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REDESCRIPTION OF *TRITOPHANIA PATRUELIS* JACOBI, 1938 FROM EOCENE BALTIC AMBER (HEMIPTERA: NOGODINIDAE)

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Abstract. — *Tritophania patruelis* Jacobi, 1938 from the Eocene Baltic amber is redescribed on the basis of four specimens from different collections. Its family, subfamily and tribal range is discussed. *T. patruelis*, according to its characters, is placed in Nogodinidae: Bladinini, Gaetulina *sensu* Fennah (1978).

Key words. — Hemiptera, Fulgoroidea, Nogodinidae, *Tritophania patruelis*, redescription, Eocene Baltic amber.

INTRODUCTION

Planthoppers (mainly Cixiidae and Achilidae) are quite frequent in Eocene Baltic amber inclusions. Unfortunately reports on fossil species from this source are very scarce and most of them originate from the last half of the 19th century (Keilbach 1982, Spahr 1988).

Fossil Nogodinidae have been known from a single species from Middle Eocene deposits of Germany. It is *Eobladina antiqua* described by Haupt in 1956.

Tritophania patruelis Jacobi is the second representative of the family in fossil record, and the first originating from fossil resins. It has been described in 1938 by Arnold Jacobi from the Klebs collection (former Königsberg in East Prussia, now Kaliningrad in Russia) of Eocene Baltic amber inclusions as belonging to the family Ricaniidae. As a representative of this family it was mentioned in the catalogue of Metcalf and Wade (1966) and in Kielbach's (1982) bibliography. Also Bekker-Midgisova (1962) and Kulicka and Szwedo (1999) listed it as a member of Ricaniidae.

Recent findings of 4 specimens from different collections allowed us to discover that *Tritophania patruelis* Jacobi, 1938 belongs to the family Nogodinidae, tribe Bladinini: Gaetulina *sensu* Fennah (1978).

MATERIAL

The type specimen according to original description: Sammlung der Preußische Geologischen Landesanstalt: Klebssche Sammlung Nr. 141, 1 ♂, was stored in the Königsberg collection. Unfortunately, the type is apparently lost. The only figures (photograph and drawings) of holotype are in papers of Jacobi (1937a, 1937b, 1938).

Material examined. Male [?] Natural History Museum, London, In. 18886; specimen well preserved, microscopic slide, covered with Canada balsam, labelled by hand (scraped) on the amber surface [XIII 13 277], hand written labels on the upper side of the slide: [white, black emarginated label: №13277, Museum Stanzen & Becker], [454, Dr. R. Klebs., on the right side 92–74], and on the bottom [white label, emarginated in blue, with printed three blue lines and Brit. Mus. (N.H.) G.D. on the bottom; hand-written: Rhynchota / Amber / East Prussia / Transf. from Zool. / Dept., 15 Dec. 1904 / *[In. 18886]* 92.74], [white label with printed on the bottom B.M. Palaeont. Dept.; O. Hemiptera / Super F. Fulgoroidea / *Tritophania* / *patruelis* Jac. / det. A.J. Ross '93; the latter three lines in pencil]. Female, AUF 03JS, ex coll. Jacek Serafin, Kasparus, Poland; specimen well preserved. Female, AUF 04JS, ex coll. Jacek Serafin, Kasparus, Poland; quite well preserved, the ventral side veiled by a milky veil, the anterior part of body in dorsal view poorly visible because of internal fractures of amber. Both specimens will be deposited in the collection of the Natural History Museum of the Institute of Systematics and Evolution of Animals, Cracow, Poland. Male [?], specimen No. 78, ex coll. Carsten Gröhn, Glinde, Germany. Specimen will be deposited in the collection of Museum des Geologisch-Paläontologisch Institut der Universität Hamburg.

