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A new genus of *Emesinae* from Dominican amber (*Heteroptera: Reduviidae*)

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Abstract. A new genus of the peculiar carnivorous bug, *Empiploiariola*, subfamily *Emesinae*, with one fossil species, *Empiploiariola inermis* n. sp. (*Heteroptera, Reduviidae*) from Dominican amber, supposedly from Lower Miocene of Haiti/Hispaniola, is described. *Empiploiariola* joins the tribe *Ploiariolini*, which also is discussed in the paper.

Key words: Dominican, amber, Miocene, fossil, *Empiploiariola, Emesinae, Ploiariolini.*

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INTRODUCTION

Our knowledge of the fossil record of the *Reduviidae* from amber is expanding; among them *Emesinae* are most numerous, almost all of them from Dominican amber (SPAHR 1988), except for two underscribed *Emesinae* from Baltic amber (see below). Till now, several emesines, including the new genus and the species presented, have been described from Dominican amber: *Malacopus wygodzinsky* POPOV 1987a, *Empicoris copal* POPOV 1987b, *Alumeda nigricans* POPOV 1989, *Alumeda dominicana* POPOV 1989, *Alumeda antilliana* POPOV 1989, and *Empiploiariola inermis* n. gen. et sp. All these emesines belong to the tribe *Ploiariolini.*

According to stratigraphic and foraminiferal analysis by BARONI-URBANI and SAUNDERS (1982), the age of Dominican amber is generally considered Early Miocene, about 20 to 30 million years. However, ambers from different mines in the Dominican Republic are not uniform and consequently the age of these deposits may be of 25 million to 40 million years (LAMBERT et al. 1985). The age of amber from La Toca is also believed to be 30 to 40 million years (SCHLEE 1990), i.e. the La Toca mine from which the inclusion in question originates, is one of the oldest (Lower Oligocene – Upper Eocene).

Ploiariolini is a rather advanced group of *Emesinae* with a worldwide distribution, particularly in tropical and subtropical regions. However, some of them are known only as fossils. The oldest known specimen, most probably of the tribe *Metapterini*, is from Baltic amber (Eocene) (BACHOFEN-ECHT (1949, p. 166, fig. 164). The other emesine from Baltic amber is an unpublished specimen of the genus *Stenorhampus* from the most primitive tribe *Collartidini*. As WYGODZINSKY (1966) pointed out, recent *Ploiariolini* are poorly represented in the Neotropical Region by some genera as *Malacopus*, *Panamia*, *Hybomatocoris* and the cosmopolitan *Empicoris*. Two fossil genera (Tertiary West Indian fauna) from the Dominican Republic are added to this general list: *Alumeda* and *Empiploiariola* gen. n.

Family: *Reduviidae* AMYOT et SERVILLE, 1843

Subfamily: *Emesinae* AMYOT et SERVILLE, 1843

Genus: *Empiploiariola* gen. n.

Diagnosis. Head, thorax and basal abdominal sternites glabrous and bare; lateral carinae of pronotum absent; scutellum, metanotum and first abdominal tergum without spines; hemelytrae with pattern elements, formed by fibrous honey-like spots; pterostigma very small and short; basal half of anterior border of discal cell connected to wing margin by two oblique cross veins; *M* and *Cu* of distal part of wing strongly thickened; *Cu* of posterior margin of discal cell partially reduced; venation of hind wing strongly reduced; fore tarsi two-segmented.

Description: Macropterous. Very small (about 3.0 mm). Body glabrous and hairless. General coloration of body argillaceous (which may be altered in the fossils); legs and antennae not annulated; forewings with more or less conspicuous pattern elements, latter of forewings formed by fibrous honey-combed spots; hind wings colourless.

Head short, anteocular part longer than postocular one, both weakly elevated dorsally. Eyes large, semiglobular, vertically as tall as head, i.e. reaching the level of dorsal and ventral surface of head; eye and postocular part of equal length in lateral view. Antenniferous tubercles quite large, antennae near apex of head, first and second joints much longer than joint 3 and 4 combined.

