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The Genera of *Tortricidae (Lepidoptera)*. Part II: Palaearctic *Olethreutinae*

[With 576 text-figs.]

Rodzaje *Tortricidae (Lepidoptera)*. Część II: Palerktyczne *Olethreutinae*

Abstract. 124 genera are redescribed and some data on the phylogeny and system are provided.

The general data concerning the present series are given in the introduction to part 1 (RAZOWSKI, 1987). To complete the morphological descriptions of the *Olethreutinae* the structure and vestiture of the valva are illustrated (Figs 1, 2). For the more complete description and discussion of some phylogenetic and morphological aspects see the paper on the *Tortricidae* valva (RAZOWSKI, 1989). Now, I am satisfied to provide a short description of the groups of setae and the general topography of the olethreutine valva.

Anterior portion of the disc in olethreutine valva is membranous except for the sacculus and partially costal areas; the distal edge of that surface called the basal cavity is more cf less distinctly expressed and sclerotized. The portion posterior to basal cavity and the ventral prominence of the sacculus called the angle is usually slender (the neck of valva), the terminal part is more or less expanding, named the cucullus. From ventral part or angle of the latter extends a fold terminating at basal cavity in small prominence, the pulvinus. The two structures show a strong tendency to atrophy. The vestiture is highly specialized and accompanies various sclerotic structures. It differentiates into several groups built of hairs, setae or spines. That of the sacculus divides often into the basal group and 3 further agglomeration, the angular, the median and the posterior; the group situated beyond the posterior edge of the basal cavity is named anterior, that beyond it on the fold and above it on the neck of the valva is the group of fold The group of cucullus often fusses with the preceding group and may include the marginal spines and the pollex, one of the latter but much stronger and situated at the ventral edge of the cucullus The dorsal

group, similarly as the basal subgroup of the sacculus, consists of the tactile setae. Other surfaces are covered by rather weakly differentiated hair or setae. The setae or spines originating at the edges of the valva externally belong to the groups of the inner surface but secondarily changed their places, except for the outher anterior group in *Pseudosciaphila* OBR., the origin of which is not explained. The particular groups are often difficult to determine as they can vary to some degree, fuse with one the other or subdivide. In such cases the determination is possible thanks to a comparison with the setal pattern in related species.

The system of the family level taxa is insufficiently found (c. f. RAZOWSKI, 1987) thus a traditional arrangement sufficient for the purposes of the present series is used. The tribal system of *Olethreutinae* is even less advanced than that of *Tortricinae*. The modern studies initiated by PIERCE & METCALFE (1922) were continued then by HEINRICH (1924, 1926) and accepted, with some corrections, by the majority of the further authors. The survey of the system and the the studies on phylogeny is given in my paper of 1976. The most important recent papers were published by KUZNETSOV & STEKOLNIKOV (1973) who divided *Olethreutinae* into two supertribes — *Olethreutidii* and *Eucosmidii*. In my above mentioned publication (RAZOWSKI, 1976) 3 tribes are distinguished, viz., *Microcorsini*, *Olethreutini* and *Eucosmini*, and that arrangement was supported by the studies on the musculature of the male genitalia of *Microcorses* (RAZOWSKI, 1980). The status the tribes was then elevated to supertribes and was unchanged till 1983 when KUZNETSOV and STEKOLNIKOV proposed a division into *Gatesclarkeanidii*, *Olethreutidii* and *Eucosmidii*. To avoid further multiplications of the systems I accepted a compilation of some previous systems of the family as explained and demonstrated in part 1 of this series (RAZOWSKI, 1987: 148).

Note. The descriptions of the scent organs concern the males, if not mentioned otherwise. The groups of the scent scales situated on the tegumen or valvae are distributed throughout the subfamily and therefore are not discussed in this paper, with a few exceptions.

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Microcorsini

Originally (KUZNETSOV, 1970) 4 genera were included in this tribe of which one is certainly Palaearctic. KUZNETSOV purchased *Acharneodes* MEYRICK to occur in China and Japan, but I have not found any species in our subregion. *Cryptaspasma* WALSINGHAM will be redescribed in the part dealing with the Oriental fauna.

Microcorses Walsingham

Microcorses Walsingham, 1900, Ann. Mag. nat. Hist., (7) **5**: 465. Type-sp.: *Microcorses marginifasciatus* Walsingham, 1900 — by orig. design.

Venation: All veins separate; in forewing chorda from before mid-distance between r_1-r_2 to base of r_5; M well developed in distal half of median cell, terminating halfway m_2-m_3; in hindwing $rr-m_1$ approaching to one another basally.

Scent organ: Between hindwing veins a_1-a_2 occurs an elliptic structure protecting a bunch of anderoconial scales.

Male genitalia (Fig. 3,4): Uncus rather small, provided with dorsal hairs; a trace of socius at the shulter of tegumen; gnathos slender, occasionally weakly broadening medially. Basal part of valva broad; basal cavity protected by thick membrane except for ventral portion; cucullus slender, without ventral angle, armed with innumerous spines extending along ventral edge as far as to the sacculus (postangular) group; no anterior group of spines or scales; long hairs at sacculus angle. Aedeagus provided with distinct coecum penis and curved ventro-terminal process; cornutus very thin, if present. Musculature: All muscles developed, m_4 short, m_1 delicate, m_5 divided into two main branches, one being attached to juxta, the other to coecum penis (Razowski, 1980; Kuznetsov & Stekolnikov, 1983 provide somewhat different description).

Female genitalia (Figs 320, 321): Sterigma, a short plate extending laterally to join apophyses anteriores, convex anteriorly, with cup-shaped median portion; colliculum atypical, strongly broadening anteriorly as far as to middle of ductus bursae where originates the ductus seminalis; signa — two very strong horns with long basal sclerites.

Early stages unknown.

Bionomy: Larva of *M. trigonana* Walsm. in clubs of *Quercus mongolica*.

Distribution: Eastern part of the Palaearctic subregion; 3 species known to date.

Comments. The supposed autapomorphies of this genus are the shape of the valva and the distribution of its spines; the structure of the signum is probably a synapomorphy of all known genera of the tribe.

Bactrini

A compact group of 6 known genera distributed in all the regions. It was first distinguished by Falkovitsh (1962), then Diakonoff (1973) treated it as a subtribe *(Bactrae)* of his *Olethreutini*. The phylogeny is little known and was not analysed by Diakonoff who, however, treated *Syntozyga* Lower as the most primitive genus, and *Henioloba* Diak. as the most advanced. In the Palaearctic subregion only one genus occurs.

Bactra Stephens

Venation: In forewing all veins separate, chorda extending from between bases of $r_1 - r_2$, M distict; in hindwing $rr - m_1$ from one point or stalked, other veins separate.

Scent organs not developed. Sex dimorphism rather slight expressed mainly in the size and pattern.

Male genitalia: Tegumen robust, with more or less differentiated distal part on which the socii occur; uncus well sclerotized, armed with lateral rows of spines; socius weakly sclerotized, hairy, drooping. Valva highly specialized, with short basal cavity and broad, often swallen basal part in the discal surface of which a concavity may occur. The major surface of that area is characteristically sculptured and named the punctulate area (Diakonoff, 1963); part of it is clear (bare area) provided with small group of spines situated subventrally; apodeme of tergal muscles situated beyond distal edge of basal cavity in majority of the species; cucullus species specific, often ovate, spined ventrally, neck indistinct, fold often developed, all with spines or hairs, or naked; a postmedian lobe armed with uniform row of spines resembling ctenidium developed. Aedeagus simple, often with non-deciduous capitate cornuti. Musculature (Kuznetsov & Stekolnikov, 1973 — *lancealana*): Besides description muscles of valva illustrated: m_2 posterior to m_4 on upper surface of basal process of valva; m_5 slender, entering medially into valva.

Female genitalia: Sterigma variably developed, more or less distinctly sclerotized plate, usually producing around ostium bursae or even forming a short reversed cup; ostium sclerite present or a rather typical colliculum developed; signum a minutely dentate more or less concave plate.

Early stages: Larval chaetotaxy described by Swatschek (1958) for the type species only.

Bionomy: European species occur in two generations yearly; larvae are boring in stems of *Juncus*, *Carex*, *Scirpus* etc.

Distribution: Cosmopolitic.

Comments. The supposed autapomorphies of this genus are the structure of the uncus, occurrence of its lateral spines and the structure of the saccular area of the valva. Diakonoff (1963) divided this genus into 5 subgenera and explained his point of view on their phylogeny. He writes that *Chiloides* possesses a strongly specialized genitalia and is, however, the most primitive subgenus whilst *Bactra* s. str. and *Nannobactra* show minor differences and are similar to each other being younger than *Chiloides*. *Spinobactra* and *Noteraula* have developed of *Bactra*-like ancestors. However, in the mentioned paper the subgenera are arranged as follows: *Spinobactra*, *Bactra* s. str., *Chiloides* and *Nannobactra*. The most important works on *Bactra* are those by Diakonoff. 1956, 1962, 1963 and 1964.

Subgenus 1: ***Bactra*** STEPHENS

Bactra STEPHENS, 1834, Ill. Br. Ent., *Haustellata*, **4**: 124. Type-sp.: *Tortrix plagana* HAWORTH, [1811] = [*Tortrix*] *lancealana* HÜBNER, [1796—99] — by subs. design. (CURTIS, 1834, Br. Ent., expl. pl. 599).

Aphelia STEPHENS, 1829, Syst. Cat. Br. Insects, **2**: 180. Type-sp.: *Tortrix pauperana* HAWORTH, [1811] = [*Tortrix*] *lancealana* HÜBNER, [1796—99] — by subs. design. (Westwood, 1840, Introd. mod. Classif., **2**; Synopsis Br. Insects: 108). Non. praeocc. by *Aphelia* HÜBNER, [1825].

Leptia GUENÉE, 1845, Annls Soc. ent. Fr., (2) **3**: 169. Type-sp.: [*Tortrix*] *lancealana* HÜBNER, [1796—88] — by monot.

Male genitalia (Fig. 5) as described for the genus; sacculus part of valva broad, swollen, armed with a few spines situated in ventral part of the concavity; cucullus usually ovate, with hair and spines agglomerated mainly ventroproximally; neck of valva very short; a weak rib accompanied by hairs extending from the vicinity of apodeme of tergal muscles to angle of cucullus usually developed.

Female genitalia (Figs 322—325) with sterigma rather simple, weakly sclerotized except for median, strongly convex portion; the latter often ill-defined; antrum sclerite species specific; colliculum weak, slender, or not developed; ductus bursae simple; ductus seminalis postmedian; signum a small concave scobination.

Early stages and bionomy as mentioned for the genus.

Distribution: All regions; in Palaearctic subregion there are 9 species, similar number is recorded from Ethiopian region, a few species are Oriental, Neotropical and Australian; the Nearctic species are probably artificially introduced (no exact data found).

Subgenus 2: ***Noteraula*** MEYRICK

Noteraula MEYRICK, 1892, Trans. N. Z. Inst., **24**: 217. Type-sp.: *Bactra straminea*: MEYRICK, 1892 = *Bactra noteraula* WALSINGHAM, 1907 — by orig. design.

Male genitalia (Fig. 6) as in the nominate subgenus but saccular spines absent, cucullus and its spines weaker, a heavily spined lobe extending just beyond sacculus (the spines reach dorsal third of posterior edge of basal cavity).

Female genitalia (Fig. 326) not examined, after DIAKONOFF (1956) with sterigma a sclerotized and curved fold above the ostium bursae, colliculum present, tubular.

Early stages and bionomy unknown.

Distribution: New Zealand only.

Comments. Monotypical subgenus characterized with distinct, spined lobe, being probably a process of the neck of the valva.

Subgenus 3: ***Spinobactra*** DIAKONOFF

Spinobactra DIAKONOFF, 1963, Tijdschr. Ent., **106** (7): 291. Type sp.: *Bactra (Spinobactra) spinosa* DIAKONOFF, 1963 — by orig. design. Ethiopian. Established as a subgenus of *Bactra* STEPHENS.

Male genitalia (Fig. 7) as in *Bactra* s. str. but spines of cucullus joined with the spines of rather distinct fold area extending to basal cavity; outer edge of sacculus densely spined; punctured area ill-defined, short bristled.

Female genitalia (Fig. 329): Sterigma broad, in form of distinctly sclerotized plate with lateral parts extending posteriorly accompanied by a less sclerotized area developed of the surrounding membrane, forming a pair of lateral folds; colliculum broad, short, membranous.

Early stages and bionomy unknown.

Distribution: Southern part of Ethiopian region. Monobasic.

Comments. Originally described as close to *Bactra* s. str. as a specialized endemic subgenus. *B. (Bactra) pythonia* MEYRICK of same region was supposed to be a transitional form between *Bactra* s. str. and *Spinobactra*. That species, however, shows some distinct autapomorphies and requests reexamination.

Subgenus 4: ***Chiloides*** BUTLER

Chiloides BUTLER, 1881, Ann. Mag. nat. Hist., (5) **7**: 392. Type-sp.: *Chiloides straminea* BUTLER, 1881 — design. by monot.

Male genitalia (Fig. 8, 9) as in nominate subgenus but a strong process extending from posterior edge of the basal cavity armed with group of terminal spines present. Sacculus spined ventrally or subventrally without a concave punctured area.

Female genitalia (Fig. 327): Sterigma more complicate than in *Bactra* s. str., with broad lateral lobes, occasionally expanding proximally and developing slender folds anteriorly or posteriorly; colliculum often broad, marked with distinct inner sclerite, or at least partially semimembranous.

Early stages and bionomy unknown.

Distribution: Tropical zones mainly; two species are Palaearctic, less than 10 species have been found in Australian, Oriental or Neotropical regions and about 20 in Ethiopian region. One species (*B. venosana* (ZELLER)) is broadly spread as found in Mediterraneum, Oriental and Australian regions.

Subgenus 5: ***Nannobactra*** DIAKONOFF

Nannobactra DIAKONOFF, 1956, Zool. Verh. Leiden, no. **29**: 52. Type-sp.: *Bactra phaulopa* MEYRICK, 1911 — by orig. design. Oriental. Established as a subgenus of *Bactra* STEPHENS.

Male genitalia (Fig. 10) is in preceding subgenus but a row of very strong marginal spines of the ventral edge of cucullus reaching usually its top and being the strongest proximally present; punctured area more or less specialized, occasionally broad, provided with strong spines variably distributed.

Female genitalia (Fig. 328) with variably developed, often complicate sterigma; colliculum usually developed, species specific.

Early stages and bionomy unknown.

Distribution. There are 5 Ethiopian, 6 Nearctic, 4 Neotropical and 2 Palaearctic species. *B. minima* MEYRICK is spread from Canary Is. as far as to Salomon Islands and *B. verutana* ZELLER is known of South Africa and North America.

Olethreutini

First tribal systems were based chiefly on the structures of the scent organs (FALKOVITSH, 1962) then supported by the studies on the musculature of the male genitalia (KUZNETSOV & STEKOLNIKOV, 1973). DIAKONOFF (1973) in his outstanding revision of the Oriental *Olethreutini* utilized mainly the structure of the female genitalia for his system.

The present system of the genera is a compilation of the DIAKONOFF'S (1973) arrangement and mine of 1983. DIAKONOFF divided his *Olethreutini* into 12 subtribes *(Gatesclarkeanae, Gnathmocerodides, Rhodocosmariae, Zomariae, Sorolophae, Sycacanthae, Statherotides, Neopotamiae, Endotheniae, Bactrae, Lobesiae* and *Olethreutae)* of which *Bactrini* are treated in this paper (after RAZOWSKI, 1983) as a distinct tribe. KUZNETSOV & STEKOLNIKOV (1983) distinguished two supertribes, *Gatesclarkeanidii* with *Gatesclarkeanini* and *Endothenini* and *Olethreutidii* with *Microcorsini, Bactrini* and *Olethreutini.* In this paper I am giving the first group a status of the subtribe as proposed originally and placing it, also after DIAKONOFF (1973), at the beginning of the tribe.

Gatesclarkeanina

Four genera are included in this subtribe, all highly specialized. *Aphiaris* is probably less specialized than the remaining two genera as the shape of its valva and a weakly differentiated sacculus show. The spines of valva are atrophied, however, its outer split is preserved. The valvae are symmetric, without basal spined lobes. *Hiroshiinouea* has asymmetric valvae, with well developed costa and with spined lobes. The valvae of *Gatesclarkeana* are highly asymmetric, with distinctly asymmetric spined lobes but rather weakly and uniformly sclerotized in their posterior parts. One genus is Oriental.

Ukamenia OKU

Ukamenia OKU, 1981 (20. II.), Tyo to Ga, **31** (3—4): 126. Type-sp.: *Simaethis sapporensis* MATSUMURA, 1931 — by orig. design.

Aphiaris V. I. KUZNETSOV, 1981, Trudy zool. Inst. Leningr., **92**: 74. Type-sp.: *Aphiaris mirana* KUZNETSOV, 1981 = *Simaethis sapporensis* MATSUMURA, 1931 — by orig. design.

Venation. In forewing chorda extending from ca 2/3 distance between bases of r_1-r_2, terminating beyond r_5; M to beyond halfway m_2-m_3; r_3 approximate to r_4, m_3-cu_1 extending from one point, *pcu* vestigial. In hindwing m_3-cu_1 very short stalked.

Scent organs: Broad, short bunch of scales at base of posterior tibia; tibia clothed with thick scales except for submedian, lateral area. Pair of small androconial pockets in anterior portion of third sternite.

Male genitalia (Figs 11—16): Pedunculus slender; uncus very short, bilobed, scarcely hairy; socius a subtriangular lobe; ventral part of tuba analis forming an elongate sclerite extending anteriorly, producing posteriorly into a pair of short processes, provided with small ventral prominence medially fusing with henion. Vinculum very broad, producing and subriangular anteriorly. Valva long, without basal cavity, provided with long outer split extending from middle part of base to before end ventrally; sacculus broad basally, slender and hairy in distal part; upper half of disc hairy; cucullus not differentiated; a dorsal, clothed with hair wart armed with strong spine at the end of valva accompanied by a flat lobe whose distal edge is fringed with spines; dorso-basal portion of disc extending in form of a large lobe called by KUZNETSOV the basal process. Aedeagus simple, slender; caulis fairly long, bilobed; juxta small; cornuti spiniform: Musculature (after KUZNETSOV & STEKOLNIKOV, 1983): Muscle 1 delicate, terminating at base of uncus; m_2 missing; m_{10} from latero-submedian part of base of valva to base of pedunculus medially, m_4 originating in submedian part of pedunculus and reaching anterior edge (inner part) of valva, m_5 subdivided into m_{5a} originating on caulis and entering deep into valva and m_{5b} attached to juxta and basal part of valva near origin of m_3, m_3 slender extending between lateral portion of vinculum (subdorsally) and juxta, and m_6 originating on caulis and terminating on saccus.

Subgenital sternite elongate, tapering terminally, bifid apically; tergite of this segment with ill-defined posterior edge provided with a long scaled process extending from its median portion.

Female genitalia (Fig 330): Sterigma asymmetric, very long, tubular, slender in distal portion, broad from before middle, terminating into a slender dorsal process; ductus bursae a slender, long, strengthened with long sclerite reaching to before origin of ductus seminalis. Signum plate-shaped with irregularly dentate lateral edges. Subgenital sternite broad, with shallow posterior incision.

Both in male and female a pair of pits on second tergite anteriorly.

Early stages: unknown; Bionomy: Probably two generations yearly.

Distribution: Southern Primore (URSS Far East).

Comments. The supposed autapomorphies of *Aphiaris* are the presence of superuncus, structure of the anterior part of the tuba analis terminal arrangement of the spines of the valva and strongly elongate tubular sterigma.

Hiroshiinouea KAWABE

Hiroshiinouea KAWABE, 1978, Tinea, **10** (19): 177. Type-sp.: *Hiroshiinouea stellifera* KAWABE, 1978 — by orig. design.

Haustellum absent. Venation: In forewing r_5 to termen, cu_1 approaching to m_3 basally (chorda, *M* and *pcu* not illustrated in original drawing); in hindwing costal area broad, $m_3 - cu_1$ stalked basally.

Scent organs: No data.

Male genitalia (Fig. 17): Tegumen slender; uncus broad, rounded, rather weakly sclerotized, hairy in apical portion; socius slender, hairy; gnathos arm broad, terminal part incised apically. Valvae asymmetrical, with large dorsobasal densely spined lobes; right valva long, with distinct angle of sacculus and strong posterior arm terminating with a group of long spines; cucullus weakly sclerotized, bristled, expanding ventrally and terminally; left valva: angle of sacculus provided with bunch of spines, distal arm wanting, neck slender, cucullus bilobed, expanding more distinctly than in right valva. Aedeagus simple; caulis very long; juxta small.

Female genitalia (Fig. 329): Sterigma a tubular, sclerotic, minutely spined structure expanding ventro-posteriorly, situated in posterior membraneous pocket; colliculum weak, partially sclerotized; ductus bursae long; one stellate signum present.

Early stages and bionomy unknown (moth collected in VIII and IX).

Comments. Originally compared with *Gatesclarkeana*; its supposed autapomorphies are the structure of the valva, especially its distal portion (the neck and the cucullus).

Distribution: Japan: Yakushima Island; monobasic genus.

Gatesclarkeana DIAKONOFF

Gatesclarkeana DIAKONOFF, 1966, Zool. Verh., **85**: 48. Type-sp.: *Platypeplus erotias* MEYRICK, 1905 — by orig. design. Oriental.

Venation: In forewing chorda extending from before base of r_2 to beyond r_5, *M* to mid-distance between $m_2 - m_3$, m_3 approximated to m_4; in hindwing $m_3 - cu_1$ very short stalked; *pcu* preserved only in distal parts of the two pairs of wings.

Scent organs: A complicate abdominal organ developed in sternites 3 and 4 or 3—5 (DIAKONOFF, 1973). In *G. idia* DIAKONOFF (Fig. 23) two pairs of large, ovate shallow cups form together a shell like structure; anterior, open ventrally originates in third sternite, the second in the fourth sternite is concave dorsally; distal edges of cups are densely scaled, and the rows of scales extend as far as to bases of their median edges; groups of slender scales in a fold of the mem-

brane connecting the bases of median edges. Large median transverse lobe, membranous anteriorly, sclerotic posteriorly and partially laterally, situated immediately beyond the shell like structures with a row of short scales along the caudal edge. The two structures connected by means of long membrane strengthened with ventral prominences of the tergites. Subgenital segment with tergite concave medially and groups of long scales. Dorsal pits in base of abdomen.

Male genitalia (Figs 18—22): Apical portion of tegumen small, accompanied by a weakly sclerotized anterior lobe, hairy, probably not homologous with ovate or with short free apex, reaching top of tegumen, often expanding medially; tuba analis slender, membranous. Valva distinctly asymmetrical, with delicate, rather weakly sclerotized posterior portion provided with hairs. Right valva with broad, bulbous sacculus forming a posterior arm like sclerite directed dorso-anteriorly, terminating in a curved plate on which a bunch of very long spines fixes; strong, elongate process in anterior part of discal surface of sacculus directed towards line of symmetry of the apparatus, densely spined (spines directed ventrally); spines of sacculus arm hidden in long split of valva opening ventrally and proximally, somewhat extending beyond end of valva; basal cavity very short, with edges partially strongly sclerotized, situated beneath basal spined process. Left valva somewhat smaller than the rigth valva, without saccular arm or ventral split; sacculus smaller with broad, ovate lobe spined dorsally. Aedeagus simple, dentate laterally; in examined species *(idia)* the structures originally treated as cornuti proved the folds of vesica or membranous body of the aedeagus.

Female genitalia (Figs 332—335): Sterigma tubular, broad, densely aciculate, connected with subgenital sclerite by means of membranous sac, terminating in apical prominence; colliculum long, strengthened by longitudinal sclerite. Signum single or paired, in form of a concave scobination often armed with a few larger dent like sclerites medially or sublaterally.

Early stages unknown.

Bionomy. Larvae have been found to feed on *Citrus*, *Cinnamomum*, *Butea*, *Ricinus*, *Thea* etc., some are (*idia*, *domestica* DIAKONOFF) polyphagous.

Distribution. The genus is repartited in the Oriental and Australian regions (9 species) but one species *(idia)* enters the Palaearctic subregion as it is found in Yakushima Is., Japan.

Comments. The genus is highly specialized as the structure of its valva shows. Its probable autapomorphies are the form of the distal portion of the valva, the shape of the process of the sacculus, the situation of the split of the valva, the shape of the socii etc. The presence of the anterior process of the top part of the tegumen is probably synapomorphic with the preceding genus. The structure of the abdominal scent organ is probably also apomorphic (the development of the posterior, median lobe) but its presence is a synapomorphy of the subtribe.

Olethreutina

In this subtribe I am placing all subgenera distinguished by DIAKONOFF (1973) within his *Olethreutini* except for *Bactrae* treated here as a distinct tribe and *Lobesiae* and *Endotheniae* regarded as separate subtribes. KUZNETSOV & STEKOLNIKOV (1983) proposed another arrangement of *Olethreutini* with the following subtribes: *Rhodocosmariina*, *Statherotina*, *Zomariina*, *Olethreutina*, *Neopotamiina*, *Eudemina*, *Lobesiina* and *Gnathmocerodina*.

Two genera purchased as Palaearctic are omitted in this paper. *Eccopis* ZELLER is a tropical genus distributed in Africa and its type-species, *E. wahlbergiana* (ZELLER) was recorded by DIAKONOFF (1983) from Saudi Arabia. Having no material for reexamination at present I shall discuss *Eccopis* in the part devoted to Ethiopian fauna. DIAKONOFF (1973) included in his *Neopotamia* one Corean apecies, viz., *Phaecadophora ochracea* WALSINGHAM which requires further examination as showing some differences to *N. leucotoma* DIAKONOFF, the type-species of *Neopotamia*.

Rhodocosmaria DIAKONOFF

Rhodocosmaria DIAKONOFF, 1973, Zoöl. Monogr. Rijksmus. nat. Hist., **1**: 35. Type-sp. *Argyroploce operosa* MEYRICK, 1911 — by orig. design., Australian region.

Venation: In forewing chorda from halfway between r_1 and r_2 to base of r_3, *M* complete, terminating before mid distance $m_2 - m_3$, all veins separate; in hindwing $rr - m_1$ strongly approximate basally, $m_3 - cu_1$ connate.

Scent organs: Scale pencil of posterior tibia present; a pencil of hair like scales from base of hindwing vein a_1 and weak marginal roll open on under side and a cncave area on upperside of that wing clothed with long hairs (DIAKONOFF, 1973); long pencil-shaped tuft of scales in intersegmental membrane at the tegumen; long scales on uncus and a distinct lobe extending from lower portion of the pedunculus, clothed with broad scales.

Male genitalia (Figs 24—26): Uncus broad, concave or incised apically; socius small or represented by a membranous hairy pad at base of uncus. Tuba analis very large, well sclerotized ventrally and laterally, broadly connected with tegumen sides. Basal cavity short, with distal edge convex, hairy, followed by a weakly sclerotized subdorsal lobe extending towards median line of the apparatus; angle of sacculus weak or atrophying, two very strong inequally sized spines bent basally; group of dense spines above the former marking the end of fold; cucullus elongate, heavily spined and hairy; outer surface of valva clothed with dense non-deciduous scales expanding ventrally. Aedeagus short; caulis broad; henion short, somewhat expanding laterally; one short spine like cornutus in vesica, if present; median part of vesica densely aciculate.

Female genitalia (Figs 336, 337): Sterigma cup-shaped, strongly sclerotiz-

ed ventrally and laterally, membranous and aciculate dorsally; colliculum very long, with longitudinal, folded sclerite; ductus seminalis originating before colliculum, dorsally; two signa of cornute type, inequally sized, densely granulate. Subgenital sternite concave in middle posteriorly, with posterior edge emarginate, densely bristled almost to the end.

Early stages and bionomy unknown.

Distribution: Australian and Oriental regions; of two known species that of Malay Peninsula was found in Japan.