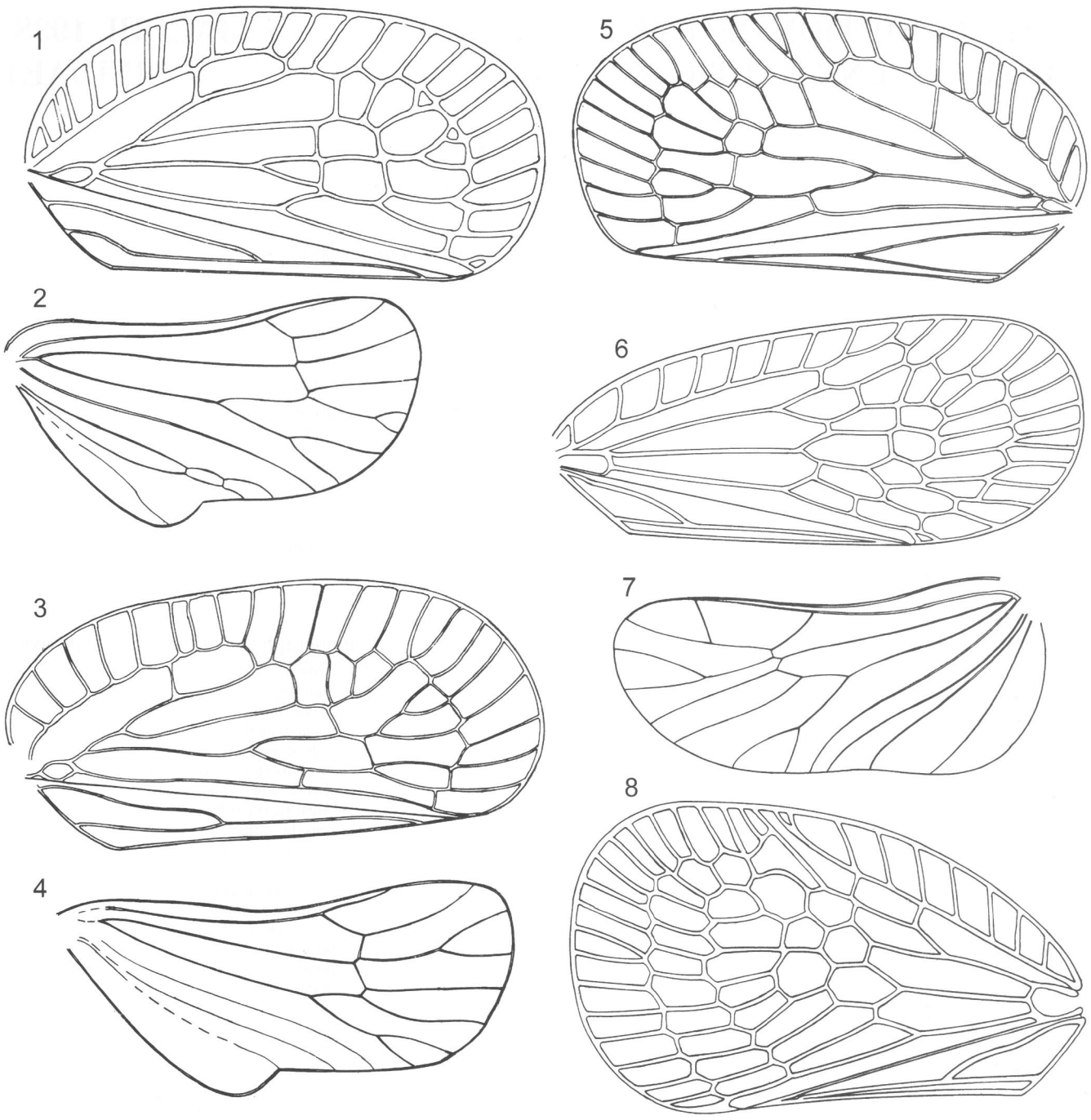
Another specimen (not examined) presented in Weitschat and Wichard's 1998 (Table 45, Fig. a) atlas of plants and animals in Baltic amber inclusions without doubt represents *Tritophania patruelis*.

REDESCRIPTION

Tritophania Jacobi, 1938

Diagnosis. Middle keel of frons not very distinct, not continuing on clypeus. Vertex and pronotum distinctly wider than long, anterior margin almost straight, without middle carina. Transverse veinlet sc–r distad from half of Sc cell length. Hind tibia with three lateral spines.

Description. see description of the species.