Pronotum completely covering mesonotum, subrectangular, generally slightly widened posteriorly; a slight constriction in front of the middle; lateral carinae absent; posterior margin without median projection medially. Scutellum, metanotum and first abdominal tergum without spines.

Fore legs slender, clothed with very short hairs and bristles, shorter than diameter of coxa and femur; fore tarsi two-segmented. Middle and hind legs covered with numerous, very short, delicate hairs.

Surface of forewings smooth, semihyaline, with only one large short discal cell, 1.7 times longer than wide, cell slightly pointed at apex, base of discal cell shortly pointed; base of discal cell connected by two short, oblique veins to costal margin of wing. Only

one longitudinal vein *M+Cu* leaves base of discal cell; *Cu* from discal cell on partially reduced; *M* and *Cu* in distal part of wing unusually strongly thickened; in apical part of wing rests of *R*-vein system preserved (Fig. 7). Pterostigma very small and short, triangular, apex far from wing tip. Venation of hind wings strongly reduced, only two simple longitudinal thickened veins present (Fig. 9).

Seventh abdominal tergite of male very short, not silent behind, i.e. not projecting over genital segment (Fig. 10).

Type species: *Empiploiariola inermis* from Dominican amber (Lower Oligocene-Upper Eocene).

Derivatio nominis: From genera *Empicoris* and *Ploiariola*, synonym of the former, indicates relationship to *Ploiariolini.*

Empiploiariola inermis sp. n.

(Figs 1-10)

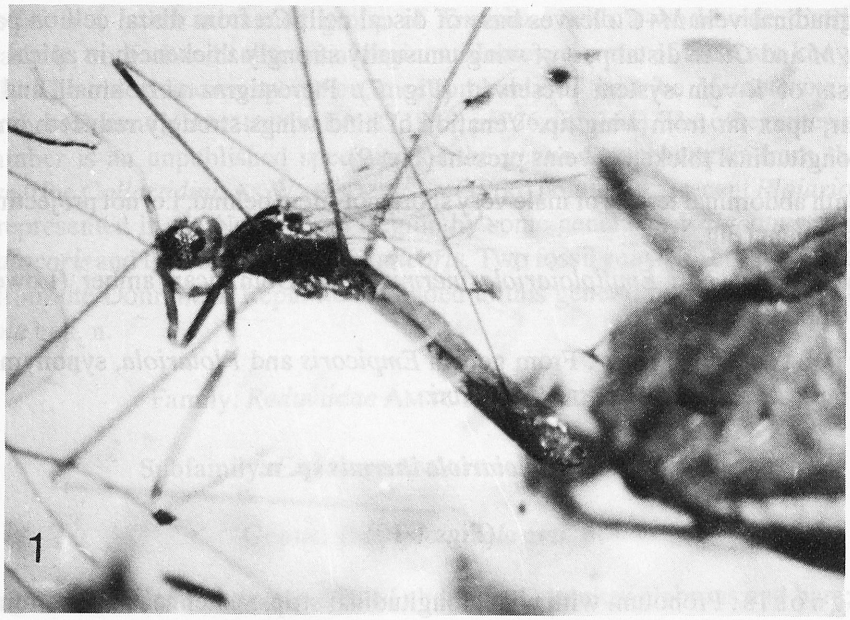
Diagnosis. Pronotum with wide, longitudinal strips; antennae and rostrum argillaceous; coxa 17.5 times as long as wide; length of femur1 and tibia1 correspondingly ca. 15 times and 11 times as long as wide; tarsal joint 2 of fore legs ca 1.5 times as long as joint1, claws curved, wide at base and abruptly narrowed beyond; forewing apically broadly rounded, 2.7 times as long as wide.

