Acta zool. cracov. **42**(2): 297-306, Kraków, 17 Dec., 1999

Notes on *Deltobathra* MEYRICK, 1923 and *Ecnomiomorpha* OBRAZTSOV, 1959 (Lepidoptera: Tortricidae), with descriptions of new taxa

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Received: 31 May, 1999
Accepted for publication: 28 June 1999

RAZOWSKI J., BECKER V. O. 1999. Notes on *Deltobathra* MEYRICK, 1923 and *Ecnomiomorpha* OBRAZTSOV, 1959 (Lepidoptera: Tortricidae), with descriptions of new taxa. Acta zool. cracov. **42**(2): 297-306.

Abstract. Two Neotropical genera, *Deltobathra* and *Ecnomiomorpha* are revided and transferred to Euliini. Ten species (*Deltobathra autarkia*, *Ecnomiomorpha caracana*, *E. aurosa*, *E. aurozodion*, *E. belemia*, *E. chrestodes*, *E. novaelimae*, *E. parae*, *E. rondoniae*, *E. tubulifera*) are described as new.

Key words: Lepidoptera, Torticidae, Euliini, Neotropic, new species.

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I. GENERAL

OBRAZTSOV (1959) had some doubts if *Ecnomiomorpha* belongs in Tortricidae but based on the venation finally included it in the Cnephasiini with a note "in which the new genus has a somewhat isolated position". POWELL et al. (1995) placed it in Tortricini based on the structure of the valva and the OBRAZTSOV's suggestions.

We are placing *Deltobathra* and *Ecnomiomorpha* in Euliini basing on the characters of the male genitalia, mainly on the shape of valva. The uncus is of the euliine shape, without spines characteristic of Cnephasiini, the gnathos is also different than in that tribe (it is constantly absent in Tortricini). The structure of valva, especially the presence of the caudal transformed spines, the developement of the sensillar wart of disc of valva, the presence of ventral lobe of coecum penis, and the development of the basal opening of valva (in *novaelimae*) have most probably involved secondarily in this tribe.

Two Neotropical genera of Euliini *Ecnomiomorpha* OBRAZTSOV and *Deltobathra* MEYRICK characterise by the presence of six putative synapomorphies: the coloration of the forewing (yellow ground-colour with blackish base and transverse fascia), the broad socii with slender bases, the very slender, long pedunculi of tegumen, the membranous transtilla, the presence of elongate, weakly sclerotized plate connecting aedeagus with juxta and the well developed sclerotic ribs of this last. The absence of transtilla may be convergent in Tortricidae but its entire reduction was unknown in

Euliini. The presence of large, spined concavities situated in the membrane beyond sterigma is most probably of an apomorphic importance.

The geographic distribution of the two genera is highly expanded by the present data; *Ecnomiomorpha* known to this date of the type-species only consists now of ten species, *Deltobathra*, also described as monotypical has two representatives. The former genus known from Panama is now recorded from Brazil. *Deltobathra* was originally reported from Peru and Brazil, but the paralectotype of it type-species may represent a quite different species or genus. Of the present distribution one can suppose that the two genera are widely distributed in the Neotropical Region.

The authors have some doubts as concers the monophily of *Ecnomiomorpha.* The known species form at least three groups. There are, however, some intermediate or difficult to interprete characters, and the females of some species remain unknown.

The systematic position of the two genera is also unclear. It is discussed with *Ecnomiomorpha*. We suppose that *Deltobathra* is a more generalized genus as having a plesiomorphic shape of the uncus, less specialized valva, and the absence of sensillar wart of the valva.

A c k n o w l e d g m e n t s. The authors' thanks are due to Mr. Marek KOPEĆ who kindly made all genitalia slides and to the authorities of the Natural History Museum London (NHML) for enabling the examination of their material.

The holotypes of the new described species are deposited in the V. O. BECKER Collection, Museu National, Universidade Federal, Rio de Janeiro.

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

DF – Districto Federal

GS – genitalia slide

MG – Minas Gerais

NHML – Natural History Museum London

PA – Pará

RJ – Rio de Janeiro

RO – Rondonia

II. SYSTEMATIC PART

Deltobathra MEYRICK, 1923

Deltobathra MEYRICK, 1923, Exotic Microlepid.,**3**: 55. Type-species: *Deltobathra platamodes* MEYRICK, 1923.

