



***Microcaulisoculus* gen. nov., a new genus of Yuripopoviniidae (Hemiptera: Heteroptera) from Myanmar amber**

***Microcaulisoculus* gen. nov., un nuevo género de Yuripopoviniidae (Hemiptera: Heteroptera) de ámbar de Myanmar**

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Abstract.—A new genus of stalked bugs *Microcaulisoculus* gen. nov., is erected to accommodate *Microcaulisoculus minutus* (Shang, Wang, Zhang & Chen, 2020) comb. nov., and the new species *Microcaulisoculus durini* sp. nov., both from Kachin amber. The new taxa are commented and discussed leaving Yuripopoviniidae with 18 species classified in 15 genera.

Keywords: *Cenomanian, Coreoidea, Mesozoic, new taxa.*

Resumen.—Se describe un nuevo género de Yuripopoviniidae *Microcaulisoculus* gen. nov para acomodar a *Microcaulisoculus minutus* (Shang, Wang, Zhang & Chen, 2020) comb. nov., y la nueva especie *Microcaulisoculus durini* sp. nov. ambos de ámbar de Kachin. Los nuevos taxones se comentan y discuten, dejando a la familia Yuripopoviniidae con 18 especies clasificadas en 15 géneros.

Palabras clave: *Cenomaniano, Coreoidea, Mesozoico, nuevos taxones.*

Coreoidea is one of the largest families of Pentatomomorpha, currently comprising nearly 3200 species of phytophagous heteropterans classified in five extant and two extinct families (Henry, 2017). Several coreoids are considered of great economic importance as pests and/or becoming invasive species worldwide within the last decades (Faúndez *et al.*, 2021).

The fossil record of Coreoidea has been documented from the Triassic to the Cenozoic (Fabrikant and Novoselska, 2024); including species classified in the families Trisegmentatidae Zhang, Sun & Zhang 1994 and Yuripopoviniidae Azar, Nel, Engel, Garrouste & Matocq, 2011. Yuripopoviniids stands apart by their peculiar eye morphology, which gave them their common name stalked eye bugs. This family currently includes 17 species classified in 14 genera (Dai *et al.*, 2024; Fabrikant and Novoselska, 2024), and these are found in Cretacic amber and impressions from Asia (Kobor and Roca-Cusachs, 2021). The purpose of this

contribution is to describe a new genus of this family to accommodate one described and a new species from Kachin mid-Cretaceous amber.

Materials and methods

The amber piece used in this study was collected in Kachin state in Myanmar. The age of the yielded amber is estimated to be from the Cenomanian (ca. 98.79 ±0.62Ma), based on a recent U-Pb zircon dating study (Shi *et al.*, 2012). Material is deposited in the Paleontological Collection of NINFA Center, Alerce, Chile. Higher systematic arrangement follows Henry (2017), and morphology follows Kobor and Roca-Cusachs (2021), Shang *et al.*, (2020), Zhang and Cheng (2020) and Zhuo *et al.*, (2022). Photos were taken with a Ricoh 550 digital camera adapted to a Celestron P45 stereoscopic microscope. Observations were made on cold light and enhanced with UV light for observation of surfaces. All measurements are expressed in millimeters.



Results and discussion

Microcaulisoculus gen. nov.

Type species *Microcaulisoculus durini* sp. nov.,
by present designation

<https://zoobank.org/NomenclaturalActs/bfa45465-0bd6-49f8-b6c0-5ea2dc8a8c2e>

Description: Small size 1.9-2.1 mm in length. Ovate shaped, dorsoventrally flattened (Fig. 1A), tegument dark and covered of coarse strong punctures. Head. wider than longer, eyes stalked, prominent flattened dorsoventrally, ocelli small and nearly rudimentary, antennae about half