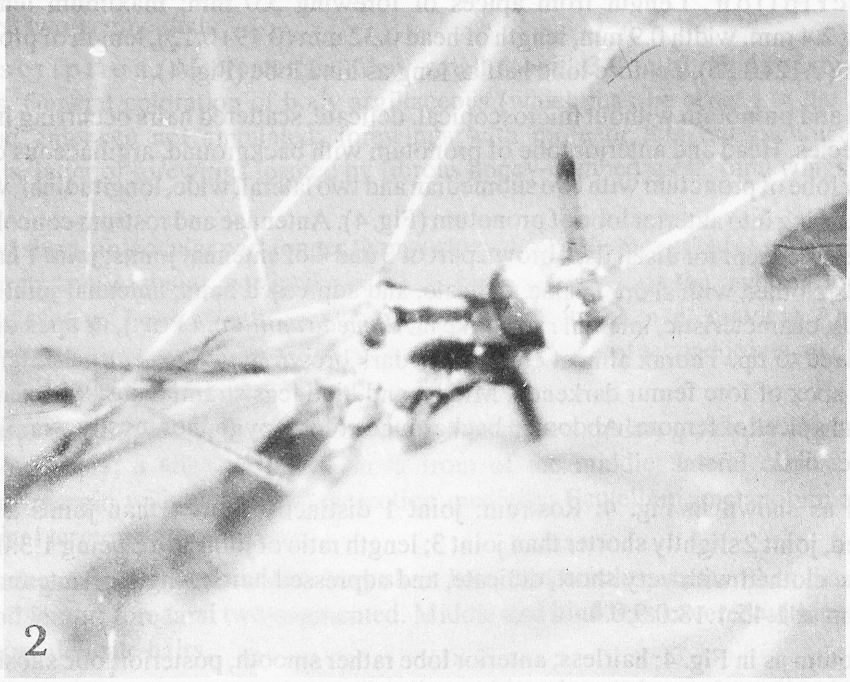
Description. Length from apices of forewing 3.0 mm; maximum length of forewing 2.4 mm, width 0.9 mm, length of head 0.32 mm (0.19+0.13), length of pronotum 0.37 mm (0.12+0.25), i.e. fore lobe half as long as hind lobe (Fig. 4).

Head and pronotum without microscopical, delicate, scattered hairs occurring in some other species. Head and anterior lobe of pronotum with background, argillaceous colour; posterior lobe of pronotum with two submedian and two lateral, wide, longitudinal, whitish stripes passing into anterior lobe of pronotum (Fig. 4). Antennae and rostrum concolorous, argillaceous except for distal dark brown part of 3 and 4 of antennal joints; joint 1 hairless, 2-4 joints clothed with short, sparse, delicate, and adpressed hairs; antennal joint 4 with numerous, characteristic, internal rings (like in *Alumeda antilliana* POP.), its apex distinctly narrowed to tip. Thorax almost completely dark brown. Fore coxae, trochanter, basal half and apex of fore femur darkened. Middle and hind legs stramineous; with darkened coxae and apices of femora. Abdomen background colour, pygophor mostly stramineous, parameres dark.

Head as shown in Fig. 4. Rostrum: joint 1 distinctly shorter than joints 2 and 3 combined, joint 2 slightly shorter than joint 3; length ratio of joint 1 to 3 being 1.3:0.8:1.0. Antennae clothed with very short, delicate, and adpressed hairs; length of antennomeres 1-4 in mm as 1.45:1.18:0.9:0.4.

Pronotum as in Fig. 4; hairless; anterior lobe rather smooth, posterior lobe subshining, microscopically reticulate. Fore legs slender, femur covered ventrally and dorsally with very short, soft bristles, basal half of femur1 with erected hard bristles (Fig. 5); length ratio of coxa1, femur1, tibial, and tarsus in mm as 0.35:0.75:0.55:0.15. Coxa 1 rather





Figs. 1-2. *Empiploiariola inermis* sp. n., ♂ holotype in Dominican amber: 1 – general view, lateral (x 26.5), 2 – the same, dorsal (x 430).