Comments. Originally this genus was compared with the members of the *Neopotamia* group of genera as having flat signa and strong spines of the sacculus. This is the only genus of the group named by DIAKONOFF as *Rhodocosmariae*. The structure of the signum is rather plesiomorphic, one signum being flattened, the other almost typically cornute. The flattening of the signum occurs convergently in many genera of this subfamily, also in *Olethreutini*, but this process is highly advanced in *Rhodocosmaria*. The shape of the uncus is seemingly apomorphic and resembles that in *Eucosma*, the socius is reduced. The supposed autapomorphies of this genus are the presence of two strong, posterior spines of the sacculus group, curved basally, accompanied by a short row of rather small spines situated more dorsally. Further autapomorphies are the presence of a weakly sclerotized processes developed above a hairy median lobe of the posterior edge of the basal cavity, the aciculate area of the aedeagus and a development of the ventro-lateral lobes of the pedunculus in the male; the autapomorphies found in females are the structures of the sterigma complex and subgenital sternite. The systematic position of *Rhodocosmaria* is unclear; it resembles *Costosa* DIAKONOFF in long dorsal process of the distal edge of the basal cavity, but in *Costosa* it is strong, setose, connected with the costa of valva (after the figures in DIAKONOFF, 1973).

Eubrochoneura DIAKONOFF

Eubrochoneura DIAKONOFF, 1966, Zool. Verh. Leiden, **85**: 62. Type-sp.: *Argyroploce parasema* MEYRICK, 1911 — by orig. design.

Venation: In forewing all veins separate; $r_4 - r_5$ and $m_3 - cu_1$ approximated basally; chorda very short, extending from mid-distance between $r_2 - r_3$ to before middle $r_5 - m_1$; median stem long, terminating in mid-distance between m_2 and m_3. In hindwing $rr - m_1$ approximate, $m_3 - cu_1$ very short stalked; *sc* connected with radial branch of median cell by means of short, oblique vein situated at middle of the latter.

Scent organs not found (only hind tibia slightly thickened).

Male genitalia (Figs 27, 28): Tegumen tapering apically, rounfed or slightly concave at apex; pedunculus slender; uncus absent; gnathos in form of sclerotic band terminating in a thorn; valva elongate-ovate; basal cavity very short; disc densely hairy, forming a ventro-anterior lobe; a group of dense hair in anterior area above sacculus, the latter with well developed posterior angle,

with ventral edge hidden by the fold, terminating in a small prominence armed with very long, thin spines; aedeagus short, with a dentate area and group of spiniform cornuti.

Female genitalia (Figs 336—338): Sterigma collar-shaped, short, accompanied by subsquare, weakly sclerotized, minutely spined surface; colliculum very long, tubular, sclerotic; anterior part of ductus bursae membranous; ductus seminalis originating at colliculum; signum, an elongate, scobinate area with several petal like sclerites anteriorly.

Distribution: New Guinea to Bismarck Is. and Celebes. One Japanese species was included in this genus.

Comments. DIAKONOFF (1973) included *Eubrochoneura* to his *Zomariae* mentioning, however, that its affinity is uncertain. The above description is based on two non Palaearctic species.

Eudemis HÜBNER

Eudemis HÜBNER, [1825], Verz. bekannter Schmett.: 382. Type-sp : [*Tortrix*] *porphyrana* HÜBNER, [1799] — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 11).

Thirates TREITSCHKE, 1829, Schmett. Eur., 7: 233. Type-sp.: *Thirates profundana*: TREITSCHKE, 1829 = [*Tortrix*] *porphyrana* HÜBNER, [1799] — by subs. design. (FERNALD, ibid.: 20).

Ditula STEPHENS, 1829, Syst. Cat. Br. Insects, 2: 172. Type-sp.: *Tortrix profundana* [DENIS & SCHIFFERMÜLLER], 1775 — by subs. design. (WESTWOOD, 1840, Introd. mod. Classif. Insects, 2; Synopsis Genera Br. Insects: 107); subsequent designation was by WALSINGHAM, 1914, Biologia cent.-am., Zool., *Lepid.-Heterocera*, 4: 211 who designated *Tortrix angustiorana* HAWORTH, [1811].

Venation: In forewing chorda extending from before middle distance between $r_1 - r_2$ to r_4; M distinct; all veins separate; in hindwing $m_3 - cu_1$ originating in one point, or separate.

Scent organs: Not developed.

Male genitalia (Figs 29—32): Tegumen slender with long pedunculus; uncus small, rounded, directed distally; socius long, drooping, hairy; tuba analis membranous. Valva long; cucullus with weak ventral angle; neck in distinct; distal edge of basal cavity ill-defined, a hairy patch or its trace on the covering membrane; sacculus group of hairs distinct, medio-anterior or anterior; cucullus spined; group *F* indistinct, coalescent with the cucullus group. Aedeagus simple, olethreutoid short; cornuti not found.

Female genitalia (Figs 341—344): Sterigma a complicate plate consisting of anterior and postvaginal plates, the latter extending into ear like lobes provided with tactile bristles. Colliculum delicate; ductus bursae long; ductus seminalis anterior with large sac. Pair of plesiomorphic funnel like signa in corpus bursae.

Bionomy: Young larvae bore in buds, older ones roll the leaves; one generation yearly. The food plants are mainly *Fagaceae* and *Rosaceae*.

Distribution: Two species are widely distributed in this subregion, one occurs in Japan and in Oriental region, the other one is exclusively Oriental.

Comments. This genus is characterized by one supposed autapomorphy — a complicate structure of the strigma. All other characters are either plesiomorphic (the shape and the number of the signa and the hairy socius) or synapomorphic (the shapes of the uncus and the socius — with *Sorolopha* LOWER).

Sorolopha LOWER

Sorolopha LOWER, 1901, Trans. Proc. R. Soc. S. Aust., **25**: 73. Type-p.: *Sorolopha cyclotoma* LOWER, 1901 — design. by monot. Australian.

Acanthothyspoda LOWER, 1908, ibid., 32: 319. Type-sp.: *Acanthothyspoda elaeodes* LOWER, 1908 — design. by monot. Australian.

Alypeta TURNER, 1916, ibid., 40: 528. Type-sp.: *Alypeta delochlora* TURNER, 1916 — design. by monot. Australian.

Alytopeta FLETCHER, 1929, Mem. Agric. India, Ent., **11**: 10. Type-sp.: *Alypeta delochlora* TURNER, 1916 — hereditarius; incorrect subsequent spelling of *Alypeta* TURNER.

Choganhia RAZOWSKI, 1960, Polskie Pismo ent., **30**: 378. Type-sp.: *Argyroploce sphaerocopa* MEYRICK, 1929 — by orig. design. Oriental.

Venation. Forewing: Chorda extending from base of r_2, reaching r_5, *M* preserved at least partially, terminating at m_2; in hindwing all veins separate except for $m_3 - cu_1$ extending from one point.

Scent organs: Male posterior tibia with brushes of scales, usually with a pencil of thin scales extending from base; in some species abdomen with a pair of long groups of hair like scales situated on lateral papillae, one on each segment.

Male genitalia (Fig. 33): Tegumen as in *Eudemis*; uncus and socius also similarly shaped or more reduced, the former in form of an apical prominence, socius usually with terminal spines or thick bristles. Valva slender; posterior edge of basal cavity rather weakly sclerotized; angle of sacculus often distinct, that of cucullus rounded, subtriangular or elongate, armed with small pollex or two spines; distal part of cucullus varying, stout or slender. Vestiture: Sacculus group continuous or atrophying on the neck of valva; *Sa* usually represented by strong group of spines and hairs, fusing with the anterior group, *Sp* rarely present; cucullus group more or less extending proximally towards middle of neck.

Female genitalia: Sterigma densely spined, cup-shaped or in form of a short tube; colliculum coalescent with anterior part of sterigma, sclerotic; ductus bursae slender, long; ductus seminalis anterior; signum horn like, single or represented by one to three granulate concavities often marked with large median spine; except for those structures a large convexity may develop, or signa are wanting.

Early stages unknown.

Bionomy: Larvae were found to feed on *Pandanus (Pandanaceae)*, *Michelia (Magnoliaceae)*, *Alceadaphne*, *Cinnamomum*, *Litsea (Lauraceae)*.

Distribution. This Oriental genus comprises over 20 species of which a few are Australian and 2 Palaearctic, occurring in the Far East.

Comments. The presence of the terminal spines of the socius is a synapomorphy with *Eudemopsis*, however, the spines disappear in a few species. The structure of the sterigma is very similar to that in the mentioned genus, but that may be of convergent importance. The valva is species specific and its shape represents various stages of the phylogenetic line, from a simple, similar to that in *Eudemis* to strongly differentiated, specialized. The vestiture is also of a more advanced type than in the mentioned genus. The angular group of sacculus is almost constantly present and strong. DIAKONOFF (1973) provided a perfect revision of this genus and the major part of the above description is based on that work.

Eudemopsis FALKOVITSH

Eudemopsis FALKOVITSH, 1962, Ent. Obozr., **41**: 190. Type-sp.: *Penthina purpurissatana* KENNEL, 1900 — by orig. design.

Venation: In forewing chorda extending from before r_2; all veins separate; in hindwing $rr-m_1$ approaching basally; m_3-cu_1 originating from one point; m_2-m_3 closer to one another than in *Eudemis*.

Scent organs absent.

Male genitalia (Figs 34, 35): Uncus reduced to a small apical lobe of tegumen; socius slender, naked, with small group of apical spines. Valva broad; angle of sacculus weak, cucullus ill-defined, with ventral and median areas provided with spines and hairs; sacculus group of spines above angle; semimembranous lobe in anterior part of disc, subdorsally. Aedeagus simple; caulis short.

Female genitalia (Figs 345—347): Sterigma cup-shaped, expanding posteriorly, with weak, spined ventro-terminal margins, colliculum ill-defined, rather well sclerotized. Ductus bursae slender, ductus seminalis median; single plesiomorphic signum present.

Early stages unknown.

Bionomy: Probably single generation a year; food-plant of type-species are *Schizandra* and *Actinidia (Magnoliaceae)*.

Distribution: Eastern part of the Palaearctic subregion incl. Japan. A few species known to date.

Comments. This genus is very close to the two preceding genera; its autapomorphies are most probably the presence a subdorsal lobe of the valva and the shape of its posterior portion.

Phaecasiophora GROTE

Venation: In forewing all veins separate; chorda from 1/3 distance between r_1 and r_2 or from beyond r_2 to before r_5 or to its base; in hindwing m_3-cu_1 extending from one point, other veins separate, in Nearctic species dorsum with a sclerotic band.

Scent organs: A tuft of scles along discoidal vein in forewing; posterior tibia with strong tufts of scales and basal pencil.

Male genitalia (Fig. 36): Tegumen broad; uncus wanting or represented(?) by a weak apical prominence of tegumen; socius broad, large, pending, densely hairy or bristled. Valva slender, up-curved, with weakly differentiated cucullus with spines fusing with those situated beyond basal cavity, spines of sacculus weak, dorsal group on large convexity. Aedeagus short, broad; cornuti numerous.

Female genitalia (Figs 348, 349): Sterigma a minutely spined plate surrounding the area of ostium bursae, or cup-shaped, with variably developed lamella postvaginalis. Colliculum present, often with inner tubular sclerite; ductus bursae long, strongly sculptured; ductus seminalis postmedian; signa small, paired scobinato-cornute, or absent.

Early stages unknown.

Bionomy little known; food plants of Nearctic *Ph. niveiguttana* GROTE are *Sassafras (Lauraceae)*, *Hamamelis (Hamamelidaceae)*. DIAKONOFF (1959) provides some further data.

Distribution: Oriental, Nearctic, Neotropical regions and (3 species) eastern part of Palaearctic subregion.

Comments. DIAKONOFF (1959) divided *Phaecasiophora* into 3 subgenera, then (1966) elevated *Sycacantha* DIAK. to the generic status. Now 2 ubgenera are distinguished. The data on the Asiatic species are gathered by DIAKONOFF (1973), those on Nearctic species by HEINRICH (1926).

Subgenus 1: ***Phaecasiophora*** s. str.

Phaecasiophora GROTE, 1873, Bull. Buffalo Soc. nat. Sci., 1: 90. Type-sp.: *Sericoris mutabilana* CLEMENS, 1865 = *Sciaphila confixana* WALKER, 1863 — by subs. design. (FERNALD 1908, Gere *Tortricidae*: 41, 60). Nearctic.

Male genitalia: Socius rounded, membranous, hairy and bristled.

Female genitalia: Sterigma as described for the genus, or with lamella antevaginalis membranous (in Nearctic species). Colliculum fusing with cup-shaped part of sterigma, varying specifically.

Distribution. Eight species are Oriental, 2 North American, 1 is found in this subregion (*Ph. attica* (MEYRICK) in West China).

Subgenus 2: ***Megasyca*** DIAKONOFF

Megasyca DIAKONOFF, 1959, Arkiv Zool., (2) 12: 171. Type-sp.: *Phaecasiophora fernaldana* WALSINGHAM, 1900 — by orig. design.; established as a subgenus of *Phaecasiophora*.

Male genitalia (not examined). After DIAKONOFF (1973) socius subrigid, sclerotic, pointed terminally.

Distribution: Of 7 known species 5 are Oriental and 2 (*Ph. obraztsovi* DIAKONOFF and *Ph. fernaldana* (WALSINGHAM)) Palaearctic.

Psilacantha DIAKONOFF

Psilacantha DIAKONOFF, 1966, Zool. Verh. Leiden, **85**: 70. Type-sp.: *Olethreutes charidotis* DURRANT, 1915 — by orig. design. Australian (New Guinea). Established as a subgenus of *Sycacantha* DIAKONOFF.

Venation: In forewing all veins separate, r_4 strongly approaching r_5 basally, *pcu* vestigial, preserved only at termen, chorda extending just from before base of r_2, almost completely atrophied; in hindwing $rr - m_1$ approximate basally, *pcu* weak.

Scent organ: Male hindwing altered, with dorsal edge thickened and rolled; dense hair tufts on tibia and tarsus (DIAKONOFF, 1973).

Male genitalia (Fig. 37): Uncus broad, well sclerotized, divided into pair of lobes or in form of a small naked process. Socius small, drooping, hairy, or bilobed, the inner branch being occasionally bristled. Valva broad anteriorly, with cucullus angle armed with spines, more or less expanding ventrally or simple. Aedeagus simple, caulis moderate, cornuti a large cluster of long spines.

Female genitalia (Fig. 350): Ostium bursae in a short cup-shaped sclerite; sterigma aciculate developed as a lamella postvaginalis, with posterior edge folded, occasionally provided with lateral processes; colliculum more of less elongate, slender or moderate, with inner longitudinally folded sclerite.

Early stages and bionomy unknown.

Distribution: Three species are Oriental, one is Australian and one is found in Palaearctic subregion (*P. pryeri* WALSINGHAM described from Japan: Honsyu and China).

Comments. This genus is very close to *Sycacantha* DIAKONOFF as one can judge from the illustrations and descriptions in DIAKONOFF'S monograph (1973). Some species are genitalically extremely similar to one another, e. g. the females of *S. concentra* DIAKONOFF and *P. manifesta* DIAKONOFF or the males of *S. inodes* (MEYRICK) and *manifesta*. The main difference pointed originally is the strong development of the uncus. That seems to be rather of convergent importance and its shape is inconstant within the genus. The socii are species specific and their shape is synapomorphic of the two genera. The only Palaearctic species distinctly differs from the type-species. In my opinion the two genera require reexamination.

Dactylioglypha DIAKONOFF

Dactylioglypha DIAKONOFF, 1973, Zoöl. Monogr. Rijksmus. Nat., **1**: 188. Type-sp.: *Dactylioglypha avita* DIAKONOFF, 1973 — by orig. design. Australian.

Venation: All veins separate except for hindwing $m_3 - cu_1$ which are connate.

Specialized scent organs not realized.

Male genitalia (Figs 38—40): Tegumen slender, long; uncus well developed,

bent, with terminal curved part rather weakly sclerotized, hairy or spined; socius usually slender, sclerotic, scarcely haired, situated distinctly beneath base of uncus; tuba analis with strong subscaphium and basal structures, henion long, concave ventrally. Valva slender with rather short basal cavity armed with more or less elongate ventral or median prominence or process at the posterior edge; angle of sacculus atrophied, angle of cucullus rather weak; spines of cucullus entering neck surface, group *A* weak, consisting of hairs or small spines.

Female genitalia (Fig. 351): Sterigma emarginate around short cup-shaped portion, flattened and expanding posteriorly, with more or less concave postvaginal portion, expanding laterally at the level of the ostium; aciculation very strong. Colliculum slender, provided with inner, incomplete sclerite. Signa, two large subequal or equal pectinations.

Early stages and bionomy unknown.

Distribution: Four species are Oriental, one Australian (the type-species, from N. Guinea); one Oriental species is spread from Sri Lanka to Japan.

Comments. The supposed autapomorphies of this genus are the shape of the uncus and the socius. DIAKONOFF (1973) treats it as intermediate between *Statherotoxys* and *Asaphistis*, however, placed it before the former at the beginning of his *Statherotides*.

Statherotoxys DIAKONOFF

Statherotoxys DIAKONOFF, 1973, Zoöl. Monogr. Riksmus. Nat. ,1: 195. Type-sp.: *Statherotoxys hypochrysa* DIAKONOFF, 1973 — by orig. design. Australian (Moluccas).

Venation: In forewing chorda extending from mid-distance between $r_1 - r_2$ reaching base of r_5, *M* to between $m_2 - m_3$; in hindwing $rr - m_1$ approximate basally.

Scent organs: Posterior tibia often thick, with dense scales and long fringe dorsally accompanied by ventral thick brush; scale pencil slender; androconial spot on hindwing, dorsally. Anal roll of hindwing modified.

Male genitalia (Fig. 41); Tegumen long, pedunculus slender; uncus more or less elongate, bent, with weak terminal hairs or bristles; socius drooping, hairy; tuba analis with subscaphium and rather distinct basal sclerites, connected with aedeagus by means of variably broad henion. Cucullus slender; fold short, both spined continuously except for the end part of the former; angle of sacculus and saccular hairs weak; aedeagus simple.

Female genitalia (Fig. 352) as in *Dactylioglypha*; the shapes of the sterigma and colliculum differ specifically, signum with median processes; anterior part of ductus bursae in some species broad.

Early stages and bionomy unknown.

Distribution: Of 6 known species 4 are Oriental and 2 occur in Australian region. One oriental species (*S. hedraea* (MEYRICK)) is found in Japan (Yakushima Is.).

Comments. Based on the available material I cannot realize any autapomorphy of this genus. DIAKONOFF (1973) compared *Statherotoxys* with *Dactylioglypha* and *Statherotis* pointing out the structure of the signum as their synapomorphy. He supposes that the slender valva and elaborate gnathos with strong subscaphium and henion are characteristic of this genus.

Statherotis MEYRICK

Statherotis MEYRICK, 1909, J. Bombay nat. Hist. Soc., **19**: 591. Type-sp.: *Statherotis decorata* MEYRICK, 1909 — by orig. design. Oriental.

Venation: Forewing with chorda originating at 3/4 distance between r_1 and r_2, terminating half way between $r_4 - r_5$, close to radial branch of median cell, *M* fused with the latter anteriorly, reaching to before base of m_3, $r_3 - r_4$ more or less approximate basally, connate or stalked; in hindwing $m_3 - cu_1$ connate or approximate, m_2 strongly approximate to m_3.

Scent organs: Tuft of scales on posterior tibia and scale pencil usually developed; abdomen occasionally with 3 pairs of coremata (on tergites 6—8), sometimes small tufts on tergite 5 or on tergite 8 only; area of androconial dark scales on underside of the forewing in distal half of median cell extending beyond it dorsally and posteriorly, if developed. Hindwing with similar scaled area but situated on the upperside, covering all median portion of the wing; in its dorsal area occur modified scales, a fold, groove or lobes accompanied by specialized scales distributed mainly on the underside; in anal region the cilia built of specialized scales forming occasionally slender tufts.

Male genitalia (Figs 42, 43): Tegumen long, with pedunculus slender; uncus hooked, often bifurcate, bristled ventrally; socius droping, small or moderate; gnathos variably developed, if present, often with basal sclerites atrophying; lateral sclerites extending from tegumen to tuba analis in several species strongly sclerotized. Valva slender; ventro-median part of distal edge of basal cavity with a variably developed lobe and spines; cucullus elongate, with distal prominence marked with pollex, occasionally another more proximal prominence (angle of sacculus) also armed with spines present; fold developed, spined; spines of sacculus constituting 1—2 groups, situated more or less ventrally; in some species almost entire disc clothed with spines.

Female genitalia (Figs 353, 354). Sterigma densely aciculate, variably shaped, with pair of sublateral or lateral processes and more or less large posterior part; its anterior portion thin or atrophied but usually deeply incised medially. Colliculum large, sclerotic, split entirely or posteriorly along ventral surface of inner sclerite; ductus bursae long, slender, in some species coiled. Two signa built of dense transverse pectinations present.

Early stages and bionomy unknown.

Distribution. This is an Old World genus, distributed mainly in the Australian and Oriental regions. One species is Palaearctic (*S. towadensis* KAWABE described from Japan: Honsyu).

Comments. The supposed autapomorphy of this genus is the presence of the processes of the sterigma. The process of the cucullus is convergently developed in this tribe (*Pomatophora* DIAKONOFF, *Teleta* DIAKONOFF, *Statheromeris* DIAKONOFF, *Sycacantha* DIAKONOFF) and shows a similar variation. The only Palaearctic species differs somewhat from the type-species of this genus, and is known of the male only.

Proschistis MEYRICK

Proschistis MEYRICK, 1907, J. Bombay nat. Hist. Soc., **17**: 731. Type-sp. = *Proschistis zeleuta* MEYRICK, 1907 — design. by monot. Oriental.

Sporocelis MEYRICK, 1907, ibid.: 732. Type-sp.: *Sporocelis marmaropa* MEYRICK, 1907 — design. by monot. Described from Oriental region.

Venation: Chorda extending from mid distance between r_1 and r_2, M terminating beyond m_2; in hindwing $m_3 - cu_1$ connate; all other veins separately.

Scent organs wanting.

Male genitalia (Fig. 44): Tegumen long, with differentiated posterior portion, which can represent the uncus, scarcely hairy; socius hairless, well sclerotized, lateral, originating at base of terminal portion of tegumen immediately beyond vestigial gnathos. Cucullus elongate, with well developed angle; fold rather distinct, subdorsal, provided with anterior lobe and patches of spines; anterior group either weak or distinct, situated on a papilla; large group of external sacculus hairs reaching angle of cucullus. Aedeagus simple.

Female genitalia (Figs 355, 356): Sterigma densely aciculate, cup-shaped surrounded by basal sclerites extending mainly laterally and forming delicate posterior lobes, or more specialized, with unified parts; the anterior, cup-shaped part may entirely be fused with colliculum; the latter slender, strengthened by long, inner sclerite; in one species an antemedian sclerite in ductus bursae present. Signum a single scobinate plate marked with some distinct spines.

Early stages and bionomy unknown.

Distribution: Oriental (2 species from Sri Lanka) and Australian regions (2 species from New Guinea). *P. marmaropa* described from Oriental region is also found in Japan (Shizuoka, Izu Island).

Comments. The supposed autapomorphies of this genus are the shape of the distal portion of the tegumen and the structure of the socius. The sacculus hairs are distributed similarly as in *Asaphistis* MEYRICK and *Aterpia* GUENÉE.

Statheromantis DIAKONOFF

Statheromantis DIAKONOFF, 1973, Zoöl. Monogr. Rijksmus. Nat., **1**: 288. Type-sp.: *Proschistis pictana* KUZNETSOV, 1969 — by orig. design.

Venation: Chorda strong, extending from mid-way $r_1 - r_2$, M terminating near base of m_2; all veins separate.

Scent organs: Occasionally a short pencil of scales and fringe along basal half of posterior tibia present; anal fold of hindwing and cubital pecten present. Transverse area clothed with pectinate scales (Fig. 47) in 6th tergite present.

Male genitalia (Figs 45—46): Tegumen high, pedunculus slender; uncus broad, flat, convex, with postero-median prominence (in the type-species); socius large, densely hairy, drooping; sclerites of tuba analis with lateral lobes or anterior prominences. Basal cavity with delicately sclerotized posterior edge; sacculus variably angulate, scarcely hairy; cucullus elongate, spined, limited anteriorly by a rib or a fold. Aedeagus simple; caulis moderate. Musculature (KUZNETSOV & STEKOLNIKOV, 1983): m_1 large, extending from middle of pedunculus to base of uncus, laterally; m_{10} developed; m_4 from below of m_1 to posterior part of basal process of valva, m_2 to its apex; m_5 broad, ventro-medially in valva.

Female genitalia (Fig. 357): Sterigma a cup-shaped, densely aciculate structure developed around ostium area, extending laterally and anteriorly, less so posteriorly; terminal part of ductus bursae broad; colliculum anteriorly to the latter, slender, provided with a folded sclerite; ductus bursae long, slender; two pectinate signa present.

Early stages and bionomy unknown.

Distribution: Eastern part of the Palaearctic subregion incl. Japan and Kuril Is. Three species discovered.

Comments. The supposed autapomorphy of this genus is a transverse rib of the valva occasionally accompanied by a ventral lobe. The structure of the sterigma is similar to that in *Proschistis*.

Rhodacra DIAKONOFF

Rhodacra DIAKONOFF, 1973, Zoöl. Monogr. Rijksmus. Nat. Hist., 1: 286. Type-sp.: *Argyroploce pyrrhocrossa* MEYRICK, 1912 — by orig. design.

Venation: Chorda extending from before base of r_2 to r_5, M to mid-distance between m_2-m_3; in hindwing m_3-cu_1 connate; all other veis run separately.

Scent organs: Scale pencil stiff, in groove of upper surface of hind tibia.

Male genitalia (Fig. 48): Uncus well sclerotized, slender, strongly expanding at the end laterally (forming "T"); socius small, drooping, hairy; tuba analis membranous. Angle of sacculus indistinct, termination strong, spinose, the spines extending proximally towards anterior group, subventral; the latter represented by submedian bunch of spines; cucullus short, densely bristled and spined, especially at ventral angle. Aedeagus short.

Female genitalia (Fig. 358): Sterigma a broad, aciculate plate extending latero-posteriorly, convex around ostium bursae; colliculum slender, with weak inner sclerite; signa, two large granulate-squamose areas.

Early stages and bionomy unknown.

Distribution: Known from Assam and Taiwan, found also in Japan. A monobasic genus.

Comments. Originally placed in the *Hedya*-group of the genera, in the subtribe *Statherotides*. The signum is similar to that in the Oriental *Corethrarcha* DIAKONOFF but is double. The supposed autapomorphy of *Rhodacra* is the shape of the tegumen.

Aterpia GUENÉE

Aterpia GUENÉE, 1845, Annl. Soc. ent. Fr., (2) 3: 161. Type-sp.: *Aterpia anderreggana* GUENÉE, 1845 — design. by monot.

Esia HEINRICH, 1926, Bull. U.S. natn. Mus., 132: 109. Type-sp.: *Olethreutes approximana* HEINRICH, 1919 — by orig. design. Nearctic.

Venation: Chorda extending from beyond base of r_1 or from midway between $r_1 - r_2$, terminating in mid-distance between $r_4 - r_5$ or at origin of r_5, M to before m_2; in hindwing $m_3 - cu_1$ from one point or short stalked, $rr - m_1$ approximate basally; all other veins in both wings separate.

Scent organs not realized.

Male genitalia (Figs 49—51): Tegumen with slender, rather long pedunculus; uncus helmet-shaped, small, more or less distinctly sclerotized; socius either entirely reduced or represented by a weak hairy patch; gnathos provided with terminal process connected with aedeagus by means of long henion. Cucullus elongate, rounded terminally, angulate ventrally; fold occasionally present; angle of sacculus distinct, often provided with a marginal inner lobe; vestiture of sacculus consisting of outer row of spines often, especially at angle, with longer bunches; group of fold consisting of spines occasionally fused with anterior and cucullus groups. Aedeagus simple; cornuti not found.

Female genitalia (Figs 359—362): Sterigma cup-shaped, simple, extending or emarginating posteriorly, with ear like ventral lobes; colliculum slender, provided with inner sclerite, occasionally a median indistinct sclerite in ductus bursae; ductus seminalis from before colliculum, dorsally; signa absent or paired, pectinate.

Early stages unknown.

Bionomy. One or two generations yearly; larvae found on *Vaccinium*, *Aconitum* and *Dryas*.

Distribution: Known of Holarctic and Oriental regions (2 species); in the Palaearctic subregion ca 10 species found.

