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Address of the Editor: Institute of Systematics and Evolution of Animals,
Polish Academy of Sciences, Sławkowska 17, 31-016 Kraków, Poland

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ISSN 0065-1710

Cover Design
Jerzy ŚWIECIMSKI

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Druk i oprawa: Drukarnia Kolejowa Kraków sp. z o.o.
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Descriptions and notes on *Netechma* RAZOWSKI, 1991 (Lepidoptera: Tortricidae)

Józef RAZOWSKI & Vitor O. BECKER

Received: 28 Aug., 2001

Accepted for publication: 20 Sept., 2001

RAZOWSKI J., BECKER V. O. 2001. Descriptions and notes on *Netechma* RAZOWSKI, 1991 (Lepidoptera: Tortricidae). *Acta zoologica cracoviensia*, **44**(4): 369-390.

Abstract. 27 species of *Netechma* are discussed, one (*neanica*) is transferred from *Saphenista*, 20 described as new: *N. illecebrosa*, *ochrata*, *altobrasiliana*, *formosa*, *magna*, *luteopocila*, *picta*, *graphitaspis*, *polyspinea*, *lojana*, *chamaecera*, *distincta*, *indanzana*, *nigralba*, *labyrinthica*, *insignata*, *phaedroma*, *moderata*, *fausta*, *notabilis*.

Key words: *Netechma*, Tortricidae, new taxa, Neotropic.

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I. INTRODUCTION

Netechma was described as a monobasic genus to comprise Costa Rican *Tortrix technema* WALSINGHAM. Then RAZOWSKI (1999) included in it 17 earlier described species and added ten new ones thus, to that date, their number has arisen up to 27. In this paper as much as 20 new species are described and one is transferred from *Cochylini*. Besides, six known species are mentioned. Now, *Netechma* is represented by 47 species widely distributed in the Neotropics, from Tamaulipas, Mexico as far as to N Argentina.

The material studied has been collected by the junior author mainly in Brazil, Ecuador and Costa Rica, a small number of specimens was taken by A. & J. RAZOWSKI in S Brazil. The holotypes of the new species are in the V. O. BECKER Collection, Brasília destined to the Museu Nacional, Universidade Federal, Rio de Janeiro. Some paratypes have been kindly donated by the junior author to the Institute of Systematics and Evolution of Animals, PAS, Kraków.

A c k n o w l e d g m e n t s . The authors are grateful to Mr Marek KOPEĆ, Kraków who made the majority of the genitalia slides and the photographs and to Krzysztof FIOŁEK, Kraków for several preparations.

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

DF – Distrito Federal

MG – Minas Gerais

RJ – Rio de Janeiro

SC – Santa Catarina

Tung. – Tungurahua

AMNH – American Museum Natural History, New York

NHML – Natural History Museum London

NHMW – Naturhistorisches Museum, Wien

NMNH – National Museum Natural History, Smithsonian Institution, Washington

VOB – Vitor Osmar BECKER Collection, Brasília.

GS – genitalia slide

N o t e s

The numbers in brackets “[]” are the entry number of specimens in the register book of V. O. BECKER. The number given in the descriptions for the labial palpi indicates the proportion of their total length to the diameter of eyes.

II. SYSTEMATICS

Netechma RAZOWSKI, 1991

Netechma RAZOWSKI, 1991, Misc. Zool., **14**: 108. Type-species: *Tortrix technema* WALSINGHAM, 1914 – by original designation, monotypical.

Essentially the characteristics of this genus completed by RAZOWSKI (1999) has not changed.

The forewing markings are in almost all species similar, despite some parts are reduced, enlarged or fused. It dominates the pattern with two fasciae parallel to termen. In several species the dorsal portion of the inner fascia is preserved in form of a distinct, separate triangle. This pattern strikingly resembles that in Cochylini. The included colour photographs of adults illustrate variation of the pattern.

A variety of shapes of the transtilla, valva complex and aedeagus (incl. the cornuti) is distinct. The transtilla varies from that with broad median part to a simple band. Occasionally the median part is enlarged and complicated by presence of lobes or processes, or there is a tendency to their atrophy. The number and size of the cornuti is also distinctly variable and the shapes of the sacculus are usually species specific. Based on those characters there is, however, a possibility to separate some three indistinctly limited groups.

The female genitalia are still insufficiently known. In several species the accessory bursa is preserved and has a rather constant position at the base of ductus bursae. Ductus seminalis originates more variably. The configuration of sterigma is species specific, however, there are some species with similar sterigmae. Same concerns the sclerites of bursa copulatrix.

The geographical repartition is now a little better known. Of ca 50 known species the majority are known, however, of their type-localities or a few stands only. The most distanced localities of the particular species are in Ecuador and Bolivia. The northernmost sites are in Mexico, viz., Tamaulipas, Sinaloa and Veracruz. The most southern localities are in Santa Catarina and Paraná, Brazil and N Argentina. Recently, numerous species are discovered in Peru, Ecuador, and Brazil but this most probably depends on the quality of the researches.

The biology is unfortunately unknown.

The systematic position of this genus is still unclear. Together with two other exclusively Neotropical genera, viz., *Icteralaria* RAZOWSKI, 1991 and *Chinchipena* RAZOWSKI, 1999 it forms a rather compact group. They all characterize mainly with the distinctly sclerotized, very slender uncus. Its situation on tegumen and the shape of base may also be of apomorphic importance. The other characters seem to be either convergent or plesiomorphic. The arrangement of the species is still provisional. The morphological distances between the species are occasionally small (eg. *praecipua* – *chamaecera*), the geographical variation, is, of course practically unknown.

Netechma illecebrosa sp.n.

(Fig. 52)

Wing span 12 mm. Head and thorax creamy, this last ferruginous proximally. Ground colour of forewing yellowish creamy in median half suffused greyish except for costa; costal remainder of median fascia brownish; dorsal marking in form of dark, ferruginous triangle; distal area ferruginous, paler beyond subapical blotch. Cilia pale ochreous. Hindwing brownish creamy, with paler cilia.

Male genitalia (Figs 1,2). Socius broad, slenderer distally; valva rounded terminally armed with a convex, dentate structure near middle of disc; sacculus simple, with sharp free termination. Median part of transtilla very broad, rather flat, thorny. Aedeagus bent, weakly sclerotized beyond middle, ventrally; vesica thorny; two moderate, stout cornuti present.

Holotype, male: "Brasil: M.G., Unaí, 1700 m, 27 IX 1983, V. O. BECKER Col." [49465], GS 22094.

R e m a r k s. Externally similar to *phaedroma* but with darker, uniform terminal area of wing and more rust dorsal triangle. Genitally similar to *N. spinea* RAZOWSKI, 1999 from Bolivia but easily distinguished by higher transtilla, the configuration of disc of valva and sacculus, the aedeagus, and the cornuti which in the mentioned species are inequally sized and one of them being very long. Female unknown.

Netechma ochrata sp.n.

Wing span ca 12 mm. Head and thorax dark grey-brown, frons greyish; labial palpus over 1.5. Forewing uniformly broad throughout, costa weakly convex, termen slightly oblique, hardly convex. Ground colour yellowish ochreous, wing base, costa and termen suffused brown, concolorous strigulation extending from suffusion of subapical third of costa and at tornus; brown streak from this last towards base of vein CuA1. Cilia brown, at apex concolorous with ground colour. Hindwing brown; cilia slightly paler, with brown median line.

Male genitalia (Figs 3,4). Median part of transtilla very large, with rounded lateral lobes. Valva slender, disc simple; sacculus provided with short termination. Aedeagus well sclerotized ventrally; cornuti, two longer and three shorter spines.

Holotype, male: "Brasil: SC, São Joaquim, 1400 m, 22-24 I 1983, V. O. BECKER Col." [52287], GS 21992.

R e m a r k s. This species is distinct by the configuration of the transtilla, aedeagus, and the shape and number of cornuti.

Netechma altobrasiliana sp.n.

(Fig. 53)

Wing span 12-13 mm. Head white creamy, thorax creamy. Ground colour of forewing white creamy suffused greyish pink except for mid-dorsum and terminal area where marked by a few brown-black dots. Markings concolorous: Costa marked by some dots and two larger postbasal spots. Dorsal, triangular part of median fascia approaching costal blotch and longitudinal blotch in middle of wing; these two and subterminal fascia connected by means of dark grey suffusion, similar suffusion in subdorsal, proximal concavity of this fascia. Cilia creamy. Hindwing brownish; cilia creamy grey.

Male genitalia (Figs 5,6). Median part of transtilla weakly concave apically; sacculus tapering from base, with weakly expanding dorsal part and distal terminal spine; cornuti, one small and two large spines.

Holotype, male: "Planaltina, DF, Brasil - 1000 m, 15 V 1983, 15°35'S-47°42'W, V. O. BECKER col.", [41012], GS 22489; paratype, also a male, labelled similarly as above but dated "VIII. 1983", [41282].

R e m a r k s. Externally this species is very similar to *formosa*, and a few other species, but can be distinguished by a presence of some brown dots in terminal part of wing. Genitally resembles *formosa*, *luteopocila*, and *sulphurica*.

Netechma formosa sp.n.

(Fig. 54)

Wing span ca 13 mm. Head white creamy, thorax more ochreous, collar tinged brown. Shape and coloration of forewing as in *altobrasiliانا* but termen tinged ochreous, dorsal area of ground colour larger, dorsal triangle pale edged proximally and distally. Cilia ochreous with black terminations at mid-termen. Hindwing brownish grey, mixed ferruginous on periphery; cilia creamy in distal half of wing, otherwise grey.

Male genitalia (Figs 7,8). Median part of transtilla bilobed, rather small. Valva fairly broad, simple; sacculus rather short, broad basally, terminating in a spine. Aedeagus stout, with short ventral termination. Two strong cornuti and a group of 10-15 twice shorter spines in vesica.

Female genitalia (Fig. 43). Sterigma broad with distal edge of anteostial part emarginate and a pair of lateral lobes at postostial portion at bases of apophyses; several small sclerites and groups of spines in corpus bursae.

Holotype, male: "Curitiba, Paraná, Brasil – 920 m, 17.V. 1974, V. O. BECKER Col.", GS 6160. Paratypes: a similarly labelled female dated 15-III-1975, and 4 males from Banhado, Quatro Barras, 800 m, dated 9-V-1970, 6-VI-1970, 2-XI-1970, and 15-III-1975; one female from Rio de Janeiro: Parque Nacional Itatiaia, 2400 m, 18 X 1985. All collected by V. O. BECKER.

