



Taxonomy / Taxonomie

Rediscovery of *Eulibitia ectroxantha* (Mello-Leitão, 1941) and synonymy of *Sphalerocynorta* Mello-Leitão, 1933 (Opiliones: Cosmetidae)



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ARTICLE INFO

Article history:

Received 7 July 2019

Accepted after revision 1st November 2019

Available online 21 November 2019

Keywords:

Arachnida

Laniatores

Neotropics

Andes

Neotype

ABSTRACT

The species *Brachylibitia ectroxantha* was described by Mello-Leitão in 1941 and since then it was never again reported or studied. Its type is certainly lost and his identity was until now a mystery; it is currently considered as *species inquirenda* and transferred to *Eulibitia* in a recent revision of the genus. Herein, we designate a neotype and provide a redescription of the species based on fresh material from Belén (Boyacá, Colombia) 50 km SW from the type locality, across the Chicamocha River. The species is recognizable by the blot pattern of the ladder mask of the dorsal scutum, the absence of groin warts in coxa IV and of armature in some areas of the mesotergum. Additional data about the genus is offered, and the species *Cynorta ambigua* is herein recognized as a junior synonym of *Eulibitia scalaris*, involving the synonymy of the genus *Sphalerocynorta* Mello-Leitão, 1933.

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1. Introduction

Many species of Cosmetidae were described by arachnologist Mello-Leitão following an atomizing system of species and genera. A remarkable example has been given by him in 1941 [1] when, in adjacent pages (166–167), misguided by the uncritical use of meristic characters, he described three new species of Cosmetinae within two new genera: *Brachylibitia* and *Platymessa*, all of the Boyacá department of Colombia. Recent studies [2,3] showed that the three names proposed by Mello-Leitão [1] match the current diagnosis of *Eulibitia* Roewer, 1912 and considered both above-cited genera as junior synonyms.

Although Medrano and Kury [3] recognized *Eulibitia ectroxantha* as a valid member of *Eulibitia* (morphologically different of the other members), they could not examine

any material of this species, because the type series has been lost for a long time, and already did not appear in the catalog of harvestmen types of the Museu Nacional by B. Soares [4]. Therefore, they created a short diagnosis based exclusively on Mello-Leitão's original description. Now, recent collecting in Boyacá allowed the rediscovery of this species in Belén, 50 km SW of the type locality La Uvita. External and genital morphologies are herein described and illustrated, and a neotype is designed (ICZN Code Art. 75.3), removing the current status of *species inquirenda*. Additionally, the synonymy of *Cynorta ambigua* Sørensen, 1932 with *Eulibitia scalaris* (Sørensen, 1932) is proposed here.

2. Material and methods

The descriptions of the dorsal scutum outline follow Kury and Medrano [4] and the chaetotaxy of the penis follows Kury and Villarreal [6] and Medrano and Kury [3]. The descriptions of colors use the standard names of

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the 267 Color Centroids of the NBS/IBCC Color System (<http://www.people.csail.mit.edu/jaffer/Color/Dictionaries#nbs-iscc>) as described in Kury and Orrico [7]. All measurements are in millimeters and were taken with a stereomicroscope, referring to the maximum length and width.

The examined material is deposited in ICN (Instituto de Ciencias Naturales–Universidad Nacional de Colombia). Other abbreviations used: CL: carapace length; CW: carapace width; AL: abdominal scutum length; AW: abdominal scutum width; Fe: femur; Ti: tibia. Tarsal formula: numbers of tarsomeres in tarsus I to IV; when an individual count is given, the order is from the left to the right side (figures in parentheses denote number of tarsomeres only in the distitarsi I–II).

The illustrations were made using a stereomicroscope with a lucid camera and digitalized using the software Inkscape v. 0.92. Photographs were taken with stereomicroscope Leica M205C coupled with a digital camera Leica DCF450. The resulting images were edited with Adobe Photoshop CS6 and the plates were prepared in CorelDraw X8.

3. Systematic accounts

Eulibitia Roewer, 1912

Sphalerocynorta Mello-Leitão 1933: 113. Type species by original designation: *Cynorta (Cynorta) ambigua* Sørensen, 1932. Syn. nov.