Coloration as in *Ecnomiomorpha*; venation illustrated by CLARKE (1958).

Male genitalia (illustrated by RAZOWSKI, 1997) as in mentioned genus but the uncus is simple, not expanding terminally and terminal part of gnathos is strongly elongate. Valva broad, with terminal setae or spines, not elongate, rather weakly sclerotized caudally; dorso-basal portion of valva small; no sensillar wart on disc. Described as monotypic; two species included.

Deltobathra platamodes MEYRICK, 1923

Deltobathra platamodes MEYRICK, 1923, Exot. Microlepid.,**3**: 55. Type-locality: Peru: Jurimaguas (NHML). – CLARKE, 1958: 92, figs 1a-c (wings, head, venation, male genit. of lectotype). – RAZOWSKI, 1997: 87, fig. 23 (male genitalia of lectotype).

Male genitalia characterized in my above mentioned paper. It is easily distinguished by the long uncus and the shape of valva which is tapering distad, provided with group of bristles below midcosta. Female unknown.

Described from Pará, Brazil and Peru (the lectotype). The Brazilian specimen (not examined genitalically) may represent *autarkia* or any other species of the following genus.

Deltobathra autarkia sp.n.

Wingspan 11 mm. Head and thorax blackish brown; labial palpus ca 1.5. Forewing broadest medially; costa uniformly gently convex, termen somewhat oblique, hardly convex. Ground-colour golden yellow, with some black brown strigulae along anterior half of costa, and some larger, transverse ones extending from subapical blotch towards tornus. Basal blotch black-brown, with oblique, slightly concave posterior edge; median fascia leaden grey slightly concave proximally and in middle distally, with dorso-posterior part mixed ochreous, and black strigulae along edges; subapical botch similar, paler. Fringes concolorous with ground-colour. Hindwing grey with paler cilia.

Male genitalia (Figs 1,2): Distal portion of tegumen reduced; uncus short, slightly tapring apically; terminal part of gnatos well developed. Valva ovate with short hairs near middle of disc and numerous spines in caudal third; sacculus without free termination, marked by two subterminal spines; aedeagus long, slender, curved, provided with subterminal ventral plate; cornuti absent.

Holotype, male: "Brasil: MG, Caraça, 1300 m, 25.X.1994, V. O. BECKER & K. S. SATTLER Col.; Col. BECKER 93552"; GS 22358. Paratypes, three identically labelled males.

Ecnomiomorpha OBRAZTSOV, 1959

Ecnomiomorpha OBRAZTSOV, 1959, Am. Mus. Novitates, nr 1959: 3, figs 1, 2, 3-4, 5 (venation, head, male, female genitalia). Type-species: *Tortrix nigrivelata* WALSINGHAM, 1914, by original designation.

The putative autapomorphies of this genus are the flattened distal part of the uncus, the dorsal position of the uncus at the end of tegumen, the backward directed uncus, the shape of the basal sclerite of valva, the shape of the socius which is broad, strongly tapering basally, and the presence of small inner prominence of the base of the arm of gnathos.

The pedunculi are very long and this apomorphic character seems to be rather constant. The end part of tegumen is in the majority of species elongate, slender, with exception of *caracana* in which it is shortened (a plesiomorphy) and the type-species (also closely related to it *belemia* and most probably *aurosa* the female of which is very similar to that in *nigrivelata*) in which the tegumen is expanding to form three lobes. The gnathos being plesiomorphic in the three last mentioned species is constantly shortened in the remaining species. The shapes of the socii are constant but in *parae* and *novaelimae* their basal parts are fusing. The shapes of valvae are variable: the costa may either extend distally or atrophying, the caudal portion is more or less long, strongly sclerotized, often fusing with the saccular part. The sensitive wart of disc of valva occurs in the majority of species. In some species setae of costa of valva or specialized thorns (transformed setae) may appear. The female genitalia are of various types; the type-species and its allies developed a sac in the distal portion of ductus bursae; in three known species the signa are found. In *belemia* it is develoed in form of the spined area, in *rondoniae* and *tubulifera* it resembles that in *Chlidanotini*.

The species included in *Ecnomiomorpha* in this paper form at least three groups whose status cannot be precised on the basis of the present study.

Ecnomiomorpha caracana sp.n.