Remarks. The species is probably more widely distributed, as it is known from Rio de Janeiro and Paraná. However, two examined specimens from other states are not included in the type series. One of them, a male from São Paulo, collected at 9000 m (GS 22088) differs from the holotype in the length of sacculus and much stronger cornuti. The other, a female from Caraca, Minas Gerais (collected at 1300 m, GS 22490) characterises with spiny distal part of anteostial sterigma, larger sclerites of bursa copulatrix and large groups of spines in corpus bursae.

Netechma magna sp.n.

(Fig. 55)

Wing span 25 mm. Head creamy, vertex tinged brownish, labial palpus ca 3, brownish; thorax creamy brownish, tegula creamy distally, brown at base. Forewing hardly expanding terminally, costa weakly convex, termen somewhat oblique, rather straight. Ground colour creamy, suffusions brownish and ochreous brown; markings brown, in costal area tinged grey. Dorsal blotch elongate, atrophying at dorsum and in median cell, accompanied by subtriangular blotch before tornus; sub-terminal fascia concave distally, brown in median part, much paler towards dorsum and costa where some browner spots; terminal marking convex medially. Cilia brownish creamy with brown median line. Hindwing creamy, tinged brownish on periphery, distinctly strigulated pale brownish; cilia creamy.

Female genitalia (Fig. 44). Sterigma very broad with proximal edge connected to distinctly sclerotized and sculptured subgenital sternite; membranous part of ductus bursae short, proximal part sclerotized; sclerites extending into distal portion of corpus bursae.

Holotype, female: "Ecuador, Loja, Loja, 2750 m, 21 XII 1992, V. O. BECKER col., [103126], GS 22491.

Netechma luteopocila sp.n.

(Fig. 56)

Wing span ca 17 mm. Head and thorax creamy, this last tinged ochreous proximally and medially. Ground colour of forewing yellowish creamy preserved in distal area of wing, along dorsum, and edges of dorsal triangle. Remaining area yellow-brown with traces of darker costal spots. Dorsal blotch, tornal spot and median, longitudinal streak vivid rust. Cilia ochreous creamy. Hindwing greyish creamy, strigulation darker; cilia creamy.

Male genitalia (Figs 9,10) similar to those in *altobrasiliانا* but valva broader, sacculus shorter, dorsal lobes of median part of transtilla deeply incised apically, aedeagus shorter, and four cornuti present: a pair of larger and pair of smaller ones.

Holotype, male: "Brasil: SC, São Joaquim, 1400 m, 22-24 I 1983, V. O. BECKER col.", [52292], GS 22492.

R e m a r k s. Externally this new species is very distinct by the presence of ferruginous, elongate dorsal blotch, concolorous tornal spot, and creamy terminal portion of the wing. The genital differences between these species as mentioned above, being however, smaller to *sulphurica*.

***Netechma pyrrhocolona* (MEYRICK)**

(Fig. 57)

Eulia pyrrhocolona MEYRICK, 1926, Exot. Microlepid., 3: 257. Type-locality: Colombia: Mt. Socorro. Coll. NHML.

Two specimens collected in Ecuador: Carchí, Maldonado, 2200 m, 9-11 I 1993, V. O. BECKER Col. [105260]. To date it was known from Colombia only.

Male genitalia (Figs 11, 12). Dorsal part of transtilla smooth; valva rounded apically; termination of sacculus sharp; numerous short conuti in vesica.

Female genitalia (Fig. 45) unknown till now. Cup-shaped part of sterigma fairly broad, rather similar to that in *pyrrhodelta*; ductus bursae long, plicate, partially well sclerotized; ductus of accessory bursa subterminal, situated dorsally; ductus seminalis extending from proximal, apical part of bursa copulatrix.

***Netechma sulphurica* RAZOWSKI, 1999**

(Fig. 58)

Netechma sulphurica RAZOWSKI, 1999, Polskie Pismo entomol., 68(1): 95, fig. 19. Type locality: Santa Catarina, Brazil. Coll. NMNH.

A pair collected in Curitiba, Paraná, Brasil at the altitude of 920 m.

Male was unknown to this date. Its genitalia (Figs 13, 14) are similar to those in *formosa* but characterize with larger, bilobed, thorny median part of transtilla, much shorter sacculus, with less convex basal part, and stronger cornuti.

R e m a r k s. This species being genitally very similar to *formosa* is quite different externally. It is whitish, with pale, diffuse greyish olive markings whilst the forewing of *formosa* characterizes with brown dorsal triangle.

Unfortunately the drawings in my paper (RAZOWSKI 1999) were incorrectly numbered and *sulphurica*, Fig. 20, was named as *pyrrhodelta* whose genitalia should bear Nr. 19.

***Netechma neanica* (RAZOWSKI & BECKER, 1986), n.comb.**

(Fig. 59)

Saphenista neanica RAZOWSKI & BECKER, 1986, Acta zool. cracov., 29(20): 458, figs 164, 165. Type-locality: Mexico: Veracruz: Huatusco. Coll. VOB.

One specimens from Mexico: Tamaulipas: Gómez Farias, 1200 m, 26 V 1997.

This species is known from the females only. It was described in the cochyliines whose genitalia do not show any differences to some *Netechma*. Externally *neanica* is very similar to *pyrrhodelta* described by MEYRICK in *Euxanthis*, also Cochylini. Only the examination of this last enabled us to transfer our species to the Euliini. The differences in the female genitalia are between these two species also slight (cf. RAZOWSKI 1999, Fig. 19). In *neanica* distal edge of the anteostial sterigma is deeply concave whilst in *pyrrhodelta* indistinctly so.

***Netechma picta* sp.n.**

(Fig. 60)

Wing span 23 mm. Head white creamy, labial palpus (ca 2) and thorax more ochreous, proximal part of thorax ferruginous brownish. Ground colour of forewing yellowish creamy, tinged pinkish ochreous except for terminal area which is more brown; costal strigulation and spots concolorous. Dorsal triangle reaching median cell, subsquare blotch near tornus; costal part of median fascia pink

brownish with brown spots, its submedian part weaker, marked with two brown spots; subapical blotch large, atrophying before tornus where small spot present; distal edge of subterminal fascia concave; suffusion of median part of wing broad. Cilia concolorous with ground colour, brown beyond suffusions. Hindwing whitish grey, suffused and strigulated brownish grey; cilia concolorous with wing, median line darker.

Male genitalia (Figs 15,16) very similar to those in *N. triangulina* RAZOWSKI, 1999. They differ mainly in the simple, sharp ventral termination of aedeagus and the presence of four fairly long cornuti (in the mentioned species the distal part of aedeagus is armed with several thorns and the cornuti are minute).

Holotype: "Costa Rica, Cerro la Muerte, 3100 m, 5-7 VIII 1981, V. O. BECKER Col." [45022]; GS 22082.

R e m a r k s. This species is genitally also similar to *N. sectionalis*. The differences are mainly in the shape of the median processes of transtilla which in *sectionalis* are simple.

Netechma sectionalis (MEYRICK, 1932)

Eulia sectionalis MEYRICK, 1932, Exotic Microlepid., 4: 260. Type-locality: Costa Rica: Orosi. Coll. NHMW.

Four male specimens from Costa Rica examined, one from Volcan Turrialba, 9 VIII 1972, and one collected 8 road km N of Vara Blanca, Volcan Poas, 1500 m, Alejuela Prov., 26 V 1985, both by the junior author.

Netechma polyspinea sp.n.

(Fig. 61)

Wing span ca 16 mm. Head creamy, frons whiter, labial palpus ca 2, black-brown in major part laterally; thorax ochreous creamy, cilia marked brownish basally. Forewing creamy, paler along edges of markings, suffused ochreous or greyish violet. Markings dark brown: Dorso-basal blotch triangular, subternal blotch pentagonal, subapical blotch elongate. Termen and base suffused. Cilia ochreous creamy. Hindwing creamy, brownish grey weakly strigulated from beyond middle; cilia paler than paripheries of wing, with distinct basal line.

Male genitalia (Figs 17,18) very similar to those in *sectionalis* but lateral parts of transtilla connected by a rather weak median sclerite, aedeagus much slenderer, provided with two series of thorns at the end (long, slender along the left edge, much shorter more median row); cornuti missing.

Holotype, male: "Ecuador: Tung., Rio Verde, 1600 m, 26 XII 1992, V. O. BECKER Col.", [104060]; GS 22499.

R e m a r k s. Genitally close to *sectionalis* but externally distinct by dark forewing markings. It is more contrasting than *consequens*, with somewhat more oblique distal fascia.

Netechma graphitaspis sp.n.

(Fig. 62)

Wing span 20 mm. Head creamy, labial palpus over 2, browner laterally; thorax brownish, end of tegula creamy. Forewing slightly expanding terminally, costa rather straight, termen oblique, straight. Ground colour creamy, suffusions pale ferruginous forming large basal and postmedian blotches; terminal blotch brownish grey, median, convex; strigulation rust brown or blackish brown (along costa). Markings black-brown in form of dorso-postbasal fascia and ill-defined subterminal fascia extending from small tornal spot, both fasciae connected by greyish black suffusion extending from vein CuP to costa. Cilia creamy tinged ochre at apex, with some brown divisions at mid-termen. Hindwing whitish creamy, strigulation brownish grey; cilia paler than wing.

Male genitalia (Figs 19,20): Uncus moderate; valva broad; sacculus with a small postbasal prominence and terminal spiny termination; two submedian thorns in dorsal part of transtilla; aedeagus long, slender, provided with strong ventro-terminal thorn accompanied by a smaller, lateral thorn; cornuti, three small spines.

Holotype, male: "Ecuador: Tung. Patate, 3000 m, 7 XII 1992, V. O. BECKER Col.", [100126], GS 22493.

R e m a r k s. Externally resembling rather Colombian *N. enucleata* RAZOWSKI, 1999 in having greyish black blotch of the forewing. Thorns of transtilla as in *sectionalis* and its allies but sacculus dentate terminally and aedeagus quite different, slender (similar to that in *enucleata*)

Netechma lojana sp.n.