Fig. 3. *Empiploiariola inermis* sp. n., holotype, anterior body portion (x 100).

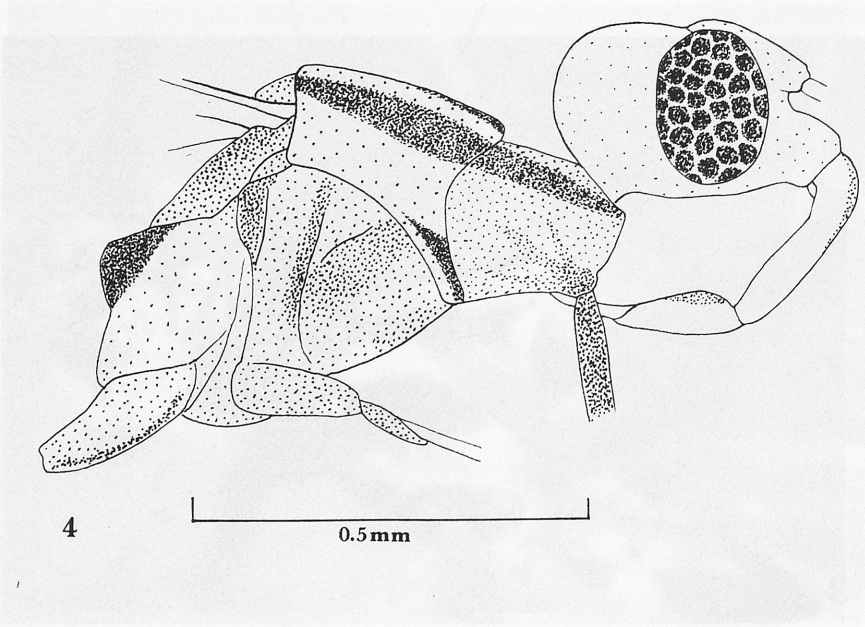
slender, 7.5 times as long as wide; length ratio of femur 1 and tibia 1.36:1.0, correspondingly ca. 15 times and 11 times as long as wide; tarsi with short, sparse, delicate adpressed hairs ventrally, one hard bristle at apex of second joint; tarsal joint 2 ca. 1.5 times as long as joint 1; claws curved, wide at base, abruptly narrowed beyond (Fig. 6). Length ratio of middle and hind femora is 1.0:1.5, both covered dorsally and ventrally with very short, delicate, numerous adpressed hairs.

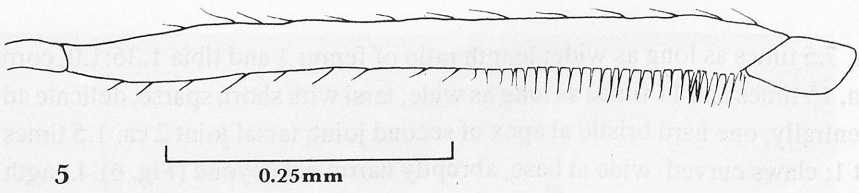
Hemelytra broadly rounded apically, without conspicuously pointed tip (Fig. 7); 2.7 times as long as wide; pattern and venation as in Fig. 8; distance apex of pterostigma to tip of wing ca. 2.4 times as long as distance between from apex of pterostigma and insertion of *M* on same; discal cell ca. 1.7 times as long as its maximum width. Hind wing as in Fig. 9; *R+M* reduced in apical part and *Cu* reduced in basal part (Fig. 9); anal lobe not evident.