Eulibitia ectroxantha (Mello-Leitão, 1941)

Brachylibitia ectroxantha Mello-Leitão, 1941: 166, fig. 1.

Cynorta ectroxantha: Goodnight & Goodnight 1953: 38.

Brachylibitia ectroxantha: Kury 2003: 38.

Platymessa ectroxantha: Medrano & Kury 2016: 57 (tagged as species inquirenda).

E. ectroxantha: Medrano & Kury 2017: 16.

Material examined. Colombia, Boyacá, Belén, vereda Caracoles alto, roadside (6°1'48.68" N 72°54'36.32" W) 2900 m, 30.iv.2016. A. García and O. García leg. 1 male neotype, herein designated, and 1 female (ICN-AO 1560).

Qualifying conditions for neotype designation. ICZN Code Art. 75.3 establishes a list of seven particulars to be observed, plus the need for a statement of an exceptional need, all of which follow: the need for the designation of a neotype in this case is acute, because species of *Eulibitia* are fairly similar to one another and in some cases they may be sympatric. The particulars: (1) the neotype is designated here with the express purpose of clarifying the taxonomic status of *E. ectroxantha* and consequently of the genus *Eulibitia*; (2) the characters that we regard as differentiating from other taxa the nominal species-group taxon are explicit in the diagnosis below; (3) data and description sufficient to ensure the recognition of the specimen designated are provided here in the description section; (4) we know that the name-bearing type specimen is lost from B. Soares [5] and from a search in our own museum (especially now, after the catastrophic fire that destroyed the palace of Museu Nacional in 2018, we are sure nothing survived, misplaced or not); (5) the neotype is consistent with what is known of the former name-bearing type from

the original description, especially because of the shape of the ladder mask; (6) the neotype came as nearly as practicable (only 50 km) from the original type locality as explained above; (7) the neotype is the property of the Universidad Nacional of Bogotá, a young expanding collection.

Diagnosis. This species may be differentiated from its congeneric ones by the combination of the following characteristics: coxa IV without groin warts, paramedian tubercles of posterior margin of scutum acuminate instead of rounded, area I without paramedian tubercles or very reduced, flattened tubercles in fingers of chelicerae, leg I with 5 tarsomeres and the ladder mask with rungs only, no rails in scutal grooves I, II, and III.

Description of male neotype (ICN-AO 1560)

Measurements. CL = 1.86, AL = 3.44, CW = 3.05, AW = 5.04, IOD = 0.84, Fe I = 2.1, Ti I = 1.6, Fe II = 3.8, Ti II = 3.1, Fe III = 2.9, Ti III = 2.2, Fe IV = 3.6, Ti IV = 3.3.

Dorsum (Fig. 1A–D). Dorsal scutum type beta, with symmetrical mid-bulge. Posterior margin of scutum with two contiguous acuminate paramedian tubercles slanted backwards. Lateral margins of scutum smooth. Posterior margin of scutum with a row of small tubercles. Tergites with row of small tubercles and anal operculum finely granular.

Venter. Free sternites finely granular; coxa I and coxa of pedipalp with longitudinal anterior row of tubercles; coxae II–IV finely and uniformly granular. Anal operculum finely granular.

Chelicerae (Fig. 2C and D). Basichelicerite with row of eight small tubercles on the basal side; movable finger with a row of five tubercles, giving a serrated appearance; fixed finger with four tubercles, all of the same size.

Pedipalps (Fig. 2A and B). Trochanter with strong ventral process. Femur with pronounced dorsal row of six separated tubercles, with ventral row of three setiferous tubercles and mesodistal process. Patella with low mesal keel. Tarsus with three thick setae in ventro-ectal part and two in ventro-mesal part.