(Fig. 63)

Wing span 19 mm. Head white creamy, labial palpus ca 2; thorax cinnamon brown medially and proximally, otherwise much paler. Forewing pinkish cinnamon; markings blackish brown finely edged creamy consisting of dorsal elongate blotch at 1/3 of dorsum, post median rounded blotch and slender fascia form tornus to costa; submedian, slender blotch before mid-costa extending towards middle of subterminal fascia. Cilia paler than ground colour. Hindwing whitish creamy, more creamy at apex, with a few pale brownish grey spots; cilia white creamy.

Male genitalia (Figs 21,22). Valva elongate, rounded apically; sacculus very broad extending beyond middle caudally, with slender dorso-posterior portion; median part of transtilla very broad provided with a pair of apical tips; bases of transtilla armed with thorny hooks; aedeagus slender, bent; cornuti wanting.

Female genitalia (Fig. 46). Sterigma rounded proximally, provided with broad posterior plate; ductus bursae sclerotized mainly in distal half laterally; corpus bursae membranous.

Holotype, male: "Ecuador: Loja, Loja, 2750 m, 21 XII 1992, V. O. BECKER Col.", [103135], GS 22494; allotype, an identically labelled female.

R e m a r k s. The systematic position of this species is not clear. Externally it resembles some species close to *formosa* but differs in presence of postmedian dorsal blotch. In the male genitalia it resembles *Netechma praecipua* MEYRICK, 1917 from Colombia described in *Cnephasia* CURTIS and then placed in *Anopina* OBRAZTSOV, 1962 (c.f. POWELL & all., 1995).

Netechma chamaecera sp.n.

(Fig. 64)

Wing span 18 mm. Head and thorax creamy, labial palpus over 2, tinged ochreous ventrally; tegula ochreous at base. Forewing as in *praecipua*: Ground colour creamy diffusely suffused pinkish ochreous; markings dark brown: Subtornal blotch distinctly separate from posterior fascia, post-basal fascia not reaching costal spot. Cilia concolorous with ground colour. Hindwing creamy white to middle, then suffused and strigulate brownish grey. Cilia dirty creamy.

Male genitalia (Figs 23,24) as in *praecipua* but dorsal part of transtilla large, subtriangular terminating in broad thorny prominence (not a thorn) and proportions of the particular parts of valva somewhat different. In this species and in *lojana* there is a thorny plate extending from dorso-basal portion of disc of valva (which also should occur with *praecipua*).

Holotype, male: "Ecuador: Carchi, Maldonado, 2200 m, 9-11 I 1993, V. O. BECKER Col.", [105252], GS 22501.

Netechma praecipua (MEYRICK)

Cnephasia praecipua (MEYRICK, 1917), Trans. ent. Soc. London, 1917: 11. Type-locality: San Antonio, Colombia. Coll. NHML. – CLARKE 1958: [153], pl 67, Figs 4-4b.

Male genitalia (Fig. 25) discussed above.

Netechma distincta sp.n.

(Fig. 65)

Wing span 20 mm. Head dirty creamy, labial palpus ca 2, tinged ochreous medially; thorax blackish brown with yellowish creamy marks. Ground colour of forewing creamy suffused and spotted brown; basal blotch in form of an agglomeration of brown spots and strigulae; dorsal blotch tapering towards dorsum, dark brown to radial arm of median cell, then forming a much paler fas-

ciae to reach mid-costa; brown fasciae between veins beyond dorsal blotch; brown-grey suffusion replacing subapical blotch; terminal fascia brownish grey, obliquely to apex. Cilia creamy suffused brownish, blackish in mid-part. Hindwing brownish creamy, browner on periphery; strigulation brownish.

Male genitalia (Figs 26,27). Median part of transtilla weakly convex, devoid thorns. Valva broad; sacculus strong provided with postmedian spiny process and smaller spiny termination. Aedeagus stout with numerous long cornuti.

Holotype, male: "Ecuador: Carchí, Maldonado, 2200 m, 9-11.I. 1993, V. O. BECKER Col.", [105214], GS 21926.

Netechma indanzana sp.n.

(Fig. 66)

Wing span ca 18 mm. Head and thorax whitish, labial palpus ca 2; base of tegula marked black, grey suffusion at middle of thorax. Forewing uniformly broad, costa weakly convex, termen somewhat oblique, sinuate medially. Ground colour white sparsely dotted black; base and dorsum of wing blackish, costa grey spotted blackish along edges. Basal blotch divided into three parts connected with one another, dorsal marking wedge-shaped, submedian; tornal spot small; costal remainder of median fascia and subapical blotch distinct; terminal marking median. Cilia white, black to mid-termen, basal line grey, divisions in mid-area blackish. Hindwing whitish; strigulation pale greyish; cilia whitish, median line greyish, incomplete.

Male genitalia (Figs 28,29). Median part of transtilla broad, rather short, with innumerable thorns. Valva broad; sacculus without free termination. Aedeagus very large, bent at zone, extending ventro-terminally; four rather short, stout cornuti present.

Holotype, male: "Ecuador: Morona, Indanza, 2800 m, 24 XII 1992, V. O. BECKER Col."; [10371], GS 21927.

Netechma technema (WALSINGHAM, 1914)

Tortrix technema WALSINGHAM, 1914, Biol. Cent.Am. Lepid. Heterocera, 4: 284, pl.8, fig. 25. Type-locality: Costa Rica: Irazu. Coll. NHML.

Two males, one collected on Volcan Turrialba, 1800 m, 9 VIII 1972, the other from S. Vito, 1100 m., 24-25 XI 1973. Both Costa Rica, coll. V. O. BECKER.

There also is a female (Costa Rica: S. Isidoro, 1500 m, 27 XI 1973, GS 22096) externally similar to the above male but we are not sure about its identification.

Netechma consequens RAZOWSKI, 1999

(Fig. 67)

Netechma consequens RAZOWSKI, 1999, Polskie Pismo entomol., 68(1): 101, fig. 22. Type-locality: Argentina: Jujuy. Coll. AMNH.

Two males labelled "Marumbi, Morretes, Paraná, Brazil, 500 m, 21 XI 1970, BECKER & LAROCA, col. BECKER", [7475], one with GS 22093. One pair from Minas Gerais: Nova Lima, 850 m, dated 1-10 I 1985 [55759] and 25-27 XII 1982 [50308]. One female from São Paulo: São Paulo, 900 m, 3-7 I 1983, V. O. BECKER col., and one from Santa Catarina: Rio Vermelho, 958 m, 20 II 1973, A. & J. RAZOWSKI leg.

Male, unknown till now, is characterized as follows. Wing span 11-13 mm. Head and thorax dirty creamy. Ground colour of forewing pale brownish creamy suffused brownish, base of wing more ochreous; markings and costal strigulae brown.

Male genitalia (Figs 30,31). Median part of transtilla very high, expanding, rounded terminally, provided with a pair of apical processes. Sacculus long, with distinct free termination and several ventral processes in median and postmedian parts. Aedeagus large, with short ventral termination; cornuti three stout, large and three much smaller spines.

Distribution wide. Known from Minas Gerais, São Paulo, Paraná and Santa Catarina in Brasil, and Argentina.

R e m a r k s. This species is very close to *N. divisoriae* RAZOWSKI, 1999 from Peru. It differs in the presence of a large subterminal thorn of sacculus, longer processes of the transtilla and the larger cornuti (one strong, 5 smaller ones).

Netechma nigralba sp.n.

(Fig. 68)

Wing span ca 18 mm. Head whitish, vertex suffused grey, labial palpus ca 2.5 marked grey and blackish laterally. Costa and termen of forewing rather straight. Ground colour whitish, sprinkled and dotted blackish and grey. Markings blackish: Basal area suffused black-grey with two costal and one dorsal blotches; dorso-postbasal blotch elongate, tornal blotch small, subtriangular connected with median and costal markings by a strong suffusion to form a large dark area with oblique, rather straight distal edge parallel to termen; black-grey subtriangular suffusion at middle of termen. Cilia blackish grey with whitish scales. Hindwing white creamy, suffused brownish grey in distal half, with slightly darker strigulation. Cilia whitish creamy.

Female genitalia (Fig. 47). Sterigma fairly long, weakly sclerotized, minutely spined; ductus bursae large, partially well sclerotized; accessory bursa originating at base of ductus bursae, lateral; basal part of ductus seminalis large, curved, strongly sclerotized, similarly situated and swung as in *sectionalis*.

Holotype, female: "Ecuador, Morona, Indanza, 2800 m, 24 XII 1992, V. O. BECKER Col.", [103472]; GS 22498.

R e m a r k. Very distinct by coloration, resembling *enucleata* or *graphitaspis*. In the female genitalia *nigralba* is close to the species-group of *sectionalis* as the situation and shape of ducus seminalis show.

Netechma labyrinthica sp.n.

(Figs 69, 70)

Wing span 21 mm. Head pale brownish creamy, labial palpus 2.5; thorax browner especially in proximal third, tegula creamy edged. Forewing ground colour pale ochreous creamy; markings browner, with some darker spots along middle of wing, costa, and dorsum. Basal blotch in form of outer convex fascia and spots at base followed by small triangle at dorsum and bifurcate line extending from 1/3 of costa to mid-dorsum; median fascia consisting of costal spot and some short lines; curved subterminal fascia from before apex to dorsal part of median fascia followed by elongate area of ground colour and similarly shaped terminal fascia extending from apex to tornus. Cilia creamy with some postapical brownish divisions. Hindwing whitish creamy, strigulation and periphery pale brownish creamy, cilia creamy.

Male genitalia (Figs 32,33). Median part of transtilla short, provided with a pair of long, hooked terminal processes. Valva slender with hooked termination of costa and a curved process situated before mid-costa; sacculus provided with small process just before the end. Aedeagus with distinct ventro-terminal process; cornuti, numerous small spines.

Female genitalia (Figs 48). Distal part of transtilla extending medially, antevaginal part concave posteriorly; elongate scalarites in ductus bursae and distal third of corpus; broad, partially sclerotized sac in distal part of the former, ventrally.

Holotype, male: "Ecuador: Tung., Patate, 3000 m, 7 XII 1992, V. O. BECKER Col.", [100127], GS 21928. Paratypes, a pair from Morona, Indanza, 2800 m, 24 XII 1992 [103466].

R e m a r k s. *N. labyrinthica* belongs in a small group of species with peculiarly up-curved apex of valva. Its transtilla is essentially similar to that in several other species of this genus (e.g. *sectionalis*) but has much longer apical processes. The spine-like process of sacculus is also observed in other *Netechma*-species (e.g. *formosa*).

Netechma insignata sp.n.