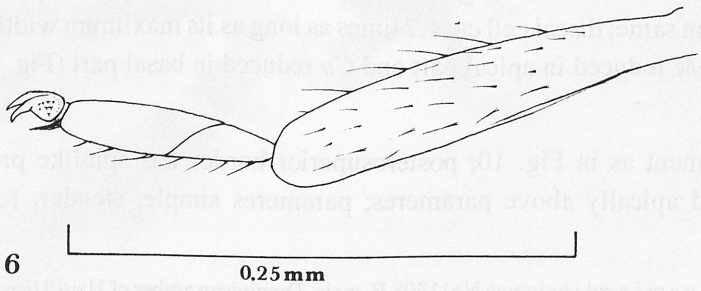
Genital segment as in Fig. 10; posterosuperior border has spinlike process which slightly pointed apically above parameres; parameres simple, slender, feebly curved apically.

Material examined: holotype No11308 B, male, Dominican amber of Haiti/Hispaniola; Dominican Republic, La Toca, Santiago Province, purchased from J. BRODZINSKY (Santo Domingo, 1987). Housed in the American Museum of Natural History, New York.

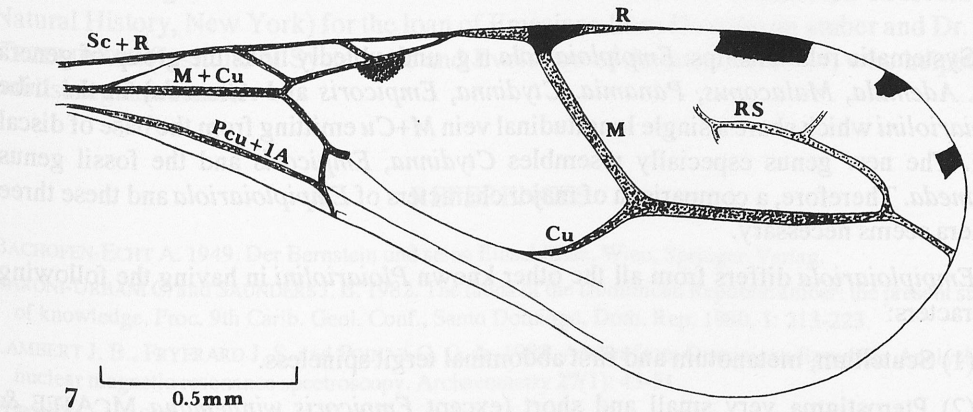
Derivatio nominis: The name derived from "*inermis*" (Lat.), unarmed.







Figs. 4-6. *Empiploiariola inermis* sp. n., ♂ holotype: 4 – head and thorax, 5 – fore femur, 6 – fore tarsus.



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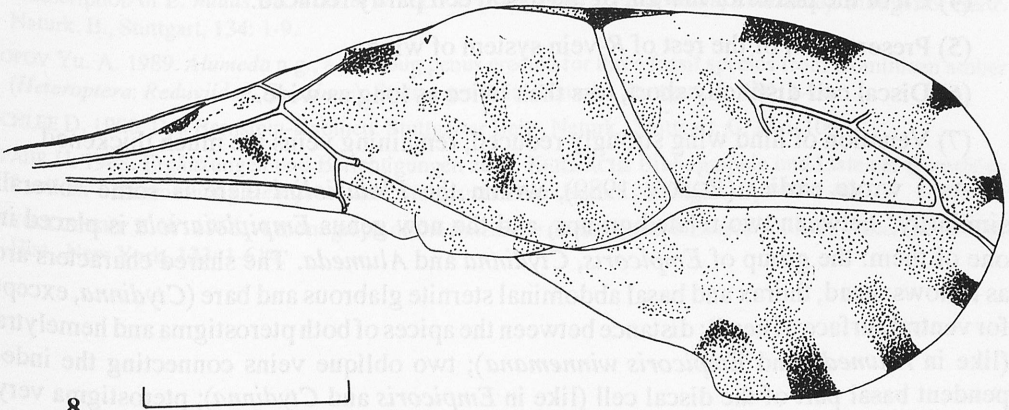

