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ON THE FOSSIL SCHIZOMIDS (SCHIZOMIDA: HUBBARDIIDAE) FROM DOMINICAN REPUBLIC AMBER

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Abstract: After an analysis of the original descriptions of the two fossil schizomid species recently described from Dominican Republic amber, it is concluded that their generic assignation is wrong. The following changes are proposed: a) *Stenochrus velteni* Krüger & Dunlop 2010 = *Rowlandius velteni* (Krüger & Dunlop, 2010) **comb. n.**; b) ?*Mayazomus pseudoannulatus* Krüger & Dunlop, 2010 = *Antillostenochrus pseudoannulatus* (Krüger & Dunlop, 2010) **comb. n.**
Key words: Schizomida, Hubbardiidae, *Antillostenochrus*, *Rowlandius*, palaeontology, amber, West Indies, Dominican Republic.

Sobre los esquizómidos fósiles (Schizomida: Hubbardiidae) del ámbar de la República Dominicana
Resumen: Un análisis de las descripciones originales de las dos especies de esquizómidos fósiles recientemente descritas de ámbar de la República Dominicana demostró que la ubicación genérica de ambas es errónea. Por tanto, se proponen las siguientes reubicaciones: a) *Stenochrus velteni* Krüger & Dunlop 2010 = *Rowlandius velteni* (Krüger & Dunlop, 2010) **comb. n.**; b) ?*Mayazomus pseudoannulatus* Krüger & Dunlop, 2010 = *Antillostenochrus pseudoannulatus* (Krüger & Dunlop, 2010) **comb. n.**
Palabras clave: Schizomida, Hubbardiidae, *Antillostenochrus*, *Rowlandius*, paleontología, ámbar, Antillas, República Dominicana.

Fossil taxa are essential for understanding the evolution and biogeography of its present-day relatives. Nevertheless, when they are misidentified, then the interpretation of the relationships and biogeographic patterns of the extant taxa become distorted.

Krüger & Dunlop (2010) described two specimens of schizomids from Dominican Republic amber (of Miocene age) as belonging to different species: *Stenochrus velteni* (male), and ?*Mayazomus pseudoannulatus* (female).

Krüger & Dunlop (2010: 47, 49) concluded that characters of the male specimen do not match those of the genus *Rowlandius* Reddell & Cokendolpher, 1995 because of "*... the absence of a posterior process on opisthosomal segment XII and the fact that the flagellum is not particularly inflated...*" [italics herein added]. But in spite of that statement, the flagellum of this specimen is typical of many *Rowlandius* species, i.e., see the pertinent figures published by Rowland & Reddell (1979), Armas (2002), and Teruel (2003, 2007). There are also several species of *Rowlandius* [i. e., *R. decui* (Dumitresco, 1977); *R. abeli* Armas, 2002; *R. terueli* Armas, 2002; and *R. moa* Armas, 2004] which exhibit only a poorly developed dorsal process (Fig. 1A).

Rowlandius is the most diversified schizomid genus in the Recent fauna of both the Dominican Republic and the Greater Antilles (Teruel, 2000; Armas, 2004b), whereas the only known West Indian species of *Stenochrus* Chamberlin, 1922 is the widespread *S. portoricensis* Chamberlin, 1922, that ranges from the southern U.S.A. to Brazil (Reddell & Cokendolpher, 1995; Santos et al., 2008). No endemic species of *Stenochrus* have been recorded from the West Indies (Armas, 2004b), while it has more than 15 described species restricted to Mexico and Central America north of Nicaragua (Reddell & Cokendolpher, 1995; Harvey, 2003).

As morphological characters of this male specimen and biogeographic data are congruent with the assumption that it belongs to the genus *Rowlandius*, we herein propose the following nomenclatural action: *Stenochrus velteni* Krüger & Dunlop 2010 = *Rowlandius velteni* (Krüger & Dunlop, 2010) **comb.n.**

The case of the second species described from Dominican Republic amber is most complex. It was based on a female specimen, and was assigned with doubt to *Mayazomus* Reddell & Cokendolpher, 1995, a genus with only two known extant species from Chiapas and Tabasco, Mexico (Reddell & Cokendolpher, 1995; Harvey, 2003).