(Fig. 71)

Wing span ca 12 mm. Forewing coloration as in *phaedroma*; ground colour creamy. Costal spots brownish grey, dorsal triangle rust brown, large, brown blotch in outer third of wing extending

from costa atrophying before tornus, with inner blotch of ground colour from apex to veins M2-M3. Cilia worn. Hindwing brownish grey; cilia worn. Female brownish grey with dark brown markings and ochreous cilia divided with brown bars. Hindwing dark, brownish.

Male genitalia (Figs 34,35). Median part of transtilla very short, with pair of long apically hooked processes. Costa of valva convex before middle, thorny, up-curved terminally; free termination of sacculus on valva accompanied by basal lobe; sacculus and ventro-caudal area of valva densely spined; row of thorns from base of costa to antemedian convexity. Aedeagus small, slender, with long ventral termination.

Female genitalia (Fig. 49). Sterigma broad, almost circular, concave distally, with curved folds, densely spined. Ostium bursae near middle of sterigma; ductus bursae slender, membranous; corpus bursae with weak postmedian sclerites and innumerable micro-spines. Accessory bursa extending from vicinity of ostium, ductus seminalis ventral, from beyond middle of corpus bursae.

Holotype, male: "Brasil; SC, Brusque, 100 m, 5 I 1989, V. O. BECKER Coll." [61055], GS 22495; paratypes: two females one from Brusque, Santa Catarina, 100 m, 15-20 IV 1985, the other from Ceara: Guaramiranga, 1000 m, 9 IV 1994.

Netechma phaedroma sp.n.

(Fig. 72)

Wing span ca 12 mm. Head and thorax creamy white, labial palpus over 1, white. Forewing not expanding terminally, costa weakly convex, termen almost straight. Ground colour creamy suffused pale ochreous postbasally, terminally and costally; dorsal triangle dark brown reaching middle of median cell accompanied by costal spot; brownish strigulation or a brown mark in median cell between median and subterminal incomplete markings, subapical spot brown, connected with tornus by means of a suffusion (subterminal marking); ochreous suffusion along termen. Cilia concolorous with termen. Hindwing pale creamy ochreous darkest in terminal third where tinged rust; cilia whiter.

Male genitalia (Figs 36-38). Transtilla consisting of two lateral sclerites connected by means of a membrane, with produced dorso-median portions. Valva broad; sacculus strong, with large terminal process and two groups of small ventral processes. Aedeagus well sclerotized ventrally terminating in a large lobe, additional, variable in size lateral lobe from zone area.

Holotype, male: "Brasil, SC, Brusque, 100 m, 15-20 I 1983, V. O. BECKER Col.", [51878], GS 21765; paratypes 4 males: one identically labelled as above, one from Banhado, Quatro Barras, Paraná, Brasil – 800 m, 7 II 1970, [34388] and one with similar label but dated 26 III 1971 (BECKER & LAROCA), [30460], one female from National Parc Itatiaia, Rio de Janeiro, 2400 m, 18 X 1985 [66338], and one from Teresópolis, same state, 1000 m, 15 I 1985 – all collected by V. O. BECKER.

R e m a r k s. Male genitalia distinctly variable, especially as concerns the sacculus and the aedeagus. This species is probably widely distributed as known from Paraná and Santa Catarina north to Rio de Janeiro.

Netechma moderata sp.n.

(Fig. 73)

Wing span 12-14 mm. Externally very similar to *altobrasiliiana* but proximal concavity of dorsal half of subterminal fascia more creamy.

Male genitalia (Figs 39,40). Median part of transtilla short, convex, armed with pair of extremely large hooks. Valva simple; sacculus beyond base slender, with sharp termination. Aedeagus weakly sclerotized beyond zone ventrally; cornuti a pair of very large, curved spines.

Female genitalia (Fig. 50). Sterigma rounded proximally; ductus bursae in major part sclerotized, proximally forming a large sac; corpus bursae with smaller sclerites, and numerous spines.

Holotype, male: "Planaltina, DF, Brasil – 1000 m, 30 III 1984, 15°35'S-47°42'W, V. O. BECKER col.", [56263], GS 22496. Paratypes, one female labelled as above but dated 9 VII 1984 [56501], and one male with label "Brasil: RJ, Cach. de Macacu, 800 m, 15 X 1985, V. O. BECKER col." [56911].

Netechma fausta sp.n.

(Fig. 74)

Wing span 16 mm. Head creamy tinged brownish, tegula rather concolorously edged, otherwise brownish ferruginous. Gound colour of forewing creamy, preserved mainly along marking's edges, suffused brownish in costal area; dorsal triangle dark, brown; remaining parts yellow-brown; sub-terminal fascia concave in middle posteriorly; triangular blotch from termen in concavity of this last. Cilia (worn) concolorous with ground colour. Hindwing rather dark, brownish grey, cilia paler.

Female genitalia (Fig. 51). Sterigma large, rounded proximally, with concave ventro-lateral surfaces of anteostial part and incised distal edge. Ductus bursae hardly differentiated; almost entire bursa spined, provided with ventro-lateral sclerite and dorso-lateral lobes.

Holotype, female: "Brasil: MG, Caraca, 1300 m, 2-4 I 1985, V. O. BECKER col.", [54346], GS 22497.

R e m a r k s. This species is very distinct externally and easily distinguished by the presence of an oblique fascia extending from wing apex to middle accompanied by dark brown dorsal triangle.

Netechma notabilis sp.n.

(Fig. 75)

Wing span 14 mm. Head and thorax dark brown but frons and end part of tegula yellowish creamy; labial palpus ca 2, concolorous with frons except for median joint which is brown. Forewing slightly expanding terminally, apex rounded, termen rather oblique, straight. Basal half of wing ochreous creamy suffused brownish especially along costa; posterior part of wing brown, paler between veins proximally. Markings dark brown consisting of median fascia extending from dorsum postbasally to before costa, with weakly visible costal part, and brown spots at tornus. Cilia concolorous with distal part of wing. Hindwing dark, brown-grey; cilia paler.

Male genitalia (Figs 41,42). Gnathos slender with almost entirely reduced terminal plate; socius fairly broad, rounded laterally; valva slightly up-curved; sacculus with a series of terminal processes. Transtilla a simple band folded ventrally. Aedeagus very short, rather broad; cornuti not found.

Holotype, male: "Ecuador: Carchí, Maldonado, 2200 m., 9-11.I. 1993, V. O. BECKER Col.", [105296]; GS 22400.

R e m a r k s. Externally very similar to some representatives of *Cochylis* TREITSCKE. Genitally distinct, with transtilla probably secondarily simplified. The aedeagus also simple, very short.

Unplaced species

Three species listed below could not been placed in the above system despite their genitalia are known. Further material is needed to decide on their systematic positions. All of them were listed in my previous paper on *Netechma* (RAZOWSKI 1999) in which the additional references are given (e.g. CLARKE 1958 with the illustrations of some types and their genitalia).

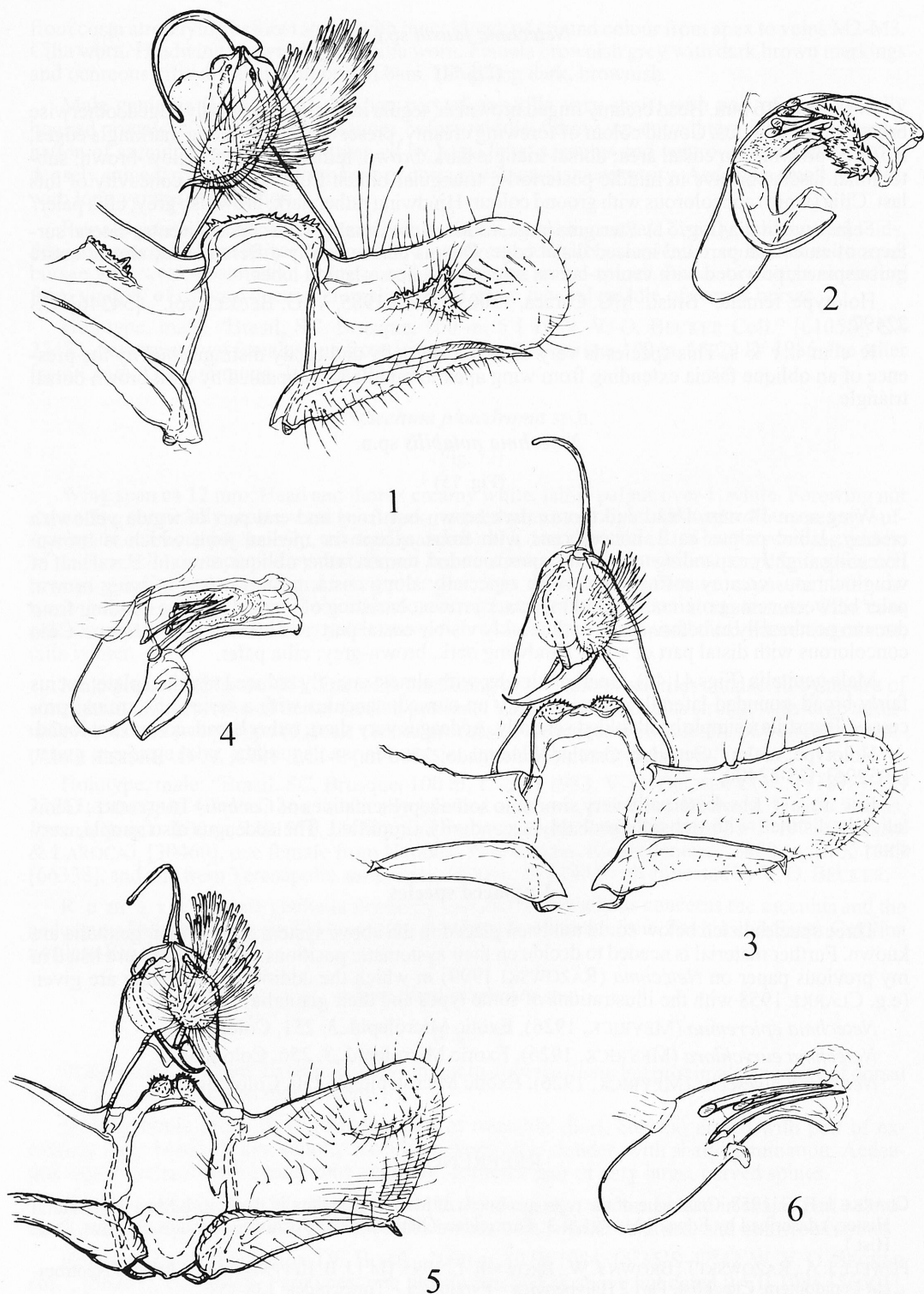
Netechma epicremna (MEYRICK, 1926), Exotic Microlepid.,3: 251. Colombia.