Wingspan, shape of wings and coloration as in preceding species, but basal blotch smaller, median fascia distinctly concave in middle proximally, less so distally, dark grey scaled black, and subapical blotch paler.

Male genitalia (Figs 3,4). Top part of tegumen short, with small median lobe; disc of valva scarcely hairy, costa of valva elongate, caudal portion subventral fusing with sacculus, terminating in a sharp process. Aedeagus distinctly bent beyond zone, with a few thorns laterally; one capitate and several spine-like cornuti in vesica.

Female genitalia (Fig. 13): Ventral region surrounding ostium with numerous microchaetae, apophyses anteriored connected with a rather weak sterigma by means of a slender rib-like sclerite; ductus bursae built of thick membrane, somewhat stronger sclerotized proximally.

Holotype, male: "Brasil: MG, Caraça, 1300 m, 25.X.1994, V. O. BECKER & K.S. SATTLER Col.; Col. BECKER 93552"; GS 22349. Paratypes, three identically labelled males and one female; two males and one female with labels "Brasil: MG 1400 m, Serra do Cipó, 17-19. IV.1991, V. O. BECKER Col.; Col. BECKER No. 78148"; one male with similar label but from "Caraça 1300 m, 2-4.I.1986; Col. BECKER 54344", and one male with "PR 750 m, Telêmaco Borba, 13-19.X.1995; Col. BECKER 97772.

Ecnomiomorpha parae sp.n.

Wingspan 8 mm; head and thorax black-brown, labial palpus ca 1.5. Forewing slender with costa weakly convex, termen shorter than in preceding species. Ground-colour glossy creamy yellow; basal blotch black-brown, median fascia slightly concave proximally, slender, pale, ochreous-ferruginous, brown in middle distally; subapical blotch smaller. Hindwing slender, greyish.

Male genitalia (Figs 5-7) with tegumen slender, long, with distal part elongate; uncus flattened terminally. Valva slender with costal part expanding, fused with caudal portion, marked with numerous setae; sacculus very long, curved terminally, provided with thorns; wart subterminal; aedeagus with large lateral lobe.

Female genitalia (Fig. 14): Sterigma very broad; ductus bursae very short, distal portion of corpus bursae sclerotized.

Holotype, male: "Brasil: Pará, Belém, 20 m, V. O. BECKER col.; Col. BECKER 47143"; GS 22360. Paratypes, male and female labelled as above but dated 10-15.XI.1994, without collection number. Another paratype, male labelled "Pará, Brasil", GS 8337, NHML.

Ecnomiomorpha nigrivelata (WALSINGHAM, 1914)

Tortrix nigrivelata WALSINGHAM, 1914, Biol. Cent.-am., Lepid. Heterocera,**4**: 283, pl.8, fig. 23. Type-locality: Panama: Canal Zone: Tabernilla. – OBRAZTSOV, 1959: 6, figs 1-5 (head, venation, genitalia).

Ecnomiomorpha aurosa sp.n.

Wingspan 9 mm. Similar to *parae* but head and thorax brown. Ground-colour ochreous creamy suffused ochreous especially to middle of dorsal area, veins in distal half of wing and dots along termen ochreous. Markings: Basal blotch small, brown; median fascia slender uniformly broad throughout, pale ferruginous, brown in middle posteriorly; subapical blotch minute, brownish. Hindwing slender, broadest medially, brownish grey; cilia paler.

Female genitalia (Fig. 15) as in *nigrivelata* but the bulbous sac of distal part of ductus bursae larger, more posterior.

Holotype, female: "Planaltina, DF Brasil – 1000 m, 27.V.1985 V. O. BECKER col., 15°35'S, 47°42'W; Col. BECKER 58276"; GS 22355.

The new species is very similar to *nigrivelata* in the female genitalia, and a comparison with the OBRAZTSOV's superficial and inaccurate figures is difficult.

Ecnomiomorpha belemia sp.n.

Wingspan 9 mm. Similar to *aurosa*, with somewhat darker markings. In paratypes subapical blotch elongate and, in one specimen, costal part of median fascia browner.

Male genitalia (Figs 8,9) as in *nigrivelata* but with slenderer spines of costa of valva and well developed pocket of disc filled with setae.

