

Phylogeny for three Polyorthini genera of the *Biclonuncaria* RAZOWSKI & BECKER, 1993 group, with descriptions of new taxa

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Abstract. Three Neotropical genera, *Biclonuncaria* RAZOWSKI & BECKER, *Clonuncaria* gen.n. and *Pseuduncifera* gen.n. are discussed and their phylogeny is proposed. Two genera and two new species (*C. cimoliptera*, *P. euchlanis*) are described.

Key words: Polyorthini, Tortricidae, Lepidoptera, descriptions, phylogeny.

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I. GENERAL

The Neotropical *Biclonuncaria* group consisting of three genera is compared with the Old World genus *Ebodina* DIAKONOFF which also belongs to more advanced Polyorthini and sharing some similarities with the discussed genera. It is regarded as a representative of a putative out-group. The *Biclonuncaria* group of genera characterises with seven apomorphies of which the presence of terminal lobes of tegumen, sac-shaped processes of transtilla, their tactile setae, and the development of pollex may be regarded as autapomorphies.

Some characters are variably distributed within the group, and probably in several groups of Polyorthini. These are the shape of aedeagus, the development of the apodemes of muscle five on coecum penis, and probably the multiplied signum. Some characters belonging to the ground-plan of the tribe (or subfamily Chlidanotinae), as the reduction of the coremata and outer split of valva, the fusion of transtilla and juxta and the membranous, dorsally open aedeagus accompanied by an atrophy of caulis appear independently several times. Unfortunately some characters as the position of the ductus seminalis and accessory bursa require reexamination in several species.

Morphological characters used for analysis: a (open circles in Fig. 1) – plesiomorphic state, b (closed circles) – apomorphic state, c – third most advanced state in transformation series.

1. Labial palpus: a – long, over twice eye diameter; b – short, about 1.5 eye diameter
2. Tegumen lobes: a – large, elongate, almost as long as pedunculus; b – short, broad, distal
3. Pedunculus: a – broad; b – very slender
4. Uncus: a – fully developed; b – vestigial or absent
5. Bifurcation of uncus: a – postmedian; b – basal

6. Pseudouncus: a – absent; b – present
7. Socius: a – lateral, from tegumen shoulder; b – submedian, from base of uncus
8. Socius: a – drooping; b – with submedian base
9. Arm of gnathos: a – rod-like, distinct; b – not developed, replaced by lateral sclerite
10. Tactile seta on arm of gnathos: a – absent; b – present
11. Lateral sclerite (at base of gnathos): a – weak, subtriangular; b – large, coalesced medially, provided with process
12. Process of lateral sclerite: a – absent; b – present
13. Terminal plate of gnathos: a – developed; b – absent
14. Arm of gnathos: a – simple; b – with terminal processes
15. Terminal plate of gnathos: a – simple; b – bilobed
16. Tuba analis: a – submembranous, simple; b – in major part well sclerotized, elaborate
17. Transtilla: a – a simple band; b – with submedian lobes
18. Tactile hairs on transtilla lobes: a – absent; b – present
19. Transtilla: a – directly fused with processus basalis of valva; b – connected membranously with processus basalis
20. Median part of transtilla: a – slender; b – broad, expanding dorsally
21. Ventro-lateral lobe of juxta: a – absent; b – present
22. Valva: a – moderately broad; b – slender
23. Outer split of valva: a – present; b – secondarily reduced
24. Terminal group of bristles on disc of valva: a – absent; b – present
25. Sacculus: a – simple; b – with terminal spine
26. Costa of valva: a – simple; b – with expanded postmedian lobe
27. Aedeagus: a – rather uniformly sclerotized; b – submembranous
28. Colliculum: a – broad, rather weakly sclerotized; b – slender, narrowing, well sclerotized tube
29. Accessory bursa: a – present; b – absent
30. Ductus seminalis: a – originating in corpus bursae; b – in ductus bursae
31. Groups of scent scales of sterigma beyond ostium: a – not developed; b – well developed, scales numerous
32. Signum: a – minute spinulae in a concavity; b – large spines; c – plate-shaped
33. Signum: a – single; b – subdivided into four parts