Netechma eurychlora (MEYRICK, 1926), Exotic Microlepid.,3: 256. Colombia.

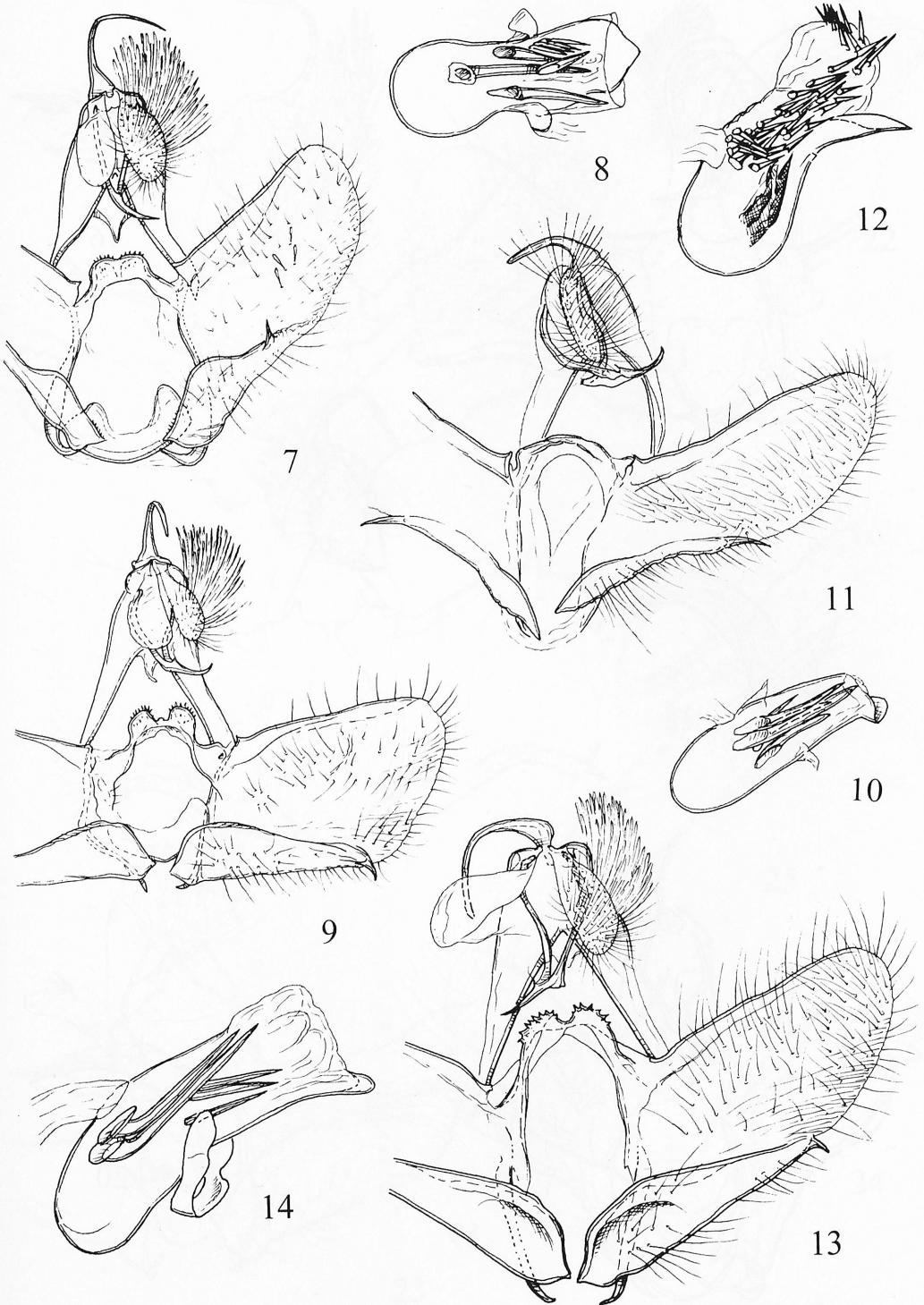
Netechma nivescens (MEYRICK, 1926), Exotic Microlepid.,3: 250. Colombia.

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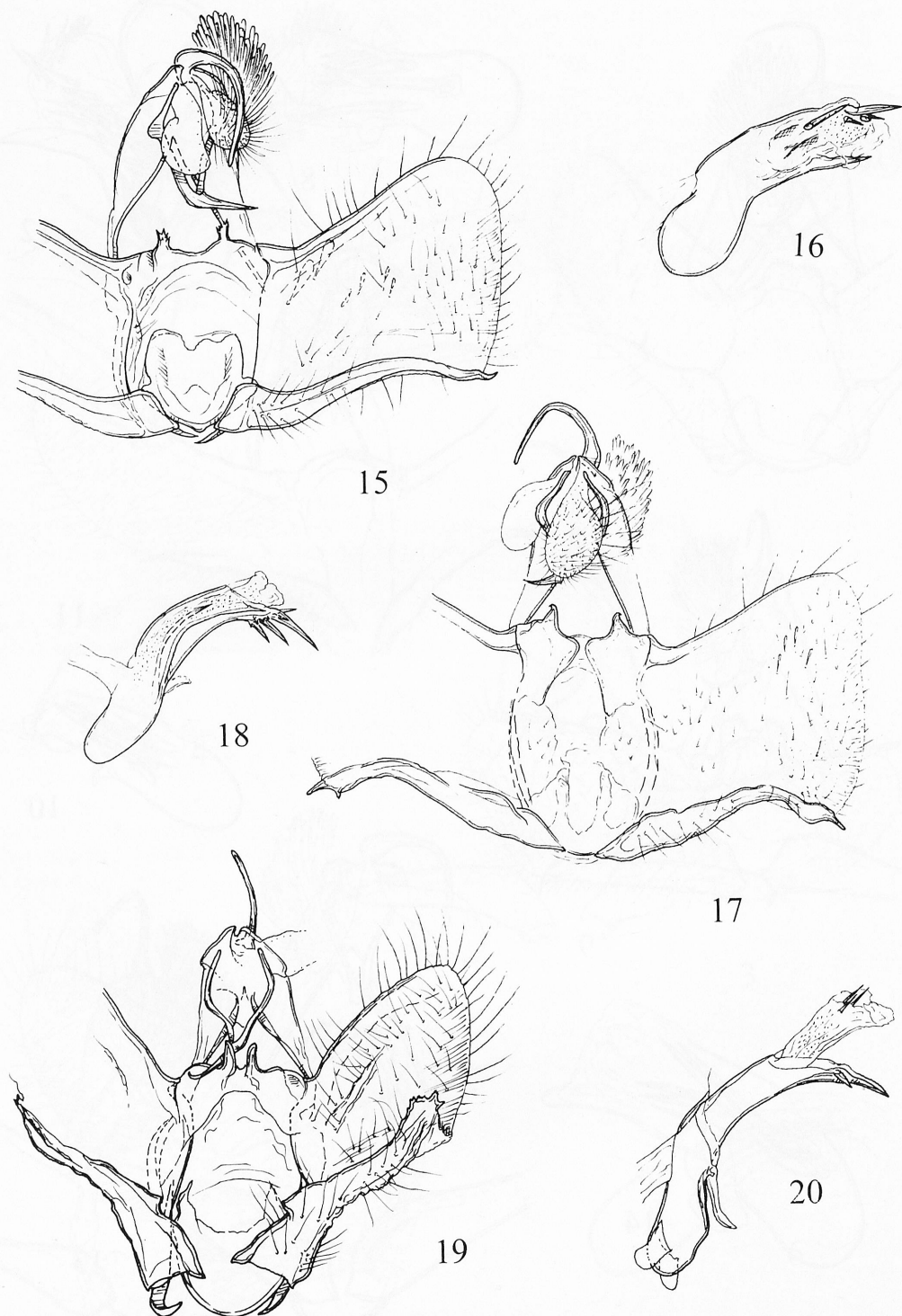
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Figs 1-6. Male genitalia of *Netechma* RAZOWSKI: 1,2 – *N. illecebrosa* sp.n., holotype; 3,4 – *N. ochrata* sp.n., holotype; 5,6 – *N. altobrasiliiana* sp.n., holotype.



Figs 7-14. Male genitalia of *Netchma* RAZOWSKI: 7,8 – *N. formosa* sp.n., holotype; 9,10 – *N. luteopocila* sp.n., holotype; 11,12 – *N. pyrrocolona* (MEYRICK), Ecuador; 13,14 – *N. sulphurica* RAZOWSKI, Brazil: Curitiba.



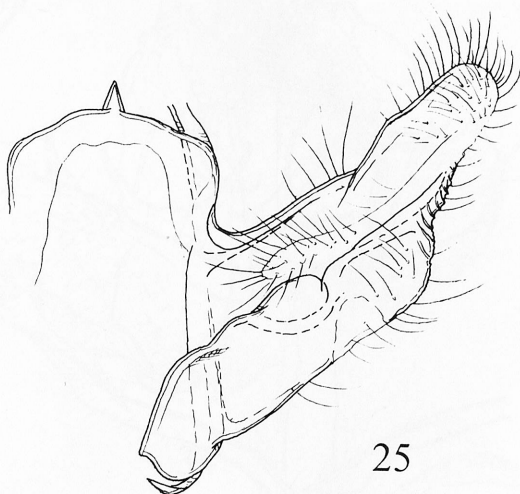
Figs 15-20. Male genitalia of *Netechna* RAZOWSKI: 15,16 – *N. picta* sp.n., holotype; 17,18 – *N. polyspinea* sp.n., holotype; 19,20 – *N. graphitaspis* sp.n., holotype.