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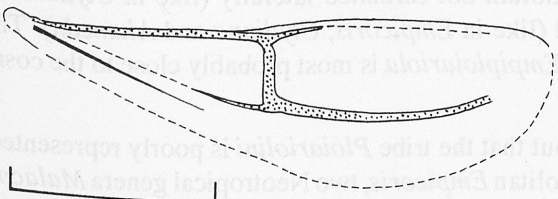

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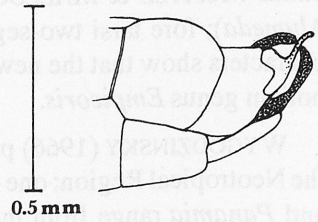

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Figs. 7-10. *Empiploiariola inermis* sp. n., ♂ holotype: 7, 8 – hemelytron (reconstruction), 9 – hind wing, 10 – apex of abdomen of male, lateral aspect.

DISCUSSION

Systematic relationships: *Empiploiariola* n.g. undoubtedly links the group of genera (i.e. *Ademula*, *Malacopus*, *Panamia*, *Ctydinna*, *Empicoris* and *Alumeda*) in the tribe *Ploiariolini* which share a single longitudinal vein *M+Cu* emitting from the base of discal cell. The new genus especially resembles *Ctydinna*, *Empicoris* and the fossil genus *Alumeda*. Therefore, a comparison of major characters of *Empiploiariola* and these three genera seems necessary.

Empiploiariola differs from all the other known *Ploiariolini* in having the following characters:

(1) Scutellum, metanotum and first abdominal tergit spineless.

(2) Pterostigma very small and short (except *Empicoris winnemana* MCATEE & MALLOCH) and located almost in the middle of wing.

(3) *M* and *Cu* of distal part of wing unusually strongly thickened.

(4) *Cu* of the posterior margin of the discal cell partly reduced.

(5) Preservation of the rest of *R*-vein system of wing.

(6) Discal cell distinctly short, less than twice as long as wide.

(7) Venation of hind wing strongly reduced, remaining veins are much thickened.

As I wrote earlier (POPOV 1989), within the *Ploiariolini* there is some "overall similarity" between two related groups, and the new genus *Empiploiariola* is placed in one of them: the group of *Empicoris*, *Ctydinna* and *Alumeda*. The shared characters are as follows: head, thorax and basal abdominal sternite glabrous and bare (*Ctydinna*, except for ventral surface of head); distance between the apices of both pterostigma and hemelytra (like in *Alumeda* and *Empicoris winnemana*); two oblique veins connecting the independent basal part of the discal cell (like in *Empicoris* and *Ctydinna*); pterostigma very small and short (like in *Empicoris winnemana* MCATEE & MALLOCH); hemelytrae with pattern elements formed by fibrous honey-comb spots (some species of *Empicoris*: *E. barberi* MCATEE & MALLOCH and *E. priscus* GRILLO & ALAYO); the base of the discal cell shortly pointed (like in *Alumeda*) and the cell itself rather short (like in *Empicoris nudus* MCATEE & MALLOCH); pronotum not carinated laterally (like in *Ctydinna* and *Alumeda*); fore tarsi two-segmented (like in *Empicoris*, *Ctydinna* and *Alumeda*). These characters show that the new genus *Empiploiariola* is most probably close to the cosmopolitan genus *Empicoris*.

WYGODZINSKY (1966) pointed out that the tribe *Ploiariolini* is poorly represented in the Neotropical Region: one cosmopolitan *Empicoris*, two Neotropical genera *Malacopus* and *Panamia* range from the Caribean to Brazil, one Neotropical *Hybomatocoris* from Chile. So two other genera have recently been added from Dominican amber (not counting *Malacopus wygodzinskyi* POPOV): *Alumeda* POPOV (3 species) and monobasic *Empiploiariola* gen. n. Judging from the described and undescribed material of Heteroptera of Dominican amber, which are known to me, the *Emesinae* are most numerous among other fossil bugs and provide evidence for a considerable diversity at least since Miocene.

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