As pointed out by Krüger & Dunlop (2010:51), "*... the most interesting aspect of the female fossil is the shape of the pedipalp, which yields a number of potentially useful characters such as an anteriorly produced trochanter coming to a sharp point and a tibia with what appears to be pseudoannulation about a third of the way along its length and a blunt mesal spur, partly opposable to the tarsus...*" [italics added]. However, they also stated that: "*... Among extant Neotropical taxa the produced trochanter and [tibial] mesal spur are consistent with the genus* Mayazomus..." [italics added]. Krüger & Dunlop (2010) overlooked the critical fact that no female schizomids have modified pedipalps, and concerning the bizarre shape depicted for this specimen, we assume it is anomalous; this assumption is further supported by the detailed photographs of Krüger & Dunlop (2010: figs. 4A,C), which show conspicuous differences between both pedipalp tibiae of the same specimen.

Krüger & Dunlop (2010: 51) also stated that abdominal flagellum of this fossil species is "*divided into three segments all bearing long setae*" [italic added]. Indeed, in the photos and drawings provided by Krüger & Dunlop (2010, fig. 4 A, D, 5 A, C) some seta-like structures are observed as arising from the first segment (Fig. 1 B), but they belong to the last abdominal sternal plates or are artifacts, because all known hubbardiids lack setae on the first segment of the flagellum

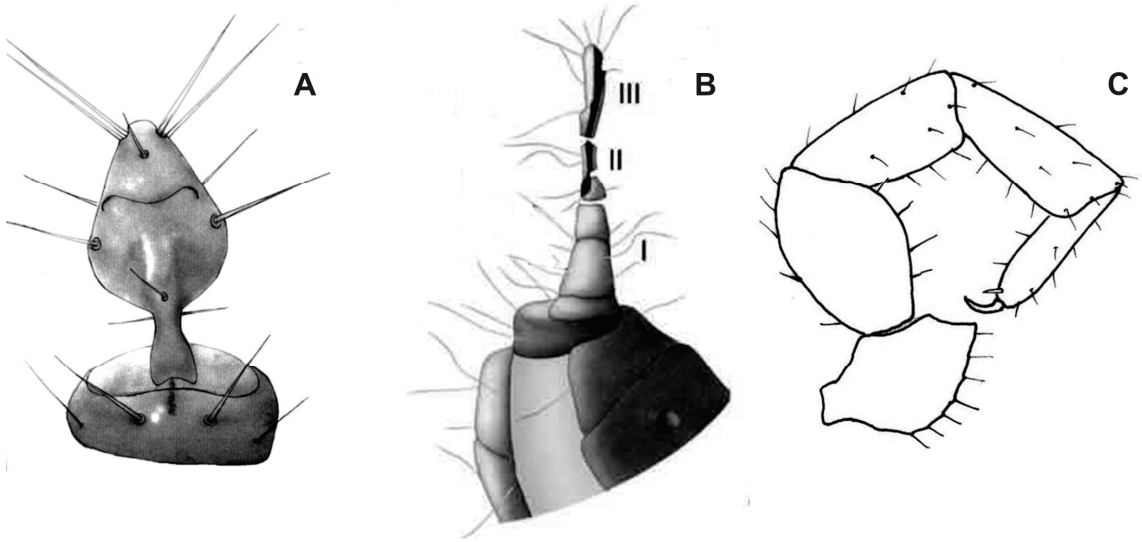

Fig. 1. A, *Rowlandius moa*, abdominal segment XII and flagellum, dorsal aspect (modified from Armas, 2004a). **B**, *Antillostenochrus pseudoannulatus*, last abdominal segments and flagellum of the female holotype, as interpreted by Krüger & Dunlop (2010, fig. 5 C). **C**, *Antillostenochrus planicauda* Teruel, 2003: female pedipalp, external view (after Teruel, 2003).

(Harvey, 1992; Reddell &Cokendolpher, 1995; L. F. de Armas and R. Teruel, personal observations). On the other hand, in the interpretative drawing of this structure (fig. 5 A, C of Krüger & Dunlop, 2010) the first segment appears as divided into at least two parts, exceptional among hubbardiids. A solid discussion on the significance of that supposedly divided segment without examination of the holotype or further specimens is not possible, but we suspect it is a misinterpretation.