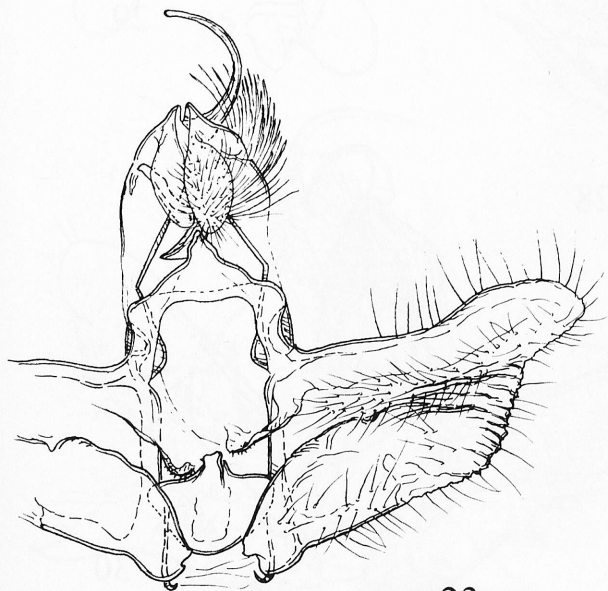
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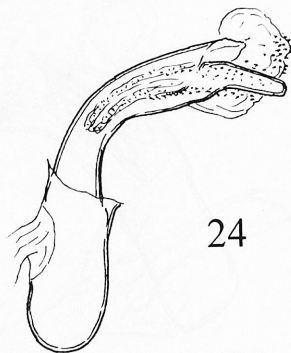
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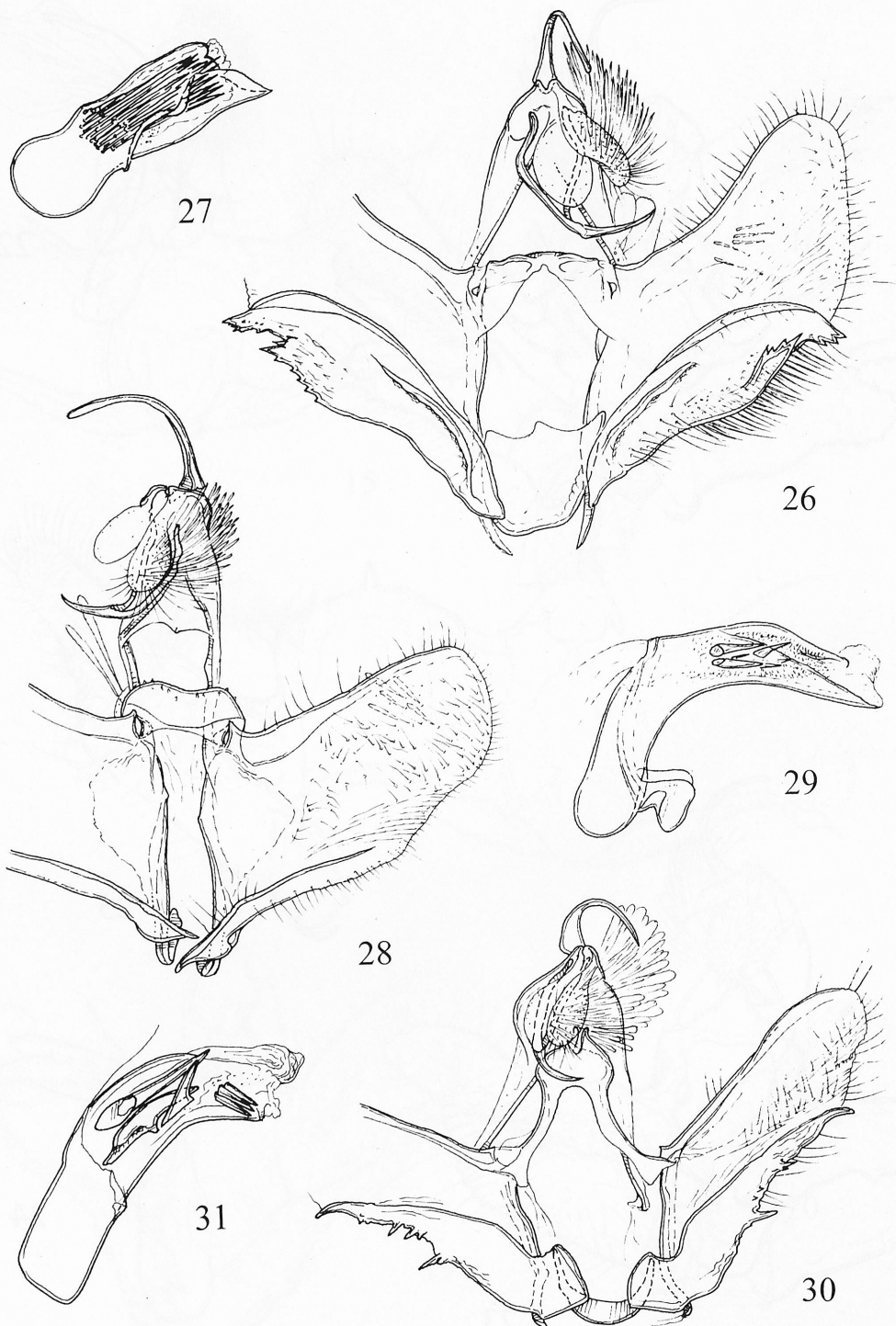


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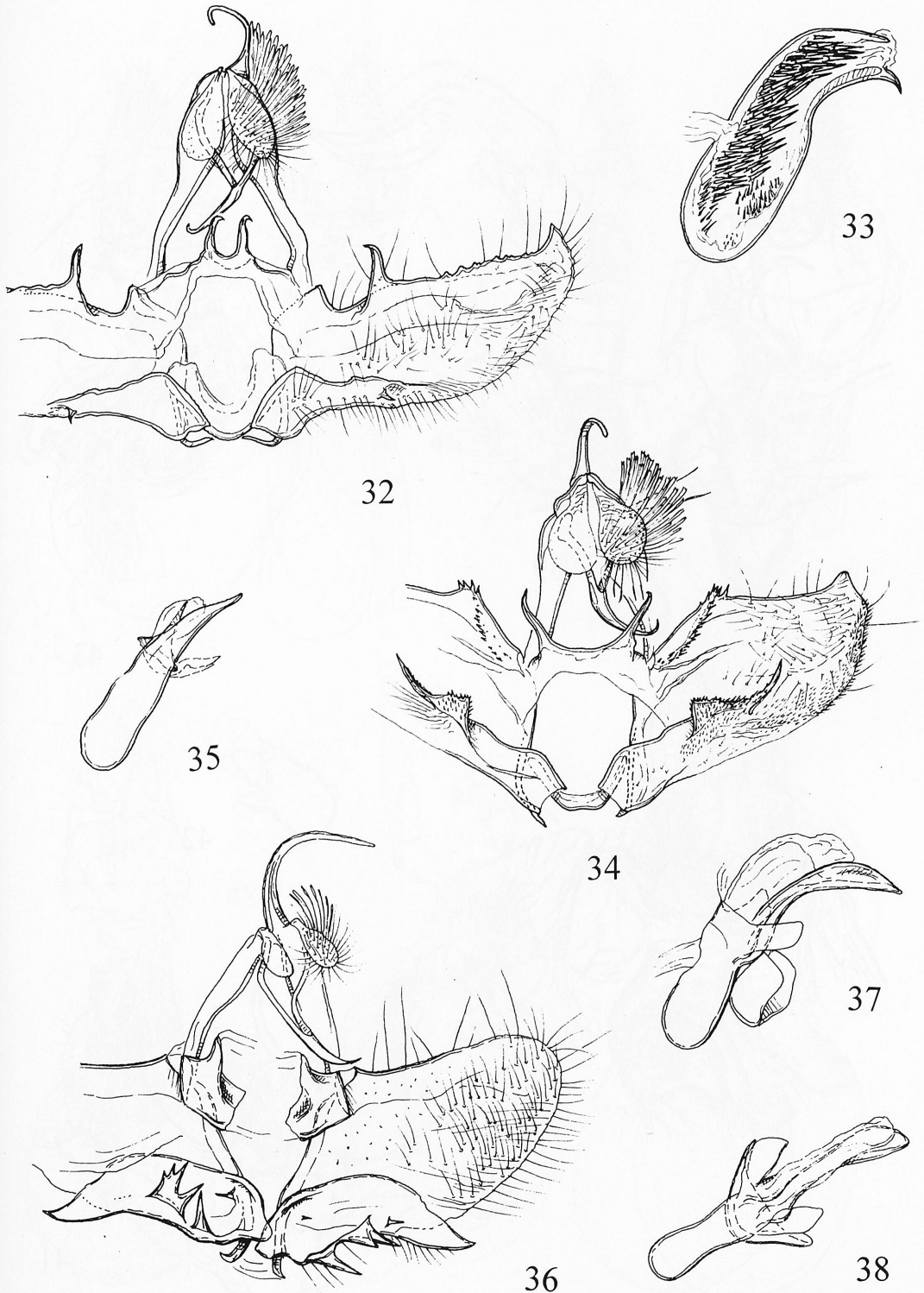