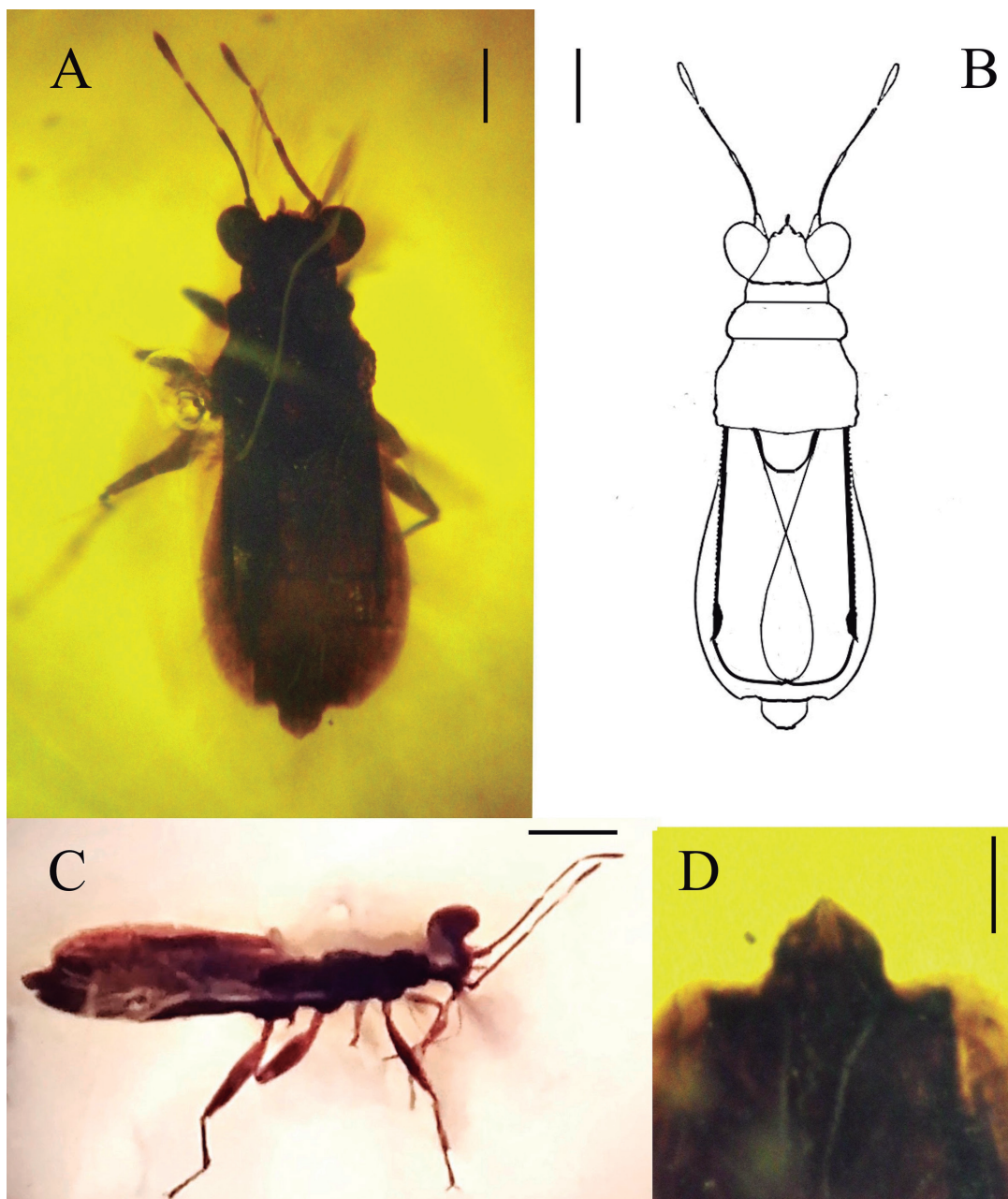


Figure 1: *Microcaulisoculus durini* sp. nov. **A)** Dorsal habitus (scale = 0,25mm). **B)** Line drawing, dorsal habitus (Scale = 0,25mm). **C)** Lateral view, UV light contrasted (scale = 0,25mm). **D)** Detail of female terminalia (Scale = 0,1 mm).



Figure 2: *Microcaulisoculus durini* sp. nov. **A)** Detail of costal margin of hemelytron (scale = 0,5 mm) **B)** Rostrum detail (scale = 0,25mm). **C)** Antenna detail (scale = 0,25mm). I= first segment, II= second segment, III= third segment IV= fourth segment.

of the body length, 4 segmented, first segment shorter, second longest, third and fourth subequal, bucculae constricted, truncate, rostrum four segmented extending towards mesocoxae. Thorax. Pronotum three lobed, subtrapezoid

shaped, scutellum spatulate to ovate, hemelytra reaching or passing the end of abdomen, costal area esclerotized and serrate, venation evanescent. Legs. Cylindrical, unarmed, without carinae or sulcus, tarsi three segmented, parem-

podia hair-like. Abdomen. Connexiva straight, unicolored, female terminalia (pygopher *sensu* Shang *et al.* 2020) clearly narrower than abdominal segments, tightly enclosing ovipositor. Male unknown.

Etymology: Micro – Small, *Caulisoculus* former genus of yuripopoviniid bugs., in reference to its small size.

Included species: *Microcaulisoculus durini* sp. nov. and *Microcaulisoculus minutus* (Shang, Wang, Zhang & Chen, 2020) comb. nov.