Legs (Figs. 1A–B and 3A–F). Segments from femora to metatarsi of legs I–III straight (except for femur III that is slightly curved) and granulate, with no conspicuous ornamentation, Trochanter III with a small retro-distal apophysis. Metatarsi with brighter transversal rings. Coxa IV finely granulated, without groin warts, distal apophysis of coxa IV tuberculate and directed laterally. Trochanter IV with small retro-distal apophysis. Femur IV entirely tuberculate with two longitudinal ventral rows differentiated of small tubercles along entire length; general shape straight in dorsal view. Tarsal counts: 5(3)/9(3)–8(3)/6/7.

Color (in alcohol) (Fig. 1). Body and appendages color background 40 (strong reddish brown) mottled in 44 (Dark Reddish Brown) occupying almost entirely the mesotergum, ladder mask 104 (pale greenish yellow). Pedipalpus, chelicerae, and trochanters and tarsomeres of legs 87 (moderate yellow).

Penis (Fig. 4). Ventral plate trapezoid, narrower basally and distal border hardly concave; dorsal process of glans long and narrow, wattle long. Shapes and organization of macrosetae as follows: MS C1–C2 large, curved and flat; MS D1 large and straight, D2 small; MS A1–A2 large.



Fig. 1. *Eulibitia ectroxantha* (Mello-Leitão, 1941), male neotype (ICN-AO 1560) (A–D) and female (ICN-AO 1560) (E), habitus. A. Dorsal view. B. Lateral view. C. Frontal view. D. Panoramic, dorsal view. Scale bars = 1 mm.

Female (ICN-AO 1560).

Measurements. CL = 1.5, AL = 3.1, CW = 2.6, AW = 4.0, IOD = 0.6, Fe I = 1.7, Ti I = 1.4, Fe II = 3.2, Ti II = 2.6, Fe III = 2.4, Ti III = 1.9, Fe IV = 3, Ti IV = 2.9.

With longer coda (Fig. 1E) and legs more delicate than males. Males with thicker basitarsi of legs I, III and IV (but not notably swollen) (Fig. 1E). Legs IV gently curved in the base. Tarsal counts: 5(3)/8(3)/6/7.

Natural history. The species is known to inhabit seriously anthropized areas near grasslands dedicated to cattle raising with sporadic pine trees. During the day, the individuals remain under a shelter of stacked rocks, where they were collected.

***Eulibitia scalaris* (Sørensen, 1932)**

Libitia (*Messa*) *scalaris* Sørensen in Henriksen 1932: 414.

Messa scalaris: Mello-Leitão 1933: 112.

Messatana scalaris: Strand 1942: 398; Kury 2003: 67.

Cynorta (*Cynorta*) *ambigua* Sørensen in Henriksen 1932: 387. Syn. nov.

Sphalerocynorta ambigua: Mello-Leitão 1933: 113; Kury 2003: 83.

Cynorta ambigua: González-Sponga 1992: 427.

Acromares lateralis Goodnight & Goodnight 1943: 2, fig. 7; Flórez & Sánchez 1995: 368; Kury 2003: 37 [junior subjective synonym of *Libitia scalaris* Sørensen, 1932 by Medrano & Kury (2017)]

Cynorta lateralis: Goodnight & Goodnight 1953: 38 [non *Cynorta lateralis* Roewer, 1928; junior secondary homonym].

Type data. 2 ♂ 2 ♀ syntypes (ZMG, lost), [COLOMBIA, Cundinamarca] (originally mistakenly reported as in