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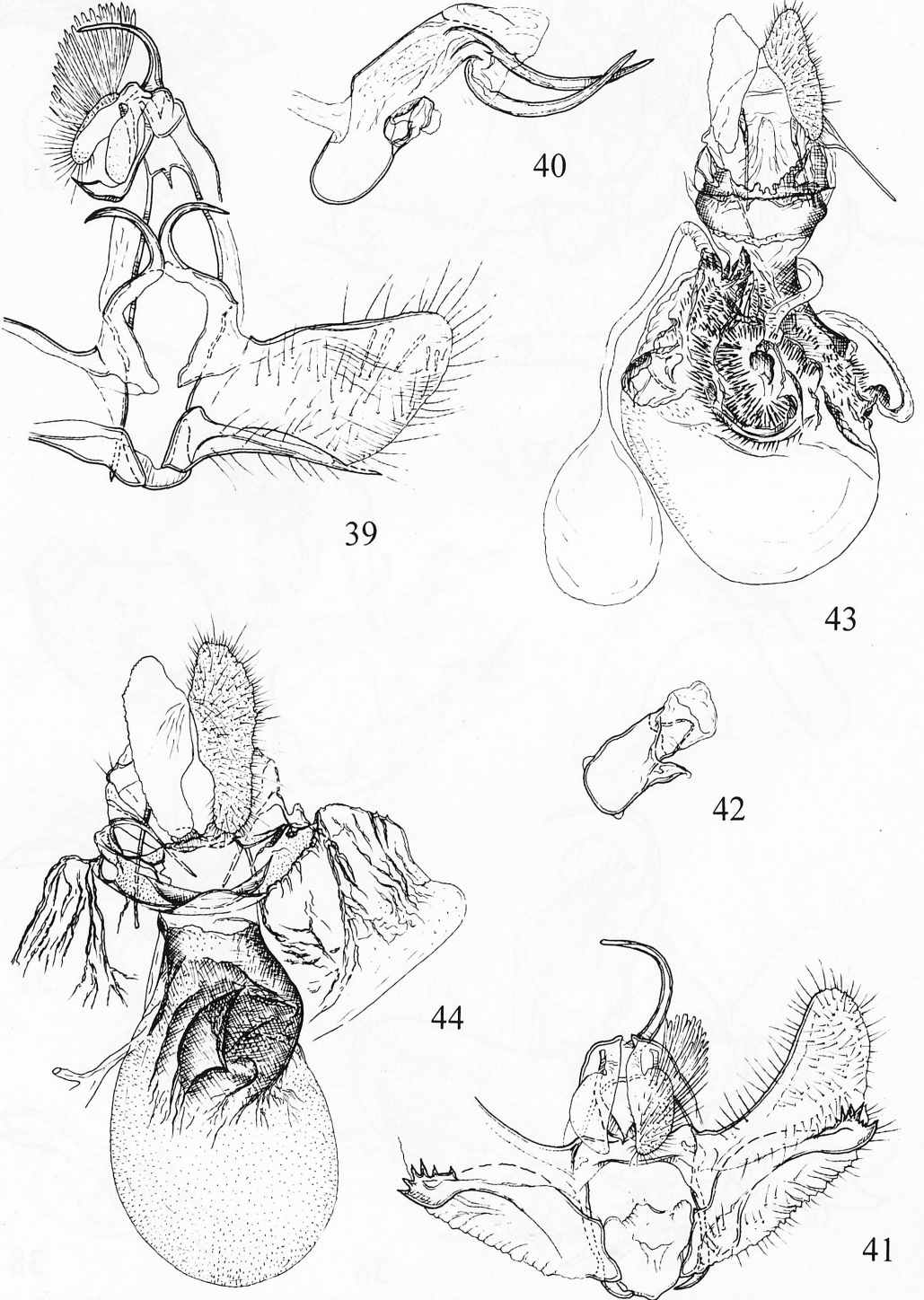
Figs 21-25. Male genitalia of *Netechma* RAZOWSKI: 21,22 – *N. lojana* sp.n., holotype; 23,24 – *N. chamaecera* sp.n., holotype; 25 – *N. praecipua* (MEYRICK), holotype, valva and transtilla.



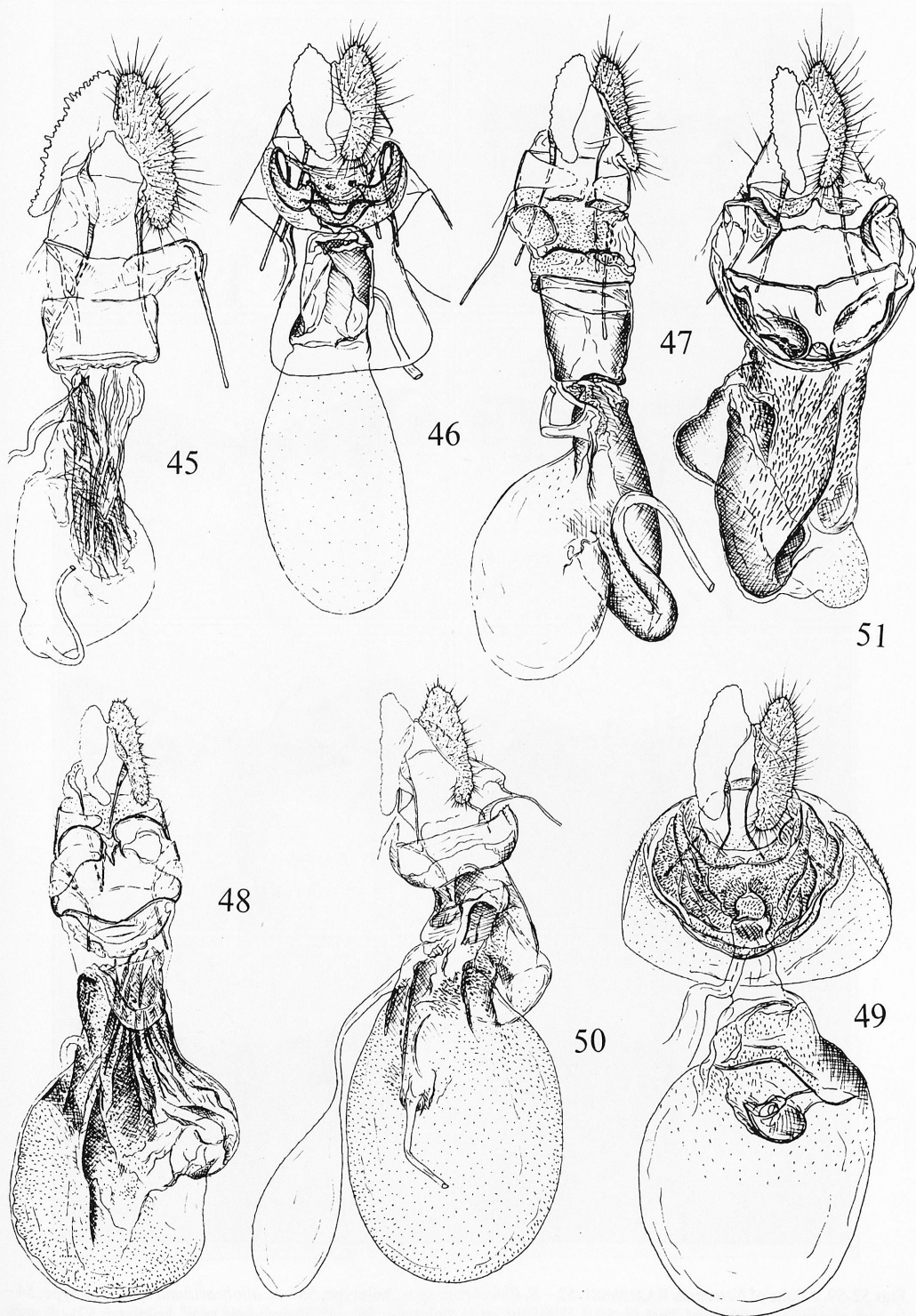
Figs 26-31. Male genitalia of *Netechma* RAZOWSKI: 26,27 – *N. distincta* sp.n., holotype; 28,29 – *N. indanzana* sp.n., holotype; 30,31 – *N. consequens* RAZOWSKI, Brazil: Paraná: Marumbi.



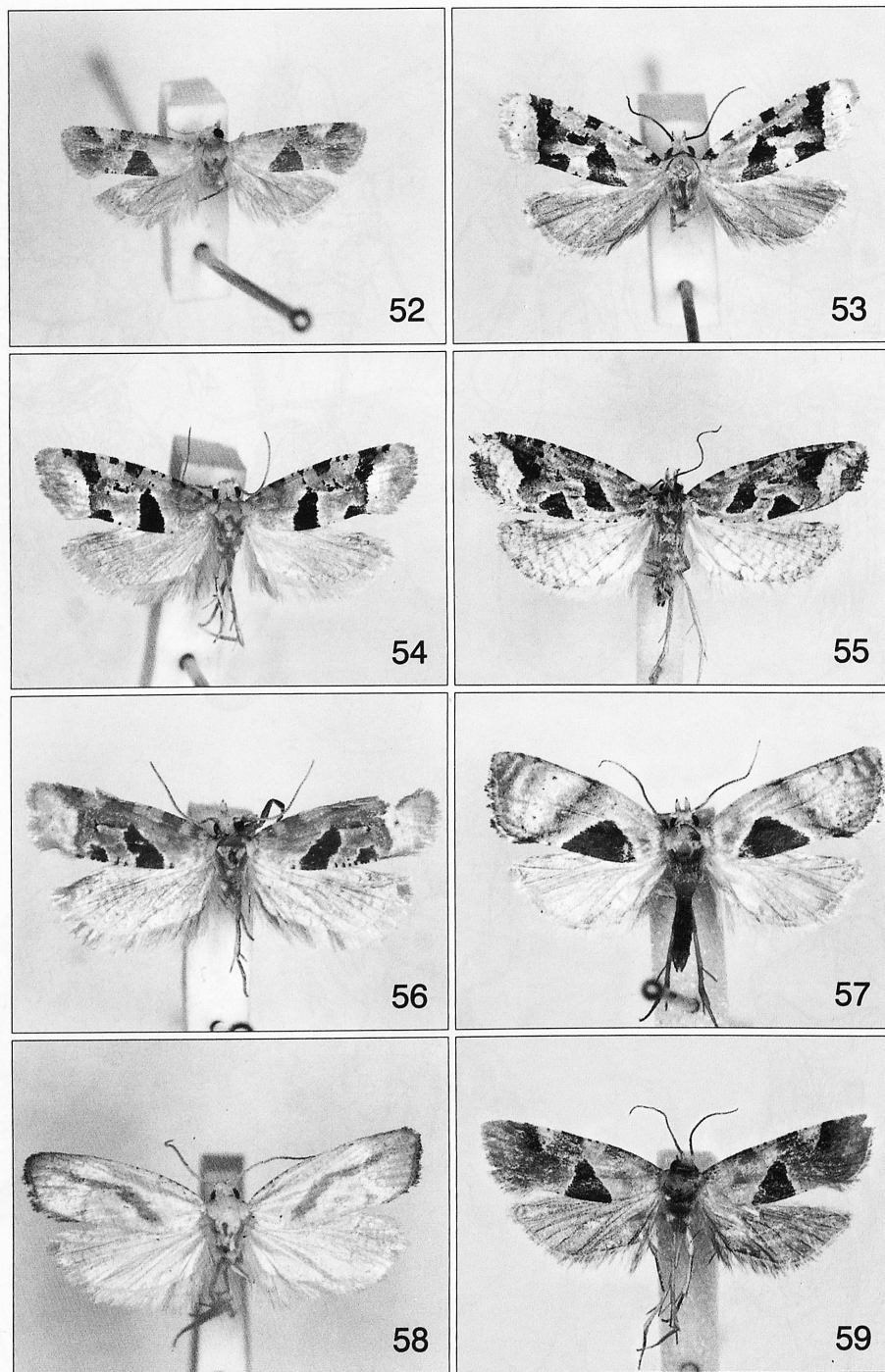
Figs 32-38. Male genitalia of *Netechma* RAZOWSKI: 32,33 – *N. labyrinthica* sp.n., holotype; 34,35 – *N. insignata* sp.n., holotype; 36-38 – *N. phaedroma* sp.n., holotype.