Remarks. *Microcaulisoculus* actually keys together with *Caulisoculus*, (Kobor and Roca-Cusachs 2021; Dai *et al.*, 2024; Fabrikant and Novoselska, 2024). However, both genera can be easily differentiated by the less stalked eyes, shorter size (about half size length), reduced wing venation, serrate costal margin of hemelytra and the narrow female terminalia of *Microcaulisoculus*. Furthermore, the shorter size, the serrate costal margin of the hemelytra and the female terminalia notoriously narrower than abdominal segments tell *Microcaulisoculus* apart from all the currently known Yuripopoviniidae genera. In future analysis, these synapomorphies can even place this genus in a different tribal or subtribal status, as such characters including wing morphology, genital shape and general body size have not only generic value but are useful understanding the higher classification of coreoid bugs (Schuh and Slater, 1995; Dong *et al.*, 2022). Both species came from the same deposit and same time estimated; therefore, they may have cohabited in the Cenomanian.

***Microcaulisoculus durini* sp. nov.**

(Figs. 1-2)

<https://zoobank.org/NomenclaturalActs/ccdadeb5-03e3-4903-9a46-6e79a0610619>

Holotype: NINFA-TYP-0004. Ovale clear piece of amber, weight 0,28 grams. 14 x 9mm. Kachin State, Myanmar, 1 well preserved female. Only syninclusions observed are few hairs and chitinous rests.

Description: Small species (1,91 mm in

length), body ovate (Fig. 1A-B), dorsoventrally flattened (Fig. 1C), with black shiny tegument. Covered dorsally of strong punctures excavated. Head. About 2,7 times wider than long, eyes prominent, stalked, dark colored; ocelli dark, nearly vestigial in line with posterior end of the head; antennifer tubercles short, armed oriented apically; antennae medium sized, little bit less than half of the length of the body (Fig. 2C), first antennomere short, little bit passing the end of the head anteriorly, second antennomere longest, cylindrical about 1,25 times longer than third, third and fourth antennomeres subequal, last antennomere with rounded widened apex; bucculae constricted, truncate; rostrum reaching midcoxae (Fig. 2B), first segment the shortest, compact, second the longest, third and fourth subequal, fourth with sharpened apex. Thorax. Pronotum three-lobed, subtrapezoid, longer than wider, first lobe collar-like, second lobe horizontally elevated, rounded in lateral view, third lobe subtriangular, humeral angles rounded; scutellum spatulate, wider than longer, apex with a whitish sclerotized band; clavus narrow and evanescent; hemelytra mostly membranous, little bit shorter than the end of abdomen, costal margin strongly sclerotized widened at pterostigmal area, with border uniformly serrated (Fig. 2A), venation evanescent almost undistinguishable, legs cylindrical, blackish without any carinae, sulcus or spines. Abdomen. Ovate, wider than maximum pronotal width, abdominal tegument light brownish colored; connexiva exposed, border smooth; female terminalia subconical, notoriously narrower than abdominal segments (Fig. 1D), located in a rectangular esclerotized plate; ovipositor short, covered entirely by the female terminalia. Male unknown.

Measurements (in mm): Total length 1,92; head width 0,62, head length 0,25; pronotum width 0,68, pronotum length 0,75; scutellum width 0,27, scutellum length 0,21; maximum abdominal width 0,79; antennomeres, I = 0,11, II = 0,25, III = 0,20, IV = 0,19; rostrum, I = 0,18, II = 0,47, III = 0,24, IV = 0,25.

Etymology: Dedicated to the J.R.R. Tolkien fiction character Durin, who was the oldest of the seven fathers of the dwarves. The name is chosen because this is a “dwarf” species among yuripopovinids, has been found in a mine and bears a “weapon” (i.e. serrated hemelytra), such as dwarves in Tolkien’s universe.

Remarks: *Microcaulisoculus durini* sp. nov. can be distinguished from *M. minutus* by the following features: *M. durini* sp. nov. has body more compact, pronotum less elongated, connexiva exposed and clearly convex, second antennomere is shorter in *M. durini* sp. nov. than *M. minutus*, and last antennomere apex is rounded; whereas the apex of last antennomere in *M. minutus* is subtruncate; the scutellum of *M. durini* sp. nov. is spatulate; whereas the scutellum of *M. minutus* is subovate and finally the female terminalia of *M. durini* sp. nov. is more compact wide and shorter than the female terminalia of *M. minutus*.

Conclusion

With the new taxa here described Yuripopoviniidae increase its number to 18 species and 15 genera. Since 2019 (Du *et al.*, 2019), the number of taxa within this family described from Myanmar amber has increased considerably reaching now 10 species in eight genera becoming the major source of both generic and specific diversity of stalked eye bugs.

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