Female genitalia (Fig. 16) with papilla analis shorter than in preceding species, colliculum longer, sac of ductus bursae in form of strong broadening with small proximal pocket; signum in form of large path of spines presenent.

Holotype, male: "Brasil: Pará, Belém, 20 m, I. 1984 V. O.BECKER col.; Col. BECKER 47143", GS 22341; paratypes, two pairs with identical labels, and one female labelled "Taffa, Brazil", GS 8338, in NHML.

Ecnomiomorpha chrestodes sp.n.

Wingspan 9 mm. Very similar to *belemia* but hindwing darker, grey.

Female genitalia (Fig. 17) somewhat similar to those in *belemia* but with colliculum much longer, better sclerotised, without signum; sac of ductus bursae smaller.

Holotype, female: "Brasil: PA, Belém, 20 m, 10-15 XI 1984, V. O.BECKER col"; GS 22347, no collection nr. Paratypes, three females labelled: "Brasil: PA, Capitão, 19-22.X.1984, V. O. BECKER col; Col. BECKER 53859."

Ecnomiomorpha novaelimae sp.n.

Wingspan 10 mm. Similar to *aurosa* but forewing ground-colour ochreous yellow, indistinctly strigulate with yellow-grey, similar shades between veins beyond end of discal cell. Markings: basal blotch brown-black; median fascia broadest at costa, somewhat expanding at dorsum, ochreous rust, black along middle and at costa; subapical blotch, smaller and paler; costa and dorsum strigulated brownish. Fringes concolorous with ground-colour. Hindwing brownish grey, fringes paler. Dark yellow pencil of scent scales in anal fold.

Male genitalia (Figs 10,11): Uncus slender; sacculus with subterminal prominence and long scent scales; aedeagus long, curved.

Female genitalia (Fig. 18): Sterigma as in *aurozodion*, but with smaller postostial lobe and rather subtriangular proximal membranous part; colliculum broader; ductus of accessory bursa broad basally. Subgenital sternite with lateral lobes, prosteriorly.

Holotype, male: "Brasil: MG, Nova Lima, 850 m, 8.X. 1985, V. O. BECKER col; Col. BECKER 63143", GS 21983. Paratypes, three males labelled as above but dated 30.XII.2988, colln Nr. 60545 and one, without colln. Nr. dated 8.X.85. Three female paratypes labelled as follows: "Planaltina, DF Brasil – 1000 m, 24.02. 1984, V. O. BECKER col; Col. BECKER 56197" and two, "Brasil: RJ, Magé, 400 m, 17.I.1985,V. O. BECKER col; Col. BECKER 55354, and "...Rio Janeiro, 23.I.1985", colln nr. 48242.

Ecnomiomorpha aurozodion sp.n.

Wingspan 7 mm. Ground-colour golden yellow, darker in distal half of wing; markings black-brown: Basal blotch and median fascia not oblique, this last with two edges concave; three dots before mid-termen. Fringes concolorous with ground-colour. Hindwing black to before middle, grey in distal part, fringes slightly paler. Female hindwing brownish, paler basally.

Male genitalia (Fig. 12): Basal half of valva very broad, disck with subcostal sensillar wart accompanied by longitudinal fold situated rather medially; caudal part of valva distinctly sclerotized, slender, expanding at the end, provided with two transformed thorns; sacculus convex. Aedeagus short, bent, with large ventral convexity at zone.

Female genitalia (Fig. 19) with colliculum weakly sclerotized; ductus of accessory bursa from distal part of corpus bursae.

Holotype, male: "Brasil: PA, Belém, 20 m, 10-15. XI. 1984, V. O. BECKER col.; Col. BECKER 53387", G.S. 21981. Paratypes, 3 males and 3 females, same labels.

Ecnomiomorpha rondoniae sp.n.

Wingspan 9 mm. Externally very similar to *chrestodes*.

Female genitalia (Fig. 20): Sterigma broad, in major part membranous; colliculum well sclerotized; ostium bursae protected by broad ventral sclerite; ductus bursae rather short, broadening before colliculum; ductus seminalis extending from before this last; signum, a group of long spines.

Holotype, female: "Brasil: RO, Porto Velho, 180 m, 24.IV. -12.V.1989, V. O. BECKER; Col. BECKER 76339", GS 22343.

Ecnomiomorpha tubulifera sp.n.

Wing span 10 mm. Similar to *caracana* but with less concave proximal edge of median fascia.