Comments. *Aterpia* resembles *Asaphistis* MEYRICK and *Proschistis* especially in the shapes of the uncus, cucullus and the vestiture of the valva; the ventral, externally situated row of bristles or hairs continues to beyond angle of the cucullus. Judging of the structure of the signum it is close to *Statheromantis*, *Statherotis* and some other genera (cf. DIAKONOFF, 1973). The mentioned author included it to the stock of *Statherotis*. One can suppose that the species of the temperate zone are more specialized, showing some distinct reductions in the

genitalia. The Oriental *Argyroploce pallidata* MEYRICK included by DIAKONOFF in *Aterpia* shows some peculiar characters, as the structure of the uncus, well developed, setose socii and spined subterminal lobes of the gnathos.

Selenodes GUENÉE

Selenodes GUENÉE, 1845, Annls Soc. ent. Fr., (2) **3**: 160. Type-sp.: *Tortrix textana* FRÖLICH, 1828 — by subs. design. (DESMAREST ,1857, [in] CHENU, Encycl. Hist. nat., papillons nocturnes, 223).

Froelichia OBRAZTSOV, 1960, Beitr. Ent., **10**: 465. Type-sp.: *Tortrix textana* FRÖLICH, 1828 — by orig. design.

Scent organs not realized.

Male genitalia (Figs 52, 53): Tegumen small; uncus rather weakly sclerotized, slender, tapering posteriorly, hairy; socius slender, lateral, with very short terminal lobe. Angle of sacculus weak; cucullus with slender, spined part, bristled along ventral edge, and with large ventral lobe (probably developed by a fusion with sacculus). Spines of cucullus continue towards posterior edge of basal cavity where a short lobe directed proximally occurs. The proximal edge of that lobe extends obliquely to the ventral edge of sacculus at the neck of valva. Aedeagus with two spines; caulis short; anellus well sclerotized forming a large cave surrounding aedeagus and fusing with anterior edge of tuba analis and its linkages with tegumen.

Female genitalia (Figs 363, 364): Sterigma a slender tube expanding lateromedially and producing beyond ostium laterally; membranous sac situated anteriorly to sterigma weak; colliculum with strong sclerite; ductus bursae slender; signa absent. Subgenital sternite large.

Early stages unknown.

Bionomy: Probably one generation a year; larve in roots of *Knautia (Dipsacaceae)*.

Distribution: Western part of Palaearctic subregion, as far as to Caucasus.

Comments. The supposed autapomorphhies of this genus are the shape of the valva, strongly developed and well sclerotized anellus and the structure of the sterigma. As the signa are absent the systematic position of the genus remains obscure. An expanding lobe situated beyond basal cavity is known in some other genera, and does not speak much of the position of *Selenodes* either. I am placing it provisionally after *Aterpia*.

Neostatherotis OKU

Neostatherotis OKU, 1974, Kontyu, **42** (1): 12. Type-sp.: *Neostatherotis nipponica* OKU, 1974 — by orig. design.

Venation: In forewing all veins separate; chorda originating between bases of $r_1 - r_2$, medially; *M* ill-defined, terminating at $m_3 - cu_1$ extending from one point.

Scent organ: Anal fold in the male hindwing developed, extending. Small lateral hairy lobes on end part of 8th sternite.

Male genitalia (Fig. 54): Tegumen robust, pedunculus fairly broad; uncus very short, somewhat extending posteriorly; socius lateral, slender, long hairy, without free end; basal sclerites of tuba analis slender. Valva slender; cucullus long, slender, with broad ventro-anterior angulation, rather uniformly spined; fold ill-defined; angle of sacculus weak, ventral edge somewhat expanding beyond middle, spines of sacculus weak. Aedeagus short, simple; cornuti not realized.

Female genitalia (Figs 432, 433): Sterigma cup like, surrounded by ovate, membranous area marked with weak sclerites laterally to ostium bursae; colliculum ill-defined; ductus bursae long, with small sclerotic surface just beyond base of ductus seminalis; the latter dorsal; two strong signa consisting of median sac and basal, lateral plates present.

Bionomy: The species, according to original description, is monovoltine; adult is on wing from May to early August occurring in mixed forests.

Distribution: Japan: Honsyu.

Comments. Originally compared with *Statherotis* and *Proschistis* but seemingly closest to *Neopotamia* group of genera. The structures of the valva and the tegumen complex are probably secondarily simplified. The supposed autapomorphy is the shape of the signum.

Neopotamia Diakonoff

Neopotamia Diakonoff, 1973, Zoöl. Monogr. Rijksmus. nat. Hist., 11 296. Type-sp.: *Neopotamia leucotoma* Diakonoff, 1973 — by orig. design. Oriental.

Venation: In forewing chorda from half way $r_1 - r_2$ to half way $r_5 - m_1$, M terminating at base of m_2, r_4 approximate to r_5 at base; in hindwing $m_3 - cu_1$ connate or short stalked, approximate to m_2 at base, $rr - m_1$ distinctly so to one another.

Scent organs: Posterior tibia densely scaled, scale pencil missing; hindwing with weak anal fold thickened anteriorly, occasionally forming a marginal lobe, short modified scales in a shallow trench present.

Male genitalia: Tegumen high, pedunculus slender; uncus slender, forked terminally, often long bristled; socius broad, lateral, subtriangular or semiovate, or reduced to an indistinct patch, with hairs reduced; tuba analis with membranous or sclerotic ventral groove. Cucullus slender, with more or less distinct angle, angle of sacculus rather weak; subdorsal process marked with hairs and spines, situated more or less posteriorly to basal cavity, occasionally with weaker ventral lobe; bristles of sacculus forming a compact row or are divided into groups as in *Aterpia*; spines of cucullus extend on the neck of valva forming group *F* that reaches to posterior edge of basal cavity. Aedeagus simple, short; caulis short; cornuti wanting.

Female genitalia (Fig. 365): Sterigma large, aciculate or granulate, often trapezoideal, with median groove beyond ostium bursae; edges of the latter convex, slender, producing externally along groove; distal edges of sterigma convex, folded or simple, accompanied by a posterior aciculate membrane. Signa two large plate-shaped sclerites of inequal size, with anterior edges elevated, sclerotic and distal edges sinuate; base of posterior edge occasionally producing, delicately sclerotized.

Early stages unknown.

Bionomy: No data except for collection dates of innumerous species.

Distribution: Ca 10 species distributed mainly in the eastern part of the Oriental region constitute the genus. One Korean species supposed to be congeneric with the type species is the only Palaearctic representative of Neopotamia.

Comments. The above diagnosis is based entirely on the description by DIAKONOFF (1973) who realized *Neopotamia* is allied to *Megalota* DIAKONOFF, however, he placed the latter far from *Neopotamia* in the system of his subtribe *Neopotamiae*. The shape of the signum is a probable synapomorphy of the *Neopotamia* group of the genera and seemingly represents a developmental stage of the pocket like signa. The autapomorphy of this genus is probably the presence of the ventral split of the tuba analis.

Phaecadophora WALSINGHAM

Phaecadophora WALSINGHAM, 1900, Ann. Mag. nat. Hist., (7) 6: 130. Type-sp.: *Phaecadophora fimbriata* WALSINGHAM, 1900 — by orig. design.

Venation: Chorda distinct, extending from 2/3 distance between $r_1 - r_2$ to mid-distance $r_5 - m_1$, M to before m_2, r_4 approximated to r_5 basally, the latter reaching termen; in hindwing $rr - m_1$ approaching posteriorly, $m_3 - cu_1$ connate, m_2 strongly approaching m_3 basally.

Scent organs: Posterior tibia simple or densely scaled dorsally, compressed laterally, developing an apical inner scaleless cavity. On tergites 5—7 may develope an organ formed by pairs of submedian brushes directed towards middle and touching along it; cubital pecten of hindwing present.

Male genitalia: Pedunculus, long, slender; uncus slender, hairy, hocked; socius pending, hairy; tuba analis membranous. Basal cavity of valva short; angle of sacculus weakly expressed, that of cucullus distinct; fold oblique, continuously spined; group *A* consisting of tactile hairs; group of sacculus consisting of 2 weak agglomerations of hairs. Aedeagus simple, short; caulis very short.

Female genitalia: Sterigma an emarginate, densely aciculate short tube or collar surrounded or followed by minutely spined membrane; ostium bursae in a sclerotic tube expanding posteriorly, fusing with colliculum anteriorly;

ductus bursae rather broad; ductus seminalis posterior; signa a pair of flattened semiovate pockets.

Early stages and bionomy unknown.

Distribution: Two east Asiatic species known to this date, one being distributed in the Oriental region and Palaearctic subregion (Japan: Kyusyu).

Comments. Judging on the shape of the valva it is very close to *Temnolopha* but the latter developes a rib at the posterior edge of the basal cavity. The signa are similar to those in *Saliciphaga*. The three genera are closely allied to each other also in the opinion of DIAKONOFF (1973). Despite the representatives of this genus are characteristic genitalically I cannot find any autapomorphy.

Temnolopha LOWER

Temnolopha LOWER, 1901, Trans. Proc. R. Soc. S. Aust., **25**: 72. Type-sp.: *Temnolopha mosaica* LOWER, 1901 — by subs. design.

Venation: In forewing chorda extends from beyond r_2 and terminates at r_5, M ends before base of m_3; in hindwing $m_3 - cu_1$ connate, the former being close to m_2.

Scent organs: Posterior tibia without scale pencil; cubital pecten present; androconial patch on lower surface at angle of cell; anal fold submarginal, opening on underside; a long pencil of scales below base of forewing.

Male genitalia (Fig. 55): Tegumen fairly short; uncus expanding terminally, bristled ventrally; socius large, drooping; tuba analis membranous. Cucullus broad, spined mainly ventro-anteriorly, with well developed angle; sacculus convex, marked by anterior and posterior bunches of hair; anterior group consisting of spines and hairs situated at the rib; a row of rather short bristles on depressed median portion of valva. Aedeagus and caulis short.

Female genitalia (Fig. 366): Sterigma broad, partially weakly sclerotized, forming 2 large lateral lobes, in basal part cup-shaped; collicum slender, provided with inner split sclerite; ductus bursae with submedian sclerite; ductus seminalis median. Signum plate-shaped (1 or 2), cornute or scobino-cornute.

Early stages unknown.

Bionomy: Larva of *mosaica* feeds in leaves of *Alpina (Zingiberaceae)*.

Distribution: Australian and Oriental regions; *mosaica* being spread from Australia to Ceylon and Japan. Three species known to date (DIAKONOFF, 1973) of which one, *T. spondilis* (MEYRICK), strongly differs from the remaining species.

Comments. DIAKONOFF (1973) points out *Temnolopha* is allied with *Aterpia* and *Phaecadophora* but differs mainly in having a clavate uncus as well as in female genitalia.

Saliciphaga FALKOVITSH

Saliciphaga FALKOVITSH, 1962, Ènt. Obozr., **41** (1): 193. Type-sp.: *Penthina acharis* BUTLER, 1879 — by orig. design.

Venation: In forewing chorda from mid-distance between r_1 and r_2 to befire r_5, M to m_2 or close to it; in hindwing all veins run separately.

Scent organs; Posterior tibia simple; no anal fold in male hindwing present.

Male genitalia (Figs 56, 57): Pedunculus long; uncus hairy, also long; socius slender, drooping, hairy; tuba analis submembranous. Valva slender; angle of cucullus small but distinct, spines of cucullus entering the neck, followed by hairs; two groups of setae on sacculus (angular and posterior); group *A* consisting of short bristles at the edge, below a large prominence armed with spines. Aedeagus and caulis short.

Female genitalia (Fig. 367): Sterigma broad, scobinate-aciculate, distinctly convex along middle, with delicately folded anterior edge; ostium bursae in bottom of median concavity, the latter open posteriorly. Colliculum slender, provided with weak inner sclerite; signa two flattened, very large pockets arranged transversely.

Early stages unknown.

Bionomy: The food plants of larva are *Salix* and *Populus*.

Distribution: East Palaearctic Asia incl. Japan.

Comments. A monobasic genus. DIAKONOFF (1973) supposes that the huge signa of the *Neopotamia* type have originated of the signa found in this genus. No autapomorphy is realized.

Pseudosciaphila OBRAZTSOV

Pseudosciaphila OBRAZTSOV, 1966, Entomologist's Gaz., **17**: 144. Type-sp.: *Phalaena (Tortrix) branderiana* LINNAEUS, 1758 — by orig. dsign.

Venation: Chorda originating before base of r_2 and reaching base of r_5, M terminating between m_1 and m_2; in hindwing $m_3 - cu_1$ connate.

Scent organs not developed.

Male genitalia (Figs. 58, 59): Tegumen long, slender; uncus bilobe, directed distally; socius reduced basally, with small terminal lobe; tuba analis built of thick membrane, connected basally with tegumen by means of a strong transverse band. Basal part of valva broad; neck very slender; cucullus broad apically, strongly tapering proximally, without any angle. Vestiture: Group of cucullus typical, row of ventral spines extending towards the neck; two groups of spines on broad postbasal part of valva, one being saccular (angular) the other probably anterior secondarily mooved ventro-posteriorly; a row of long setae extending ventrally from subdorsal fold of outer surface. Aedeagus and caulis short; cornuti wanting. Musculature (KUZNETSOV & STEKOLNIKOW, 1983): m_2 long, extending from middle of tegumen between bases of pedunculi to end of basal process of valva; m_4 short, to its anterior prominence; m_5 terminating at end of sacculus.

Female genitalia (Fig. 368): Sterigma a semiovate, aciculate sclerite forming an elevate collar surrounding ostium bursae and opening proximally; colliculum

ill-defined, provided with rather short sclerite; ductus seminalis subterminal; signa: two almost equally large flattened pockets.

Early stages: SWATSCHEK (1958) described the chaetotaxy of the type-species, however, including it in *Olethreutes*.

Bionomy: Single generation yearly; larvae feed in spun leaves of *Populus* where pupate.

Distribution: Holarctic region. One species included in this genus by DIAKONOFF (1973), *P. rhachistis* DIAKONOFF from India seems not congeneric.

Comments. The supposed autapomorphies of *Pseudosciaphila* are the presence and situation of the outer row of bristles of the valva, the arrangements of the anterior and saccular groups of spines, the shape of the cucullus and the position of the uncus. HANNEMANN (1961) included its type-species in a distinct monotypical genus *Sciaphila* TREITSCHKE but TREITSCHKE differently interpreted the Linnean species *Phalaena Tortrix wahlbomiana* (= *Sciaphila alticolana* HERRICH-SCHÄFFER) thus *Sciaphila* must be treated as a junior synonym of *Cnephasia (Tortricinae)*. That caused OBRAZTSOV's decision of an erection of the present genus.

Pseudohedya FALKOVITSH

Pseudohedya FALKOVITSH, 1962, Ènt. Obozr., **41** (1): 192. Type-sp.: *Grapholitha gradana* CHRISTOPH, 1881 — by orig. design.

Venation: Chorda extending from mid-distance between $r_1 - r_2$ base of r_5; in hindwing $m_3 - cu_1$ on a very short stalk.

Scent organs: Posterior tibia without scale pencil but with a weak subdorsal groove.

Male genitalia (Figs 60, 61): Uncus slender; socius broad, ovate, hairy; tuba analis with large subscaphium, terminating in a process. Angle of sacculus distinct; cucullus slender, in type-species limited anteriorly by a roof-shaped lobe; anterior and saccular areas densely and uniformly spined. Aedeagus short, simple; caulis small; henion strongly developed; cornuti wanting. Musculature (after KUZNETSOV & STEKOLNIKOV, 1977, for *P. cincinna* FALKOVITSH): m_{10} long, extending from between bases of pedunculi to before end of tuba analis laterally, m_2 from between the latter on tegumen to end of basal process of valva, m_4 from broadening of basal portion of pedunculus to posterior part of basal process.

Female genitalia (Figs 369—370): Sterigma subtriangular, tapering terminally, rounded anteriorly, provided with hairs before apical incision laterally; ostium bursae in a cup-shaped sclerite, the latter split ventrally; colliculum slender, long; ductus bursae simple; two plesiomorphic inequally sized signa in corpus bursae present.

Early stages and bionomy unknown.

Distribution: Palaearctic eastern Asia: Ussuri region and Japan: Hokkaido. Two species known to date.

Comments. Originally compared with *Hedya*, but after DIAKONOFF (1973) allied with *Semniotes* DIAKONOFF. That opinion is based on the form and structure of the subscaphium and henion. The probable autapomorphy of this genus is the vestiture of the basal area of the valva. The sclerite separating the cucullus from the anterior part of the valva is probably of convergent importance as it was found in some species of *Statheromantis*. DIAKONOFF (same paper) suggests also that the large and robust signa assign this genus to *Neopotamiae*.

Hedya HÜBNER

Hedya HÜBNER, [1825], Verz. bekannter Schmett.: 380. Type-sp.: *Phalaena Tinea salicella* LINNAEUS, 1758 — by subs. desing. (FERNALD, 1908, Genera *Tortricidae*: 10).

Episagma HÜBNER, [1825], ibid.: 383. Type-sp.: *Phalaena Tortrix schreberiana* LINNAEUS, 1761 = [*Phalaena*] *dimidiana* CLERCK, 1759 — by subs. design. (FERNALD, 1908, ibid.: 17). Subsequent designation of the type-sp. is by HEINRICH (1923: 194): *Phalaena Tortrix solandriana* LINNAEUS, 1758.

Pendina TREITSCHKE, 1829, Schmett. Eur., **7**: 227. Type-sp.: *Phalaena Tinea salicella* LINNAEUS, 1758 — by subs. design. for *Penthina*, nom. emend. *Penthina* TREITSCHKE, 1830. ibid., **8**: 21. Type-sp.: hereditarius, design. by DUPONCHEL, 1834, Annls Soc. ent. Fr., **3**: 445), Subs. design. are by CURTIS, 1835, Br. Ent., explanat., pl. 567: — *Apotomis turbidana* HÜBNER, [1825] and by STEPHENS, 1834, Ill. Br. Ent., *Haustellata*, **4**: 87: *Phalaena revayana* [DENIS & SCHIFFERMÜLLER], 1775.

Scent organs: The wing and tibial organs variable, often reduced.

Male genitalia (Figs 62—70): Uncus species specific, usually folding along middle ventrally, expanding in posterior part ventroposteriorly, setose or hairy; socius hairy, elongate or short, drooping. Base of tuba analis a delicate, transverse band, often expanding submedially, in a few cases scarcely aciculate or accompanied by anterior sclerite; posterior part of tuba membranous. Cucullus slender with weak angle; fold variable; the two parts spined continuously or a small space on posterior part of neck present; anterior group consists of short bristles or spines; sacculus always with a row of long setae forming one or two (median and posterior) groups, exceptionally a small angular group is present. Aedeagus short; caulis short, forming often a broad collar around aedeagus, occasionally fusing with tuba analis by means of a thick membrane of dorsal part of anellus or a weak henion.

Female genitalia (Figs 371—377): Sterigma a weak aciculate plate extending around ostium bursae to form a collar like structure, or cup-shaped, in some cases bulbous, expanding posteriorly to embrace the distal portion of ductus bursae; very often the plate-shaped part of sterigma atrophies or membranises so lateral or very weak posterior sclerites remain. Colliculum slender, provided with inner sclerite, or thick, bent or enlarged medially; ductus seminalis originating before colliculum dorsally. Signa two small funnels or shallow

scobinate pits, often inequal in size. Subgenital sternite occasionally with median groove posteriorly.

Early stages: After SWATSCHEK (1958) larvae of this genus do not differ from the larvae of *Olethreutes* in chaetotaxy.

Bionomy: Larvae feed in buds and spun leaves of *Salicaceae*, *Rosaceae*, *Betulaceae* etc. being often polyphagous (*H. nubilana* (HAWORTH)). Hibernation in early larval stages. One or two generations yearly.

Distribution: Known of Holarctic and Oriental regions, in this subregion more than 10 species found.

Comments. No autapomorphy of *Hedya* is found. DIAKONOFF (1973) compares it with *Dudua* treating the reductions of the basal linkages of the tuba analis as a progressive character. That membranisation is, however, convergent and was found in various more primitive genera. I am treating some structures of that part of the genitalia as specialized, however, convergent (or they may represent a synapomorphy of some genera, e. g. of *Lasiognatha* DIAKONOFF or *Pristerognatha* OBRAZTSOV). The degree of the development of those characters is variable.

Dudua WALKER

Dudua WALKER, 1864, List. Spec. lepidopt. Ins. Coll. Br. Mus., **33**: 1000. Type-sp.: *Dudua hesperialis* WALKER, 1864 — design. by monot.

Platypeplus WALSINGHAM, 1877 [in:] MOORE, Lepidopt. Ceylon, **3**: 495. Type-sp.: *Eccopis aprobola* MEYRICK, 1886 — design. by monot. *Platypeplum* WALSINGHAM, 1899, Indian Mus. Notes, **4**: 105 — nom. emend. for *Platypeplus*.

Venation: In forewing chorda completely atrophied or originating between $r_1 - r_2$ and terminating beyond r_5, *M* wanting or its remainders reaching half way $m_2 - m_3$, *pcu* preserved in terminal part of wing, $r_4 - r_5$ strongly approximated basally, fork of anal veins long; in hindwing $rr - m_1$ approximated postbasally or basally, $m_3 - cu_1$ extending from one point.

Scent organs: Posterior femur fringed along lower edge in basal half; tibia dilated posteriorly; anal region of hindwing rolled and folded, with tuft of scales inside, if present.

Male genitalia (Figs 71—73): Tegumen slender, often with distinct shoulders; uncus rather broad, flat, densely hairy; socius drooping, slender, hairy; base of tuba analis forming a median aciculate lobe or a pair of lobes. Cucullus long, angulate; fold variably developed, often very long, terminating in a pulvinus, or atrophying, both spined, or the neck naked; anterior group built of spines and hairs; sacculus angulation usually weak, spines median, hairs anterior, median or posteromedian if developed. Aedeagus short; lobes of caulis beyond zone often strongly developed; cornuti missing.

Female genitalia (Figs 378, 379): Sterigma an emarginate, densely spined, more or less sclerotic plate, often extending posteriorly or elevated around ostium bursae, exceptionally accompanied by aciculate lobes or plates situated

in broad surrounding membrane. Colliculum slender, usually with inner sclerite slit ventrally. Ductus bursae long; signa two densely spined plates extending medially into rather short thorns or funnels.

Early stages unknown.

Bionomy: Larvae live on *Euphorbiaceae* (Australian *D. phylanthana* (MEYRICK) on *Phyllanthus*). *D. aprobola* (MEYRICK) roll the leaves or feeds in inflorescencies of *Rosa*, *Lantana*, *Dahlia*, *Salix* etc. (DIAKONOFF, 1973).

Distribution: Oriental, Australian regions; two species are Palaearctic (*D. ptarmicopa* (MEYRICK) and *D. scaeaspis* (MEYRICK) found in Liliang, China).

Comments. Over 20 species are known. *Dudua* was synonymized by DIAKONOFF (1968) with *Hedya*, but then restored (DIAKONOFF, 1971). Its synonym, *Platypeplus*, was in the former paper treated as a subgenus of *Hedya*, but then sunk as a synonym of *Dudua* (DIAKONOFF, 1973). DIAKONOFF separated *Dudua* from *Hedya* on the basis of a presence of the aciculate process of the basal area of the tuba analis in the former. In the European species of *Hedya* that structure is absent or represented by a small group of minute spines only. Thus I am preserving *Dudua* as a valid genus treating the presence of its aciculate lobes of the tuba analis as of autapomorphic importance. The two genera are very closely allied to one another.

Metendothenia DIAKONOFF

Metendothenia DIAKONOFF, 1973, Zoöl. Monogr. Rojksmus. nat. Hist., **1**: 445. Type-sp.: *Metendothenia emmilta* DIAKONOFF, 1973. Oriental — Australian.

Venation: Chorda originating anteriorly to base of r_2, terminating beyond r_5, M weak reaching beyond base of m_2; in hindwing $rr - m_1$ approximated basally, remaining veins separate.

Scent organs: Hind tibia provided with a short pencil of scales placed in a subdorsal groove; occasionally coremata on 7th segment; anal area of hindwing rolled, sometimes with a free lobe extending from base or with longitudinal folds, modified scales on tornus, or the anal region not specialized (DIAKONOFF, 1973).

Male genitalia (Figs 74, 75): Tegumen usually slender; uncus well sclerotized, hairy and spined ventro-terminally or terminally; socius varying from large drooping and hairy lobe to a small patch, or is vestigial, if present; tuba analis membranous or as in preceding genus. Cucullus more or less elongate, spined; neck often naked; fold absent; large hairy or spined lobe just beyond distal edge of basal cavity; sacculus variable in shape, often convex, with groups of setae or hairs forming usually median or posterior groups. Aedeagus variable in shape; caulis usually moderate.

Female genitalia (Fig. 380): Sterigma a complicate plate provided with folds or lobes, densely aciculate; ostium bursae in middle area of the former;

colliculum strong, tubular, fusing with the bottom of sterigma. A single signum in form of a flat, dentate scobination (in the type species).

Early stages: Chaetotaxy known in the only European species placed by SWATSCHEK (1958) in *Olethreutes*.

Bionomy: *M. atropunctana* (ZETTERSTEDT) lives in spun leaves of the ends of twigs of several plants (*Crataegus*, *Salix*, *Betula* etc). Two generations yearly.

Distribution: Australian region; two non-Australian species were originally included in this genus, viz., the above mentioned Palaearctic *atropunctana* and Nearctic *M. separatana* (KEARFOTT).

Comments. The originally suggested autapomorphy is the presence of a variably developed, hairy and spined lobe situated beyond basal cavity dorsomedially. However, in several other genera a similar structure is found. The species included originally in this genus differ from one the other in the shape and situation of that lobe. DIAKONOFF (1973) based his generic system mainly on the structure of the signum. In this genus there are at least three types of it, the denticulate-scobinate signum (in *M. mesarotra* (MEYRICK) characteristic of *Statherotides*, the flattened, broad thorn known in various groups (*M. rhodambon* DIAKONOFF) and paired, shallow scobinate cup (in *atropunctana*). The latter type is common within the tribe, and is found e. g. in some *Hedya* to which *atropunctana* approaches genitalically especially in the shape of the sterigma. The single signum of *mesarotra* corresponds with that in several genera of *Statherotides* sensu DIAKONOFF but in almost all species of that group there are two signa instead of one. So, of one can suppose the presence of single signum is a result of a reduction. The shape of the signum of *rhodambon* is most probably plesiomorphic, so that species can be regarded as congeneric. Having no possibility of an examination of those Oriental species I am following the DIAKONOFF'S concept and include in this genus also the Palaearctic species. I am also retaining the position of this genus, close to *Hedya* and *Dudua*.

Orthotaenia STEPHENS

Orthotaenia STEPHENS, 1829, Syst. Cat. Br. Insects, **2**: 181. Type-sp.: *Tortrix undulana* [DENIS & SCHIFFERMÜLLER], 1775 — by subs. design. (WESTWOOD, 1840. Introd. mod. Classif., **2**, Synopsis Br. Insects: 108). Secondary designation: WALSINGHAM, 1914, Biologia cent.-am. Zool.: 245, 248) — *Tortrix striana* [DENIS & SCHIFFERMÜLLER], 1775.

Syricoris TREITSCHKE, 1829, Schmett. Eur., **7**: 230. Type-sp.: *Tortrix undulana* [DENIS & SCHIFFERMÜLLER], 1775 — by subs. design. (WESTWOOD, 1840, op. cit.: 108, for *Sericoris* TREITSCHKE). Subs. design.: FERNALD, 1908, Genera *Tortricidae*: 19, 57 — *Olethreutes conchana* HÜBNER, [1796—99] = *Phalaena rivulana* SCOPOLI, 1763. *Sericoris* TREITSCHKE, 1830, ibid., **8**: 142. Type-sp.: *Totrix undulana* [DENIS & SCHIFFERMÜLLER], 1775 — hereditarius. Unjustified emend. of *Syricoris* TREITSCHKE, 1829.

Badebecia HEINRICH, 1926, Bull. U. S. natn. Mus., **132**: 124. Type-sp.: [*Tortrix*] *urticana* HÜBNER, [1796—99] = *Phalaena Tortrix undulana* [DENIS & SCHIFFERMÜLLER], 1775 — by orig. design.

Scent organs: Anal fold of hindwing large; posterior tibia with long scale pencil.

