

***Paleoploiariola venosa*, a new fossil Emesinae (Heteroptera: Reduviidae) genus and species from Dominican amber¹**

*Jenaro Maldonado Capriles*², *Jorge A. Santiago-Blay*³ and
*George O. Poinar, Jr.*³

ABSTRACT

Paleoploiariola, a monotypic fossil genus in the Emesinae (Heteroptera, Reduviidae), is described based on *P. venosa*, new species. The genus is characterized by the very thick apical vein of the fore wing's only discal cell.

RESUMEN

Paleoploiariola, un género fósil monotípico en la subfamilia Emesinae (Heteroptera, Reduviidae), es descrito a base de *P. venosa*, especie nueva. Este género se caracteriza por la vena apical muy gruesa en la única celda discal de las alas anteriores.

INTRODUCTION

The fossil record of the Reduviidae is small, consisting of about 12 species, the Emesinae having the largest number, all from Dominican amber. Including the new genus and species described herein, the fossil emesines are *Alumeda antillarum* Popov (9), *A. dominicana* Popov (9), *A. wygodzinskyi* Popov (9), *Empicoris copal* Popov (8; Copal), *Malacopus wygodzinskyi* Popov (7) and *Paleoploiariola venosa*, n. gen. and sp.

Paleoploiariola belongs in the Ploiariolini. This tribe is characterized by fore wings lacking of r-m as M is inserted on submarginal veins; first or basal spine of posteroventral series of fore femur not well developed, not conspicuously larger than any of the remaining spines; small size, and basal angle of discal cell of fore wing connected to coastal margin by a short oblique vein.

The studied specimen is in a subconical (11 x 10 mm) polished piece of pale orange-yellow amber (0.5 g). Most Dominican amber comes from

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²Entomologist and Professor Emeritus, Department of Crop Protection; mailing address - Urb. Aponte 6I-1, Cayey, Puerto Rico 00736

³Department of Entomological Services, University of California, Berkeley, CA 94720-0001, USA

mines located in the Cordillera Septentrional, between Santiago and Puerto Plata, in the Northern Portion of the Dominican Republic. These mines are in the Altamira facies of the El Mamey Formation (Upper Eocene), which is shale-sandstone interspersed with a conglomerate of well-rounded pebbles (3).

Difference in the magnitudes of absorption peaks in nuclear magnetic resonance spectra of the exo-methylene group of amber from different mines in the Dominican Republic was to calculate the age of the various mines (5) using the 20 million to 23 million year age of the Palo Alto mine as a standard (1). The age of the mines in that region of the country varies from 25 million to 40 million years. Amber from the La Toca mine was the oldest, some 35 million to 40 million years old (lower Oligocene to upper Eocene). These age estimates are close to the independent data reported by Schlee (10), who gave a range of 30 million to 45 million years for La Toca mine. Davis (2) reported 20 million to 30 million years as the age of Dominican amber.

The holotype (HE 4-23) is deposited in the Poinar collection of Dominican amber maintained at the Museum of Paleontology of the University of California, Berkeley (acc. no. 39843). Drawings were made with a camera lucida while having the specimen immersed in oil. Measurements are given in millimeters.

Paleoploiariola Maldonado, Santiago-Blay and Poinar, new genus.

Type species *Paleoploiariola venosa* sp. nov.

Female.—Fossil. Ploiariolini. Black; fore wings with pattern of conspicuous grayish areas, otherwise uniformly colored, without annulations or other markings. Body and appendages glabrous. Without long spines on under surface of head, rostrum, and fore coxae. Pronotum, scutum, scutellum, and margin of first abdominal tergum unspined; anterior lobe of pronotum without lateral carina; anterior pronotal lobe with lateral carinae; posterior margin of pronotum straight.