Female genitalia (Fig. 21) characterise with long tube containing distal portion of ductus bursae situated beyond median convexity of subgenital sternite; ductus bursae very slender; ductus seminalis originating beyond base of this last; signum long, consisting of slender spines, gradually smaller distad.

Holotype, female: "Brasil: MG 1400 m, Serra do Cipó, 17-19.IV.1991, V. O. BECKER Col.; Col. BECKER 78148"; GS 22344.

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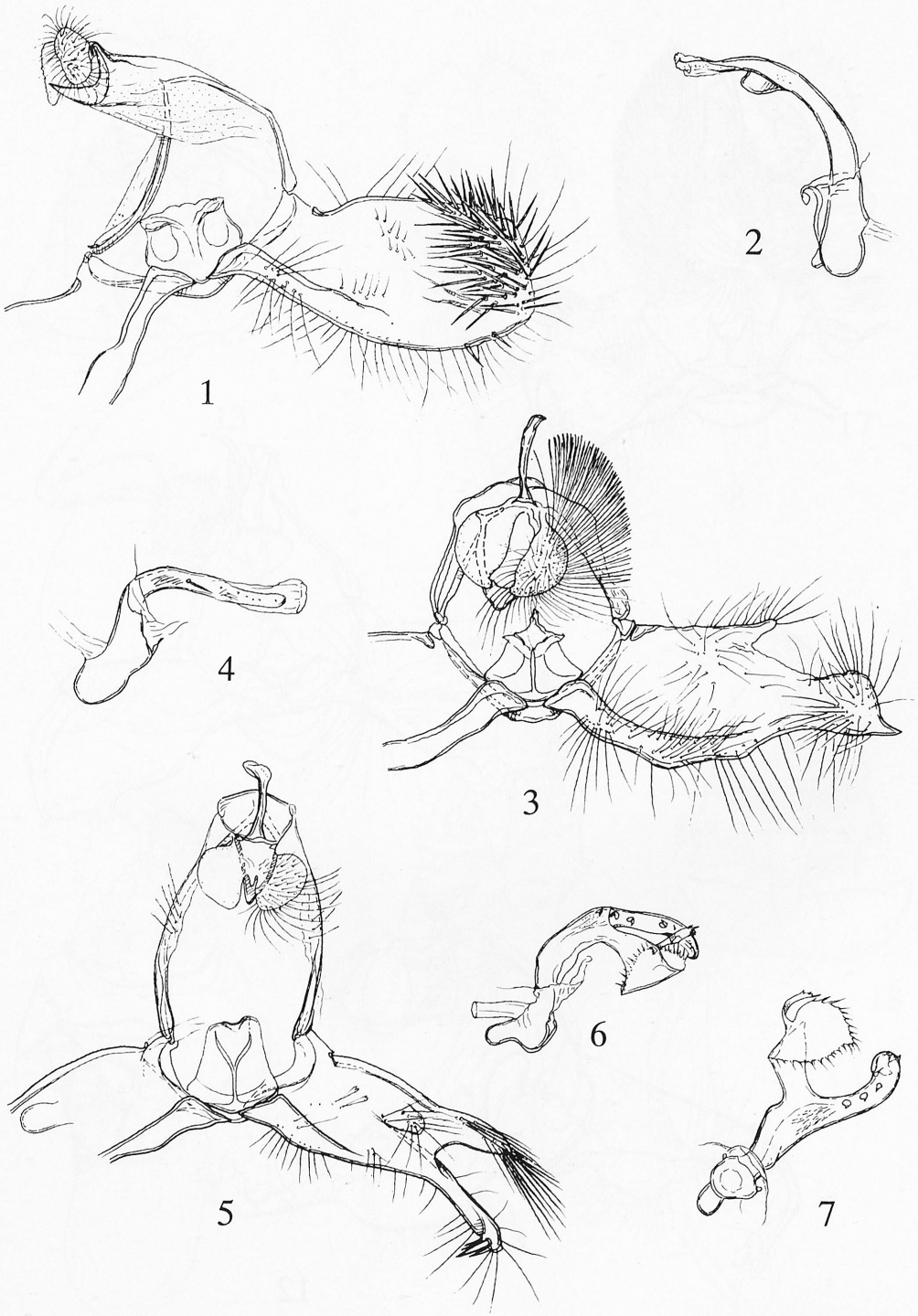
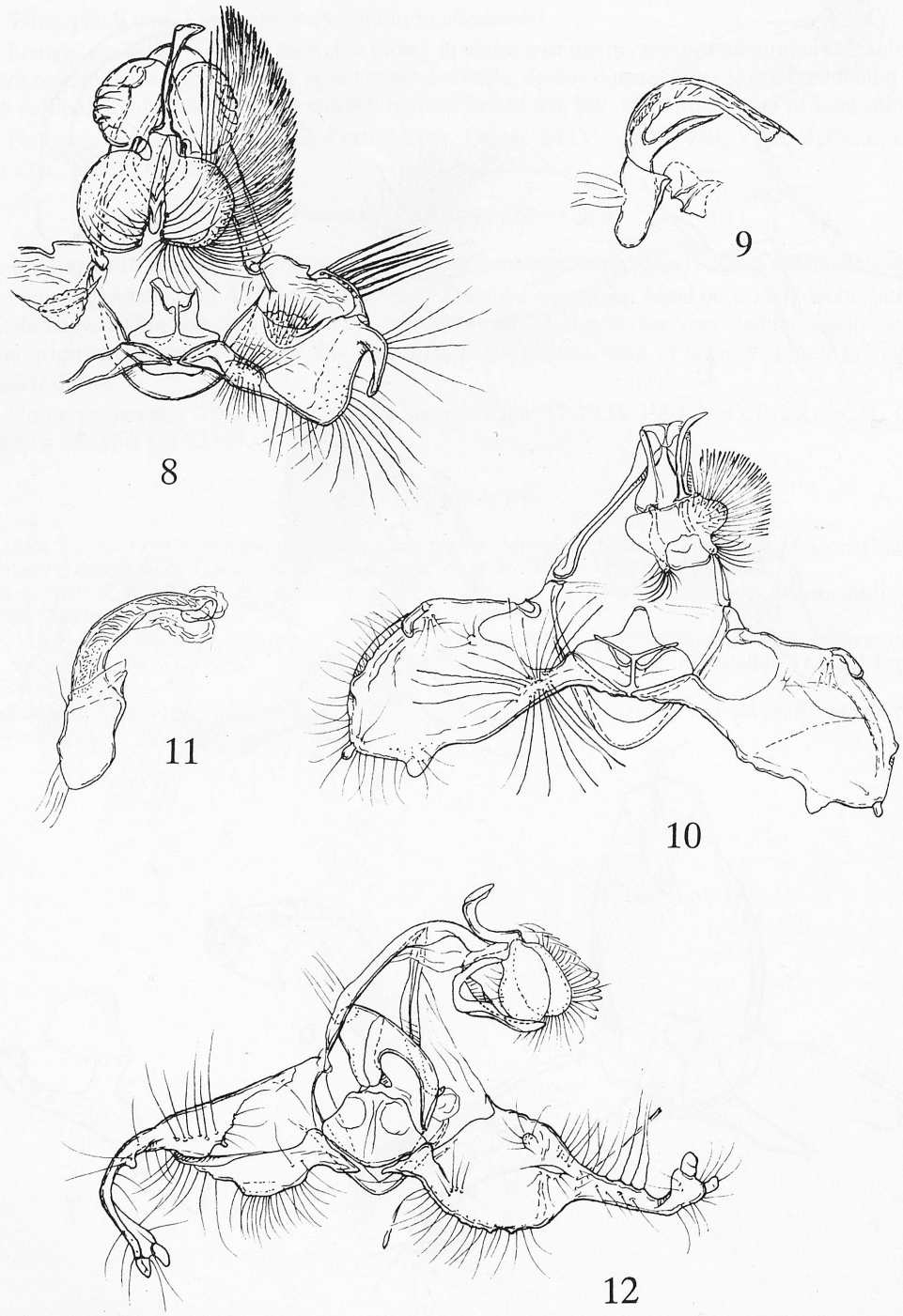
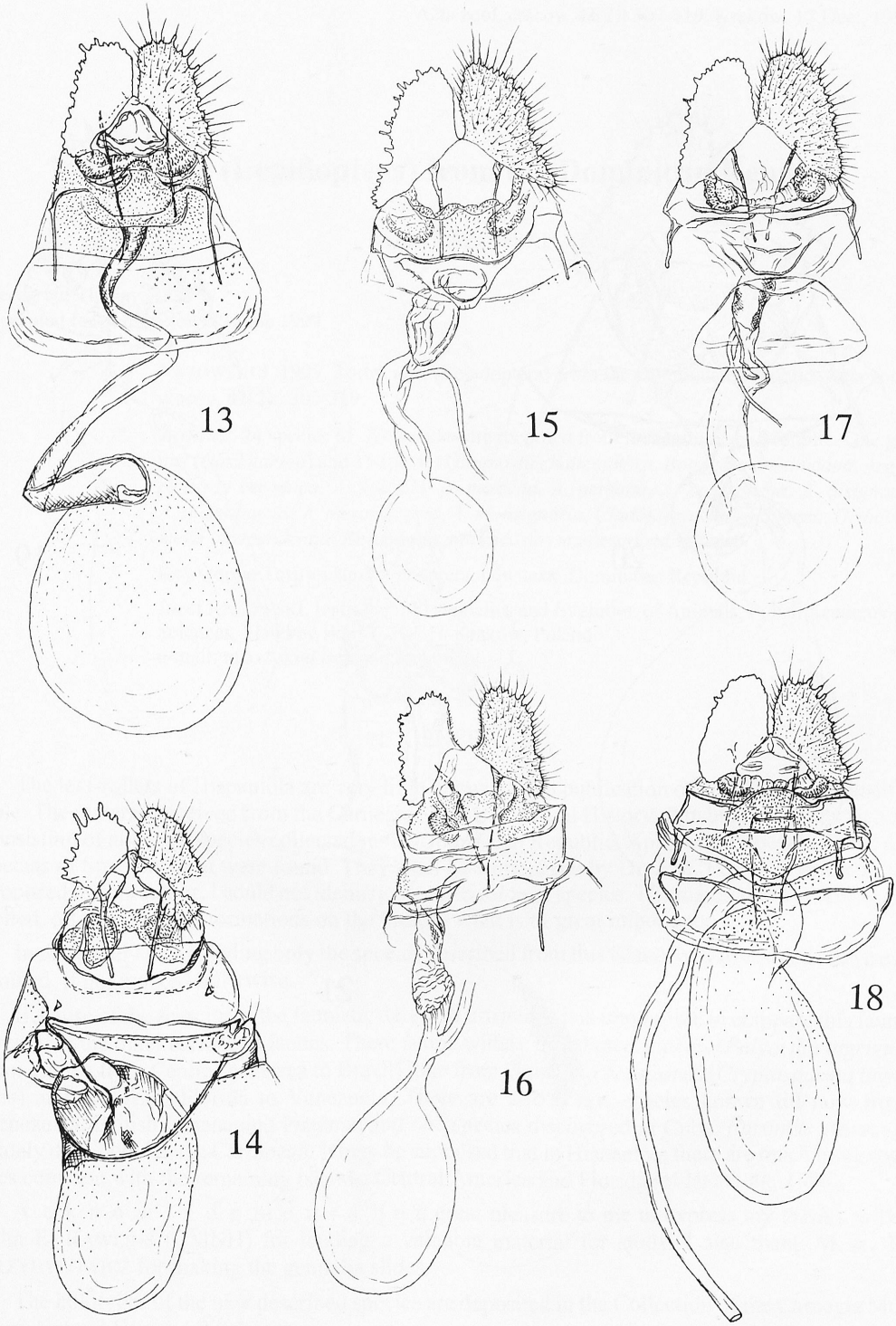