Male genitalia (Figs 76, 77): Uncus short, similarly folded as in *Hedya*, subtriangular, sharp apically; socius broad, lateral, hairy; anterior linkage of tuba analis producing medially, provided with ventro-anterior group of fairy long spines. Basal cavity large; sacculus broadly angulate, with strong, spined ventral process before neck, the latter scarcely spined; cucullus slender, with spines extending anteriorly. Long process terminating in a spine in end part of aedeagus; caulis fairly long. Musculature (KUZNETSOV & STEKOLNIKOV, 1977); m_1 well developed, reaching top of tegumen laterally to uncus base; m_2 to end part of basal process, m_4 broad, attached to broad anterior convexity of pedunculus and posterior half of basal process; m_5 inserted in distal part of sacculus as far as to base of ventral process and to lateral portion of caulis.

Female genitalia (Figs 381, 382): Sterigma as in *Hedya*, e. a. with a cup-shaped central part, but accompanied by a pair of lateral plates and posterior convexity. Colliculum large, inner sclerite developed; ductus seminalis extending from before colliculum, dorsally; single, concave, sculptured signum in corpus bursae.

Early stages: SWATSCHEK (1958) provided characteristics of the type-species including it in *Olethreutes*.

Bionomy: One generation yearly; hibernates last instar larva; larvae live as polyphags on various plants as *Vaccinium*, *Betula*, *Acer*, *Pirus* or *Urtica*.

Distribution: A Palaearctic genus; two species known.

Comments. *Orthotaenia* is certainly allied to *Hedya* but more specialized as one can judge on its autapomorphies (the presence of the ventral process of valva at the beginning of the neck and the process of the middle of the tuba analis with its ventral spines). The shape of the socius is also specialized, but most probably convergent, the uncus is strongly reduced. The female genitalia are more generalized than those in *Hedya*.

Pseudohermenias OBRAZTSOV

Pseudohermenias OBRAZTSOV, 1960, Beitr. Ent., **10**: 471. Type-sp.: *Phalaena (Tortrix, Coccyx) clausthaliana* SAXESEN, 1840 = *Pyralis abietana* FABRICIUS, 1887 — by orig. design.

Scent organs: Rather short scale pencil in posterior tibia; anal fold of the hindwing reaching middle of its edge.

Male genitalia (Figs 78—80): Unus strong, incised apically, bristled and hairy; socius drooping, hairy; tuba analis membranous with large basal lobes. Cucullus ovate, without ventral angle; sacculus concave ventrally which a short spined lobe above. Aedeagus simple; cornuti short, capitate spines.

Female genitalia (Figs 383, 384): Sterigma, a sclerite convex anteriorly, extending laterally, forming a distinct median tube like prominence embracing the ostium bursae; colliculum long, inner sclerite developed; ductus seminalis originating before the latter; small, single funnel like signum present.

Early stages: Chaetotaxy of type-species is described by SWATSCHEK (1958) who placed it in *Olethreutes*.

Bionomy: One generation yearly; larvae feed on conifers *(Pinus, Abies, Picea)*.

Distribution: Palaearctic genus known of two species only.

Comments. A supposed autapomorphy of *Pseudohermenias* is the structure (incl. spines) of the postangular prominence of the sacculus; the shapes of the cucullus and the neck of the valva are probably the synapomorphies of this genus, *Apotomis* and *Orthotaenia*.

Rudisociaria FALKOVITSH

Rudisociaria FALKOVITSH, 1962, Ènt. Obozr., **41** (1): 195. Type-sp.: *Grapholitha (Sericoris) expeditana* SNEFFEN, 1883 — by orig. design.

Venation: Chorda originating in middle distance between r_1-r_2, terminating at r_5, M reaching base of m_2; all veins separate.

Scent organ: Small scale pencil of hind tibia.

Male genitalia (Fig. 81): Uncus rather short; socius well sclerotized, directed ventrally, sharp, scarcely hairy; tuba analis membranous. Angle of sacculus distinct; anterior group of vestiture consisting of hairs, a bristled lobe and a dense group of spines above it; cucullus slender.

Female genitalia (Fig. 385): Sterigma broad, rounded proximally, producing latero-posteriorly, accompanied by a pair of posterior lobes; colliculum very short; signum a small, scobinate concavity.

Early stages and bionomy unknown.

Distribution: Palaearctic part of eastern Asia: China, Primorskij Kraj, Korea and Japan. Two species known to date.

Comments. DIAKONOFF (1973) supposes it is allied to *Piniphila*, *Celypha* and *Eccopis* ZELLER from S. Africa. The rigid socius and the arrangement of the spine clusters of the valva in the male and the structure of the sterigma in female are probable autapomorphies of this genus. The socii in *R. velutina* (WALSINGHAM) are submembranous, but that may be regarded as a plesiomorphy.

Piniphila FALKOVITSH

Piniphila FALKOVITSH, 1962, Ènt. Obozr., **41** (1): 196. Type-sp.: *Sericoris decrepitana* HERRICH-SCHÄFFER, 1851 — by orig. design.

Venation: All veins separate, chorda from mid-distance between r_2-r_3, terminating at m_5, M reaching base of m_2.

Scent organs: Posterior tibia with scale pencil and directed downwards anal roll of hindwing.

Male genitalia (Figs 82, 83): Uncus tapering terminally, hairy, expanding posteriorly; socius broad, parietal; linkages of base of tuba analis broad, well

sclerotized. Angles of sacculus and cucullus distinct, the latter with a small group of spines; cucullus slender, bristled; saccular group represented by a few bristles, group *A* wanting. Aedeagus with several capitate cornuti in vesica.

Female genitalia (Figs. 386, 387): Sterigma collar-shaped, accompanied by posterior slender plates situated in thick membrane surrounding the main part; cup-shaped median portion fused with long colliculum provided with inner sclerite; ductus seminalis extending from before colliculum; signum a concave scobination.

Early stages: SWATSCHEK (1958) described chaetotaxy of *decrepitana* but included it in *Endothenia*.

Bionomy: Larva in female inflorescences and twigs of young *Pinus* (after some authors also on *Vaccinium*, *Rhododendron* etc.). One generation yearly.

Distribution: A monobasic, Palaearctic genus.

Comments. The presence of the anterior group of the spines of the cucullus is a probable autapomorphy of this genus.

Tia HEINRICH

Tia HEINRICH, 1926, Bull. U. S. natn Mus., 32: 108. Type-sp.: *Argyroploce vulgana* MCDUNNOUGH, 1922 — by orig. design. Nearctic.

Venation: All forewing veins separate; in hindwing $rr-m_1$ anastomosing beyond median cell; m_2-m_3 approximated at base, m_3-cu_1 closely approaching basally, or from one point.

Scent organs: Short scale pencil on posterior tibia and short, thin fold in anal part of hindwing.

Male genitalia (Figs 84—86): Uncus slender, scarcely hairy; socius long, bristled and haired, without a ventral free end; tuba analis and its basal band-shaped linkages membranous. Basal cavity of valva short with, peculiar, finely sculp-tured covering membrane; cucullus slender, long, scarcely bristled and spined; a few spines on neck, ventrally; angle of sacculus rounded; densely spined concavity posteriorly to angle. Aedeagus short, simple; cornuti absent.

Early stages and bionomy unknown.

Distribution: Holarctic region. Monobasic.

Comments. The supposed autapomorphy of *Tia* is the presence of the squamose structure of the basal cavity. Originally compared with *Endothenia*; KUZNETSOV (1978) placed it after *Piniphila*.

Apotomis HÜBNER

Apotomis HÜBNER [1825], Verz. bekannter Schmett.: 380. Type-sp.: *Apotomis turbidana* HÜBNER, [1825] = *Tortrix corticana* HAWORTH, [1811] nec DENIS & SCHIFFERMÜLLER, 1775 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 10, 56).

Limma HÜBNER, [1825], ibid.: 380. Type-sp.: *Tortrix inundana* [DENIS & SCHIFFERMÜLLER], 1775 — by subs. design. (FERNALD, 1908, op. cit.: 10).

Aphania HÜBNER, [1825], ibid.: 386. Type-sp.: [*Tortrix*] *scriptana* HÜBNER, [1796—99] = *Tortrix lineana* [DENIS & SCHIFFERMÜLLER], 1775 — by sub. design. (FERNALD, 1908, op. cit.: 13, 57).

Antithesia STEPHENS, 1829, Syst. Cat. Br. Insects, **2**: 172. Type-sp.: *Apotomis turbidana* HÜBNER, [1822] = *Tortix corticana* HAWORTH, [1811] — by subs. design. (WESTWOOD, 1840, Introd. mod. Classif. Insects, **2**. Synopsis Genera Br. Insects: 107).

Brachytaenia STEPHENS, 1852, List Specimens Br. Animals Colln Br. Mus., **10**: 25. Type-sp.: *Tortrix semifasciana* HAWORTH, [1811] — design. by monot.

Venation: In forewing all veins separate, in hindwing $m_3 - cu_1$ connate.

Scent organs: Scale pencil of posterior tibia and anal fold of the hindwing.

Male genitalia (Figs 87—89): Tegumen long with oblique or rounded shoulders; uncus flattened dorso-ventrally, scarcely hairy, with some subterminal setae ventrally; socius broad, rounded or elongate, densely bristled; tuba analis strong, well sclerotized ventrally, with latero-terminal lobes; anterior linkages of tuba analis at least partially sclerotized. Basal cavity elongate; angle of sacculus more or less distinct, with weak group of hairs or a few spines; a large lobe extending from beyond distal edge of basal cavity armed with strong spines and innumerous hairs; neck gradually expanding posteriorly into an elliptic, setose cucullus. Aedeagus short, simple; single cornutus with elongate capitulum present; caulis short. Musculature (KUZNETSOV & STEKOLNIKOV, 1977): m_1 well developed inserting at base of socius, m_{10} also strong, reaching distal part of subscaphium; m_2 originating at bases of pedunculi, inserting on basal process apically; m_4 extending from a weak convexity of the base of pedunculus to posterior half of basal process; m_5 inserting in dorsal portion of valva within basal cavity.

Female genitalia (Figs 388—393): Sterigma plate-shaped, expanding around ostium bursae, often producing posteriorly, with anterior angle convexely rounded, exceptionally developing a membranous fold. Ductus bursae long, transversely plicate in terminal portion, with median part swung, sclerotic; ductus seminalis extending from the latter area. Two small scobinate concavities represent the signa.

Early stages: SWATSCHEK (1958) provides a description of some European species, however, not separating *Apotomis* from *Olethreutes*.

Bionomy: Single, more rarely two generation yearly; hibernate middle instars of larvae; food plants are mainly *Salicaceae*, the larvae feed in spun leaves.

Distribution: A Holarctic genus; a few species are Oriental; over 30 species described to this date.

Comments. The supposed autapomorphies of *Apotomis* are the shapes of the cornutus, valva and sacculus, the structure of the tuba analis and the presence of the sclerotized area of the ductus bursae. The shape of the cucullus is similar to those in *Orthotaenia* and *Pseudohermenias* and may represent their synapomorphy.

Cymolomia LEDERER

Cymolomia LEDERER, 1859, Wien. Ent. Mschr., 3: 374. Type-sp.: *Sciaphila hartigiana* SAXESEN, 1840 — design. by monot.

Venation: In forewing all veins separate, M to base of m_2, chorda from mid-distance r_1—r_2 to base of r_5; in hindwing $rr-m_1$ approximate anteriorly, m_3-cu_1 short stalked.

Scent organs: Long scale pencil on posterior tibia and hair like scales at base above; anal part of hindwing rolled downwards, slightly projecting distally.

Male genitalia (Fig. 90): Uncus short, bilobed or weakly concave apically, armed with subterminal spines ventrally; socius large, usually drooping, hairy; basal sclerite of tuba analis bilobe, extending medially to form a short subscaphium, or membranous. Valva develops a long cucullus extending ventrally into a densely spined fold; sacculus group of spines median, if developed; anterior group consisting of hairs or spines. Aedeagus very short; caulis short; cornuti missing.

Female genitalia (Figs 394, 395): Sterigma well developed, aciculate, consisting of a tubular prominence surrounding ostium bursae and extending laterally and ventrally into a variably shaped plate; usually its lateral parts are large, elongate or rounded, showing a tendency to membranize ventro-medially. Colliculum provided with elongate sclerite; ductus bursae often weakly sclerotized medially; ductus seminalis posterior; signum single, funnel-shaped.

Early stages: Description of chaetotaxy based on the type-species provided by SWATSCHEK (1958) suggests that *Cymolomia* is closely related to *Olethreutes*.

Bionomy: Single generation a year; the young larvae of *hartigiana* mine the pins of *Abies* and *Picea*, then spin them, other species feed on *Ledum*, *Pirola* etc.

Distribution: Known of Palaearctic subregion; 2 species are Oriental. A revision of the Nearctic fauna should confirm its occurrence in American continent. Innumerous species known.

Comments. No autapomorphy is found. *Cymolomia* is extremely close to *Argyroploce* and the only difference is in the shape of the sterigma; the remaining features are either inconstant or of convergent importance.

Argyroploce HÜBNER

Argyroploce HÜBNER, [1825], Verz. bekannter Schmett.: 379. Type-sp.: *Phalaena Tinea arbutella* LINNAEUS, 1758 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 9, 56).

Venation: In forewing chorda extending from mid-distance r_1-r_2, terminating before r_5; in hindwing m_3-cu_1 in male short stalked, in female connate, remaining veins separate, however, $rr-m_1$ often strongly approximated basally.

Scent organs: Anal fold of hindwig short; scale pencil of posterior tibia short.

Male genitalia (Figs 91—99) as in *Cymolomia* but sacculus more strongly

angulate (type-species) provided with a group of spines; cucullus slender; fold present; a hairy patch on membrane covering basal cavity may develope. Aedeagus simple.

Female genitalia (Figs 396—400): Sterigma very large, plate-shaped, convex medially; ostium bursae subterminal; colliculum long; ductus seminalis near colliculum, extending dorsally; signum a rounded scobinate concavity, or absent.

Early stages unknown.

Bionomy: One generation yearly; larvae in spun leaves of *Vaccinium* and *Arctostaphylos*.

Distribution: Europe.

Comments. The probable autapomorphy of this genus is a very large sterigma. A few species may be included in this genus, however, they show some variation in the genitalia. It seems posible *Cymolomia* is synonymous with *Argyroploce*. The above diagnosis is based mainly on the type species.

Pristerognatha Obraztsov

Pristerognatha Obraztsov, 1960, Beitr. Ent., **10**: 468. Type-sp.: *Sericoris penthinana* Guenée, 1845 — by orig. design.

Venation as in *Argyroploce*; in hindwing $m_3 - cu_1$ extending from one point.

Scent organs: Long scale pencil on posterior tibia; anal fold in hindwing.

Male genitalia (Figs. 100—102): Uncus delicate, hairy; socius drooping, hairy; tuba analis membranous, with base minutely spined ventrally. Cucullus slender with spined area fusing with that of fold, or neck naked; sacculus group and anterior group may occur.

Female genitalia (Figs 401—404): Sterigma in form of lateral lobes expanding around ostium bursae posteriorly, the latter protected by distinct sclerite fused with colliculum; ductus bursae short; ductus seminalis submedian; signum not developed.

Early stages: After Swatschek (1958) chaetotaxy as in *Endothenia* to which that author included the two known species of *Pristerognatha*.

Bionomy: Two generations yearly; larvae in stems and roots of *Impatiens*.

Distribution: Holarctic region; two species described.

Comments. This genus was erected chiefly on a basis of the presence of the spined area of the tuba analis. That character is, however, variable within the genus and even species and on the other hand it appears convergently in several other genera as *Dudua*, *Lasiognatha* Diakonoff in a very similar form.

Stictea Guenée

Stictea Guenée, 1845, Annls Soc. ent. Fr., (2) **3**: 161. Type-sp.: *Tortrix flammeana* Fröl ich, 1828 = *Tortrix mygindana* [Denis & Schiffermüller], 1775 — by orig. design. Subsequent, incorrect designation was by Desmarest [in:] Chenu, 1857, Encyclop. Hist. nat., Papillons noct.: 223 (*Phalaena Tinea arbutella* Linnaeus, 1758).

Venation and scent organs as in *Argyroploce*.

Male genitalia (Fig. 103): Uncus, socius and tuba analis as in *Argyroploce*. Angle of sacculus weak, followed by a broadening which probably represents anterior portion of cucullus. In that area, in the disc, there is an elliptic cavity filled with spine like bristles and armed with a strong submedian spine situated near ventral lip; weakly differentiated group of bristles in median part of valva; cucullus in postmedian part heavily spined; fold indistinct; anterior group represented by hairs. Aedeagus simple; caulis long.

Musculature (KUZNETSOV & STEKOLNIKOV, 1977 — *mygindana*): m_1 fairly large; m_2 and m_4 as in *Celypha*; m_5 inserting in ventral portion of valva, anteriorly to a cavity of disc, and in dorsal half of caulis.

Female genitalia (Fig. 405): Sterigma extremely large, convex, aciculate, with differentiate anterior and posterior lobes; ostium apical; colliculum long, provided with inner sclerite from which thin ductus seminalis extends; signum wanting.

Early stages: SWATSCHEK (1958) included the type species of *Stictea* in *Olethreutes*.

Bionomy: One generation a year. Larvae in spun leaves of *Vaccinium*, *Myrica* and *Arctostaphylos*.

Distribution: Western and northern parts of Europe. Monobasic.

Comments. *Stictea* is allied to *Olethreutes* and *Argyroploce* but its valva is more specialized. Its supposed autapomorphies, are the presence of a distinct cavity in the disc of the valva and its inner spine.

Olethreutes HÜBNER

Olethreutes HÜBNER, [1822], Syst. alphab. Verz.: 58–67, 69. Type-sp.: *Phalaena Tortrix arcuana* LINNAEUS, 1761 = [*Phalaena*] *arcuella* CLERCK, 1759 — by subs. design. (WALSINGHAM, 1895, Trans. ent. Soc. London, **1895**: 518).

Roxana STEPHENS, 1834, Ill. Br. Ent., *Haustellata*, **4**: 118. Type-sp.: *Phalaena Tortrix arcuana* LINNAEUS, 1761 = [*Phalaena*] *arcuella* CLERCK, 1759 — design. by monot.

Melodes GUENÉE, 1845, Annls Soc. ent. Fr., (2) **3**: 161. Type-sp.: *Phalaena Tortrix arcuana* LINNAEUS, 1761 = [*Phalaena*] *arcuella* CLERCK, 1759 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 30). Preoccupied by *Melodes* KEYS, 1840, in *Aves*.

Venation: All veins separate; in forewing chorda originating in mid-distance between r_1-r_2, terminating between r_4-r_5, M reaching mid-way m_2-m_3.

Scent organs: Delicate scale pencil of posterior tibia, hidden in a groove; rolled anal area of hindwing.

Male genitalia (Fig. 104): Uncus long, hairy dorsally; socius moderate, drooping, hairy; base of tuba analis with delicate lobes. Angle of sacculus atrophying; distal edge of basal cavity rounded, expanding subdorsally, hairy; cucullus elongate, spined, with ill-defined angle; fold atrophying but marked with a row of spines fusing with spines of cucullus and reaching basal cavity; a bunch consisting of spines and bristles in mid part of sacculus, subventrally. Aedeagus simple; cornuti short, capitate spines. Musculature (KUZNETSOV & STEKOL-

NIKOV, 1975 — *arcuella*): m_1 slender, inserting on base of uncus, laterally; m_2 from between bases of pedunculi, to end part of basal process of valva; m_4 to neck of the latter; m_5 directed towards ventral edge of sacculus.

Female genitalia (Figs 406, 407): Sterigma cup-shaped, aciculate, marked with ribs and grooves, with anterior, shallow fold; ostium situated near middle of sterigma; colliculum provided with inner sclerite; ductus seminalis originating before colliculum. Signum absent.

Early stages: SWATSCHEK (1958) described the chaetotaxy of the type-species and placed in *Olethreutes* together with the representatives of some allied genera.

Bionomy: Probably one generation yearly; larvae of type-species feed in fallen leaves.

Distribution: Palaearctic subregion. Three species known to date.

Comments. The systematic position of *Olethreutes* is unclear. DIAKONOFF (1973) included in this genus *Argyroploce*, *Phiaris*, *Loxoterma* and *Exartema* and subdivided it into *Biscopa*, *Syricoris*, *Olethreutes* s. str. and *Phiaris*. In my paper on Polish Lepidoptera (RAZOWSKI, 1983) I included in this genus only 3 species closely allied to the type-species and treated *Phiaris*, *Argyroploce* and *Loxoterma* as distinct genera. *Biscopa* was regarded as a synonym of *Phiaris*. *Syricoris* is an objective junior synonym of *Orthotaenia*. DIAKONOFF in the mentioned work listed under *Olethreutes* many Nearctic species of *Exartema*. The latter will be reexamined and discussed in the paper on the Nearctic genera, now it could be mentioned that *Exartema* is closely related to *Phiaris*. The supposed autapomorphy of *Olethreutes* is the structure of the valva and especially the position of the bunch built of spines and hairs on the sacculus.

Celypha HÜBNER

Celypha HÜBNER, [1825], Verz. bekannter Schmett.: 382. Type-sp.: *Tortrix striana* [DENIS & SCHIFFERMÜLLER], 1775 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 11, 56).

Euchromia STEPHENS, 1829, Syst. Cat. Br. Insects, **2**: 183. Type-sp.: *Tortix purpurana* HAWORTH, [1811] = *Phalaena rufana* SCOPOLI, 1862 — by subs. design. (WESTWOOD, 1840, Introd. mod. Classif. Insects, **2**. Synopsis Genera Br. Insects: 108). Preoccupied by *Euchromia* HÜBNER, [1819].

Loxoterma BUSCK, 1906, Ent. News, **17**: 305. Type-sp.: *Tortrix latifasciana* HAWORTH, [1811] = *Tortrix aurofasciana* HAWORTH, [1811] — design. by monot.

Celypha HÜBNER, [1825], Verz. bekannter Schmett.: 382. Type-sp.: *Tortrix striana* [DENIS & SCHIFFERMÜLLER], 1775 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 11, 56).

Paracelypha OBRAZTSOV, 1960, Beitr. Ent., **10**: 447. Type-sp.: *Phalaena rivulana* SCOPOLI, 1763 — by orig. design.

Celyphoides OBRAZTSOV, 1960, ibid.: 480. Type-sp.: *Tortrix (Sericoris) flavipalpana* HERRICH-SCHÄFFER, 1851 — by orig. design.

Venation: All veins separate; chorda from beyond mid-distance $r_1 - r_2$, terminating at r_5; M to base of m_2.

Scent organ: Strong scale pencil on posterior tibia reaching at least to its middle.

Male genitalia (Figs 105—118): Uncus hairy, varying from a weakly sclerotized, subtriangular process to a rigid often broad rod; socius drooping or lateral, with reduced apical lobe, hairy; tuba analis membranous, often with ventral sclerite and well developed anterior juncture. Valva broad basally; sacculus more or less expanding posteriorly, forming a rounded angle; cucullus slender, often broadening posterad; fold usually distinct, provided with apical lobe; posterior edge of basal cavity forming in several species a distinct rib. Vestiture: Sacculus group consisting of a ventral or subventral clusters of spines or bristles, occasionally situated externally or on (under) lobes or processes; cucullus and sacculus groups fusing with group of fold; anterior group represented by hairs. Musculature (KUZNETSOV & STEKOLNIKOV, 1977 — *rufana*): m_1 delicate, reaching base of uncus; m_2 from between bases of pedunculi to top of basal process of valva, m_4 to its opposite prominence; m_5 very large, inserting ventro-posteriorly on sacculus and medially on caulis.

Female genitalia (Figs 408—417): Sterigma large, consisting of median, convex part, usually incised posteriorly almost as far as to ostium area, with large lateral wing-shaped plates and weak anterior fold. Colliculum variably long; ductus seminalis dorsal, posterior; ductus bursae simple, exceptionally provided with a median sclerite; signum a single, aciculate or granulate concavity.

Early stages: SWATSCHEK (1958) characterized chaetotaxy of some species and included them in *Olethreutes*.

Bionomy: One or two generations yearly; larvae often in roots or bases of stems, or spinning the leaves, flowers or shoots of various plants e.g. *Taraxacum*, *Hieracium*; some being polyphagous.

Distribution: A Holarctic genus, in this subregion represented by over 20 species.

Comments. DIAKONOFF (1973) divided *Celypha* into two subgenera, viz., *Celypha* and *Celyphoides* and included *Loxoterma* in *Olethreutes*. I synonymized (RAZOWSKI, 1983) *Celyphoides* with *Celypha*. *Loxoterma* does not show any important differing character and thus is sunk as a synonym of this genus. The supposed autapomorphies of this genus are probably the shape of the anterior portion of the valva and the presence of a slender cluster of hairs on its sacculus. Very close to the following genus.

Phiaris HÜBNER

Phiaris HÜBNER, [1825], Verz. bekannter Schmett.: 381. Type-sp.: *Phiaris penkleriana*: HÜBNER, [1825] = *Sericoris olivana* TREITSCHKE, 1830 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 11).

Mixodia GUENÉE, 1845, Annls Soc. ent. Fr., (2) 3: 160. Type-sp.: *Pyralis schulziana* FABRICIUS. 1777 — by subs. design. (DESABREST, 1857 [in:] CHENU, Encyclop. Hist. nat. Papillons noct.: 223).

Biscopa DIAKONOFF, 1973, Zool. Monogr., Leiden, 1:492. *Pyralis bipunctana* FABRICIUS, 1794 — by orig. design.

Venation and scent organs as in preceding genera.

Male genitalia (Figs 119—122): Tegumen long; uncus usually short, broad, hairy, often with ventral rib along middle; socius drooping or lateral, hairy. Cucullus slender, bristled and spined; fold present, often provided with distinct apical lobe, spined, occasionally developing a hairy subdorsal outer lobe; sacculus long, often with terminal process and 1—3 clusters of spines; distal edge of basal cavity may develope a transverse rib-shaped prominence beyond which disc is concave, often bristled. Aedeagus short; usually several short cornuti in vesica present; henion in many species well developed.

Female genitalia (Figs 418—427): Sterigma large or very large, often strongly convex or producing around ostium bursae, with large lateral or latero-posterior plates. All those strutures situated in a strong membrane developing a slender anterior fold. In some species latero-posterior lobes weakly connected with medio-anterior sclerites, completely separate, or divided into several parts. Colliculum often very large; ductus seminalis postmedian or subterminal, originating dorsally; signum a small, spined concavity, if developed.

Early stages: Chaetotaxy as in *Olethreutes* sensu SWATSCHEK (1958).

Bionomy: Usually 2 generations yearly; the larvae of the majority species feed in spun leaves of *Vaccinium*, *Mentha*, *Rubus*, *Prunus* etc.

Distribution: Holarctic; in this subregion there are over 40 species. Known also from the Oriental region.

Comments. The structure of the sterigma is similar to that in *Celypha*, the signum is of same type as in the genera of the *Celypha* — *Argyroploce* complex. This genus differs from *Celypha* in a lack of a group of long bristles of the sacculus. Despite several characters allows an easy separation of that genus from its allies no autapomorphy is found. DIAKONOFF (1973) included it together with the Nearctic *Exartema* in *Olethreutes* and described *Biscopa* as a new subgenus. KUZNETSOV (1978) synonymized it with this genus and RAZOWSKI (1983) followed his interpretation. *Exartema* is very closely related to *Phiaris*, but not reexamined for this paper.

Capricornia OBRAZTSOV

Capricornia OBRAZTSOV, 1960, Beitr. Ent., **10**: 474. Type-sp.: *Carpocapsa boisduvaliana* DUPONCHEL, 1836 — by orig. design.

Venation and scent organs as in *Phiaris*.

Male genitalia (Fig. 123): Tegumen long; pedunculus slender; uncus proportionally small, hairy dorso-posteriorly; socius rigid, scarcely hairy; tuba analis connected with base of socius by means of long, sclerotic belts and latero-anterior membrane. Valva very long; distal edge of basal cavity indistinct; sacculus provided with median spined and hairy process and naked termination; cucullus slender extending anteriorly into a spined lobe limited by a ventral fold. Aedeagus simple; henion short, broad.

Female genitalia (Figs 428, 429) as in *Phiaris*.

Early stages unknown.