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II. TAXONOMICAL PART

A b b r e v i a t i o n s u s e d:

CMNH – Carnegie Museum Natural History, Pittsburgh

MRSN – Museo Regionale di Scienze Naturali, Torino

NHML – Natural History Museum, London

Biclonuncaria RAZOWSKI & BECKER, 1993

Biclonuncaria RAZOWSKI & BECKER, 1993, Revta bras. Ent., **37**(3): 507. Type-species: *Biclonuncaria dalbergiae* RAZOWSKI & BECKER, 1993, by original designation.

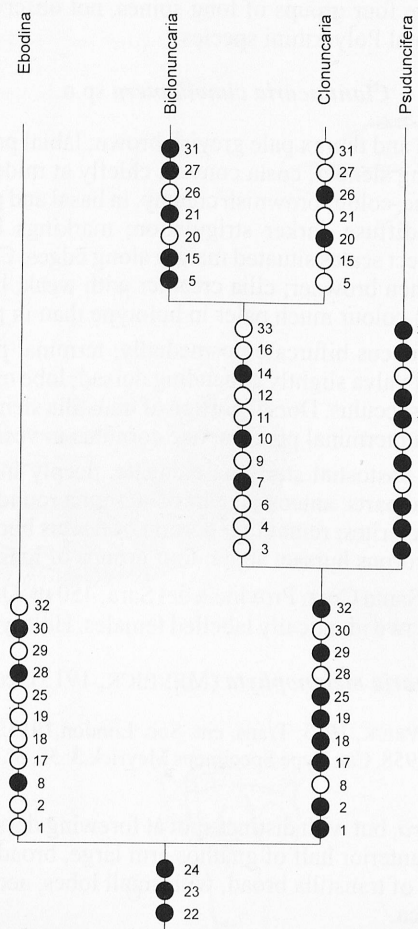


Fig. 1. Proposed phylogeny for the *Biclonuncaria* group of genera. For explanation of characters see the text; open circles – plesiomorphic state, closed circles – apomorphic state.

This genus was described to contain 11 Neotropical species distributed throughout the region. Some further undescribed species require examination. Characteristics of the genus as in the original paper, and in Fig. 1.

Clonuncaria gen.n.

Type species: *Clonuncaria cimoliptera* sp.n.

Shape of forewing, coloration and distribution of appressed scales of forewing similar to those in the species of the preceding genus. Venation: all veins separate; in forewing R5 to termen just beneath apex, M3-CuA1 approaching at discal cell, base of CuA1 opposite 2/3 distance between R1-R2; in hindwing Sc+Rs-M1 close to one another in basal third, M3-CuA1 connate.

Genitalia as described for the species.

R e m a r k s. This genus is established to include two close species. Its putative autapomorphies are the strongly convex dorsal part of transtilla, the membranous connection of its lateral parts with valva, the postmedian lobe of costa of valva, the atrophy of median part of gnathos, and multi-

plication of the signa (there are four groups of long spines, not observed in this group of genera, however, found in a few Oriental Polyorthini species).

Clonuncaria cimolioptera sp.n.

Alar expanse 15 mm. Head and thorax pale greyish brown; labial palpus ca 2, with second joint expanding terminally. Forewing slender, costa convex, chiefly at middle, apex very short, termen almost straight, oblique. Ground-colour brownish creamy, in basal and postmedian parts of wing suffused brownish, with weak, diffuse darker strigulation; markings brownish, rather indistinct, marked with large groups of erect scales situated mainly along edges. Cilia creamer. Hindwing pale brownish creamy to middle, then browner; cilia creamer with weak, browner median line. Proximally to median fascia ground-colour much paler in holotype than in paratypes.