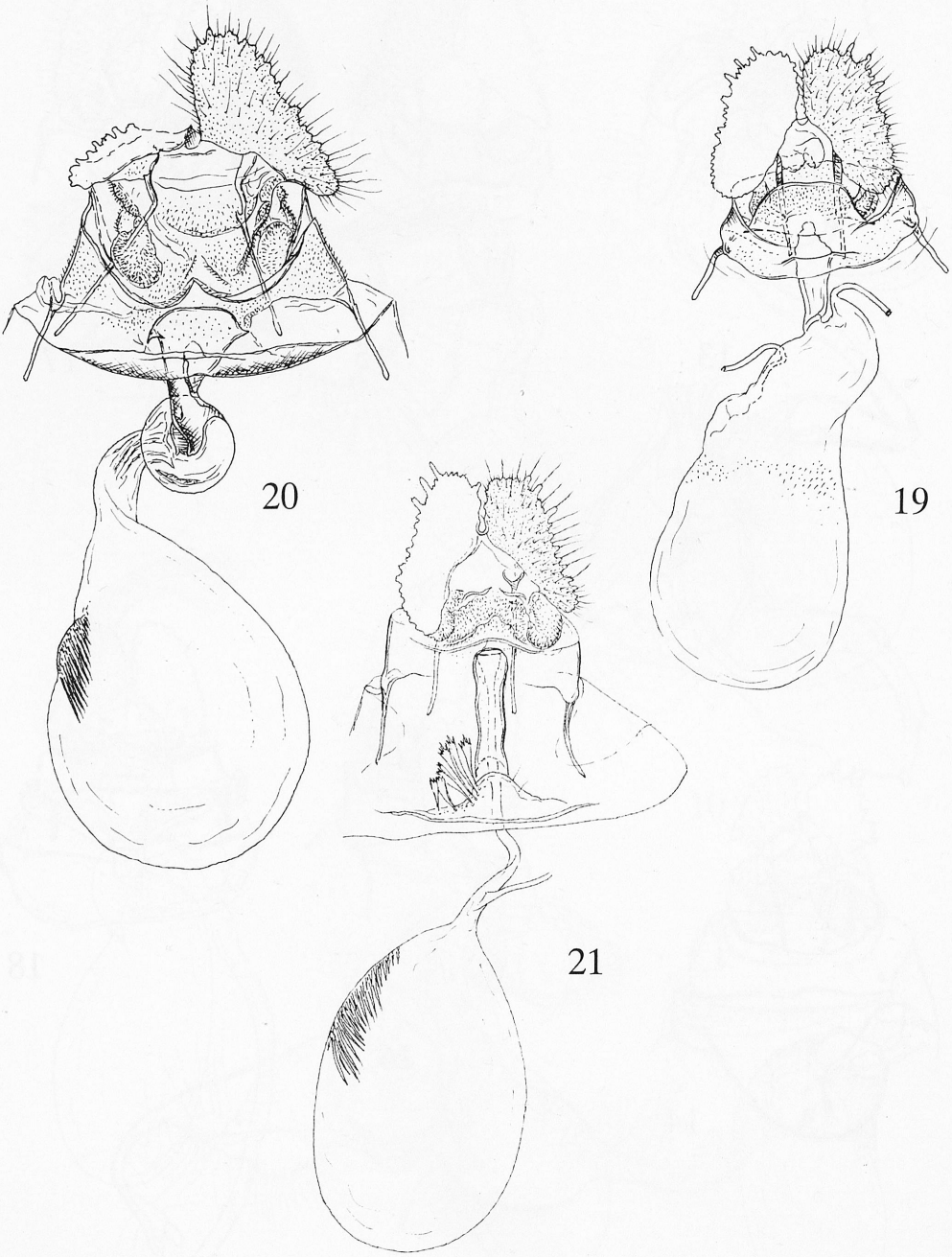
Figs 1 – 7. Male genitalia. 1,2 – *Deltobathra eutarkia* sp.n., holotype; 3,4 – *Ecnomiomorpha caracana* sp.n., paratype; 5-7 – *E. parae* sp.n., holotype.



Figs 8 – 12. Male genitalia of *Ecnomiomorpha* Obr.: 8,9 – *E. belemia* sp.n., holotype; 10,11 – *E. novaelimae* sp.n., holotype, 12 – *E. aurozodion* sp.n., holotype.



Figs 13 – 18. Female genitalia of *Ecnomiomorpha* Obr.: 13 – *C. caracana* sp.n., paratype; 14 – *E. parae* sp.n., paratype; 15 – *E. aurosa* sp.n., holotype; 16 – *E. belemia* sp.n., paratype; 17 – *E. chrestodes* sp.n., holotype; 18 – *E. novaelimae* sp.n., paratype.



Figs 19 – 21. Female genitalia of *Ecnomiomorpha* Obr.: 19 – *E. aurozodion* sp.n., paratype; 20 – *E. rondoniae* sp.n., holotype; 21 – *E. tubulifera* sp.n., holotype.