Bionomy: Single generation a year; larva feeds on *Abies*.

Distribution: A monobasic, Palaearctic genus.

Comments. The only supposed autapomorphy of this genus is the shape and size of its sclerotic socius being also the only difference to *Phiaris*.

Pelatea Guenée

Pelatea Guenée, 1845, Annls Soc. ent. Fr., (2) **3**: 161. Type-sp.: *Tortrix klugiana* Freyer, 1836 — design. by monot. *Petalea* [sic!] Walker, 1866, List Specimens lepid. Insects Colln Br. Mus., **35**: 1790 — incorrrect subs. spelling of *Pelatea* Guenée.

Venation: Chorda extending from beyond r_1, terminating at base of r_5, M to mid-distance between $m_2 - m_3$; in hindwing $m_3 - cu_1$ originate in one point.

Scent organs: In type-species posterior tibia without scale pencil, in Oriental *P. assidua* (Meyrick) it is present and reaches 1/3 of tibia; no anal fold in hindwing.

Male genitalia (Figs 124, 125): Tegumen very broad, strongly convex dorsally; uncus semimembranous; tuba analis small, attached submedially; distal part of tegumen extending dorso-posteriorly into a pair of large, sclerotic lobes. Valva slender; angle of sacculus weak; neck and angle of cucullus indistinct; posterior edge of basal cavity forming a rib followed by a concavity bristled anteriorly and dorsally; group of small spine beyond basal cavity subdorsally; cucullus densely spined. Aedeagus simple; caulis short.

Female genitalia (Figs 430, 431): Eighth tergite rather weakly sclerotized dorsally, expanding into large ventro-lateral lobes; membranous, folding longitudinally sac inside eighth tergite. Sterigma large, with postmedian ostium situated in small, membranous sac, extending laterally and connected with apophyses anteriores; antevaginal sac well developed, membranous; colliculum slender, with indistinct internal sclerite; ductus seminalis submedian; signum wanting.

Early stages unknown.

Bionomy: Larva feeds in buds of *Peonia*.

Distribution: Palaearctic subregion (single species), for the data on the another, Oriental species see below.

Comments. The supposed autapomorphies of *Pelatea* are the presence and shape of the process of the distal part of the tegumen and the structure and situation of the uncus. The fusion between the sterigma and apophyses anteriores represents a plesiomorphy and is found in the *Olethreutini* for the first time (known to date in *Microcorsini*). Diakonoff (1973) placed this genus after *Celypha* in his *Olethreutae*, Kuznetsov (1978) after *Tia*. However, the two interpretations are not supported and I am following that by Diakonoff placing *Pelatea* at the end of the *Celypha* group of genera. The only Oriental spe-

cies mentioned above is unknown to me but, judging on the illustrations in the DIAKONOFF'S monograph, it shows rather strong differences to the type-species.

Lobesiina

Of about 10 genera of this subtribe distributed in the Holarctic and Oriental regions three are Palaearctic. DIAKONOFF (1973) describes 7 Oriental genera, without any phylogenetic discussion. In his arrangement *Podonognatha* DIAKONOFF is the most generalized genus close to *Lobesia*. *Podonognatha* and New Guinean *Theorica* DIAKONOFF preserved the anal fold of the hindwing and *Engelana* DIAKONOFF characterizes with somewhat altered anal region of that wing. That suggests, after DIAKONOFF, a close relationship between *Lobesiina* and *Olethreutina*. The presence of the hindwing scent organ can be, however, regarded as a plesiomorphy within the subtribe. There are three genera in the Palaearctic subregion, viz., *Didrimys*, *Lobesiodes* and *Lobesia*. The differences between the two latter genera are rather slight in the male genitalia and DIAKONOFF (1973) treating them as the subgenera only suggests that in *Lobesiodes* spine cluster Spc_2 situated on a projecting lobe is separate from Spc_1 by means of a marginal incision whilst in *Lobesia* the two groups are more or less united, not separate by any incision. The above character is rather variable and the most important difference between the two genera (cf. RAZOWSKI, 1983) is the structure of the posterior edge of the subgenital sternite. The presence of the inner lateral folds of that edge in *Lobesia* is treated as its autapomorphy.

Didrimys DIAKONOFF

Didrimys DIAKONOFF, 1973, Zoöl. Monogr. Rijksmus. nat. Hist., **1**: 388. Type-sp.: *Platypeplus harmonica* MEYRICK, 1905 — by orig. design. Oriental.

Venation: Chorda close to radial stem of the median cell, extending from 2/3 distance $r_1 - r_2$, terminating beyond r_4, *M* well developed reaching beyond base of m_2, remainder of *pcu* at tornus, anal veins forked to middle; in hindwing $rr - m_1$ and $m_2 - m_3 - cu_1$ strongly approximate basally, *pcu* and a_3 atrophied at least anteriorly, cubital pecten present.

Scent organs: Posterior tibia provided with scale pencil strongly broadening terminally, occasionally also with tufts of scales near apex, dorsally; basal joint of tarsus with scale pecten above.

Male genitalia (Fig. 126): Tegumen high; base of uncus broad, median portion becoming slender towards the end, broadening postmedially, hairy, armed with terminal spines; socius drooping, hairy; basal portion of tuba analis aciculate, provided with a pair of submedian sharp processes connected membranously. Valva slender; cucullus long, spined, with weak angle marked by small

anterior group of spines; neck naked; group *A* compact, consisting of short spines or bristles. Aedeagus short; cornuti missing.

Female genitalia (Fig. 434): Sterigma densely aciculate, consisting of two lateral lobes almost touching one another anteriorly connected by a transverse lobe situated beyond them; colliculum short, with bivalvous inner sclerite, expanding towards ostium bursae; signum simple, funnel-shaped, weakly broadening basally.

Early stages unknown.

Bionomy: *D. harmonica* is known to feed in leaves of *Eugenia (Myrtaceae)*.

Distribution. Of 4 known species 2 are Oriental and 2 Australian, one being distributed in the two regions and entering the Palaearctic subregion.

Comments. The supposed autapomorphy of this genus is the structure of the basal portion of the tuba analis. There is one Japanese species (*D. tokui* KAWABE) described from Yakushima Is. in this genus on the basis of similar structure of the tuba analis but showing some distinct characters and seemingly requiring separation. Thus it is not included in *Didrimys*.

Lobesiodes DIAKONOFF

Lobesiodes DIAKONOFF, 1954, Zool. Verh. Leiden, **22**: 55. Type-sp.: *Sericoris euphorbiana* FREYER, 1842 — by orig. design.

Venation: In males long pterostigma extending from end of *sc* as far as to r_4 developed; chorda from mid-distance between r_1-r_2 to base of r_5, r_4-r_5 strongly approximate basally or extending from one point, *M* atrophying posteriorly; in hindwing $rr-m_1$ originating in one point, m_3-cu_1 short stalked.

Scent organs: Posterior tibia with short bunch of scales; lateral pockets in abdomen developed.

Male genitalia (Figs 127, 128): Tegumen tapering terminally; pedunculus slender with apodeme of m_4 strongly elongate, thin apically; uncus vestigial, marked with a few tactile bristles dorsally; socius in form of a weak lateral fold devoid hairs; juncture of tuba analis rather weakly sclerotized, tuba analis membranous. Distal edge of basal cavity ill-defined, membranous; sacculus strongly incised ventrally; cucullus slender; fold small, naked; spines of sacculus divided into two groups. Aedeagus simple, with basal zone; caulis long; cornuti missing.

Female genitalia (Figs 435—438): Sterigma in form of a long, sclerotic tube, folding dorsally, emarginating proximally, developing a weak anterior plate or a thick membrane. Ductus bursae long, in distal part embraced by tube of sterigma, occasionally forming an ill-defined colliculum; ostrium bursae situated at top of sterigma, asymmetrical; ductus seminalis subterminal, situated ventrally; signum not developed. Subgenital sternite weakly concave posteriorly.

Early stages: SWATSCHEK (1958) characterized the representatives of this genus together with *Lobesia* under the name *Polychrosis*.

Bionomy: Two generations yearly. Larvae in spun leaves of the ends of shoots of *Euphorbia*.

Distribution: The genus is Holarctic, but the majority of the species occur in North America. There are two Palaearctic species only.

Comments. This genus is most probably more primitive than *Lobesia* (cf. p. 150) as one can judge on the simple structure of its subgenital sternite and a well developed fold of the valva. Their synapomorphies are the structure of the sterigma, its asymmetry and the shape of the valva. No autapomorphy found.

Lobesia Guenée

Lobesia Guenée, 1845, Annls Soc. ent. Fr., (2) **3**: 297. Type-sp.: *Asthenia reliquana* Hübner, [1825] — by subs. design. (Desmarest, 1857 [in:] Chenu, Encyclop. Hist. nat. Papillons noct.: 224; subsequent, identical designation was by Fernald, 1908, Genera *Tortricidae*: 33).

Polychrosis Ragonot, 1894, Annls Soc. ent. Fr., **63**: 209. Type-sp.: *Tortix botrana* [Denis & Schiffermüller], 1775 — by orig. design.

Byrsoptera Lower, 1901, Trans. Proc. R. Soc. S. Aust., **25**: 77. Type-sp.: *Byrsoptera xylistis* Lower, 1911 — design. by monot. Australian.

Paralobesia Obraztsov, 1953, Tijdschr. Ent., **96**: 92. Type-sp.: *Coccyx anderreggiana* Herrich-Schäffer, 1851 — by orig. design.

In this paper I am treating the nominate subgenus only. The remaining subgenera are non Palaearctic and shall be discussed in the parts concerning the Oriental and Australian faunas. Diakonoff (1973) provided a key to identification of the subgenera of *Lobesia* (*Harmosoma* Diakonoff, *Lomaschizodes* Diakonoff, *Apolobesia* Diakonoff and *Lomaschiza* Lower).

Venation and scent organs as in *Lobesiodes*.

Male genitalia (Figs 129—138) as in *Lobesiodes* but uncus almost completely atrophied, socius occasionally preserved, bristled, tuba analis usually membranous, simple. Sacculus with grups of spines variably separated from one the other, usually represented by a median agglomeration; cucullus with one, sometimes atrophying very long spine situated dorso-anteriorly to its ventral angle; fold vestigial or absent. Caulis short, often broad. Musculature (Kuznetsov & Stekolnikov, 1977 — *L. duplicata* Falkovitsh): m_1 atrophied; m_2 from between bases of pedunculi; to apex of basal process of valva; m_4 from top of process of pedunculus to opposite prominence of basal process; m_5 large, median.

Female genitalia (Figs 440, 441): Sterigma tubular, often expanding anteriorly, with less asymmetrical ostium bursae than in preceding genus, fused with subgenital sternite by means of more or less elaborate membranous sac; colliculum very slender, marked by a weak inner sclerite, or not differentiated; ductus seminalis posterior; single, plate-shaped, folded longitudinally signum, if present. Seventh sternite with convex median part of posterior edge and pro-

duced corners, folding sublaterally to form a pair of inner lobes directed proximally.

Early stages: Diagnosis by SWATSCHEK (1958) joins the characters of this and the preceding genus but includes the chaetotaxy of the type-species of *Lobesia*.

Bionomy: Two generations yearly; hibernation in larval or pupal stage. Larvae feed in spun leaves, flowers and seeds of various plants, e. g. on *Salix*, *Quercus*, *Fagus*, *Juniperus*, *Solidago*, *Allium*.

Distribution: Holarctic; in the Palaearctic subregion occurs ca 20 species.

Comments. The supposed autapomorphies of *Lobesia* are the fusion of the anterior part of the sterigma with the posterior edge of the subgenital sternite and the shape of the latter. OBRAZTSOV divided *Lobesia* into *Lobesia* s. str. and *Polychrosis*, and for some species established the genus *Paralobesia*. FALKOVITSH (1970) treated *Lobesiodes* and *Paralobesia* as the subgenera and KUZNETSOV (1978) distinguished two subgenera, viz., *Endopiza* and *Lobesia* s. str. However, *Endopiza* is an incorrect subsequent spelling of *Endopisa* (a synonym of *Grapholitha*, cf. p. 204). DIAKONOFF (1973) treated *Lomaschiza* as a subgenus of *Lobesia* and gave *Endopiza* a status of the genus with *Polychrosis* and *Paralobesia* as its synonyms. RAZOWSKI (1983) synonymized *Paralobesia* and *Polychrosis* with the genus in question on a basis of inconstant differing characters. In *Endopiza* three spine clusters on the sacculus were found (KUZNETSOV, 1978) whilst in *Lobesia* only two such groups; in reality those groups are variably developed, often fused. OBRAZTSOV (1953) suggested *Polychrosis* has two groups of spines of the sacculus, but it proved incorrect.

Endotheniina

This is a small group of the genera distributed in the Holarctic and Oriental regions; in the Palaearctic subregion occurs the type-genus only, whilst in the Oriental region the second genus, *Molybdocrates* DIAKONOFF, was found.

Endothenia STEPHENS

Endothenia STEPHENS, 1852, List Specimens Br. Animals Colln. Br. Mus., **10**: 28. Type-sp.: [*Tortrix*] *gentiana* HÜBNER, [1809—10] = [*Tortrix*] *gentianeana* HÜBNER, [1796—99] — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 35).

Alloendothenia OKU, 1963, Insecta matsum., **26** (2): 104. Type-sp.: *Alloendothenia menthivora* Oku, 1963 — synon. n.

Venation: In forewing chorda originating in mid-distance between $r_1 - r_2$, terminating between $r_4 - r_5$, *M* vestigial reaching halfway $m_2 - m_3$ or base of m_3; in hindwing $rr - m_1$ stalked or strongly approximate to middle, $m_3 - cu_1$ extending from one point or separate; *pcu* in both pairs of wings vestigial.

Scent organs: In some species posterior tibia with scale pencil and anal fold of hindwing present.

Male genitalia (Figs 139—144): Tegumen subtriangular orr ounded posteriorly, in majority of species strongly expanding anteriorly, with lateral folds extending dorsally and fusing with socii; uncus distinctly sclerotized, expanding apically, provided with outer hairs and ventro-apical short spines; tuba analis membranous. Valva slender; cucullus usually slender, bristled, not angulate; sacculus with occasionally developed process or angle, a sclerotic lobe armed with spines beyond basal cavity accompanied by weak group of hairs, occasionally extending beyond valva ventrally. Aedeagus short; zone submedian, linked with lateral parts of tegumen by means of slender bands; caulis broad; juxta very short; cornuti short, capitate spines, if present. Musculature (KUZNETSOV & STEKOLNIKOV, 1977 — *E. margaritana* (HAWORTH)): m_1 distinct, inserting in mid part of uncus, ventrally and on postbasal portions of pedunculus; m_2 missing; m_4 to top of strongly reduced basal process of valva; m_5 reaching posterior edge of sacculus.

Female genitalia (Figs 442—448): Sterigma cup-shaped, somewhat expanding posteriorly, or with well developed lateral plates forming a collar like prominence around ostium bursae or beyond it. In some species lamella postvaginalis complicate presenting concavities and transverse ribs; occasionally a membranous sac anteriorly to sterigma. Ductus bursae long, often weakly sclerotized near base of ductus seminalis; colliculum short, slender, if developed; ductus seminalis postmedian or subterminal with large sac. Signum a single basket-shaped, aciculate or granulate sclerite.

Early stages: The diagnosis of SWATSCHEK (1958) is based on the chaetotaxy of the species belonging in 3 genera, including some *Endothenia*.

Bionomy: Larvae live in twigs, stems, roots as well as in flowers and seeds of various plants, e. g. *Dipsacus*, *Gentiana*, *Euphrasia* and *Mentha*. Hibernation in larval stage; one or two generations yearly.

Distribution: Chiefly Holarctic region; the majority of species are known of Palaearctic subregion (over 30), a few are Oriental, if congeneric.

Comments. The supposed autapomorphies of *Endothenia* are the fusion between the tegumen and the aedeagus, the shape of the aedeagus complex the presence of the process situated near distal edge of basal cavity and the shape of the signum. The Oriental species distinctly differ from the Holarctic and are not included in the above diagnosis. DIAKONOFF (1973) separated the Nearctic species from the Palaearctic on a basis of the arrangement of the veins (in the Nearctic species veins $rr - m_1$ are remote and parallel) and proposed for them a new subgenus *Neothenia* with the type-species *Sciaphila hebesana* WALKER. The Nearctic species have not been yet studied and the status of *Neothenia* shall be discussed in one of the following parts of this series. *Alloendothenia* is in this paper synonymized with *Endothenia* as it does not show any more important separating characters. The type-species of *Alloendothenia* is closely related with *E. ericetana* (HUMPHREYS & WESTWOOD).

Eucosmini

Traditionally two subtribes are included. To *Eucosmina* belong more primitive genera representing a great variation of forms, however, *Enarmoniina* are occasionally treated as more generalized.

Eucosmina

In this subtribe belongs the majority of the genera insufficiently known to date even in comparison with all remaining groups of *Olethreutinae*. The system of the Palaearctic genera is rather intuitional. The present system is based chiefly on that proposed for Polish Fauna (RAZOWSKI, 1987).

Two genera are excluded from this paper bacause no Palaearctic species congeneric with their type-species was found. These are *Strepsicrates* MEYRICK (type-species: *Sciaphila ejectana* WALKER, Australian) and *Herpystis* MEYRICK (type-species: *Herpystis rusticula* MEYRICK, from Seychelles).

Salsolicola KUZNETSOV

Salsolicola KUZNETSOV, 1960, Ènt. Obozr., 39 (1): 189. Type-sp.: *Salsolicola rjabovi* KUZNETSOV, 1960 — by orig. design.

Venation: In forewing $m_2 - m_3$ connate; chorda from beyond mid-distance $r_1 - r_2$ to base of r_2; M absent. In hindwing $rr - m_1$ connate, $m_3 - cu_1$ connate or stalked.

Male genitalia (Figs 145, 146): Tegumen broad, rounded posteriorly; uncus simple, hairless; socius large, drooping, hairy. Valva broad; basal process simple, bent; basal cavity variably long; angle of sacculus small, ventral incision beyond the latter very short; cucullus large, with ill-defined or atrophied ventral angle, clothed with spines postmedially and with almost completely lost ventral vestiture; sacculus extending dorsally at the end of basal cavity. Aedeagus simple or with lateral process; cornuti non-deciduous, if present.

Female genitalia (Figs 449, 450): Sterigma ill-defined, in form of a weak, very short postvaginal belt producing laterally; ostium bursae broad, protected by a tubular sclerite; cingulum a large sclerotic tube, if developed; ductus seminalis anterior, extending from before cingulum; signum a minutely scobinate plate.

Bionomy: Larve feed in spun leaves of *Salsola*; one generation yearly.

Early stages unknown.

Distribution: Palaearctic Central Asia; known of 3 species.

Comments. Systematic position uncertain. KUZNETSOV (1978) placed it before *Epinotia* probably on basis of a well developed, rigid uncus. The structure of the valva resembles rather that in the genera close to *Thiodia*. The female genitalia are quite distinct.

Eriopsela Guenée

Eripsela Guenée, 1845, Annls Soc. ent. Fr., (2) **3**: 163. Type-sp.: [*Tortrix*] *quadrana* Hübner, [1813] — by subs. design. (Desmarest, 1857 in Chenu, Encycl. Hist. nat. Papillons. nocturnes: 223; Fernald, 1908, Genera *Tortricidae*: 30).

Venation: In forewing all veins separate, *M* at most traceable; in hindwing $m_3 - cu_1$ stalked. Sexual dimorphism distinct, expressed in size and coloration.

Male genitalia (Fig. 147): Uncus vestigial or completely reduced; socius a broad, drooping hairy lobe, often with very short free end; tuba analis membranous, connected with tegumen by means of weak transverse bands. Basal process usually simple; basal cavity well developed, with posterior edge simple, naked in dorsal third; angle of sacculus distinct; neck very short; cucullus broad, with well developed ventral angle and often with subventral or caudal prominence or process, ventro-anterior portion of cucullus usually naked. Aedeagus simple or provided with ventral process or dents; caulis long, expanding posteriorly; cornuti a few non-deciduous spines.

Female genitalia (Figs 451, 452): Sterigma strong; postvaginal plate weakly concave at ostium bursae; colliculum provided with inner sclerite fused with cingulum and connected with sterigma. Ductus seminalis median, originating laterally; signum present.

Early stages unknown.

Bionomy: One, rarely two generations a year. Hibernation in larval stage; larvae oligophagous feeding on various shrubs as *Solidago*, *Succissa* etc.

Distribution: Palaearctic; the areals are little known in majority of species; *E. quadrana* (Hübner) is transpalaearctic. About 10 species described.

Comments. The systematic position of this genus is rather unclear; its supposed autapomorphy is the shape of the valva. *Eriopsela* shows some similarities both with *Salsolicola* and *Thiodia*, but no synapomorphy of those genera was found.

Thiodia Hübner

Thiodia Hübner, [1825], Verz. bekannter Schmett.: 391. Type-sp.: [*Tortrix*] *citrana* Hübner, [1799] — by subs. design. (Walsingham, 1895, Proc. zool. Soc. London, **1895**: 125).

Botropteryx Caradja, 1916, Dt. ent. Z. Iris, **30**: Type-sp.: *Grapholitha sulphurana* Christoph, 1888 — by orig. design.

Gypsonomoides Obraztsov, 1946, Z. wien. Ent. Ges., **30** (1945): 35. Type-sp.: *Paedisca delitana* Fischer Roeslerstamm, 1840 = *Tortrix trochillana* Frölich, 1828 — design. by monot.

Foveifera Obraztsov, 1946, Z. wien. Ent. Ges., **30** (1945): 40. Type-sp.: [*Tortrix*] *hastana* Hübner, [1799] = *Tortrix (Lophoderus) torridana* Lederer, 1859 — by orig. design.

Venation: In forewing all veins separate, inner veins of median cell absent; in hindwing $m_3 - cu_1$ stalked.

Scent organs: A rounded convexity clothed with scales at furcation of anal

veins in male forewing. A pair of weak, rounded pockets in membrane between sternites 6—7 in female *(citrana)*.

Male genitalia (Figs 149—153): Uncus present, more or less elongate, exceptionally bifid; socius short, with weak free lobe, or vestigial; tuba analis membranous, provided with slender lateral sclerites. Basal cavity usually long, with posterior edge simple or convex, hairy or spined, in some species a lobe or a group of spines on an atrophying prominence subdorsally; neck short or indistinct, naked or armed with a row of spines extending from angle of cucullus; the latter often more or less expanding ventrally or ventro-posteriorly; a similar lobe representing probably the end part of sacculus may extend from beyond cucullus; angle of sacculus in several species distinct, or extending posteriorly. Aedeagus simple, or provided with thorns or processes. Musculature (KUZNETSOV & STEKOLNIKOV, 1973 — *citrana*): m_5 originating in lower half of caulis.

Female genitalia (Fig. 453): Ovipositor short, or telescopical; apophyses strong; sterigma a cup-shaped, often bulbous sclerite expanding dorso-posteriorly; colliculum variable, provided with inner sclerite, partially membranous; ductus seminalis anteriorly to the latter; two signa present. Subgenital sternite strong, subtrangular.

Early stages: SWATSCHEK (1958) based his diagnosis on chaetotaxy of the type-species only.

Bionomy: One generation yearly; hibernate last instar larva *(citrana)* that feeds on inflorescences of *Compositae*; pupation on the ground in cocoon.

Distribution: Palaearctic subregion; the type-species is transpalaearctic (not recorded from N. Africa and Japan), areals of other species are much smaller. Ca 20 species described.

Comments. The supposed autapomorphy of *Thiodia* is a presence of male scent organ. The valva is similar to that in *Eriopsela* but is more specialized, however, showing a similar tendency to develope the distal prominences. KUZNETSOV (1978) treats *Gypsonomoides* as a subgenus of *Thiodia*. The only difference between them is a presence of a minute sclerotic lobe situated above the angle of the sacculus in *Gypsonomoides*.

Makivora OKU

Makivora OKU, 1979, Appl. Ent. Zool., **14** (4): 367. Type-sp.: *Makivora hagiyai* OKU, 1979 — design. by monot.

Venation: In forewing all veins separate, inner veins of cell not developed; *pcu* vestigial. In hindwing all veins separate, $rr - m_1$ strongly approximated basally.

Scent organs: A grove in male forewing in median cell, postbasally; hair pencil partly concealed in anal fold of hindwing (the fold extending distinctly beyond anal part of wing); costal fold of forewing absent. Scape of antenna strongly enlarged; postbasal notch present.

Male genitalia (Fig. 154): Uncus small, bifid; socius drooping, haired. Valva elongate; basal cavity fairly short; angle of sacculus distinct; neck ill-defined; cucullus very short, with ventral process; spines of sacculus situated mainly terminally; cornuti, a bunch of deciduous spines.

Female genitalia (Fig. 454): Sterigma cup-shaped; cingulum submedian, large; two inequally large signa with weak basal broadenings in corpus bursae.

Early stages unknown.

Bionomy: Probably polivoltine. Larvae in fruits of *Podocarpus*, where hibernate.

Distribution: Japan (Honsyu). Monotypical.

Comments. Very close, or even congeneric, with *Thiodia* from which it differs in having anal fold of the hindwing and postbasal notch of the antenna. The wing scent organ is also differently situated, however, identical with that in *Thiodia*.

Thiodiodes Obraztsov

Thiodiodes Obraztsov, 1964, Tijdschr. Ent., **107** (1): 24. Type-sp.: *Grapholitha seeboldi* Rössler, 1877 — by orig. design.

Venation: In forewing chorda originating in mid-way between $r_1 - r_2$, reaching base of r_5; M absent; m_3 approximated to cu_1 basally and posteriorly. In hindwing $m_3 - cu_1$ approximated at base.

Male genitalia (Fig. 155): Tegumen slender, expanding terminally to form a short prominence; socius drooping, small, scarcely haired. Valva long, slightly bent ventro-terminally; basal process inner, simple; basal cavity short; angle of sacculus atrophied; cucullus not differentiated; spines of valva irregularly distributed, not reaching basal cavity; innumerous hairs on membrane and a minute fold beyond the latter. Aedeagus simple; one short cornutus in vesica.

Female genitalia (Fig. 455): Sterigma small, convex posteriorly; ostium median; colliculum very short, sclerotic; ductus seminalis posterior; signum missing.

Early stages and bionomy unknown.

Distribution: Spain and France only.

Comments. The type-species is unknown to me thus I am placing this genus according to the original interpretation. Its supposed autapomorphies are the shape of the valva and the distribution of its spines.

Asketria Falkovitsh

Asketria Falkovitsh, 1964, Trudy zool. Inst. Leningr., **34**: 270. Type-sp.: *Asketria lepta* Falkovitsh, 1964 — by orig. design.

Venation: All veins separate.

Male genitalia (Figs 156, 157): Uncus strongly sclerotized, bifurcate apically,

situated on elongate distal portion of tegumen; socius sclerotic, scarcely hairy; tuba analis membranous. Basal cavity of valva long; angle of sacculus in type-species distinct; cucullus elongate, bristled, with spines situated in its anterior part, ventrally; basal process atrophied. Aedeagus simple; two non-deciduous cornuti in vesica.

Female genitalia unknown to me.

Early stages unknown.

Bionomy: Larva of *A. cervinana* (CARADJA) feeds on *Atraphaxis*.

Distribution: Palaearctic subregion from Caucasus and Asia Minor to Amur territory and China; bound with arrid areas. Two species known.

Comments. The systematic position of this genus is unclear; KUZNETSOV (1978) placed it beyond *Thiodia* and included *Biuncaria* as its subgenus. Its supposed autapomorphy is the structure of the distal part of the tegumen.

Rhopobota LEDERER

Rhopobota LEDERER, 1859, Wien. ent. Mschr., **3**: 124, 148, 366. Type-sp.: [*Tortrix*] *naevana* HÜBNER, [1817] — design. by monot.

Erinaea MEYRICK, 1907, J. Bombay nat. Hist. Soc., **18**: 141. Type-sp.: *Erinaea chlorantha* MEYRICK, 1907 = *Teras verdifer* HAMPSON, 1891 — design. by monot. Oriental.

Norma HEINRICH, 1923, ibid.: 191. Type-sp.: *Epinotia dietziana* KEARFOTT, 1907 — orig. design. Nearctic.

Kundyra HEINRICH, 1923, ibid.: 192. Type-sp.: *Kundyra finitimana* HEINRICH, 1923 — by orig. design. Nearctic.