Figures 1–8. Wings. 1–5. *Tritophania patruelis* Jacobi: (1) right fore wing; specimen from NHM In. 18886; (2) right hind wing , specimen from NHM In. 18886; (3) right fore wing; ex. coll. J. Serafin, AUF 03JS; (4) right hind wing; ex coll. J. Serafin, AUF 03JS; (5) left fore wing, redrawn after photograph in Weitschat and Wichard 1998. 6. Right fore wing of *Pucina pellucida* Guérin, redrawn after Melichar (1898). 7. Left hind wing of *Pucina pellucida* Guérin, redrawn after Melichar (1898). 8 Left fore wing of *Gaetulia fulva* Melichar, redrawn after Melichar (1898)

Tritophania patruelis Jacobi, 1938

Diagnosis. General colour (in amber) greyish brown to dark brown, eyes reddish. Tegmina smoked, yellowish with dark brown veins and veinlets. Wings hyaline with brown veins.

Description. Vertex about 3 times wider than long in middle line, without median carina. Anterior margin almost straight in middle, lateral margins straight and parallel, posterior margin almost straight.

Frons measured along lateral margin about as long as wide, about 1.4 times as wide as long in the middle line, with

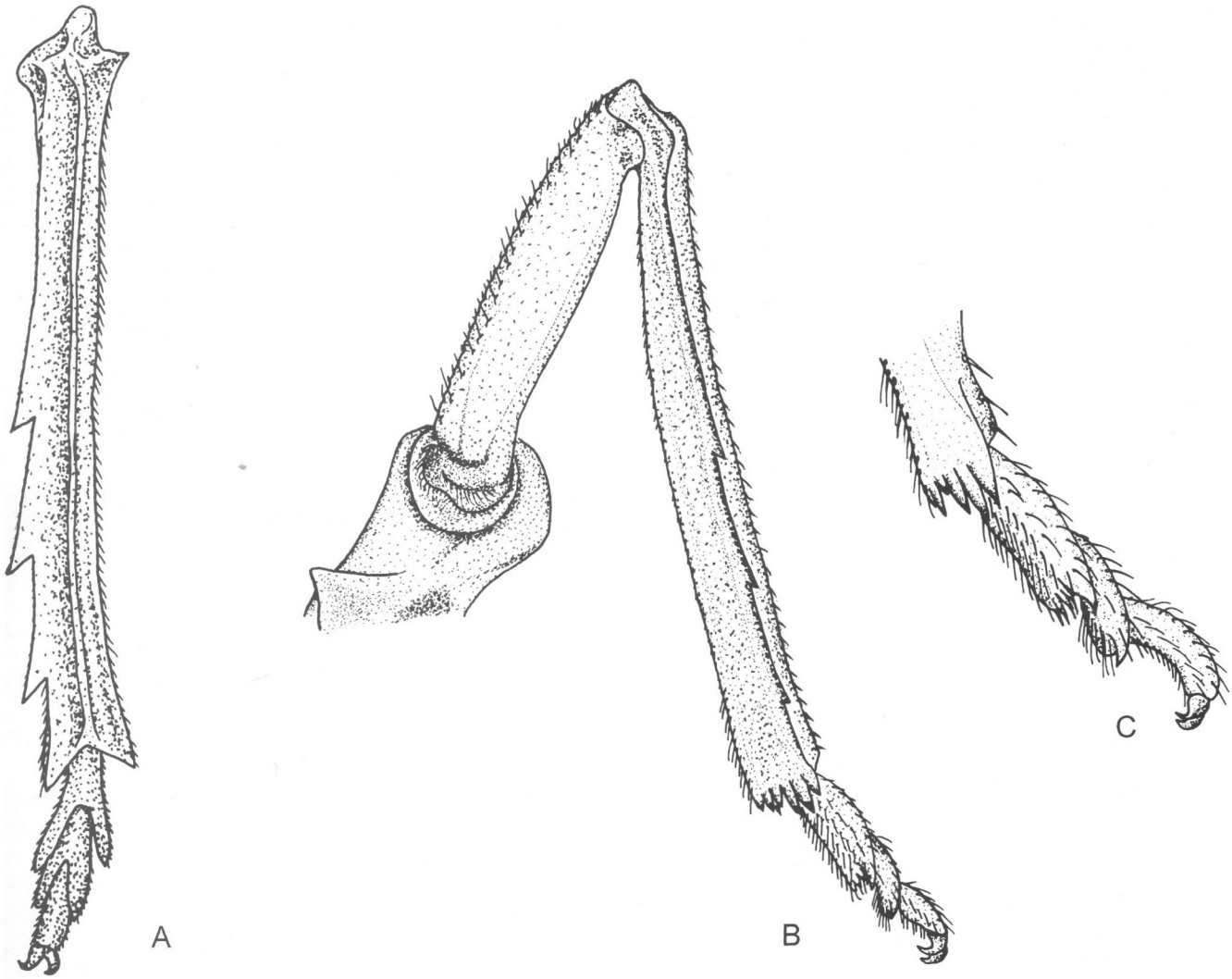
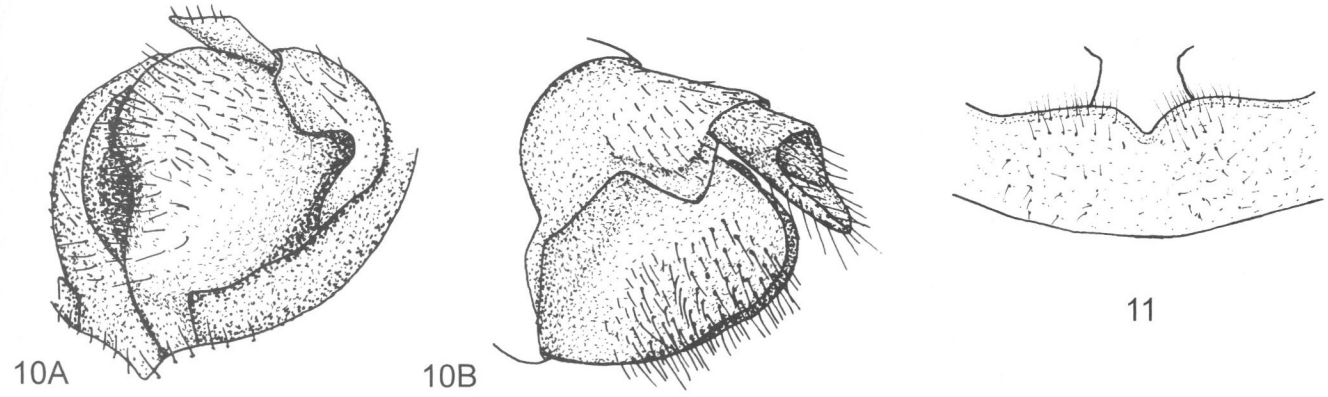