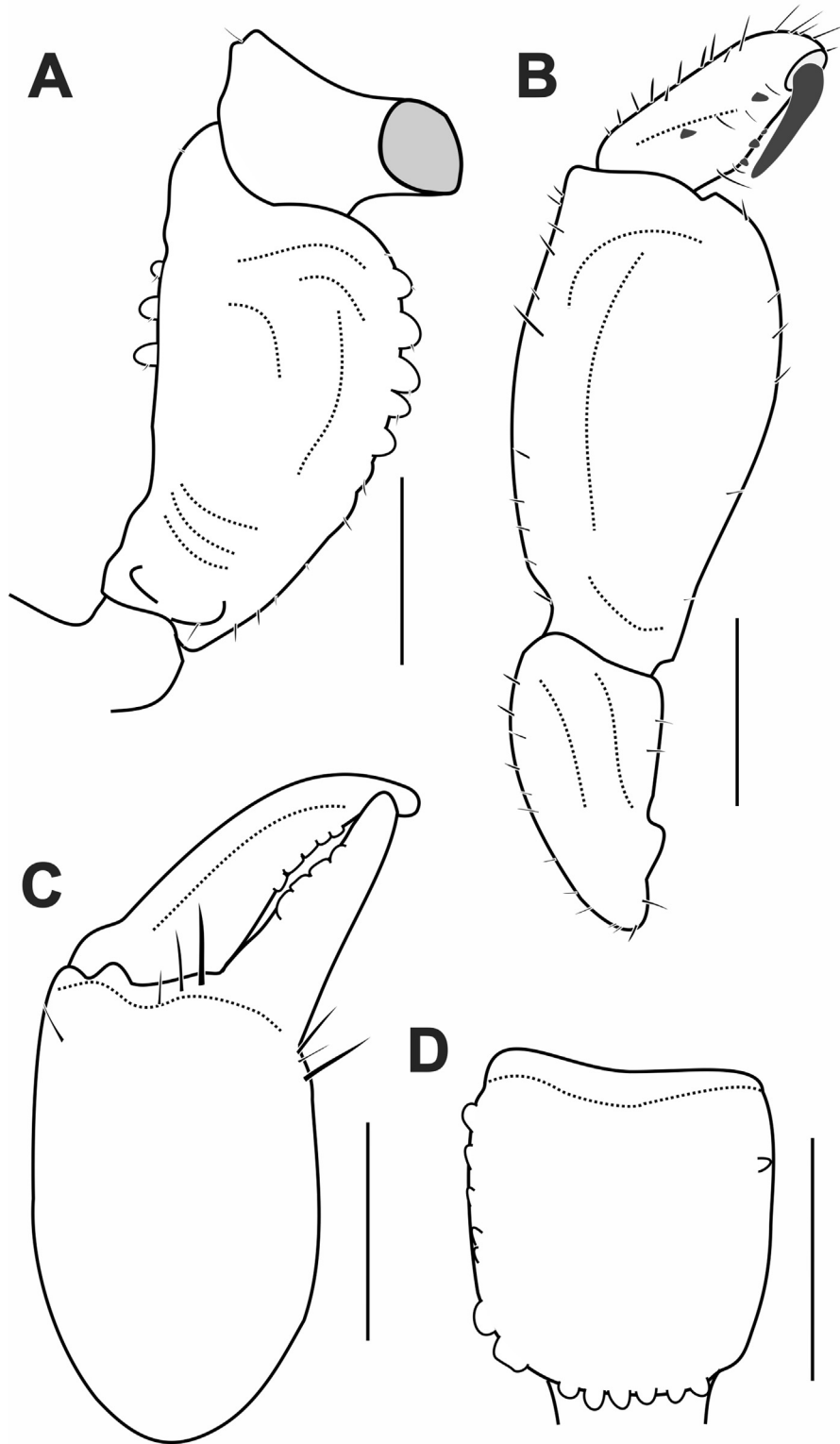


Fig. 2. *Eulibitia ectroxantha* (Mello-Leitão, 1941), male neotype (ICN-AO 1560). A. Left pedipalpus, femur and patella in ventral view. B. Left pedipalpus, tibia and tarsus in ventral view. C. Left basichelicerite, dorsal view. D. Left cheliceral hand, frontal view. Scale bars = 0.5 mm.