Male genitalia (Figs 3,4): uncus bifurcate posmedially; terminal process of gnathos long, expanding apically; apical part of valva slightly expanding dorsad; lobe of costa postmedian; group of short setae above distal half of sacculus. Dorsal portion of transtilla slender, with distinct submedian lobes. Aedeagus armed with subterminal process; one cornutus in vesica.

Female genitalia (Fig. 4): postostial sterigma elongate, deeply incised in middle posteriorly, with subtriangular, sharp apical parts; anteostial part of sterigma rounded; colliculum broad, membranous with indistinct inner sclerites; remaining portion of ductus bursae slender; accessory bursa extending from distal part of corpus bursae; signa, four groups of long spines.

Holotype, male: "Bolivia: Santa Cruz, Provincia del Sara, 450 m, October 1909, Jose Steinbach. CMNH Acc.4543". Paratypes, two identically labelled females. Holotype in the CMNH collection.

Clonuncaria melanophyta (MEYRICK, 1913), **comb.n.**

Argyrotoxa melanophyta MEYRICK, 1913, Trans. ent. Soc. London, **1913**: 172. Type-locality: Argentina: Tucuman. Coll. NHML. Clarke, 1958, Cat. Type Specimens Meyrick, **3**: 55, pl. 27, fig. 2,2b (wings, male genital type).

Very similar to *cimolioptera*, but with distinct spot at forewing dorsum. In male genitalia the bifurcate part of uncus shorter, anterior half of gnathos arm large, broad, lobe of costa of valva situated more distally, dorsal part of transtilla broad, with small lobes, aedeagus with triangular apical thorn, and five cornuti in vesica.

Pseuduncifera gen.n.

Type species: *Pseuduncifera euchlanis* sp.n.

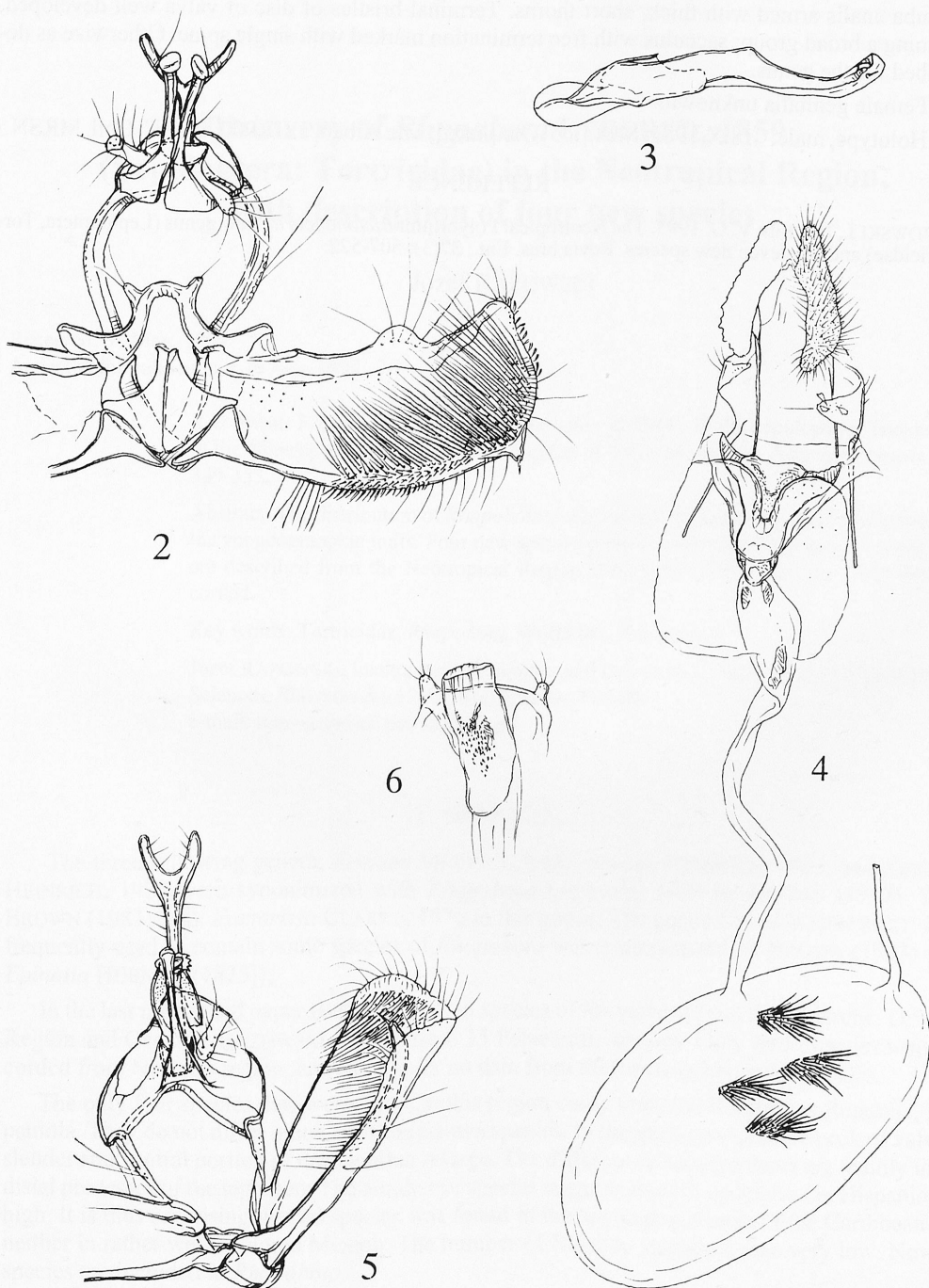
Habitus as in preceding genus. Venation: in forewing R5 to termen, M2-M3 strongly approaching basally, close to CuA1, in hindwing, CuA2 opposite 1/3 distance between two first radial veins; in hindwing M2, M3 and CuA1 strongly approaching to one another basally.