Eumarissa CLARKE, 1976, Insects of Micronesia, **9** (1): 39. Type-sp.: *Eumarissa leucognoma* CLARKE, 1976 — by orig. design. Australian.

Venation: In forewing chorda extending from 1/3 distance $r_1 - r_2$ to mid-distance $r_5 - m_1$, if preserved; M to base of m_3 or cu_1. In hindwing m_2 more or less approximated to m_3; m_3—cu_1 stalked. Sexual dimorphism usually slight, in *Rh. stagnana* ([DENIS & SCHIFFERMÜLLER]) forewing in female much slenderer than in male.

Scent organs not developed, except for area of specialized scales on reverse of male hindwing of *naevana*.

Male genitalia (Figs 158, 161): Tegumen fairly broad, rounded apically, without trace of uncus but with a pair of sublateral processes; socius fused with base of tuba analis or its junctures with tegumen at least laterally, drooping, haired, or, as in type-species, hairy part situated at top of lateral process; in the latter case the socii may fuse medially and their basal sclerites are very long. Basal cavity long, with posterior edge convex, provided with sharp prominences or a process originating usually at its ventral part; angle of sacculus and neck atrophying or absent; shape of cucullus variable, its caudal edge simple or prominent and spined; a row of spines along ventral edge of valva. Aedeagus simple; caulis broad, forming lateral lobes near aedeagus; cornuti of both types. Musculature (KUZNETSOV & STEKOLNIKOV, 1977 — of *naevana*): muscle 1

lateral, strongly developed; m_2 from top part of tegumen to end of basal process of valva; m_5 originating in ventral half of caulis, inserting ventrally in the valva, reaching end of its basal cavity.

Female genitalia (Figs 456—460): Sterigma usually small, expanding terminally, accompanied with minute posterior lobes or scobinate patches, or cup -shaped; cingulum varying in size and shapes; ductus seminalis submedian or posterior, originating before cingulum or in it; large bifid sclerite situated in distal part of corpus bursae in majority of species; two rather small, slender signa present. Subgenital sternite more or less incised in middle posteriorly, often secondarily fusing with sterigma.

Early stages; Diagnosis by SWATSCHEK (1958) is based on chaetotaxy of 4 European species.

Bionomy: One or two generations yearly; hibernation in egg stage; larvae feed in leaves, twigs and flowers of various plants, some species being polyphagous (e. g. *naevana* on *Vaccinium*, *Prunus*, *Crataegus*).

Distribution: The genus is repartited in the Holarctic, Oriental and Australian regions. Of ca 30 known species about 15 are Palaearctic. The species have fairly wide areals but only one is transpalaearctic. The genus is revided by BROWN (1983).

Comments. The supposed autapomorphies of this genus are the presence of the pair of the processes of the top part of tegumen and sclerite of the corpus bursae (also its shape and situation). In the recent literature several species have been placed in *Griselda* which is a synonym of *Epinotia*. BROWN (1983) synonymized *Norma*, *Kundyra* and *Eumarissa* with *Rhopobota* the type-species of which are known to me of the literature only. I am following the above point of view and shall reexamine those taxa in the following parts of this series.

Metacosma KUZNETSOV

Metacosma KUZNETSOV, 1985, Vestn. Zool., **1985** (1): 3. Type-sp.: *Metacosma impolitana* KUZNETSOV, 1985 — by orig. design.

Venation as in *Spilonota*, but in forewing $r_4 - r_5$ strongly approximate or connate, the latter to apex. In hindwing $m_3 - cu_1$ well separate.

Male genitalia (Fig. 162): Tegumen short, broad; uncus small, hairy, indistinctly limited basally; pedunculus slender; socius a weak, hairy lobe. Angle of sacculus indistinct, that of cucullus weak; basal process atrophied; ventral portion of valva bristled, a bristled band extending from beyond middle reaching costa; apical part with a slender lobe, bristled, bent anterad; caudal edge of cucullus irregularly convex, armed with stout spines. Aedeagus simple; caulis strong.

Female genitalia (Fig. 461): Sterigma atrophying, coalescent with distal edge of subgenital sternite; the latter subdivided into pair of lateral sclerites and subtriangular median portion forming a posterior lobe overlaping ostium

bursae. Terminal part of ductus bursae cup-shaped, rather weakly sclerotized, probably representing a colliculum; cingulum reaching middle of ductus bursae; ductus seminalis ventral, situated in incision of the latter; pair of signa developed.

Early stages and bionomy unknown.

Distribution: South Primore (Far East).

Comments. Originally compared with *Spilonota* to which it is very similar in the female genitalia, especially in the structure of the subgenital sternite and its fusion with the ostium area. The male genitalia reminds those in *Rhopobota* especially as concerns the shape of the valva. Provisionally I am placing *Metacosma* near the mentioned genus.

Noduliferola Kuznetsov

Noduliferola Kuznetsov, 1973, Ènt. Obozr., **52** (3): 635. Type-sp.: *Noduliferola obstrusa* Kuznetsov, 1973 — by orig. design.

Venation as in *Gephyroneura* but transverse vein between basal parts of the hindwing $sc-rr$ absent as originally mentioned.

Scent organ: Costal fold in male forewing developed; no anal fold in hindwing. Long hair like scales situated in lateral membrane in a pocket like concavity near genitalia.

Male genitalia (Fig. 166): Tegumen slender, tapering apically; uncus wanting; socius marginal, slender, minutely bristled. Neck of valva very short; angle of sacculus weak; basal cavity shallow with distal edge delicately bristled; cucullus bilobed, inner lobe hairy, armed with ventral cluster of spines situated near ventral angle, accompanied by two longer spines extending from its ventral area extending dorsally; outer lobe naked, extending distally, subtriangular; basal process long, simple. Aedeagus and cornuti of *Eucosma* type.

Female genitalia, early stages and bionomy unknown.

Distribution: East China: Prov. Kiangsu.

Comments. This monotypical genus was originally compared with *Gephyroneura*. Unknown to me.

Assulella Kuznetsov

Assuelella Kuznetsov, 1973, Ènt. Obozr., **52** (3): 691. Type-sp.: *Eucosma litigiosa* Meyrick, 1912 — by orig. design. Oriental.

Venation: In forewing chorda close to r stem, extending from beyond mid-distance r_1-r_2 to base of short stalked r_4-r_5 or to mid-way r_4-r_5 if separate; M approaching basal third of radial stem, reaching m_3; m_3-cu_1 connate, pcu vestigial. In hindwing $rr-m_1$ closely approximated in basal third; m_3-cu_1 connate.

Male genitalia (Fig. 163): Tegumen very broad; pedunculus slender; uncus

very broad, short, with two sublateral lobes from which rows of small hairs extend towards latero-posterior corners of tegumen; socius rounded apically; lateral folds of tegumen extending anteriorly towards subscaphium; the latter forming a pair of long, lateral, pointed sclerites. Valva long; basal cavity also long, directed towards angle of sacculus; the latter occasionally producing a short process; neck long, hairy or bristled; cucullus semiovate, spined, with group of long outer spines extending from external lobe; pollex minute, accompanied by other short, delicate spines. Aedeagus slender; caulis long; cornuti, a bunch of deciduous spines.

Female genitalia (after DIAKONOFF, 1983): Sterigma short, fused with distal edge of subgenital sternite, convex posteriorly; ostium bursae protected by a short sclerite, or sterigma vestigial, having a form of a posterior margin of the ostium sclerite (?colliculum); ductus bursae slender; ductus seminalis originating beyond corpus bursae; pair of thorn like signa present, posterior signum situated near base of ductus bursae, provided with elongate basal plate.

Early stages and bionomy unknown.

Distribution: Known of Oriental region; in this subregion one species found; 7 species known to this date.

Comments. Originally compared with *Peridaedala* MEYRICK ("from which it differs in venation and lack of costal fold; scape of antenna swallen"). DIAKONOFF (1983) suggests its close connection with *Hermenias* MEYRICK group of genera. Its supposed autapomorphies are the shapes of the uncus, sclerites of tuba analis and the valva complex. The female genitalia are known to me from a photography in DIAKONOFF'S work only. *A. optabilana* KUZNETSOV from South Primore is not included in the present redescription.

Spilonota STEPHENS

Spilonota STEPHENS, 1829, Syst. Cat. Br. Insects, **2**: 173. Type-sp.: [*Tortrix*] *comitana* HÜBNER, [1799] = *Tortrix ocellana* [DENIS & SCHIFFERMÜLLER], 1775 — by subs. design. (CURTIS, 1835, Br. Ent., 12, expl. lp. 551).

Tmetocera LEDERER, 1859, Eien. ent. Mschr., **3**: 124, 367. Type-sp.: *Tortrix ocellana* [DENIS & SCHIFFERMÜLLER], 1775 — design. by monot.

Venation: In forewing chorda extending from 2/3 r_1-r_2 to mid-distance r_5-m_1; M to before base of m_3. In hindwing m_3-cu_1 stalked. All other veins separate.

Scent organ: A notch in basal joint of male antenna.

Male genitalia (Figs 167, 168): Tegumen high, slightly prominent apically; uncus atrophied; socius tapering apically, well sclerotized along outer edge; tuba analis simple. Basal process of valva small, inner; basal cavity large, ovate; angle of sacculus weak; neck slender, swung; cucullus small, transversely ovate, weakly expanding dorsally, strongly so ventrally where a distinct prominence armed with very strong pollex present. Aedeagus simple; caulis very large, broad, anellus emarginate beyond zone; numerous deciduous cornuti in vesica.

Female genitalia (Figs 462—464): Sterigma small, fused with complicate subgenital sternite, producing into a pair of subterminal lobes posteriorly, followed by a sclerite situated at 8th segment; ostium bursae area protected by a dorsal sclerite; colliculum with another, ventral sclerite; cingulum long with ductus seminalis anterior, originating ventrally; two signa present.

Early stages: SWATSCHEK (1958) provided a diagnosis based on two European species.

Bionomy: One generation yearly; hibernation in third larval instar; larvae utilize various plant families, also conifers, spinning the leaves; *ocellana* is polyphagous.

Distribution: Holarctic and Oriental regions; about 15 species described; *ocellana* and *laricana* are holarctic in distribution, other species are limited to smaller areals.

Comments. The supposed autapomorphies of *Spilonota* are the shapes of the sterigma and the subgenital sternite, the structure of the end part of the valva and probably that of the socius and the caulis. No certain synapomorphy realized. KUZNETSOV (1978) placed it at the beginning of his system, near *Gibbifera*, whilst in my system (RAZOWSKI, 1987) *Spilonota* is given a quite opposite position.

Rhopalovalva KUZNETSOV

Rhopalovalva KUZNETSOV, 1964, Ènt. Obozr., **43** (4): 883. Type-sp.: *Eudemis lascivana* CHRISTOPH, 1881 — by orig. design.

Venation: In forewing chorda extends from beyond mid-distance $r_1 - r_2$ to base of r_4, the latter stalked with r_5 to middle; M very weak; $m_3 - cu_1$ curved. In hindwing all veins separate except for $m_3 - cu_1$ which are stalked to middle.

Male genitalia (Figs 169, 170): Pedunculus with long anterior apodeme; distal part of tegumen variable in shape; uncus slender, simple; socius drooping, hairy. Valva broad anteriorly; neck very slender, naked; cucullus ovate, spined, with short marginal spines and large, often capitate pollex; basal cavity broad; angle of sacculus distinct, provided with a hairy lobe directed dorsad. Aedeagus simple; caulis long; cornuti usually absent, weak if developed. Musculature (after KUZNETSOV & STEKOLNIKOV, 1977 — *lascivana*): Muscle 1 long, reaching base of uncus, ventrally; m_2 inserting on end part of basal process of valva, m_4 on its neck; m_5 subdorsal, m_6 on opposite part of caulis entering end part of sacculus.

Female genitalia (Fig. 465): Sterigma a very weakly sclerotized, scobinate plate surrounding ostium bursae the anterior edge of which is very thin, sclerotic; ductus bursae slender, in distal part marked with ventral sclerite; ductus seminalis extending from base of ductus bursae; pair of funnel like, delicate signa in corpus bursae.

Early stages and bionomy unknown.

Distribution: Palaearctic Eastern Asia incl. Japan. Four species known.

Comments. Originally placed between *Acroclita* and *Rhopobota*. Its supposed autapomorphies are the presence of a hairy lobe situated at the end of the sacculus and the presence and the shape of the pollex.

Eucoenogenes MEYRICK

Eucoenogenes MEYRICK, 1939, Trans. ent. Soc. London, **89** (1938): 49. Type-sp.: *Caenogenes melanancalis* MEYRICK, 1937 — heredit. Replacement name for *Caenogenes* MEYRICK, 1937.

Caenogenes MEYRICK, 1937, Exot. *Microlepid.*, **5**: 159. Type-sp.: *Caenogenes melanancalis* MEYRICK, 1937 — design. by monot. Oriental.

Venation: In forewing chorda from 2/3 distance $r_1 - r_2$ to base of r_5; *M* indistinct, terminating before base of m_3, *pcu* atrophying. In hindwing $rr - m_1$ approximated basally; $m_3 - cu_1$ stalked to middle.

Male genitalia (Fig. 171): Uncus broad, short, bifid terminally; socius drooping, hairy; tuba analis provided with lateral sclerites. Valva broad anteriorly; neck distinct, spined or bristled; angle of sacculus well developed, provided with hairy lobe from below which extend strong spines and bristles; posterior edge of basal cavity bristled; cucullus subtriangular, spined, with marginal spines strong but short. Aedeagus simple, long; caulis fairly long; henion anterior connected membranously with tuba analis; cornuti deciduous.

Female genitalia (Fig. 466): Sterigma concave, with short lamella antevaginalis and large lamella postvaginalis, membranous at ostium bursae, with dorsal wall producing anteriorly; ostium protected by very weak, short sclerite; one cingulum at base of ductus bursae, the other very large in anteromedian part of the ductus; ductus seminalis anterior, originating ventrally, rigid in basal portion; two strong, plesiomorphic signa developed.

Early stages unknown.

Bionomy: On Hokkaido one generation yearly, in the south more generations; hibernation in larval stage; larvae feed in seeds of *Castanea* being occasionally also the pests of *Arbutus* and *Fragaria*.

Distribution: Of 4 known species 3 are Oriental and one Palaearctic (Japan, China: North Yunnan).

Comments. This genus is closely related to *Hermenias* MEYRICK; the only difference is a presence of the bristled lobe situated at the end of the basal cavity of the valva and a more specialized area of the angle of the sacculus being armed with very strong spines. In *Hermenias* occur in that part at most long, thick setae, however, identically arranged as in *Eucoenogenes*. Moreover, in the mentioned genus that area shows a rather distinct variation and a presence of the spines can be of a specific value only. Unfortunately the type-species of *Eucoenogenes* is unknown to me.

Biuncaria KUZNETSOV

Biuncaria KUZNETSOV, 1972, Nasekomye Mongolii, **1**: 715. Type-sp.: *Grapholitha kenteana* STAUDINGER, 1892 — by orig. design.

Venation: In forewing chorda originating before mid-distance $r_1 - r_2$, terminating at base of r_2; *pcu* vestigial. In hindwing $sc - rr$ strongly approximated basally; $m_3 - cu_1$ stalked to beyond middle.

Male genitalia (Fig. 172): Uncus reduced to a weak dorso-terminal hairy prominence; socius large, spined. Basal cavity of valva short; angle of sacculus distinct, hairy; row of hairs parallelly behind distal edge of basal cavity; cucullus elongate, subtriangular, convex caudally, spined along caudal and ventral edges; spines of cucullus in a row almost reaching group *A*. Cornuti, two non-deciduous spines.

Female genitalia (Fig. 467): Sterigma broad, elliptic plate; ostium bursae subsquare; colliculum long, sclerotic; two inequally sized signa present.

Early stages and bionomy unknown.

Distribution: Central Asia; Mongolia, Amur-Zeja Highland etc. Two species known to date.

Comments. Originally described as a distinct genus, then (KUZNETSOV, 1972) included in *Asketria* as its subgenus. The supposed autapomorphy of *Biuncaria* is the shape of the rudimentary, hairy uncus. Systematic position is rather doubtful.

Coenobiodes KUZNETSOV

Coenobiodes KUZNETSOV, 1973, Ènt. Obozr., **52**: 687. Type-sp.: *Coenobiodes acceptana* KUZNETSOV, 1973 — by orig. design.

Venation: Chorda extending from 2/3 of $r_1 - r_2$, terminating at base of r_5; *M* weak but complete, reaching mid-way between $m_2 - m_3$, *pcu* vestigial. In hindwing all veins separate except for $m_3 - cu_1$ which are stalked to 1/3.

Male genitalia (Fig. 173): Uncus short, terminating in a pair of lateral tips; socius long, drooping; subscaphium atrophied. Neck of valva naked; angle of sacculus distinct, with a lobe directed dorsally, hairy; group *A* consisting of hairs; cucullus of eucosmine type, with dense outer spines. Aedeagus as in *Eucosma*.

Female genitalia (Figs 468, 469): Sterigma distinctly sclerotized, with postvaginal and antevaginal plates unified, forming lateral lobes anteriorly and posteriorly; ductus bursae broad in anterior half; ductus seminalis median, slander; signum small.

Early stages unknown.

Distribution: Japan.

Comments. Originally compared with *Eucoenogenes* from which it differs

in having a lobe at the end of the sacculus, slender socius and in absence of spines on the neck of the valva and angle of the sacculus. In 1976 KUZNETSOV included in this genus *C. abietiella* (MATSUMURA) which, however, shows some differences to the type species and is not treated in the above diagnosis.

Acroclita LEDERER

Acroclita LEDERER, 1859, Wien. ent. Mschr., **3**: 123, 329. Type-sp.: *Paedisca arctana* STAUDINGER, 1859 = *Semasia consequana* HERRICH-SCHÄFFER, 1851 — design. by monot. *Acrolita* FERNALD, 1908, Genera *Tortricidae*: 59 — incorrect subs. spelling.

Venation: In forewing $r_4 - r_5$ long stalked; in hindwing $m_3 - cu_1$ connate or short stalked.

Male genitalia (Fig. 174): Uncus very short, scarcely haired; socius large, hairy; subscaphium weak. Basal cavity of valva short; angle of sacculus rounded, large; neck slender; cucullus broad, expanding ventro-posteriorly, bristled, armed with outer strong spine. Aedeagus simple; caulis large; henion short, broad; group of deciduous cornuti in vesica present.

Female genitalia (Figs 470, 471): Eighth tergite large, apophyses posteriores strongly enlarged distally, connected with posterior sac of postsegmental membrane. Sterigma consisting of a slender anterior portion and much larger postvaginal plate; ductus bursae membranous distally, with very long cingulum; ductus seminalis originating near middle of the latter, ventrally. Two large signa not expanding basally.

Early stages: Diagnosis basad on chaetotaxy is given by SWATSCHEK (1958).

Bionomy: Larva lives in spun flowers and seeds of *Euphorbiaceae* and hibernates.

Distribution: Europe; one species known.

Comments. The systematic position is not clear. KUZNETSOV (1978) placed it at the end of his system of *Eucosmina*. The only supposed autapomorphy is the shape of the valva, especially the cucullus. The position of the spine of the cucullus may prove convergent.

Strepsicrates MEYRICK

Strepsicrates MEYRICK, 1888, Trans. Proc. N. Z. Inst., **20** (1887): 73. Type-sp.: *Sciaphila ejectana* WALKER, 1863 — hereditarius; replacement name for *Strepsiceros* MEYRICK.

Strepsiceros MEYRICK, 1881, Proc. Linn. Soc. N. S. W., **6**: 678. Type-sp. *Sciaphila ejectana* WALKER, 1863 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 44); nom. preoce. by *Strepsiceros* H. SMITH, *Mammalia*. Australian.

Phthinolophus DYAR, 1903, Proc. ent. Soc. Wash., **5**: 307. Type-sp.: *Phthinolophus indentatus* DYAR, 1903 — design. by monot. Nearctic.

Phthenolophus BUSCK, 1910, ibid., **12**: 132. Incorrect subs. spell. of *Phthinolophus* DYAR.

Venation not examined.

Male genitalia (Fig. 164): Tegumen with slender pedunculi and weak apical

prominence in middle, or with apical edge straight but always with lateral processes called by DIAKONOFF (1967) the uncus. That structure varies specifically from small, triangular sclerites to long, rigid processes, often hairy. Socius just below the latter, a small, membranous, hairy sack; tuba analis membranous, lateral linkages rigid, band like. Valva slender, with distinct neck and short sacculus marked with sharp process at ventral angle and with variably developed lobe armed with short spine above it, being probably a kind of pollex; disc spined, densely so beyond basal cavity and on cucullus. Aedeagus simple; a bunch of spiniform cornuti in vesica.

Female genitalia (Fig. 472): Sterigma at least partially strongly sclerotized around ostium bursae, semimembranous or weakly sclerotized posteriorly, scobinate, concave. Ductus bursae fairly short; cingulum long, more or less distinctly swung, occasionally connected with ostium sclerite by means of a sclerotic band; ductus seminalis from cingulum or anteriorly to it, dorsal or dorsolateral; signum absent.

Bionomy: The larvae, probably polyphagous, live on *Myrtaceae* (e. g. *ejectana* on *Kunzea*, *Darwinia*, *Leptospermum* and *Psidium* — after DIAKONOFF, 1967). *S. coriariae*, however, was bread from *Comarum*, *Rosaceae*.

Distribution: The genus is known of a few species from Oceania, Australian, Oriental and Holarctic Regions. There is only single Palaearctic species, very closely related to *ejectana*, found in the Far East (USRR: Primorskij Krai, Japan: Honsyu); one species is Nearctic.

Comments. The identification of the apical structure of the tegumen remains unclear. The systematic position is doubtful; DIAKONOFF (1967) placed it before *Peridaedala* and I am following his interpretation, however, it does not seem satisfactory. This genus shows some characters common with Oriental genus *Hermenias* MEYRICK.

Peridaedala MEYRICK

Peridaedala MEYRICK, 1925, Exot. *Microlepid.*, 3: 139. Type-sp.: *Peridaedala hierograpta* MEYRICK, 1925 — design. by monot. Australian (New Guinea).

Venation: In forewing $r_4 - r_5$ stalked; $m_3 - cu_1$ approximate basally; inner veins of median cell missing; *pcu* completely atrophied. In hindwing $m_3 - cu_1$ stalked to before middle; $rr - m_1$ approximated to one another in anterior half, or stalked (in male).

Scent organ: Abdomen occasionally (*P. crastidochroa* DIAKONOFF, from N. Guinea) with lateral pencils of hair-like scales on segments 6 and 7, laterally. Costal fold in male present. In male of type-sp. flagellum strongly flattened dorsoventrally, provided with deep notch (after DIAKONOFF, 1953).

Male genitalia (Fig. 175): Uncus very broad, more or less concave apically, occasionally with lateral corners elongate, well sclerotized posteriorly or even emarginate, scarcely haired ventrally; socius rigid, haired, extending from basal

region of uncus, laterally; subscaphium distinctly sclerotized, forming a strong plate more or less incised distally, developing apical prominences or lobes. Basal cavity of valva fairly large; angle of sacculus developed, accompanied with a lobe extending from subventral area; neck of valva distinct, usually haired or spined; cucullus with well developed ventral (and often dorsal) prominence, hairy and spined. Aedeagus simple, broad basally; cornuti, a bunch of deciduous spines.

Female genitalia (Figs 473, 474): Sterigma cup-shaped, with usually ill-defined postvaginal structures forming simple plate or scobinate, weak sclerite or membrane; colliculum small, sclerotic, if developed; cingulum species specific, often anterior, more or less long, occasionally reaching postmedian portion of ductus bursae; ductus seminalis in Palaearctic species sublateral, situated near middle of the latter; signa, two nail-shaped, aciculate sclerites.

Early stages and bionomy unknown.

Distribution: Of about 15 known species one is East Palaearctic, the remaining species are known either of New Guinea or the Oriental region (mainly Philippine Islands).

Comments. The supposed autapomorphies of this genus are the structure of the ventral portion of the tuba analis and probably the socii. In Palaearctic *P. optabilana* (KUZNETSOV) there are two bunches of hair on dorsal surface of the uncus. DIAKONOFF (1953) supposed it was allied to *Hermenias* and was possibly derived from *Spilonota*. Its systematic position remains unclear; basing on some similarities in the structure of the valva and the socii I am placing it near *Acroclita*.

Gibbifera OBRAZTSOV

Gibbifera OBRAZTSOV, 1946, Z. wien. Ent. Ges., **30** (1945): 26, 35. Type-sp.: *Penthina simplana* FISCHER ROESLERSTAMM, 1835 — by orig. design. (as mentioned on p. 26, and not *Paedisca delitana* FISCHER ROESLERSTAMM, 1839 = *Tortrix trochillana* FRÖLICH, 1828 as mentioned on p. 35).

Venation: Chorda and median stem well developed, all veins separate except for hindwing $m_3 - cu_1$ stalked to middle. Costal fold absent.

Male genitalia (Figs 176, 177): Tegumen slender, high; uncus sclerotic, slender, expanding and weakly bifurcate apically, scarcely haired; socius ventrolateral, long, hairy, with fairly short free termination; lateral sclerites of tuba analis extending from broad lobes of tegumen, submedian. Angle of sacculus well expressed, naked; cucullus large, up-curved; pollex on slender prominence or process situated anteriorly to angle of cucullus; basal process of valva with distinct neck. Aedeagus simple; henion sclerotic; cornuti of deciduous type. Musculature (KUZNETSOV & STEKOLNIKOV, 1977 — *Gibberifera* [sic!] *mienshana* KUZNETSOV): m_2 to top of basal process of valva, m_4 inserting on its opposite prominence; m_4 to sacculus, originating dorsally on caulis.

Female genitalia (Figs 475, 476) with short ovipositor; sterigma short, broad, concave beyond middle, membranous near ostium bursae; anterior edge of the latter sclerotic, convex ventro-posteriorly; cingulum subterminal; ductus seminalis ventral, originating before cingulum; signa slender, broad basally. Subgenital sternite short.

Early stages: Diagnosis provided by SWATSCHEK (1958) is based on the type-species.

Bionomy: One generation a year; hibernation in pupal stage; larvae in spun leaves of *Populus*.

Distribution: The type-species is transpalaearctic and enters Oriental region, three other species are known from China.

Comments. The supposed autapomorphies of this genus are the shape of the valva especially that of the base of the pollex and probably the form of the membrane connecting upper parts of the basal processes of the valva. The systematic position of *Gibbifera* is not sufficiently explained; it shows some characters common with those in *Epinotia* (e. g. the shape of the cucullus, a rigid uncus) and most probably belongs in that evolutionary branch.

Epinotia HÜBNER

Epinotia HÜBNER, [1825], Verz. bekannter Schmett.: 377. Type-sp.: *Pyralis stroemiana* FABRICIUS, 1781 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 8).

Astatia HÜBNER, [1825], ibid.: 377. Type-sp.: [*Tortrix*] *parmatana* HÜBNER, [1817] = *Phalaena Tortrix solandriana* LINNAEUS, 1758 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 7, 54).

Evetria HÜBNER, [1825], ibid.: 378. Type-sp.: [*Phalaena*] *tedella* CLERCK, 1759 — by subs. design (FERNALD, 1908, op. cit.: 8).

Asthenia HÜBNER, [1825], ibid.: 381. Type-sp.: [*Tortrix*] *pygmaeana* HÜBNER, [1796—99] — by subs. design. (FERNALD, 1908, op. cit.: 10, 57).

Acalla HÜBNER, [1825], ibid.: 385. Type-sp.: [*Tortrix*] *ophthalmicana* HÜBNER, [1796—99] = *Pyralis maculana* FABRICIUS, 1775 — by subs. design. (FERNALD, 1908, op. cit.: 12).

Panoplia HÜBNER, [1825], ibid.: 393. Type-sp.: [*Tortrix*] *angustana* HÜBNER, [1813] = *Phalaena Tortrix cruciana* LINNAEUS, 1758 — by subs. design. (FERNALD, 1908, op. cit.; 17).

Coccyx TREITSCHKE, 1829, Schmett. Eur., **7**: 230. Type-sp.: *Tortrix comitana* [DENIS & SCHIFFERMÜLLER], 1775 = [*Phalaena*] *tedella* CLERCK, 1759 — by subs. design. (FERNALD, 1908, op. cit.: 19).