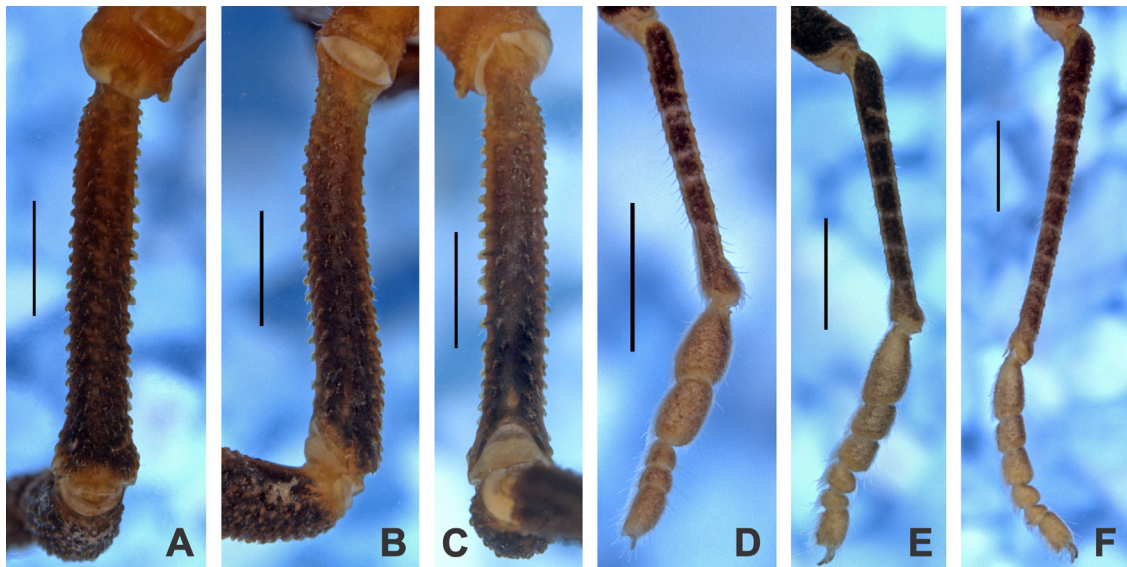


Fig. 3. *Eulibitia ectroxantha* (Mello-Leitão, 1941), male neotype (ICN-AO 1560). A. Left femur and trochanter IV, dorsal view. B. Same, prolateral view. C. Same, ventral view. D. Left tibia and tarsomeres of leg I, prolateral view. E. Left tibia and tarsomeres of leg III, prolateral view. E. Left tibia and tarsomeres of leg IV, prolateral view. Scale bars = 1 mm.