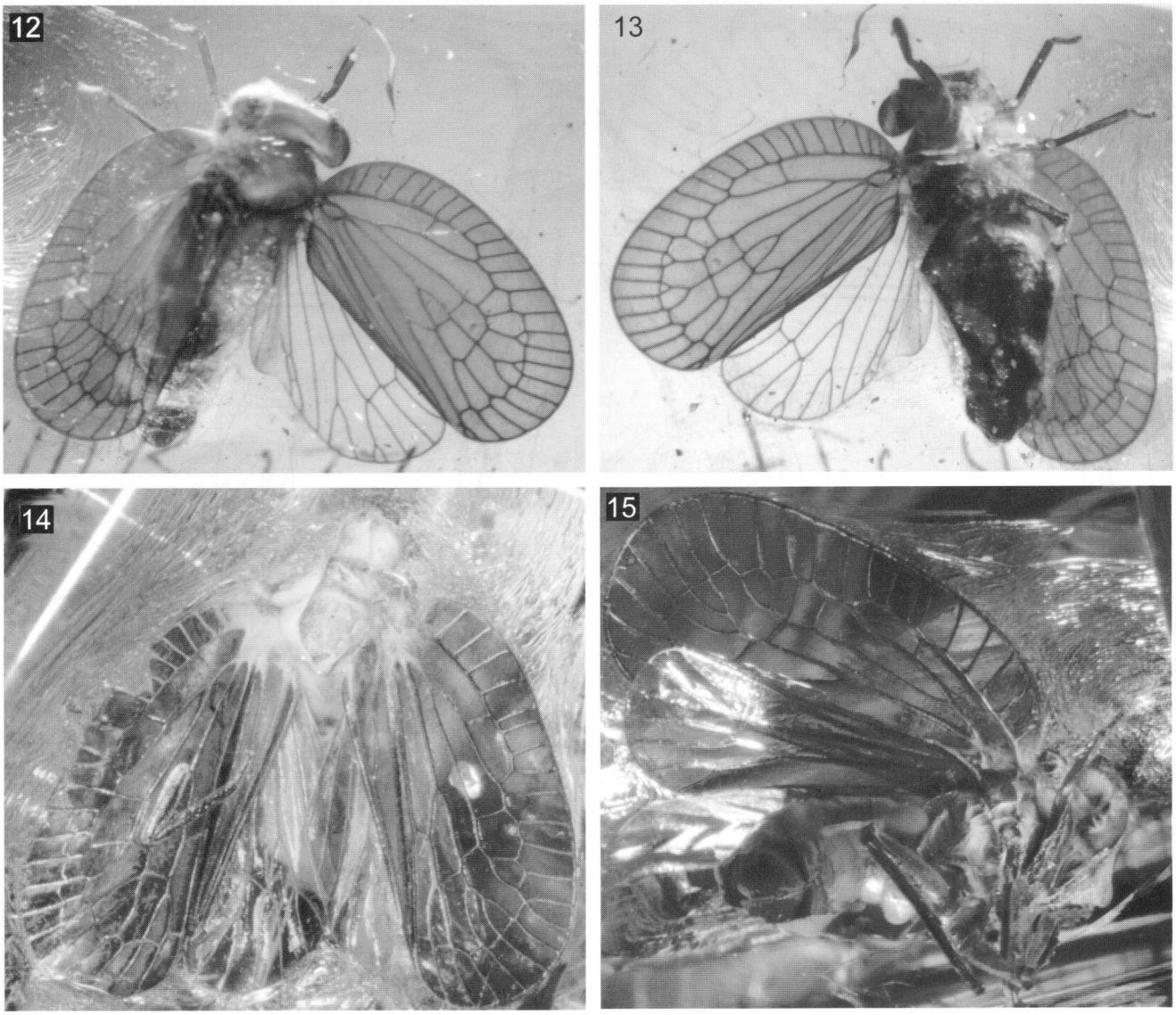
Figure 9. *Tritophania patruelis* Jacobi, hind tibia and tarsus [ex coll. J. Serafin, AUF 03JS]: (A) tibia and tarsus in dorsal view, (B) hind leg in lateral view; (C) end of tibia and tarsus in lateral view

