with rows of five large transparent cells, their size increasing from inner to lateral margin. The part covering the body is only slightly convex and consists of a narrow sutural and a larger fused discoidal and subcostal area, all with small puncture like cells; the sutural area has 2-3 cells adjacent to the apex of pronotal projection and enlarges posteriorly to 3-4 cells, broadening behind the abdomen there showing rows of two or one larger hyaline cells like those of the costal area.

A uniseriate hypocostal lamina is present on ventral side, following the contour of the abdomen and sinuately projecting over its apex.

L e g s. Thin and slender, femora moderately swollen, tarsi bisegmented, segment II much longer than the preceding one and of ovate shape in lateral view. The enlarged segment II – a character of the tribe Litadeini – needs to be verified, see comments at chapter “discussion”.

M e a s u r e m e n t s. Length from apex of clypeus to posterior end of hemelytra 2.05 mm; length of body (clypeus to apex of abdomen) 1.55 mm; length of antennae 0.86 mm; maximum width / length of paranota 0.4/0.7 mm; max. width across paranota 1.05 mm; width across costal areas 1.475 mm; width of hyaline costal area of each wing 0.387 mm.

E t y m o l o g y. This species is dedicated to Volker Brandt, who was very helpful to find and to provide for study this precious inclusion.

A c k n o w l e d g m e n t s

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R e f e r e n c e s

ARILLO A. & V.M. ORTUÑO (2005): Catalogue of fossil insect species described from Dominican amber (Miocene). – Stuttgarter Beitr. Naturk. Serie B, Nr. 352: 1-68.

- DRAKE, C.J. (1922): Neotropical Tingitidae with descriptions of three new genera and thirty-two new species and varieties (Hemiptera). – Mem. Carnegie Mus., **9** (2): 351-378.
- DRAKE C.J. & M.E.Poor (1937): Concerning the genus *Leptobyrsa* Stål (Hemiptera). – Proc. Biol. Soc. Washington, **50**: 163-166.
- DRAKE C.J. & F.A. RUHOFF (1965): Lacebugs of the World: A Catalog (Hemiptera: Tingidae). – United States National Museum Bulletin, **243**: i-viii + 634 pp, 56 pl.
- FROESCHNER R.C. (2001): Lace Bug Genera of the World, II: Subfamily Tinginae: Tribes Litadeini and Ypsotingini (Heteroptera: Tingidae). – Smithsonian Contributions to Zoology, **611**: iii + 28 pp.
- GOLUB V.B. & Y.A. POPOV (2002): A new cantacaderid lace bug from Baltic amber and a key to fossil Cenozoic species of the family Tingidae (Insecta: Heteroptera). – Mitt. Geol.-Paläont. Inst. Univ. Hamburg, **86**: 245-252.
- GRIMALDI D.A. (1994): The age of Dominican amber (pp 203-217). In: Anderson K.B. & J.C. Crelling (eds.), Amber, Resinite and Fossil Resins. – American Chemical Society, Washington D.C., xvii + 297 pp.
- GRIMALDI D.A. & M.S.ENGEL (2005): Evolution of the Insects. – Cambridge University Press, xv + 755 pp.
- ITURRALDE – VINET M.A. & R.D.E. MAC PHEE (1996): Age and paleogeographical origin of Dominican amber. – Science **273**: 1850-1852.
- STÅL C. (1873): Enumeratio Hemipterorum, vol. 3. – Kongl. Svenska Vet.- Akad. Handl., **11**(2): 1-163.

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