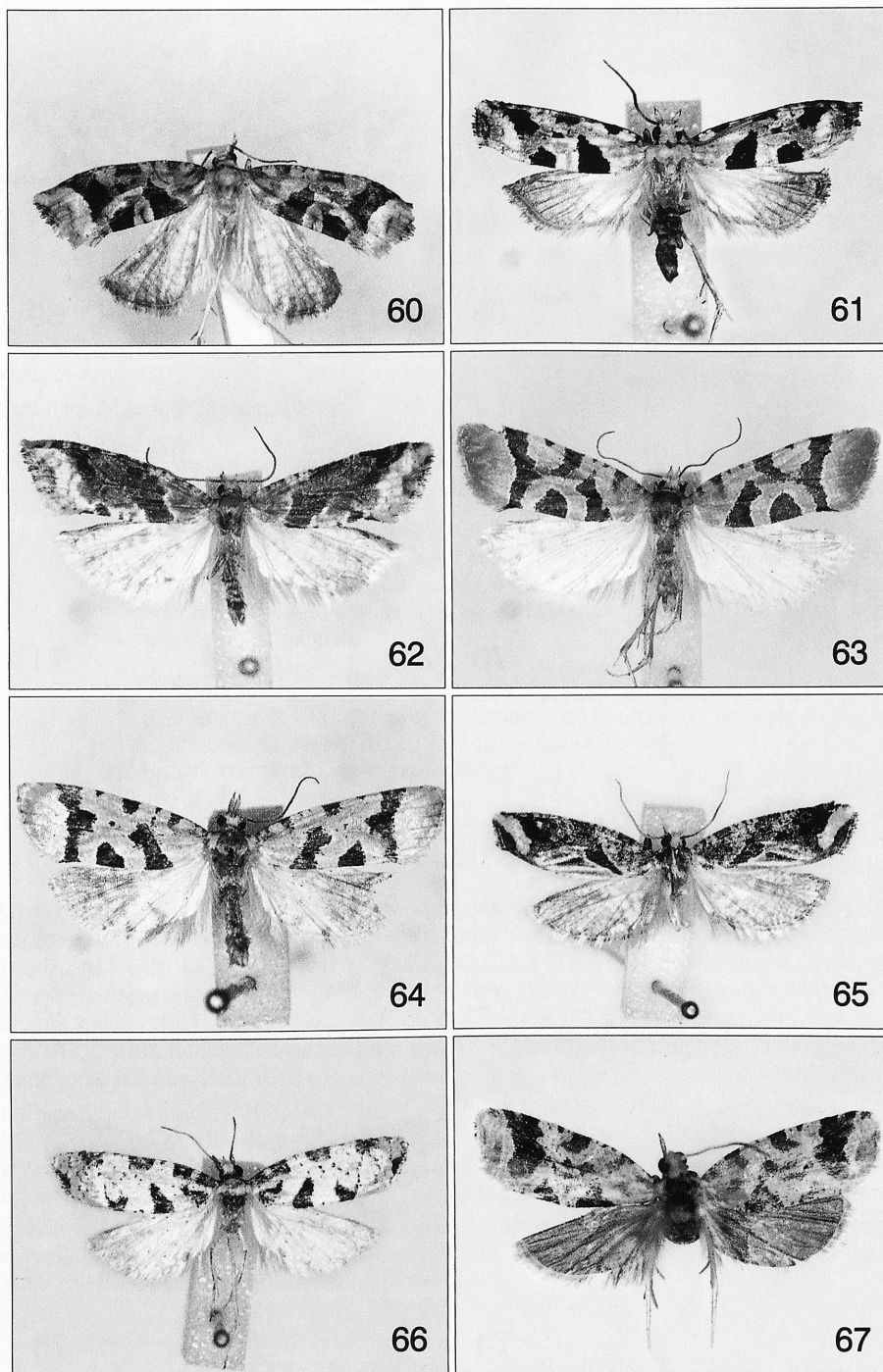
Figs 39-44. Male and female genitalia of *Netechma* RAZOWSKI: 39,40 – *N. moderata* sp.n., holotype; 41,42 – *N. notabilis* sp.n., holotype; 43 – *N. formosa* sp.n., paratype; 44 – *N. magna* sp.n., holotype.



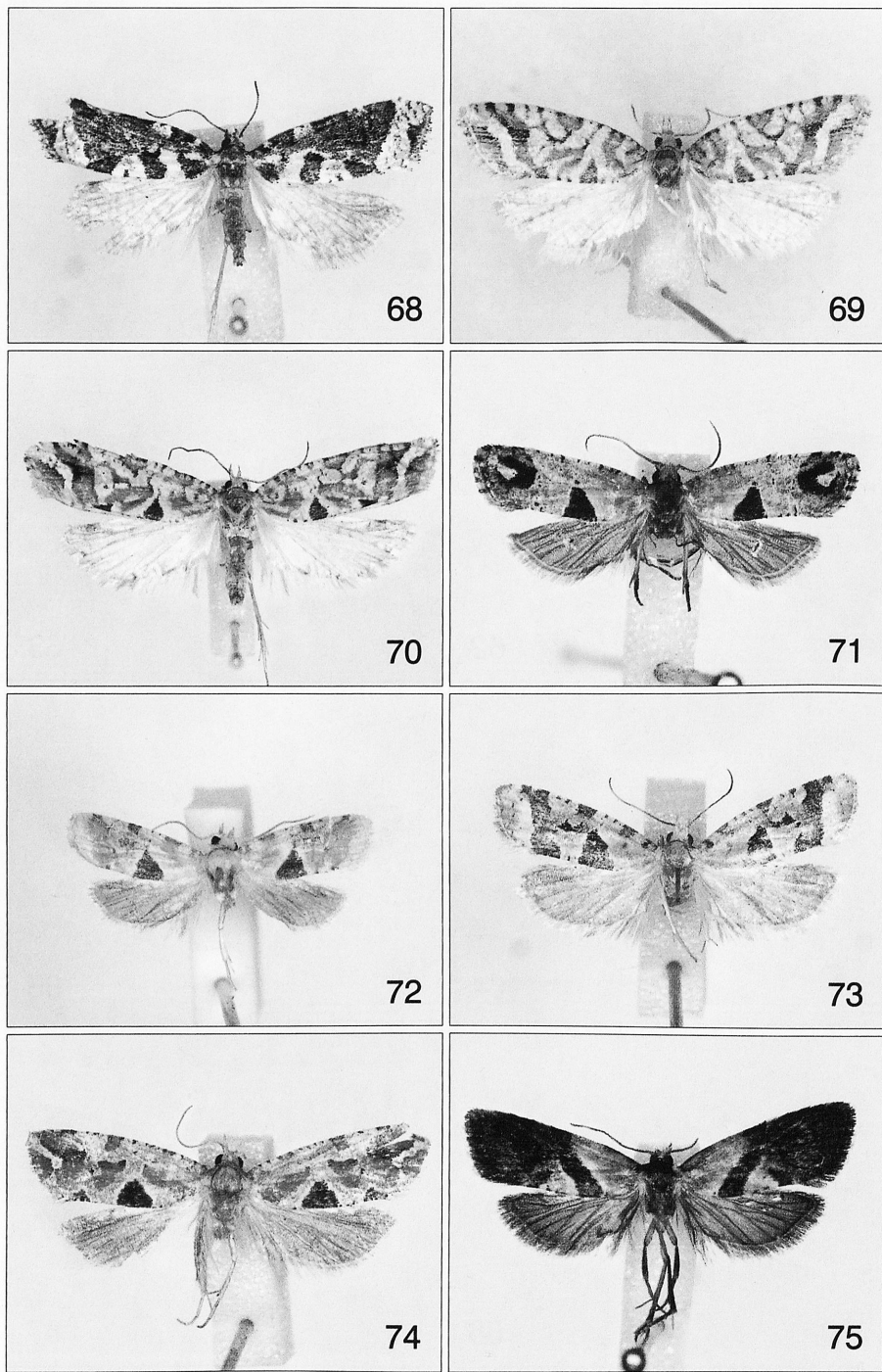
Figs 45-51. Female genitalia of *Netchma* RAZOWSKI: 45 – *N. pyrrhocolona* (MEYRICK), Ecuador; 46 – *N. lojana* sp.n., paratype; 47 – *N. nigralba* sp.n., holotype; 48 – *N. labyrinthica* sp.n., paratype; 49 – *N. insignata* sp.n., paratype; 50 – *N. moderata* sp.n., paratype; 51 – *N. fausta* sp.n., holotype.



Figs 52-59. Adults of *Netechma* RAZOWSKI: 52 – *N. illecebrosa* sp.n., holotype; 53 – *N. altobrasiliiana* sp.n., holotype; 54 – *N. formosa* sp.n., paratype, Itatiaia; 55 – *N. magna* sp.n., holotype; 56 – *N. luteopoecila* sp.n., holotype; 57 – *N. pyrrhocolona* (MEYRICK), Ecuador; 58 – *N. sulphurica* RAZOWSKI, Brazil: Curitiba; 59 – *N. neanica* (RAZOWSKI & BECKER), Mexico: Tamaulipas.



Figs 60-67. Adults of *Netechma* RAZOWSKI: 60 – *N. picta* sp.n., holotype; 61 – *N. polyspinea* sp.n., holotype; 62 – *N. graphitaspis* sp.n., holotype; 63 – *N. lojana* sp.n., paratypus; 64 – *N. chamaecera* sp.n., holotype; 65 – *N. distincta* sp.n., holotype; 66 – *N. indanzana* sp.n., holotype; 67 – *N. consequens* RAZOWSKI, holotype.



Figs 68-75. Adults of *Netechma* RAZOWSKI: 68 – *N. nigralba* sp.n., holotype; 69 – *N. labyrinthica* sp.n., holotype; 70 – same species, female paratype; 71 – *N. insignata* sp.n., paratype, Ceara; 72 – *N. phaedroma* sp.n., holotype; 73 – *N. moderata* sp.n., paratype; 74 – *N. fausta* sp.n., holotype; 75 – *N. notabilis* sp.n., holotype.