Male genitalia as described for the species and in Fig. 1. The supposed autapomorphies are the presence of pseudouncus, small triangular uncus, atrophy of arms of gnathos, presence of large, fusing medially lateral sclerites of tegumen, presence of long, rod-like process of this last, and well sclerotized, elaborate tuba analis.

Pseuduncifera euchlanis sp.n.

Alar expanse 15 mm. Head greyish brown, thorax with darker and paler spots, labial palpus brownish, ca 2. Forewing not expanding terminally, termen distinctly oblique, rather straight. Ground-colour greyish, indistinctly suffused with brownish; markings brown, dotted with black-brown, several larger spots in distal third of wing. Cilia rather concolorous with ground-colour. Hindwing and cilia pale brownish, rather transparent in basal part, basal line brownish.

Male genitalia (Figs 5,6): uncus, a small apical convexity of tegumen; pseudouncus bifid in terminal fifth, with broad base extending from beyond broad part of tegumen, proximally; bases of so-



Figs 2–6. Male and female genitalia: 2,3 – *Clonuncaria cimolioptera* sp.n., holotype; 4 – same species, paratype; 5,6 – *Pseuduncifera euchlanis* sp.n., holotype.

cii lateral; typical gnathos absent, probably partially included in uniform lateral sclerites fusing with one another medially and armed with long, slender, median, broad basally process; terminal portion of tuba analis armed with thick, short thorns. Terminal bristles of disc of valva well developed, forming a broad group; sacculus with free termination marked with single spine. Otherwise as described for the genus.

Female genitalia unknown.

Holotype, male: "18.X.1981, Mex.[ico] Oax[haca], Mte Alban, 1.II.1900; Bassi". Coll. MRSN.

REFERENCE

- RAZOWSKI J., BECKER V. O. 1993. The Neotropical Polyorthini *Biclonuncaria*, new genus (Lepidoptera, Tortricidae) and its eleven new species. *Revta bras. Ent.*, **37**(3): 507-522.