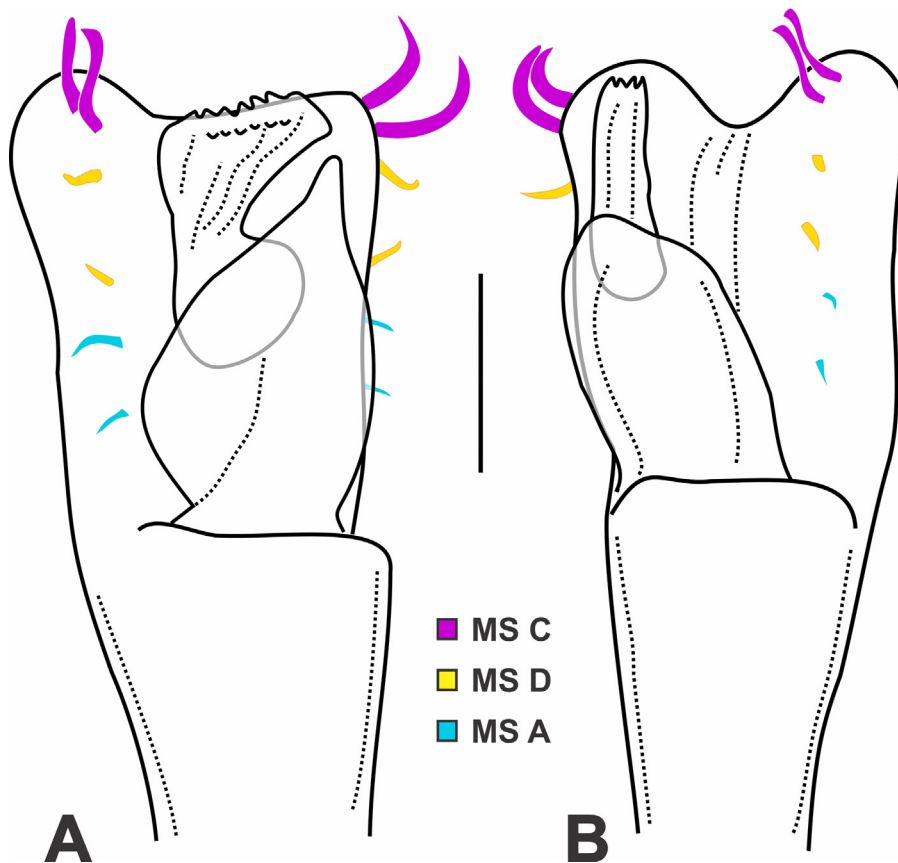


Fig. 4. *Eulibitia ectroxantha* (Mello-Leitão, 1941), male neotype (ICN-AO 1560), apical part of penis. A. Left oblique view. B. Right oblique view. Scale bar: 0.1 mm.

“Venezuela”), Pacho and Zipaquirá, near Bogotá, 2000–2200 m; 1 ♂ 1 ♀ syntypes (ZMG, lost), [COLOMBIA, Cundinamarca, Soacha, Salto del] Tequendama. All type material of Opiliones in the Zoologisches Museum of the Georg-August-Universität in Göttingen has been destroyed, according to information from the curator Dr. Gert Tröster (June 28, 2011).

Rationale of the synonymy. As stated above, all material used by Sørensen (1932) for describing the species is now lost. The original description is not accompanied by any illustration, but it is detailed enough to recognize it as *Eulibitia scalaris* (Sørensen, 1932) based in armature and spots pattern of dorsal scutum. Henriksen (1932) himself, who edited Sørensen’s manuscript, stated that this species should be included within *Eulibitia*, noting the similarity with *E. maculata* Roewer, 1912. Its geographical distribution is in concordance with our proposal of the synonymy.

4. Discussion

Based in the exomorphology of known species of *Eulibitia*, we recognize two groups: the *scalaris* group that includes *E. scalaris*, *E. castor*, *E. helena*, and *E. leda*, and the *maculata* group including *E. maculata*, *E. clytemnestra*, *E. pollux*, and *E. ectroxantha*. The members of the latest group share the following features: (1) coxa IV without groin warts and (2) absence of armature (paramedian tubercles) in area I. Inside this group, only *E. ectroxantha* possesses paramedian tubercles in area III.

The ladder mask, considering its intraspecific variation, has been proved useful to elucidate the monophyly of cosmetid genera under cladistic paradigm [8], nonetheless potentially useful phylogenetic characters inside genera are unexplored. Parts of the ladder mask: rungs and rails (as defined in Medrano & Kury [2]) may be useful to unveiling natural proximity between species. Thus, *E. ectroxantha* shows similarities with *E. pollux* by having a well-marked rung of groove I, a dissociated groove II, and a groove III without rung. Both species belong to the maculate group. Likewise, *E. castor* possesses a reduced ladder mask just present at the lateral margins of groove I. It is difficult to suggest the proximity of this species to *E. ectroxantha* and *E. pollux* for two reasons: (1) *E. castor* belongs to the *scalaris* group, with morphological differences in coxa IV and the armature of the mesotergum; (2) variations of the ladder mask in *E. castor* are unknown because the pattern was described based on a single

specimen, and as far as we know, the variation may be dramatic in this genus as in the case of *E. maculata*.

Disclosure of interest

The authors declare that they have no competing interest.

Acknowledgements

We thank Andrés García and Orlando García for collecting material here examined and Pio Colmenares for the donations of lab material. Eduardo Flórez kindly loaned material deposited in ICN. We wish to thank all people who donated funds for the reconstruction of the AracnoLab, especially the American Arachnological Society and Jürgen Gruber. The photographs were taken with the stereomicroscope (CNPq Universal 14/2013) with the kind assistance of Manoela Woitovicz Cardoso. This study has been supported by grants #306411/2015-6 from the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq, Produtividade em Pesquisa), #200.085/2019 from Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro (FAPERJ, Apoio Emergencial ao Museu Nacional) to ABK and the scholarship from FAPERJ (#E-26/200.605/2018) to LNA.

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