Fore wings smooth, the grayish pattern formed by a fibrous honey-combed micronetwork; venation as in figure 1, only one discal cell, 1.7X as long as wide, apex rounded, veins M and Cu emitted from base of discal cell not fused; M inserted on submarginal vein, point of insertion slightly apicad of termination level of 1A; lateral margin of discal cell fused with costal margin; pterostigma short, triangular; sections of veins M and Cu forming the apical end of the discal cell unusually thickened. Hind wing venation consisting of two longitudinal veins (R + M and Cu) and a few transverse veins, without transverse thickening at midlength; genital lobe somewhat projected, details not evident. Procoxa shorter than profemur, profemur slightly shorter than protibia; spinules of equal

length along profemur (fig. 5); protarsus with 3 segments; claws 2, seen well on first and third legs, not discernible on second; abdomen boat-shaped. Details of genitalia not evident.

Diagnosis: *Paleoploiariola* differs from *Alumeda*, another fossil genus, and from all extant Ploiariolini genera by the presence of thick veins on the apex of the discal hemelytral cell and by the lack of dorsal spines.

Remarks: In the extant *Empicoris barberi* (6) and in *Empicoris priscus* (4), the blade of the hemelytra is minutely honey-combed or areolate, thus looking much like that of the new fossil genus. For this reason, on first impression *Paleoploiaria* seems to be an *Empicoris*. In the latter, only one vein is emitted from the base of discal cell as M and Cu are fused. The unarmed scutellum and metanotum key out *Paleoploiaria* close to the otherwise very different *Sepimesos* that has embossed fore wings, humped anteocular region, relatively wide hemelytra and moderately long protibial setae. The thickened veins of the discal cell and the small pterostigma are autoapomorphies of *Paleoploiaria*.

Etymology.—*Ploiariola* is a synonym of *Empicoris* (Ploiariolini), a genus with some species having spotted fore wings. *Ploiariola* serves better than *Empicoris* to correlate the new genus name with its systematic position. *Paleo* (Greek = ancient) means primitive, old, and usually associated with fossil forms; *areol* (Latin = space), refers to the honeycomb patterned fore wings.

***Paleoploiariola venosa* sp. nov.** Maldonado, Santiago-Blay and Poinar
figures 1-5

Type data - Amber from Cordillera Septentrional, Dominican Republic, from lower Miocene to upper Eocene, estimated age 25 to 40 million years.

Female - Color as described for genus. Head: 0.35 to 0.4 long to tip of clypeus, 0.5 wide across eyes; interocular space 0.08, about twice as wide as eye on dorsal view; rostrum strongly curved, unspined. Pronotum 0.4 long, 0.3 wide at humeral angles, anterior lobe 0.08, 0.1 long, posterior lobe 0.3 long. Anterior leg: coxa about two-thirds as long as femur (0.6:0.8), femur slightly longer than tibia (0.8:0.7); spines of femur much shorter than diameter of segment, mere spinules; tarsi 3-segmented, first segment slightly shorter than last two combined. Abdominal margin smooth. Overall length 2.7, length of fore wings 3.0.

Diagnosis: the differential generic characters suffice to identify this species. As mentioned above, *E. barberi* (6) and *E. priscus* (4) have the discal cell of the fore wings spotted and thus somewhat resemble those of *P. nervosa*.

Etymology. - The trivial name *venosa* (Latin, *vena* = vein) makes indirect reference to the unique thickening of most veins projecting distally from the discal cell on the fore wing.

DISCUSSION

The characters used to describe *Paleoploiariola* separate it from all extant genera. *Sepimesos*, also a Ploiariolini, with two longitudinal veins emitted from the base of the discal cell and unarmed dorsally, is its closest relative, but these two genera are morphologically very different. Other genera with two veins emitted from the discal cell and some with spotted fore wings, such as *Emesopsis*, have one or two small cells basad of discal.