Four characters strongly suggest that this fossil specimen belongs to the genus *Antillostenochrus* Armas & Teruel, 2002: (1) abdominal tergite II with more than two dorsal setae (see four setae in Krüger & Dunlop, 2010, figs. 4A, 5A); this character was illustrated but not mentioned in the original description; (2) female with a very long flagellum; (3) overall size relatively large (ca. 5.0 mm), and (4) pedipalp trochanter sharply produced anteriorly (Krüger & Dunlop, 2010, figs. 5A,D) (Fig. 1 C). Among the West Indian schizomids, no other genus has such combination of characters. For that reason, we propose the following nomenclatural action: ?*Mayazomus pseudoannulatus* Krüger & Dunlop, 2010) = *Antillostenochrus pseudoannulatus* (Krüger & Dunlop, 2010) **comb.n.**

The genus *Antillostenochrus* is a Greater Antillean taxon distributed in eastern Cuba (six species), Hispaniola (two species), and Puerto Rico (one species) (Armas, 2004b; Teruel, 2007). It is morphologically close to *Stenochrus* and, in some aspects, to *Mayazomus* as well.

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Bibliography

ARMAS, L. F. DE 2002. Nuevas especies de *Rowlandius* Reddell & Cokendolpher, 1995 (Schizomida: Hubbardiidae) de Cuba. *Revista Ibérica de Aracnología*, **6**: 149-167.

ARMAS, L. F. DE 2004a. Nueva especie de *Rowlandius* Reddell & Cokendolpher, 1995 (Schizomida: Hubbardiidae) de Cuba oriental. *Revista Ibérica de Aracnología*, **10**: 211-214.

ARMAS, L. F. DE 2004b. Arácnidos de República Dominicana. I. Palpigradi, Schizomida, Solifugae Thelyphonida (Arthropoda: Arachnida). *Revista Ibérica de Aracnología*, Volumen Especial Monográfico, **2**: 1-63.

ARMAS, L. F. DE 2010. Schizomida de Sudamérica (Chelicerata: Arachnida). *Boletín de la Sociedad Entomológica Aragonesa (S.E.A.),* **46**: 203-234.

ARMAS, L. F. DE & C. VÍQUEZ 2010. Nuevos Hubbardiidae (Arachnida: Schizomida) de América Central. *Boletín de la Sociedad Entomológica Aragonesa (S.E.A.),* **46**: 9-21.

HARVEY, M.S. 2003. *Catalogue of the smaller arachnid orders of the world*. CSIRO Publishing, Collingwood, ix + 385 pp.

KRÜGER, J. & J.A. DUNLOP 2010. Schizomids (Arachnida: Schizomida) from Dominican Republic amber. *Alavesia,* **3**: 43-53.

REDDELL, J. R. & J. C. COKENDOLPHER 1995. *Catalogue, bibliography and generic revision of the order Schizomida (Arachnida).* Texas Memorial Museum, Speleological Monographs, 4: 1-170.

ROWLAND, J. M. & J. R. REDDELL 1979. The order Schizomida (Arachnida) in the New World. I. Protoschizomidae and dumitrescoae groups (Schizomidae: *Schizomus*). *The Journal of Arachnology*, **6**: 161-196.

SANTOS A. J., S. C. DIAS, A. D.BRESCOVIT & P. P. SANTOS 2008. The arachnid order Schizomida in the Brazilian Atlantic Forest: a new species of *Rowlandius* and new records of *Stenochrus portoricensis* (Schizomida: Hubbardiidae). *Zootaxa*, **1850**: 53-60.

TERUEL, R. 2000. Una nueva especie de *Rowlandius* Reddell & Cokendolpher, 1995 (Schizomida: Hubbardiidae) de Cuba Oriental. *Revista Ibérica de Aracnología*, **1**: 45-47.

TERUEL, R. 2003. Adiciones a la fauna cubana de esquizómidos, con la descripción de un nuevo género y nueve especies nuevas de Hubbardiidae (Arachnida: Schizomida). *Revista Ibérica de Aracnología*, **7**: 39-69.

TERUEL, R. 2007. *El género* Rowlandius *Reddell & Cokendolpher 1995 (Schizomida: Hubbardiidae) en la región Oriental de Cuba*. M.Sc. Thesis. Centro Oriental de Ecosistemas y Biodiversidad, Santiago de Cuba, iii + 92 pp.