slightly visible median carina. Lateral margins regularly convex, slightly elevated above face. Face in the upper half perpendicular to vertex, clypeal suture distinctly arcuate. Rostrum reaching mid coxae, the apical segment narrower, shorter than the subapical one.

Pronotum almost as long as vertex in midline, without carinae, anterior margin curved, the posterior margin sinuate.



Figures 10–11. *Tritophania patruelis* Jacobi. 10. Female genital block [ex coll. J. Serafin, AUF 03JS]: (A) in ventro–lateral view; (B) in lateral view. 11. Last pregenital sternite in ventral view [ex coll. J. Serafin, AUF 03JS]



Figures 12–15. *Tritophania patruelis* Jacobi. (12) Specimen from NHM In. 18886, in dorsal view; (13) Specimen from NHM In. 18886, in ventral view; (14) Specimen ex. coll. J. Serafin, AUF 03JS, in dorsal view; (15) Specimen ex. coll. J. Serafin, AUF 03JS, in ventro-lateral view

Mesonotum wide, rhomboid, 1.6 times longer than the total length of vertex and pronotum, with five carinae.

Tegula about twice as wide as long.

Tegmina about twice as long as wide, semihyaline, veins distinct (Figs 12–15), the costal margin strongly curved basad, in the median part slightly curved; the apical and cubital angles rounded. Costal membrane basad 1.5 times wider than costal cell, with scarce transverse veinlets, tapering apically and without stigma. Costal cell with single distinct transverse veinlet in distal half. Basal cell twice as long as wide. Sc+R leaving basal cell with short common stem, not parallel, forming two irregular cells near the subapical line. M begining at same point as Sc+R, joined at level of basal cell. M with long stem, about 3.2 times longer than Sc+R common stem, bifurcated. M_1 connecting with M_2 by single transverse veinlet. M_1 connected with R by single transverse veinlet. Cu straight, not furcated, united with M_2 by single transverse veinlet. Tegmina with single subapical line. Apical cells regular, about 3 times as long as wide. Clavus without transverse veinlets; A_1 connected with A_2 before the middle of clavus (Figs 1, 3, 5).