Following Wygodzinsky's (11) interpretation of homologies in the Emesinae, we think that *Paleoploiariola* exhibits thoracic plesiomorphic characters, as most reduviids and all emesine genera. For example, the

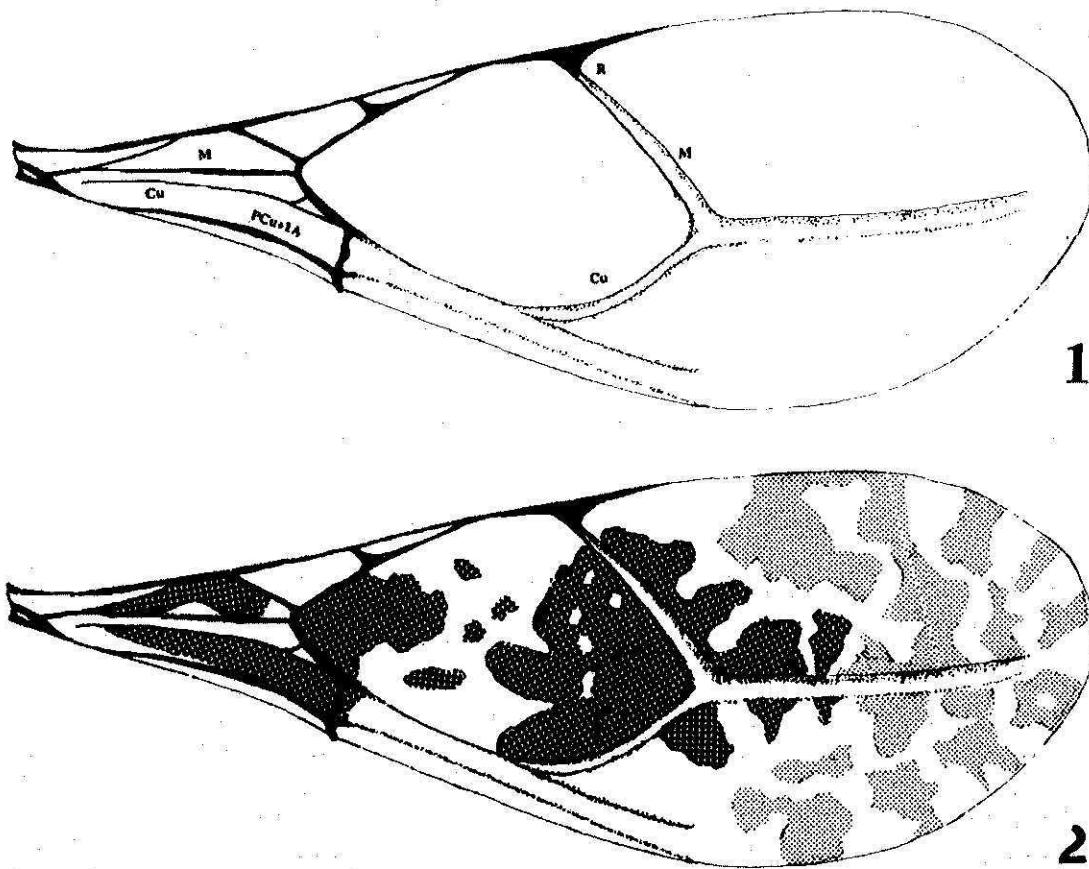
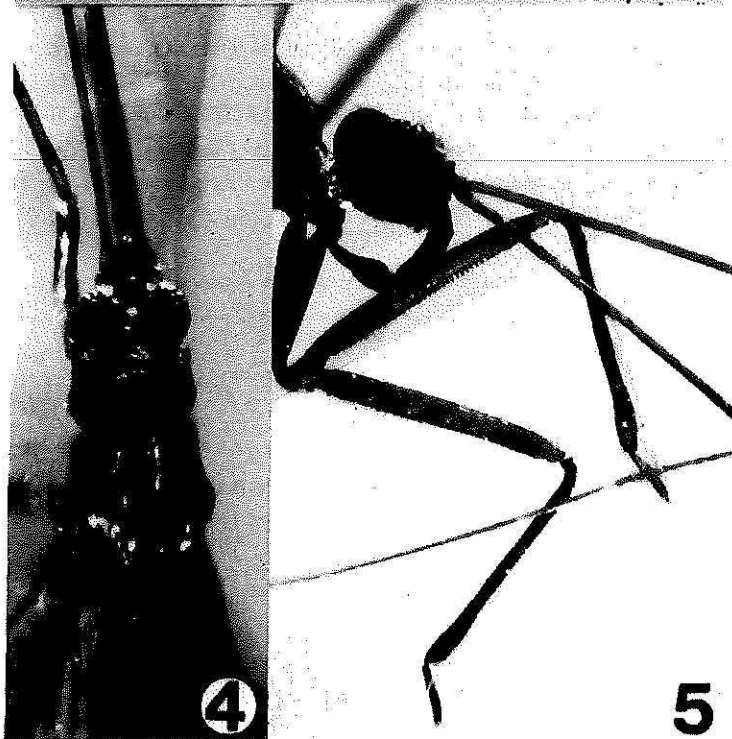
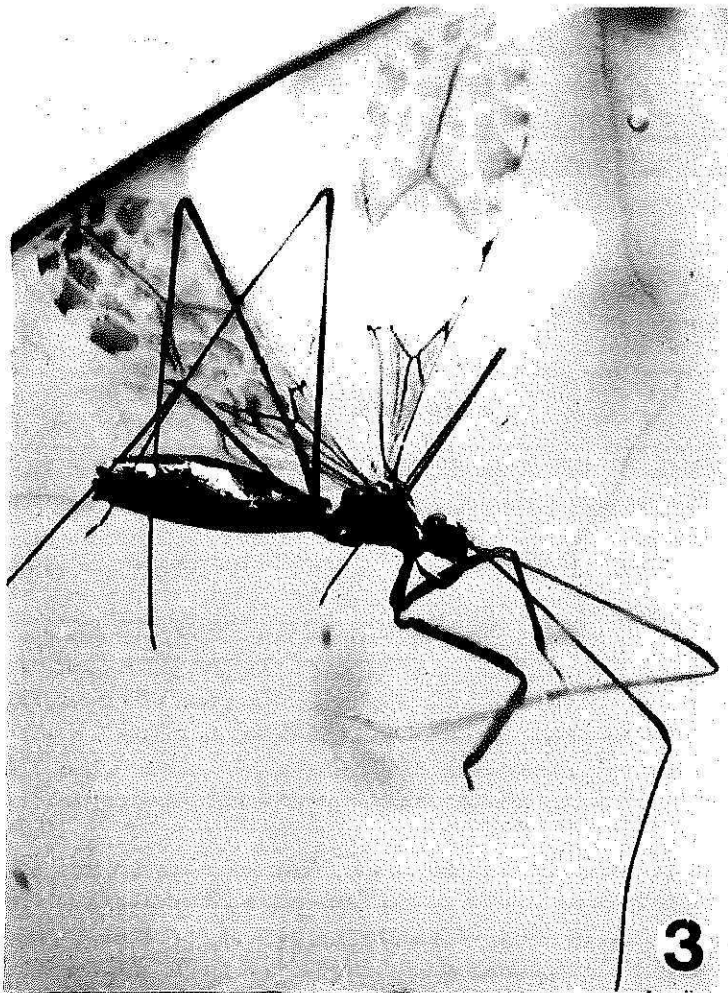


FIG. 1-5.—*Paleoploiariola nervosa*, n.sp., female holotype, 1. forewing venation; 2. forewing pattern; 3. overall view, lateral; 4. head and pronotum, dorsal; 5. head and prothorax, lateral (note row of microspines of uniform length along profemur).



anterior lobe of the pronotum is well developed, the other two lobes are not, the anterior acetabula open downwardly, and the body is relatively stout. A stout body suggests bilaterally arranged internal genital organs. Inferred synapomorphic characters are the lack of spines or spinelike setae on the head, rostrum, and fore coxae, long and slender fore coxae, and a single discal cell. The single discal cell results from venational modifications at the base of the forewings. *Orthunga* (Leistarchini), has one discal cell resulting from modifications of the venation on the apical half of the wing.

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