Steganoptycha STEPHENS, 1829, Syst. Cat. Br. Insects, **2**: 176. Type-sp.: *Pyralis boeberana* FABRICIUS, 1787 = [*Phalaena*] *nisella* CLERCK, 1759 — by subs. design. (WESTWOOD, 1840, Introd. mod. Classif. Insects, **2**: Synopsis Genera Br. Insects: 107).

Poecilochroma STEPHENS, 1829, ibid.: 183. Type-sp.: *Phalaena Tortrix solandriana* LINNAEUS, 1758 — by subs. design. (WESTWOOD, 1840, op. cit.: 108).

Paedisca TREITSCHKE, 1830, Schmett. Eur., **8**: 188. Type-sp.: [*Tortrix*] *parmatana* HÜBNER, [1817] = *Phalaena Tortrix solandriana* LINNAEUS, 1758 — by subs. design. (DUPONCHEL, 1834, Annls Soc. ent. Fr., **3**: 447; secondary designation: CURTIS, 1835, Br. Ent., expl. pl. 571 — *Phalaena Tortrix profundana* [DENIS & SCKIFFERMÜLLER], 1775).

Paragrapha SODOFFSKY, 1837, Bull. Soc. Naturalistes Moscou, **6**: 92, 97. Type-sp.: [*Tortrix*] *parmatana* HÜBNER, [1817] = *Phalaena Tortrix solandriana* LINNAEUS, 1758 — hereditarius. Replacement name for *Paedisca* TREITSCHKE, 1830.

Phlaeodes GUENÉE, 1845, Annls Soc. ent. Fr., (2) **3**: 172. Type-sp.: [*Tortrix*] *frutetana* HÜBNER, [1796—99] = *Tortrix tetraquetrana* HAWORTH, [1811] — by subs. design. (DESMAREST, 1857 [in:] CHENU, Encycl. Hist. nat. Papillons noct.: 224, as *frutelata* [sic!]; FERNALD, 1908, Genera *Tortricidae*: 31).

Hypermecia GUENÉE, 1845, ibid.: 173. Type-sp.: [*Tortrix*] *angustana* HÜBNER, [1813] = *Phalaena Tortrix cruciana* LINNAEUS, 1758 — by subs. design. (DESMAREST, 1857, op. cit.: 224; secondary design.: FERNALD, 1908, Genera *Tortricidae*: 31 — *Hypermecia viminana* GUENÉE, 1845 = *Phalaena Tortrix cruciana* LINNAEUS, 1758).

Cartella GUENÉE, 1845, ibid.: 174. Type-sp.: *Tortrix cretaceana* FRÖLICH, 1828 = *Tortrix bilunana* HAWORTH, [1811] — design. by monot. *Curtella* STAINTON, 1859, Man. Br. Butterflies Moths, **2**: 201— incorrect subs. spelling.

Pamplusia GUENÉE, 1845, ibid.: 180. Type-sp.: *Coccyx monticolana* DUPONCHEL, 1843 = *Tortrix mercuriana* FRÖLICH, 1828 — design. by monot.

Steganoptera HERRICH-SCHÄFFER, 1851, Syst. Bearb. Schmett. Eur., **4**: 133. Incorrect subs. spelling of *Steganoptycha* STEPHENS, 1829.

Lithographia STEPHENS, 1852, List Specimens Br. Animals Colln Br. Mus., **10**: 32. Type-sp.: [*Phalaena*] *nisella* CLERCK, 1759 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 35).

Halonota STEPHENS, 1852, ibid.: 45. Type-sp.: *Phalaena Tortrix bimaculana* DONOVAN, 1808 = *Pyralis stroemiana* FABRICIUS, 1781 — by subs. design. (FERNALD, 1908, op. cit.: 35).

Catastega CLEMENS, 1861, Proc. ent. Soc. Philad., **1**: 86. Type-sp.: *Catastega timidella* CLEMENS, 1861 — by subs. design. (BUSCK, 1903, Proc. U. S. natn. Mus. **25**: 852). Nearctic.

Proteopteryx WALSINGHAM, 1879, Ill. Lepid. *Heterocera* Br. Mus., **4**: 68. Type-sp.: *Proteopteryx emarginana* WALSINGHAM, 1879 — by orig. design.

Neurasthenia PIERCE & METCALFE, 1922. Genitalia Br. *Tortricidae*: 65. Replacement name for *Asthenia* HÜBNER, [1825]. Type-sp.: [*Tortrix*] *pygmaeana* HÜBNER, [1796—99] — heredit.

Hamuligera OBRAZTSOV, 1946, Z. wien. ent. Ges., **30** (1945): 31. Type-sp.: *Phalaena Tortrix trimaculana* DONOVAN, 1806 = *Pyralis abbreviana* FABRICIUS, 1794 — design. by monot.

Griselda HEINRICH, 1923, Bull. U. S. natn. Mus., **123**: 186. Type-sp.: *Paedisca radicana* WALSINGHAM, 1879 = *Griselda radicana* HEINRICH, 1923 — by orig. design. Nearctic.

Venation: Chorda and *M* well preserved; in hindwing $m_3 - cu_1$ stalked to various degrees. In male forewing costal fold often developed.

Male genitalia (Figs 178—184): Tegumen broad; uncus broad, tapering posteriorly, bifid or bifurcate apically, in several species simple, hairy or bristled dorsally and laterally; socius usually subtriangular, more or less elongate, often reaching base of uncus, in some species well sclerotized, naked, or with basal hairs only, more frequently densely haired throughout; triangular sclerites variably developed, often coalescent with outer or inner parts of bases of socii. Henion distinctly sclerotized laterally, usually expanding towards tuba analis attaching to it laterally, membranous in median portions. Lateral edges of tuba analis in many species sclerotic, aciculate, in other species, however, completely membranous. Neck of valva in many species indistinct; cucullus often expanding dorso-terminally or (and) with well developed angle, marked with marginal spines; sacculus angulate or without angle; spines of sacculus in 2—3 groups often coalescent with anterior group if present, exceptionally spines of neck developed; basal cavity rather short. Aedeagus simple, tubular; caulis short in some species forming posterior prominences; cornuti, a bunch of deciduous spines. Musculature (KUZNETSOV & STEKOLNIKOV, 1973 — *crenana*): m_1 strong, reaching base of uncus, ventrally; m_2, m_4 well developed.

Female genitalia (Figs 477—482): Ovipositor short; anterior part of sterigma weak, postvaginal plate well developed, more or less elongate, concave at ostium bursae or beyond it, where membranous; in a few species lateral parts of sterigma expanding, rarely sterigma almost completely atrophied; ostium sclerite usually short; cingulum median; ductus seminalis originating before cingulum or in it, in majority of species subdorsally. Signa, two strong, more or less flattened funnels. Subgenital sternite with variably incised posterior edge, often with well developed submedian folds or lobes.

Early stages: SWATSCHEK (1958) provides a diagnosis based on chaetotaxy of 29 species and distinguishes some subgenera.

Bionomy: The species of *Epinotia* are univoltine; larvae feed in spun leaves and buds and are usually oligophagous. They utilize numerous plant families, mainly trees; hibernation in larval stage; pupae often in silken cocoons in the soi.

Distribution: Known of Holarctic, Oriental, Australian and Neotropical. regions. In this subregion about 100 species found.

Comments. The supposed autapomorphy of this genus is the structure of the henion. A tendency of fusion of the basal triangle and the socius leading to a direct connection between the henion and the socius is most probably of same importance. The genus was divided into several subgenera by HANNEMANN (1961) and SWATSCHEK (1958). These were: *Epinotia* s. str., *Hamuligera*, *Steganoptycha*, *Panoplia*, *Proteopteryx* and *Asthenia*. BRADLEY & all. (1979) distinguished *Asthenia*, *Hamuligera* and *Epinotia* and KUZNETSOV (1978) *Epinotia* and *Evetria*. The above systems were based on the differences in the structure of the male genitalia and the presence of the costal fold in the male forewing. SWATSCHEK utilized some additional larval characters. However, all those characters are either slight or convergent (e. g. the costal fold) and are inconstantly distributed within the genus. Thus I decided (RAZOWSKI, 1987) to sink all the subgenera of *Epinotia* and now am following that point of view.

Hikagehamakia OKU

Hikagehamakia OKU, 1974, Kontyû, **42** (1): 15. Type-sp.: *Hikagehamakia albiguttata* OKU, 1974 — by orig. design.

Venation: In forewing all veins separate; chorda originating in mid-distance between $r_1 - r_2$, terminating at r_5, M well dveloped, reaching base of m_2. In hindwing $m_3 - cu_1$ stalked to beyond middle.

Male genitalia (Fig. 185): Tegumen strong, rather broad terminally; uncus very strong, sclerotic, rounded apically, bristled; socius well sclerotized, curved, dorso- lateral, hairy; tuba analis sclerotized laterally. Neck of valva slender; ventral edge of sacculus convex, bristles above subventral fold of sacculus reaching posterior edge of basal cavity; cucullus rather short, strongly convex ventroanteriorly, spined. Aedeagus simple; bunch of cornuti in vesica present; henion median, membranous posteriorly.

Female genitalia (Fig. 485): Ovipositor elongate; apophyses posteriores

long; sterigma, small ovate plate forming a weak band anterior to ostium bursae, the latter protceted by ventral sclerite; ductus bursae rather short; cingulum incomplete, median; ductus seminalis from anterior part of cingulum dorsally. In allotype two signa found, in examined specimen one minute signum only.

Bionomy: Probably an univoltine species occurring in deciduous forests.

Distribution: Japan: Honsyu and Hokkaido.

Comments. This monobasic genus was originally compared with *Epinotia* and *Zeiraphera*, thus, agreeing with that opinion, I am placing it between those genera. Any autapomorphy found.

Zeiraphera TREITSCHKE

Zeiraphera TREITSCHKE, 1829, Schmett. Eur., 7: 231. Type-sp.: *Zeiraphera lichena* TREITSCHKE, 1829 = *Pyralis isertana* FABRICIUS, 1794 — by subs. design. (CURTIS, 1838, Br. Ent., 15, exp. pl. 711).

Venation as in *Epinotia*; costal fold absent.

Male genitalia (Figs. 186, 187): Uncus strongly reduced, represented by a weak apical convexity of the tegumen, often without any trace of transverse suture; socius, a broad, hairy lobe; tuba analis membranous with elongate basal sclerite; henion absent. Valva elongate, rather similar to that in many *Epinotia* species; basal process with distinct neck; sacculus delicately angulate or with atrophied angle; angle of cucullus weak; neck short, ill-defined, usually hairy; bristles of sacculus or weak spines may occur. Aedeagus simple; cornuti, a bunch of deciduous spines. Musculature: KUZNETSOV & STEKOLNIKOV (1977) illustrate the muscles of valva of *Z. arguta* (CHRISTOPH); m_2 inserts on top of basal process of valva, m_4 on whole posterior part of the latter, dorsally; m_5 ventro-medially on sacculus.

Female genitalia (Fig. 486): Ovipositor telescopical; apophyses long; eighth tergite partially membranous; sterigma strongly reduced, represented by aciculate patches of membrane situated beyond more or less elevated dorso-posterior part of ostium sclerite which also may be regarded as a part of sterigma; cingulum median or postmedian; ductus seminalis originating dorsally or laterally, anterior to cingulum. Signa strong. Subgenital sternite distinctly incised posteriorly, occasionally marked with submedian folds.

Early stages: SWATSCHEK (1958) provides a diagnosis based on 3 European species.

Bionomy: One generation yearly; hibernation in the egg stage; larvae feed in spun leaves both on conifers and deciduous trees; some species important economically.

Distribution: Holarctic genus; in Palaearctic subregion represented by ca 20 known species; some species are very widely distributed (*Z. ratzeburgiana* (SAXESEN), *Z. griseana* (HÜBNER)) being recorded of Holarctic region.

Comments. This genus is very closely related to *Epinotia* and shows similar reductions (of the uncus or henion). No autapomorphy is found.

Crocidosema Zeller

Crocidosema Zeller, 1847, Isis, **40**: 721. Type-sp.: *Crocidosema plebeiana* Zeller, 1847 — design. by monot. *Crocidosoma* Walker, 1863, List Specimens lepid. Insects Colln. Br. Mus., **37**: 279 — incorrect subs. spelling of *Crocidosema* Zeller.

Venation: Chorda and *M* well developed, two last radial veins originating closely to one another. In hindwing $rr-m_1$ approached anteriorly; m_3-cu_1 stalked.

Scent organ: A concavity with numerous hair like scales on upper side of male hindwing between veins *cu* and a_1.

Male genitalia (Figs 188—190): Uncus short; socius large, drooping, hairy; tuba analis small, membranous; henion uniformly sclerotized. Basal cavity of valva short, ovate; angle of sacculus distinct, provided with bristles; neck short, very slender; cucullus broad, bristled, provided with thin, outer pollex. Aedeagus simple; caulis long; cornuti, a bunch of deciduous spines.

Female genitalia (Figs 487, 488): Sterigma reduced to a median aciculate postvaginal patch; distal part of ductus bursae sclerotic except for the dorsal portion; cingulum long, folded; ductus seminalis extending from middle of the latter, dorsally; signa large. Subgenital sternite large, provided with postmedian lobes and with a weak terminal portion fused with ventro-posterior edge of the ostium sclerite.

Early stages: Chaetotaxy discussed by MacKay (1959).

Bionomy: Probably two generations yearly; hibernation in egg stage; larva polyphagous (on *Malva*, *Hibiscus*, *Crataegus* etc.) feeds in spun leaves; pupation in silken webb on the soil.

Distribution: Cosmopolitic. Two species in this subregion.

Comments. The structure of the scent organ and that of the lobes of the subgenital sternite are the supposed autapomorphies of this genus.

Phaneta Stephens

Phaneta Stephens, 1829, List Specimens Br. Animals Colln Br. Mus., **10**: 32. Type-sp.: *Cochylis pauperana* Duponchel, 1843 — design. by monot.

Astenodes Kuznetsov, 1966, Trudȳ zool. Inst., Leningr., **37**: 196. Type-sp.: *Astenodes bimaculana* Kuznetsov, 1966 — by orig. design.

Venation: Chorda originating in mid-distance between r_1-r_2. In hindwing m_3-cu_1 connate or short stalked; all other veins separate.

Male genitalia (Fig. 191): Uncus rudimentary; socius long, sclerotic, hairy along inner edge; neck of valva ill-defined; ventral portion of sacculus large; basal cavity large; basal process small. Vestiture as in *Eucosma*.

Female genitalia (Fig. 489): Basal parts of apophyses posteriores coalescent, accompanied by invaginations of postsegmental membrane. Sterigma simple,

of *Eucosma* type, followed by a pair of convex lobes; cingulum present; signa well developed.

Early stages unknown.

Bionomy: One generation yearly; larva in spun flowers and fruits of *Rosa*.

Distribution: Palaearctic subregion; two species known to date.

Comments. The supposed autapomorphies of *Phaneta* are the shape and lateral sclerotization of the socius and the structure of the ovipositor characterized with membranous lobes.

Pelochrista LEDERER

Pelochrista LEDERER, 1859, Wien. ent. Mschr., **3**: 331, 337. Type-sp.: *Paedisca mancipiana* MANN, 1858 — design. by monot.

Callimosema CLEMENS, 1865, Proc. ent. Soc. Philad., **5**: 141. Type-sp.: *Callimosema scintillana* CLEMENS, 1865 — design. by monot. Nearctic.

Pseudeucosma OBRAZTSOV, 1946, Z. wien. ent. Ges., **30** (1945): 37. Type-sp.: [*Tortrix*] *caecimaculana* HÜBNER, [1796—99] — by orig. design.

Eucosmoides OBRAZTSOV, 1946, ibid.: 38. Type-sp.: *Paedisca decolorana* FREYER, 1842 — by orig. design.

Venation: In forewing chorda from 2/3 distance $r_1 - r_2$ to base of r ; M reaching base of m_3, if preserved. In hindwing $m_3 - cu_1$ long stalked. Postcubital veins vestigial or absent. Males constantly with costal fold of forewing developed.

Male genitalia (Figs 192—194): Tegumen long; pedunculus slender; uncus rounded, ill-defined or somewhat elongate, concave apically, haired; socius usually long, hairy; tuba analis almost membranous, linked with tegumen by means of long bands. Valva long; sacculus elongate; neck distinct, often long; cucullus short, in many species expanding dorsally or rounded, long spined, with ventral angle marked with strong pollex often situated on a distinct prominence, or accompanied by 2—3 weaker spines; posterior edge of basal cavity simple or with variably developed hairy lobe or process extending towards angle of sacculus. Aedeagus simple, open dorso-posteriorly; cornuti deciduous.

Female genitalia (Fig. 490) as in *Eucosma*, or with very long ovipositor; sterigma simple, often distinctly concave medially; ductus bursae with cingulum or its remainders; signa two, occasionally one, altered, in some species accompanied by a pair of flat sclerites. Subgenital sternite weakly concave posteriorly, distinctly sclerotized posteriorly and laterally, or uniformly sclerotic.

Early stages: SWATSCHEK (1958) provides a diagnosis based on 3 species but included also one *Epinotia* species, and placed them in *Pseudeucosma*.

Bionomy: Probably only one generation yearly; hibernation in larval stage; larvae feed mainly in roots and stems of *Compositae*.

Distribution: Holarctic region; bound mainly with steppe areas; over 50 species known to this date.

Comments. The supposed autapomorphies of *Pelochrista* are the presence

of the lobe at the distal edge of the basal cavity of the valva, however, reduced in several species and probably a peculiar sclerotization of the subgenital sternite. *Pelochrista* was divided into *Pseudeucosma* with large lobe beyond basal cavity and *Pelochrista* s. str. (cf. KUZNETSOV, 1978). As the above mentioned character is inconstant and its lack is resulted by the reductions that occurred several times within the genus, I am not preserving that subdivision.

Hendecaneura WALSINGHAM

Hendecaneura WALSINGHAM, 1900, Ann. Mag. nat. Hist., (7) 6: 401. Type-sp.: *Hendecaneura impar* WALSINGHAM, 1900 — by orig. design.

Eucosmodes KUZNETSOV, 1973, Ènt. Obozr., 52 (3): 689. Type-sp.: *Eucosma axiotima* MEYRICK, 1937 — by orig. design.

Venation: Not reexamined; in *impar* different in male than in female, in *axiotima* all veins separate (cf. OBRAZTSOV, 1952).

Male genitalia (Fig. 195): Tegumen broad; uncus vestigial; socius broad, drooping, rounded apically, hairy; neck of valva slender; a sclerotic lobe along dorsum of sacculus reaching end of basal cavity; angles of both sacculus and cucullus distinct; spines of group *A* dense, neck almost naked. Aedeagus as in *Eucosma*.

Female genitalia (Figs 491, 492): Subgenital sternite partially *(impar)* or entirely *(axiotima)* fused with sterigma; median concavity of the latter deep, distal part of lamella postvaginalis membranous; ductus bursae long, with postmedian cingulum; ductus seminalis originating ventrally, just at cingulum. Two inequally long signa present.

Early stages and bionomy unknown.

Distribution: Known from China: North Yunnan and Japan: Honsyu only; a few species known to this date.

Comments. *Eucosmodes* was originally compared with *Lepteucosma* DIAKONOFF (based probably on the plesiomorphic shape of the valva and distinguished by a reduction of the uncus). The importance of the fusion of the subgenital sternite and the sterigma is probably species specific *(axiotima)* as in *impar* it is only weakly expressed. A presence of the sclerotic lobe situated at the ventral edge of the basal cavity may prove convergent, however, I am treating it as an autapomorphy for a time being.

Eucosma HÜBNER

Eucosma HÜBNER, [1823], Züträge Samml. exotische Schmett., 2: 28. Type-sp.: *Eucosma circulana* HÜBNER, [1823] — design. by monot. Nearctic.

Catoptria GUENÉE, 1845, Annls Soc. ent. Fr., (2) 3: 187. Type-sp.: *Catoptria carduana* GUENÉE, 1845 = *Tortrix cana* HAWORTH, [1811] — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 33); preoccup. by *Catoptria* HÜBNER, [1825], *Pyralidae*.

Calosetia WILKINSON, 1859, Br. *Tortricidae*: 279, 294. Type-sp.: *Tortrix nigromaculana* HAWORTH, [1811] = *Tortrix campoliliana* [DENIS SCHIFFERMÜLLER], 1775 — design. by monot.

Pygolopha LEDERER, 1859, Wien. ent. Mschr., **3**: 123, 279. Type-sp.: *Pygolopha trinacriana* LEDERER, 1859 = *Penthina lugubrana* TREITSCHKE, 1830 — design. by monot.

Ioplocama CLEMENS, 1860, Proc. Acad. nat. Sci. Philad., **12**: 360. Type-sp.: *Ioplocama formosana* CLEMENS, 1860 — design. by monot. Nearctic. *Joplocama* WALKER, 1860, List Specimens lepidopt. Insects Colln Br. Mus., **30**: 994 — incorrect subs. spelling of *Ioplocama* CLEMENS.

Affa WALKER, 1863, op. cit., **27**: 202. Type-sp.: *Affa bipunctella* WALKER, 1863 — design. by monot.

Exentera GROTE, 1877, Can. Ent., **9**: 227. Type-sp.: *Exentera apriliana* GROTE, 1877 = *Sciaphila improbana* WALKER, 1863 — design. by monot. Nearctic.

Exenterella GROTE, 1883, ibid., **15**: 23. Type-sp.: *Exentera apriliana* GROTE, 1877 — heredit. Replacement name for *Exentera* GROTE, 1877.

Palpocrinia KENNEL, 1919, Mitt. münch. ent. Ges., 8 (1917—18): 66. Type-sp.: *Palpocrinia ottoniana* KENNEL, 1919 — design. by monot.

Venation: In forewing chorda weak; all veins separate except for hindwing $m_3 - cu_1$ often long stalked (varying from approximate to connate and stalked).

Scent organ: Costal fold in male forewing of many species.

Male genitalia (Figs. 196—198): Uncus short, rounded apically; socius slightly elongate, drooping, hairy; tuba analis weakly sclerotized, connected with tegumen by means of weak sclerites. Angle of sacculus more or less distinct; neck well defined; cucullus short, with distinct angle, bristled and spined; spines and bristles on neck and sacculus variably developed, often atrophying, usually preserved in ventral half; posterior edge of basal cavity somewhat expanding subdorsally, hairy or bristled; dorsal group of setae weak, often situated on a convexity of costa; basal process variable in shape. Aedeagus simple, often broad; cornuti, a bunch of deciduous spines.

Female genitalia (Fig. 493): Antevaginal part of sterigma delicate, rather weakly sclerotized; postvaginal part aciculate, fairly long, concave medially, a concavity at ostium bursae large, membranous; ductus bursae fairly short; cingulum well developed, swung; ductus seminalis originating in membranous portion of cingulum, usually lateral; two well developed signa in corpus bursae.

Early stages: SWATSCHEK (1958) provides a diagnosis based on chaetotaxy of 16 European species.

Bionomy: Probably one generation yearly at least in the northern and central part of this subregion; hibernation in larval stage. Larvae feed in roots, stems and flowers of *Compositae*.

Distribution: Known of Holarctic and Oriental regions; about 100 species described. The areals of Palaearctic species are usually wide, some species (*E. obumbratana* (ZELLER), *E. hohenwartiana* ([DENIS & SCHIFFERMÜLLER]), *E. campoliliana* ([DENIS & SCHIFFERMÜLLER]) etc.) are transpalaearctic, bound with arrid biotops chiefly.

Comments. This genus is very closely related to *Epiblema*. The two are hightly specialized and show similar reductions of some parts of the male genitalia. One can suppose that an absence of the horn like sclerite at the posterior edge of the basal cavity of the valva in *Eucosma* is a result of a reduction.

In that case one could not realize any important difference between the two genera. This problem cannot be solved on the basis of the present study, and I am following previous interpretations treating the two as distinct genera. No autapomorphy of *Eucosma* is found.

Lepteucosma DIAKONOFF

Lepteucosma DIAKONOFF, 1971, Veröff. zoo. StSamml. Münch., **15**: 179. Type-sp.: *Lepteucosma oxychrysa* DIAKONOFF, 1971 — by orig. design.

Venation: In forewing base of r_1 originating at 1/4 of median cell, chorda and *M* missing. In hindwing $rr-m_1$ strongly approximated in basal thirds, m_3-cu_1 long stalked; anal veins weak, last anal vein at wing edge.

Scent organs: A pencil of hair like scales originating on small basal lobe situated anteriorly to anal edge of hindwing; the latter with a very slight dorsal roll.

Male genitalia (Fig. 165) as in *Eucosma* but uncus distinct, convex basally, bicornute apically; socius short; tuba analis membranous. Basal cavity of valva elongate; neck very slender; cucullus with broad dorsal hairy lobe and long, spined, slender ventral lobe; anterior saccular group weak, built of hairs and bristles. Aedeagus as in *Eucosma*.

Female genitalia, early stages and bionomy unknown.

Distribution: The type-species comes from NW Karakorum (in the description of the genus purchased South Tailand!), the second known species is from Tonkin, S. China.

Comments. Unknown to me. Originally compared with *Eucosma* from which differs in having a well developed uncus. Its presence is of plesiomorphic importance, however, its shape may be autapomorphic. A similar shape of the valva is known in *Eucosma*.

Epibactra RAGONOT

Epibactra RAGONOT, 1894, Annls Soc. ent. Fr., **63**: 208, 226. Type-sp.: *Grapholitha sareptana* HERRICH-SCHÄFFER, 1861 — design. by monot.

Venation: In forewing all veins separate, chorda and *M* missing; in hindwing $rr-m_1$ approximated anteriorly, m_3-cu_1 stalked to middle. Costal fold absent.

Male genitalia (Fig. 199): Uncus atrophied; socius latero-terminal, broad, hairy; tuba analis with indistinct sclerites. Valva as in *Eucosma*, with distinct neck and angle of sacculus; cucullus strongly elongate, expanding dorsally and ventrally, spined and bristled; basal cavity expanding dorso-posteriorly, with group of spines beyond posterior edge; basal process well developed, with weak neck. Aedeagus simple; two strong, non-deciduous cornuti in vesica.

Female genitalia, early stages and bionomy unknown.

Distribution: From Austria to western Siberia, in the southern belt, on open areas.

Comments. Very close to *Eucosma,* but with reduced uncus and more specialized socius. The presence of non-deciduous cornuti is treated as a plesiomorphic character, however, their shape and proportions may proove autapomorphic.

Protancylis DIAKONOFF

Protancylis DIAKONOFF, 1983, Fauna Saudi Arabia, 5: 267. Type-sp.: *Protancylis amseli* DIAKONOFF, 1983 — by orig. design.

Venation: Chorda extending from beyond mid-distance $r_2 - r_3$ to base of r_5; *M* fully developed, reaching base of m_3. In hindwing $rr - m_1$ strongly approximated in basal third; $m_3 - cu_1$ stalked to before middle. Veins *pcu*: absent in forewing, traceable in hindwing.

Male genitalia: Tegumen rounded apically, without any prominence; socius, a broad submembranous, hairy lobe. Distal edge of basal cavity ill-defined dorsally; angulation of sacculus distinct, armed with large group of spines; neck slender, naked; cucullus elongate. Aedeagus and cornuti as in *Eucosma.*

Female genitalia (Fig. 494): Sterigma, a concave plate with proximal edge slender; colliculum slender, sclerotic; cingulum well developed and sclerotized, reaching colliculum; ductus seminalis probably dorsal; signa slender.

Early stages and bionomy unknown.

Distribution: Saudi Arabia.

Comments. Originally described as primitive genus close to *Eucosma,* however, the socii resembles those in *Gypsonoma,* or, as stated originally, in *Ancylis.* I am placing *Protancylis* provisionally after *Epibactra* as its socii are more specialized than in all genera of this group. No autapomorphy found.

Gypsonoma MEYRICK

Gypsonoma MEYRICK, 1895, Handbook Br. Lepidopt.: 481. Type-sp.: *Tortrix dealbana* FRÖLICH, 1828 = *Tortrix incarnana* HAWORTH, [1811] — by orig. design.

Venation: Chorda absent, *M* reaching to before base of cu_1; in hindwing $rr - m_1$ distinctly separate; $m_3 - cu_1$ stalked.