Hind wings hyaline with distinct veins, without precostal area (Figs 12–15). RP finishes near the wing apex, RP and M connecting by transverse vein, branched. CuA with four branches, fused basally with CuP. AA and AP not branched, sometimes with few transverse veinlets (Figs 2, 4).

Hind tibiae with 3 lateral and 7 apical spines (Figs 9a, b), first tarsomere 1.4 times longer than the second (Fig. 9c).

Female genitalia (Figs 10a, b): ovipositor rounded, with sparse distinct short hairs. Internal margin thickened, not denticulate. Last pregenital sternite quite long, incised medially (Fig. 11).

Dimensions as in Table 1.

Table 1. Main dimensions of the specimens examined.

all dimensions in mm	AUF 003	AUF 004	NHM 18886	KG 78
total length	8.31	8.51	7.13	8.22
length of tegmina	6.93	7.23	6.14	6.83
width of tegmina	3.27	3.46	3.17	—
length of vertex	0.47	0.43	0.31	—
width of vertex at the anterior margin	1.10	1.25	1.18	1.18
length of pronotum	0.47	0.39	0.35	0.47
length of mesonotum with scutellum	1.37	1.29	1.10	1.18
maximum width of frons	1.65	1.49	1.45	1.72
length of frons in the middle line	1.14	1.18	1.18	—
length of hind tibia	2.70	2.70	1.90	2.50
length of basitarsomere	0.49	0.43	0.37	0.45
length of the second tarsomere	0.35	0.29	—	0.31

DISCUSSION

The family Nogodinidae comprise 50 genera and about 190 species (O'Brien and Wilson 1985). It is primarily a tropical family (Wilson et al. 1994), the most numerous in Oriental and Neotropical Regions, at present not reaching Palaearctic. Very little is known about the biology of the family: *Bladina* are often found feeding on grasses (O'Brien and Wilson 1985), but all are believed to be monophagous on woody dicotyledones (Wilson et al. 1994).

In fossil material only two species of Nogodinidae are recorded: *Eobladina antiqua* Haupt, known only from imprint of the basal part of fore wing in Mid Eocene deposits of brown coal mine Neumark West, Geiseltal ad Halle a Saale. It resembles the South American genus *Bladina* Stål and the Australian genus *Salona* Stål (Haupt 1956). The second one, *Tritophania patruelis* Jacobi, is known from the Eocene Baltic amber.

Tritophania patruelis Jacobi could be referred to tribe Gaetulini *sensu* Fennah (1978) regarding characters as follow: claval veins uniting basad of middle of clavus, tegmina without transverse veinlets of R–M and M–Cu, third valvula of ovipositor rounded, posterior margin thickened, without denticles.

This second fossil nogodinid in general habitus resemble the recent genera *Pucina* Stål — known from the Oriental and Australian Regions (Jacobi 1938), and *Gaetulia* Stål from South and Central America. *Tritophania patruelis* Jacobi differs from the mentioned genera by the following characters: head with the compound eyes wider than pronotum and mesonotum with 5 carinae. The vertex of *Pucina* bears a median carina, which is absent in *Tritophania* and *Gaetulia*. The anterior margin of the vertex in *Gaetulia* is angulated, in *Tritophania* and *Pucina* almost straight. The costal cell in *Gaetulia* with two transverse veinlets (Fig. 8), in *Pucina* (Fig. 6) and *Tritophania* only one veinlet is present. Hing wing venation of *Tritophania* and *Pucina* very similar (Figs 2, 4, 7). *Tritophania* and *Gaetulia* have hind leg tibia with three spines, in *Pucina* hind leg tibia with only two.

Because six specimens (including holotype) are known today, it seems that this species probably was not very rare in the Eocene amber forest.

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