Scent organs: Group of long scales at end of pedunculus, laterally, situated on more or less expanding convexity of a membrane, or on a large bulbous lobe connected with tegumen by means of slender band. Often the scent scales differentiated, forming two groups. Broad, short scales on dorso-basal area of disc of valva present.

Male genitalia (Figs 200—204): Uncus completely atrophied; socius short, broad, hairy, situated laterally reaching top of tegumen. Basal cavity of valva

short, or elongate, covered by minutely haired membrane in the posterior part, or with scent scales, with posterior edge simple, convex or accompanied with a horn or a lobe; angle of sacculus usually atrophied, in a few species convex, sharp; neck more or less distinct; cucullus rounded, setose and spined, with distal part membranous, strongly convex, extending caudad. Aedeagus simple; cornuti of deciduous type, grouped in a bunch; caulis very short. Musculature (KUZNETSOV & STEKOLNIKOV, 1977 — *G. dealbana* (FRÖLICH)): m_1 atrophied; m_2 to end of basal process of valva; m_4, delicate, to top of its posterior prominence; m_5 inserting deep in the valva, ventro-medially.

Female genitalia (Figs 495—497): Sterigma spherical, expanding laterally, open anteriorly and dorsally, with large antevaginal plate and shorter dorsal or dorso-posterior postvaginal plate. Ostium bursae in top part of sterigma, in a tube; cingulum large, irregularly sclerotized, usually postmedian; ductus seminalis in the latter, dorsal; two slender signa present.

Early stages: Diagnosis by SWATSCHEK (1958) is based on chaetotaxy of 6 European species.

Bionomy: Single generation yearly; hibernation in larval or pupal stages. Larvae feed in buds, leaves and twigs, mainly of *Salicaceae* and *Betulaceae*.

Distribution: Holarctic. In Palaearctic subregion there are over 20 species a few of which are transpalaearctic.

Comments. The supposed autapomorphies of this genus are the shape of the cucullus, the presence of the peduncular scent organ and a secondary strengthening of the posterior part of the membrane covering the basal cavity. KUZNETSOV (1978) placed *Gypsanoma* after *Zeiraphera* and before *Gravitarmata* probably on basis of the presence of the horn of the valva. As no synapomorphy is found the position of this genus is unclear.

Nuntiella KUZNETSOV

Nuntiella KUZNETSOV, 1971, Ènt. Obozr., **50** (2): 433. Type-sp.: *Nuntiella extenuata* KUZNETSOV, 1971 — by orig. design.

Venation: In forewing chorda extending from before r_2 to mid-distance $r_4 - r_5$ and is close to radial stem; M reaching base of m_2; m_2 strongly approximated to m_3 basally. In hindwing $m_3 - cu_1$ stalked to middle. Costal fold in male absent.

Male genitalia (Fig. 205): Uncus well developed, sclerotic, bifurcate, with hairy prominence at base proximally; socius lateral, ill-defined, scarcely haired; tuba analis membranous. Valva as in *Epiblema*, with horn and lobe at ventral edge of basal cavity, situated postmedially.

Female genitalia, early stages and bionomy unknown.

Distribution: Known of China (Shansi) only.

Comments. Originally compared with *Epiblema* from which it differs it having a well developed uncus. The only supposed autapomorphy of *Nuntiella* is the structure of the socius.

Epiblema HÜBNER

Epiblema HÜBNER, [1825], Verz. bekannter Schmett.: 375. Type-sp.: *Tortrix scopoliana* [DENIS & SCHIFFERMÜLLER], 1775 = *Phalaena Tinea foenella* LINNAEUS, 1758 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 6).

Cacochroea LEDERER, 1859, Wien. ent. Mschr., **3**: 331, 337. Type-sp.: *Paedisca grandaevana* ZELLER, 1846 — design. by monot.

Monosphragis CLEMENS, 1860, Proc. Acad. nat. Sci. Philad., [**12**]: 354. Type-sp.: *Monosphragis otiosana* CLEMENS, 1860 — design. by monot. Nearctic.

Euryptychia CLEMENS, 1865, Proc. ent. Soc. Philad., **5**: 140. Type-sp.: *Euryptychia saligneana* CLEMENS, 1865 = *Hedya scudderiana* CLEMENS, 1860 — design. by monot. Nearctic.

Eurytychia HEINRICH, 1923, Bull. U. S. natn. Mus., **123**: 137 — incorrect subs. spelling.

Venation: Hindwing $m_3 - cu_1$ stalked, all remaining veins separate.

Scent organ: Costal fold in male forewing.

Male genitalia (Figs 206—211) as in *Eucosma* but in the majority of species occurs a sclerotic horn situated beyond the prominence of the distal edge of the basal cavity of valva; occasionally an additional sclerotic lobe below horn present; spines of neck of valva often distinct. Musculature (KUZNETSOV & STEKOLNIKOV, 1973 — *foenella*): m_1 distinct; m_2 originating at base of peduncu-lus, inserting on top of basal process of valva; m_4 on neck of that process; m_5 postmedially on caulis, entering deep in the valva.

Female genitalia (Figs 498, 499) as in *Eucosma*; sterigma simple, in form of a postvaginal plate and a weak, usually membranous anterior band.

Early stages: SWATSCHEK (1958) provides a diagnosis based on 7 European species.

Bionomy: One generation yearly at least in the temperate zone; hibernation in larval stage. Larvae feed in roots and lower parts of stems of *Compositae*.

Distribution: Holarctic and Oriental regions. In Palaearctic subregion ca 50 species occur; some of them are widely spread as for instance *foenella* known of Palaearctic and partially Oriental regions; some species are transpalaearctic.

Comments. The only supposed autapomorphy of *Epiblema* is the presence of the horn of valva, however, that structure reduces partially or entirely in a few species (cf. comments to *Eucosma*). OBRAZTSOV (1965) divided *Epiblema* into *Cacochroea*, *Epiblema* s. str. and *Notocelia* and SWATSCHEK (1958) treats them as distinct genera. KUZNETSOV (1978) separated *Notocelia* but synonymized *Cacochroea* with *Epiblema*. The larval characters utilized by SWATSCHEK (the presence of the double crown of crochets in *Cacochroea*) are insufficient to separate a subgenus, thus the conclusions of MACKAY (1959) requite reconsideration.

Notocelia HÜBNER

Notocelia HÜBNER, [1825], Verz. bekannter Schmett.: 380. Type-sp.: [*Tortrix*] *achatana* HÜBNER, [1796—99] = *Pahalena Tortrix uddmanniana* LINNAEUS, 1758 — by subs. design. (WESTWOOD, 1840, Introd. mod. Classif. Insects, **2**; Synopsis Genera Br. Insects: 108).

Aspis TREITSCHKE, 1829, Schmett. Eur., 7: 231. Type-sp.: *Pyralis solandriana* FABRICIUS, 1775 = *Phalaena Tortrix uddmanniana* LINNAEUS, 1758 — design by monot. Preocc. by *Aspis* LAURENTI, 1768 in *Reptilia*.

Aspidia DUPONCHEL, 1834, Hist. nat. Lépid. Papillons Fr., 9: 20. type-sp.: as above, heredit. Replacement name for *Aspis* TREITSCHKE.

Pardia GUENÉE, 1845, Annls Soc. ent. Fr., (2) 3: 155. Type-sp.: *Tortrix tripunctana* [DENIS & SCHIFFERMÜLLER], 1775 = *Phalaena Tortrix cynosbatella* LINNAEUS, 1758 — design. by monot.

Venation as in preceding genus.

Male genitalia (Figs 212—216) as in *Epiblema* but a pair of non-deciduous cornuti situated terminally in vesica present.

Female genitalia (Figs 500—502) as in *Epiblema* but with distinct anterior part of sterigma and semimembranous hairy lobes attached to its posterior corners.

Early stages: SWATSCHEK (1958) provided a diagnosis based on 6 European species.

Bionomy: One generation yearly; hibernation in larval stage; food plants are *Rosaceae* and *Fagaceae*; larvae feed in buds and leaves.

Distribution: A Palaerctic genus known of ca 20 species some of which are widely distributed a few being transpalaearctic.

Comments. The supposed autapomorphies of *Notocelia* are the position of the cornuti and the presence of of the lobes situated at the distal corners of the sterigma. SWATSCHEK (1958) treats *Pardia* as a separate genus which in this and in several earlier publications is regarded as a synonym of *Notocelia*.

Coccyx TREITSCHKE

Coccyx TREITSCHKE, 1829, Schmett. Eur., 7: 230. Type-sp.: [*Tortrix*] *strobilana* HÜBNER, [1796—99] = *Phalaena Tinea strobilella* LINNAEUS, 1758 — by subs. design. (DESMAREST, 1857 [in:] CHENU, Encyclop. Hist. nat. Papipillons noct.: 224). Subsequent designation by FERNALD, 1908, Genera *Tortricidae*: 19 — *Tortrix comitana* [DENIS & SCHIFFERMÜLLER], 1775 = [*Phalaena*] *tedella* CLERCK, 1759.

Blastesthia OBRAZTSOV, 1960, Beitr. Ent., 10: 462. Type-sp.: *Phalaena Tortrix turionella* LINNAEUS, 1758 — by orig. design.

Pseudococcyx SWATSCHEK, 1958, Abh. Larvalsyst. Insekten, 3: 131. Type-sp.: *Retinia tessulatana* STAUDINGER, 1871 — design. by monot. *Pseudococcyx* AGENJO, 1955, Graellsia, 13: 5 — invalid name; type-sp. not designated.

Subepiblema AGENJO, 1955, ibid.: 5. Invalid name.

Venation: In forewing chorda extending from mid-distance $r_1 - r_2$ to base of r_5 or anteriorly to it; M vestigial, terminating between $m_2 - m_3$ or at cu_1 and then distinct. In hindwing $m_2 - m_3$ separate or connate, $m_3 - cu_1$ stalked. Costal fold in male absent.

Male genitalia (Fig. 217, 218): Uncus vestigial; socius drooping, elongate, hairy. Basal cavity of valva short; cucullus and sacculus both with well developed, or the latter with atrophying angle; horn distinct, close to posterior edge

of basal cavity; basal process well developed; aedeagus simple, with a bunch of deciduous cornuti in vesica.

Female genitalia (Figs 503—505): Sterigma, a concave plate with rather distinct anterior portion; ostium bursae occasionally protected by a weak sclerite; cingulum well developed; one signum present.

Early stages: SWATSCHEK (1958) characterized chaetotaxy of *posticana* and *turionella* under the name *Coccyx* and that of *tessulatana* under *Pseudococcyx* differentiating it on basis of absence of miunte thorns on the neck shield.

Bionomy: One generation yearly; hibernation in larval stage; foodplants are the confers; *turionella* is an important pest.

Distribution: Palaearctic subregion; of 4 species known to date 2 are transpalaearctic.

Comments. The systematic position of *Coccyx* is insufficiently explained. Genitalically it is very close to *Epiblema* but does not show any autapomorphy. A presence of a single signum is certainly a result of a reduction realized occasionally in this subtribe. I neither could find any autapomorphy of *Pseudococcyx* and such characters as the shape of the valva and positions of the chorda and median stem in the forewing are convergent. The differences given by SWATSCHEK (1958), a lack of minute thorns in neckshield and dorsocranial position of III to the stigma of the eighth abdominal segment in the larva do not seem sufficient for separation of *tessulatana* in a distinct genus.

Retinia GUENÉE

Retinia GUENÉE, 1845, Annls Soc. ent. Fr., (2) **3**: 180. Type-sp.: *Retinia resinana* GUENÉE, 1845 = *Phalaena Tinea resinella* LINNAEUS, 1758 — by subs. design. (DESMAREST, 1857 [in:] CHENU, Encyclop. Hist. nat., Papillons noct.: 224).

Petrova HEINRICH, 1923, Bull. U. S. natn. Mus., **123**: 21. Type-sp.: *Retinia comstockiana* FERNALD, 1879 — by orig. design. Nearctic.

Venation: In forewing chorda originating in mid-way between r_1—r_2, terminating just before r_5; *M* rudimentary, bifurcate, terminating at mid-distance $m_1 - m_2$ and at cu_1. In hindwing $m_3 - cu_1$ stalked, allother veins separate. Costal fold in male absent.

Male genitalia (Figs 219, 220) as in *Coccyx* but horn of valva broad, flat. Distal edge of sacculus with inner fold.

Female genitalia (Figs 506, 507) as in *Coccyx* but two signa present.

Early stages: Chaetotaxy is described by SWATSCHEK (1958) on basis of one species *(resinella)* and by MACKAY (1959) for the Nearctic species. In *resinella* there are 4 setae in group VII of the thoracic leg, what is unusual in *Tortricidae*.

Bionomy: *R. resinella* completes its life cycle within two years and hibernates as a larva; *R. preangustana* SNELLEN has one year cycle and hibernates in pupal stage. Food plants are the conifers; the larvae may bore the pins, then live under bark, or in cones.

Distribution: Holarctic region; in Palaearctic subregion there are ca 10 species of which *resinella* is transpalaearctic.

Comments. No autapomorphy is found; the lobe of the sacculus is probably of little importance as similar structures develope in other genera, and is inconstant.

Barbara Heinrich

Barbara Heinrich, 1923, Bull. U. S. natn. Mus., **123**: 27. Type-sp.: *Evetria colfaxiana* Kearfott, 1907 — by orig. design. Nearctic.

Venation as in preceding genus.

Male genitalia (Fig. 221) as in *Retinia* and *Coccyx* but socius shorter. Sacculus with posterior concavity extending towards cucullus; horn missing; area beyond basal cavity scarcely haired.

Female genitalia (Fig. 508) as in *Retinia*, but sterigma short, expanding posteriorly.

Early stages: Swatschek (1958) describes chaetotaxy of *B. herrichiana* Obraztsov only whilst MacKay (1959) provides the characteristics on basis of the Nearctic species.

Bionomy: Single generation yearly; larvae feed in cones of various conifers; hibernation in larval stage.

Distribution: Holarctic region; 3 species in this subregion.

Comments. There is no important autapomorphy of this genus, as the structure of the valva (the presence of the inner lobe extending from the sacculus towards the cucullus) may prove convergent. The sterigma is generally taking plesiomorphic, but the shape of its lateral parts may be regarded as specialized, however, convergent, similar to that in *Gravitarmata*.

Gravitarmata Obraztsov

Gravitarmata Obraztsov, 1946, Z. wien. Ent. Ges., **30** (1945): 42. Type-sp.: *Retinia retiferana* Wocke, 1879 = *Retinia margarotana* Heinemann, 1863 — by orig. design.

Venation: Chorda weak, extending from 1/3 $r_1 - r_2$ to before base of r_5; M to base of m_2; two last median veins closely approximated to one another basally. In hindwing $m_3 - cu_1$ connate or short stalked. Costal fold in male forewing missing.

Male genitalia (Fig. 222): Tegumen broad; uncus sclerotic, bifurcate beyond middle; socius broad, subrigid, scarcely haired. Valva as in preceding genus.

Female genitalia (Fig. 503) as in *Barbara* but sterigma subdivided; a sclerotic collar like structure situated in the membrane beyond eight tergite.

Early stages: Chaetotaxy unknown.

Bionomy: One generation yearly; hibernation in larval stage; larvae feed in twigs and cones of conifers.

Distributuion: Palaearctic subregion.

Comments. This monobasic genus is an offshoot of the *Retinia* — *Gravitarmata* line having with those genera synapomorphic structure of the valva and with the former that of the sterigma. Its autapomorphies are the shapes of the uncus and the socius.

Rhyacionia HÜBNER

Rhyacionia HÜBNER, [1825], Verz. bekannter Schmett.: 379. Type-sp.: *Tortrix buoliana* [DENIS & SCHIFFERMÜLLER], 1775 — by subs. design. (WALSINGHAM, 1900, Ann. Mag. nat. Hist., (7) 6: 124).

Venation: In forewing chorda extending from mid-distance between $r_1 - r_2$ to before base of r_5; M to before m_2, or atrophying; $m_2 - m_3$ strongly approximating basally. In hindwing $m_3 - cu_1$ short stalked. Costal fold missing.

Male genitalia (Figs 223—228): Uncus absent or rudimentary; socius, a weak, scarcely haired patch. Valva strong, with long sacculus developing a distinct angle; neck short, provided with median sclerites or a longitudinal convexity and a trace of a lobe; angle of cucullus weak or forming a naked, often large ventral process. Aedeagus strong, usually with thorns.

Female genitalia (Figs 510—513): Sterigma, a double, scobinate hairy patch situated beyond a cup-shaped basal portion, extending dorso-posteriorly, fusing with colliculum sclerite to which inner sclerites of ductus bursae may attache; cingulum absent; ductus seminalis subterminal or posterior extending from colliculum, ventrally; two signa, if present. Eighth sternite simple, or with submedian folds.

Early stages: SWATSCHEK (1958) based hit diagnosis on 3 European species, MACKAY (1959) worked out the Nearctic representatives, and OBRAZTSOV (1964) provided a compilation of their descriptions.

Bionomy: One generation yearly; hibernation in larval stage; larva in twigs of conifers; some species are very important economically.

Distribution: Holarctic region; of over 20 species 10 are Palaearctic; *buoliana* is holarctic in distribution (but is also known of South America where artificially introduced), *Rh. pinivorana* (ZELLER) and *Rh. duplana* (HÜBNER) are transpalaearctic.

Comments. The supposed autapomorphy of *Rhyacionia* is a presence of the sclerites of the neck of the valva. The socius is vestigial. The presence of the processes of ventral edge of the valva, the reduction of the sterigma and a fusion of the ostium sclerite with the colliculum may prove of convergent importance only.

Clavigesta OBRAZTSOV

Clavigesta OBRAZTSOV, 1946, Z. wien. Ent. Ges., 30 (1945): 43. Type-sp.: *Spilonota sylvestrana* CURTIS, 1850 — by orig. design.

Venation: In forewing chorda and *M* completely atrophied; in hindwing $m_2 - m_3$ approximated, $m_3 - cu_1$ long stalked.

Male genitalia (Fig. 229): Uncus vestigial; socius slender, delicate. Angle of sacculus distinct; neck very long, slender; cucullus ovate, with atrophied angle; basal process of valva vestigial.

Female genitalia (Fig. 514): Sterigma reduced; antrum area protected by a sclerite.

Early stages: SWATSCHEK (1958) described chaetotaxy of the type-species.

Bionomy: One generation yearly; hibernation in larval stage; larvae feed in buds and twigs of conifers.

Distribution: Holarctic region; in this subregion two species discovered.

Comments. This genus is very close to *Rhyacionia* but characterizes with an autapomorphic shape of the valva.

Unplaced genera

Antichlidias MEYRICK

Antichlidias MEYRICK, 1931, Bull. Sect. Sci. Acad. Roum., **14**: 65. Type-sp.: *Antichlidias holocnista* MEYRICK, 1931 — design. by monot.

Venation: Chorda extending from beyond mid-distance $r_1 - r_2$ to base of r_5; *M* distinct, reaching base of m_3, r_4 curved, terminating at costa, r_5 to beyond apex of wing, m_3 and cu_1 bent. In hindwing $rr - m_1$ approximated, $m_3 - cu_1$ stalked to 1/3; m_2 approximated to the latter.

Male genitalia (Figs 230—233): Tegumen very high; pedunculus very slender; terminal portion of tegumen slender, folding laterally from the level of base of pedunculus, extending laterally into a pair of long, slender, distinctly sclerotized processes embraced by posterior part of the tegumen being probably a transformed uncus; socii are seemingly represented by a membrane marked with very long bristles; tuba analis membranous, situated in a large, plicate membrane connected with aedeagus by means of a weakly sclerotized, ovate henion; vinculum fused with base of valva ventrally, forming a short, transverse band, otherwise entirely atrophied or unified with anterior edge of valva to which pedunculus is attached. Valvae fused ventrally, so only distal portions of sacculi are free, minutely spined; cucullus slightly differentiated, hairy; basal cavity large, ovate; basal process atrophied; outer group of hairs situated submedially. Aedeagus strong, provided with terminal lobes; caulis large; juxta weak; cornuti, two short, non-deciduous spines. Subgenital segment (Fig. 234): Tergite tapering posteriorly, bristled ventrally; sternite producing into two lateral lobes situated subventrally.

Female genitalia (Figs 515, 516): Sterigma, a cup-shaped sclerite extending from basal, concave plate, with ventro-lateral edges emarginate; the latter

attached to edges of incision of posterior margin of subgenital sternite. Ostium bursae on top of a cup-shaped part of sterigma, protected by short sclerite; ductus bursae slender, provided with subterminal sclerite; ductus seminalis ventral, originating in anterior part of ductus bursae; two slender signa of graptholitine type in corpus bursae. Subgenital sternite long, concave laterally at the fusion with lateral parts of the tegumen on the ventro-posterior corners of which dense short scales occur.

Early stages and bionomy unknown.

Distribution: Eastern part of Palaearctic Asia: China and Japan.

Comments. This genus shows numerous supposed autapomorphies as the structure of the tegumen, valva, vinculum, sclerites of subgenital segments, presence of the lateral processes of the tegumen or the shape of the sterigma. Besides, several highly advanced reductions of the particular elements of the male genitalia occur. As no synapomorphy with any other genus is realized the systematic position of *Antichlidias* remains completely unclear.

Namasia DIAKONOFF

Namasia DIAKONOFF, 1983, Fauna Saudi Arabia, **5**: 259. Type-sp.: *Namasia catoptrica* DIAKONOFF, 1983 — by orig. design.

Venation: In forewing chorda from 2/3 distance between r_1 and r_2 to base of r_5; M weakly preserved. In hindwing $rr - m_1$ and $m_3 - cu_1$ stalked.

Male genitalia unknown.

Female genitalia (Fig. 517): Sterigma sclerotic, represented by postvaginal plate, consisting of a pair of scobinate, probably haired lobes; ostium bursae not protected by any sclerite; ductus bursae slender, membranous; colliculum probably built of thick membrane, slenderer than remaining part of ductus bursae; ductus seminalis extending from beyond 2/3 of ductus bursae. Subgenital plate subtriangular, incised posteriorly. Signa slender, subequal.

Early stages and bionomy unknown.

Distribution: Saudi Arabia only.

Comments. A monotypical genus originally compared with Nearctic *Norma* HEINRICH, known of single female only. Systematic position unclear. The above redescription is based entirely on the original diagnosis and drawing.

Enarmoniina

The position of this subtribe is unclear. Usually two genera, *Enarmonia* and *Ancylis*, have been located in it. KUZNETSOV & STEKOLNIKOV (1983) gave it the tribal status placing *Enarmoniini* at the beginning of their *Eucosmidii* as the most primitive group. Basing on some similarities in the characters of the larva and pupa they suggested *Enarmoniini* approach *Olethreutidii*. For

their pirimitive position within their *Eucosmidii* speak after those authors the reduction of the uncus and muscle 1, the presence of large socius, the broad tegumen and its fusion with the vinculum as well as a primitive position of muscle 6 on the aedeagus. As the specialized characters common of *Eucosmini* and "*Laspeyresiini*" (= *Grapholitini*) they mentioned the shape of the basal process of the valva which becomes simple, devoid any prominence, because of declining of muscle 2 (in *Ancylis*) or overtaking a function of the extensors of the valvae by muscles 4 (in *Semnostola*). Also muscle 5 attaches more ventrally on the caulis and the cornuti are of the deciduous type. Those characters, however, vary withing *Eucosmini* (thus also in *Enarmoniina*) and *Grapholitini* and therefore the group is insufficiently defined. It seems therefore possible some genera included in it are transferable to either *Eucosmina* or *Grapholitini*. In this paper I am retaining this subtribe but locating it at the end of *Eucosmini* system.

Sillybiphora Kuznetsov

Sillybiphora Kuznetsov, 1964, Ènt. Obozr., **43** (4): 886. Type-sp.: *Sillybiphora devia* Kuznetsov, 1965 — by orig. design.

Venation: In forewing chorda extending from before middle $r_1 - r_2$ to beyond base of r_5; *M* weak, *pcu* vestigial; in hindwing $rr - m_1$ stalked to 1/3, $m_3 - cu_1$ so to middle.

Mele genitalia (Fig. 235): Tegumen rather short; uncus absent: socius very broad, hairy. Valva broad basally; basal cavity large, extending towards end of sacculus; the latter expanding ventro-terminally, haired in distal portion; cucullus slender, bristled. Aedeagus short; bunch of deciduous cornuti in vesica.

Female genitalia (Fig. 518): Sterigma, a delicate sclerite surrounding ostium bursae; ductus bursae with cingulum situated anteriorly; ductus seminalis ventral, expanding from anterior part of the latter.

Early stages and bionomy uknown.

Distribution: Eastern Palaearctic subregion: Primorskij Kraj.

Comments. This monotypical genus was originally compared with *Ancylis*, however, its female genitalia are quite different. The shape of the signum is in this genus plesiomorphic and the structure of the ductus bursae, with distinct cingulum, reminds that in many representatives of *Eucosmina*. Provisionally I am following the original interpretation of its systematic position. No autapomorphy is found.

Pseudacroclita Oku

Pseudacroclita Oku, 1979, Kontyu, **47** (4): 591. Type-sp.: *Acroclita hapalaspis* Meyrick, 1931 — by orig. design.

Venation: In forewing two last radial veins long stalked; trace of *M* reaching mid-distance between $m_2 - m_3$; cu_1 strongly approaching m_3 basally; *pcu* vesti-

gial, preserved on peripheries of wing. In hindwing $rr - m_1$ approximate anteriorly, $m_3 - cu_1$ stalked.

Male genitalia (Fig. 236): Uncus ill-defined, in form of a cup-shaped, hairy prominence of top part of tegumen; socius broad, lateral, hairy. Sacculus prominent distally; neck distinct; cucullus subtriangular, expanding ventro-posteriorly where bristled. Aedeagus broad; cornuti, numerous short spines of non-deciduous type.

Female genitalia (Figs 519, 520): Sterigma broad, cup-shaped; colliculum provided with inner sclerite. Signa slender, horn like, with basal plates developed.

Early stages not described.

Bionomy: Larva rolls lower surface of leaf; pupal case in cut off part of leaf. Univoltine. Food plants are the species of *Rubus*.

Distribution: Japan: Honsyu. Monotypical.

Comments. Originally compared with *Acroclita*, *Gypsonoma* and *Ancylis*. From the latter it differs mainly in the shape of the signum, which is plesiomorphic, but several other characters remind those of *selenana* group of species. Probably close to *Ancylis* showing progressive character of the venation (stalked veins).

Kennelia Rebel

Kennelia Rebel, 1901 [in:] Staudinger & Rebel, Cat. Lepidopteren pal. Faungebietes, **2**: 263. Type-sp.: *Anomalopteryx xylinana* Kennel, 1900 — heredit. Replacement name for *Anomalopteryx* Kennel, 1900.

Anomalopteryx Kennel, 1900, Dt. ent. Z. Iris, **13**: 157. Type-sp.: *Anomalopteryx xylinana* Kennel, 1900 — design. by monot. Nom. preocc. by *Anomalopteryx* Reichenbach, [1853], *Aves* and *Anomalopteryx* Stein, 1874, *Trichoptera*.

Male genitalia (Fig. 237): Tegumen slender; process of the anterior part of pedunculus strong; uncus well sclerotized, expanding terminally, with pointed lateral projections; socius broad, sublateral, hairy; tuba analis membranous. Basal cavity of valva short, with posterior edge convex, hairy; long scales on sacculus situated above its weakly expressed angle; neck distinct; cucullus ovate, bristled and spines; basal process large, provided with basal prominence. Aedeagus simple; caulis broad, concave posteriorly; cornuti, a bunch of deciduous spines.

Female genitalia (Fig. 521): Sterigma small, expanding beyond ostium bursae, followed by a complicately folded membrane; colliculum tubular, provided with inner sclerite; ductus bursae bulbous at base; ductus seminalis proximal, originating ventrally; signa absent. Subgenital sternite deeply concave posteriorly, fused with sterigma by means of delicate submedian sclerites.

Early stages unknown.

Distribution: Known of East Palaearctic Asia (Primorskij Kraj, Japan).

Bionomy: Food-plant is *Rhamnus*.

Comments. This genus shows some similarity with *Aclylis* and is closely related to it. The uncus in *Kennelia* is more generalized and the signa are plesiomorphic.

Ancylis HÜBNER

Ancylis HÜBNER, [1825], Verz. bekannter Schmett.: 376. Type-sp.: *Pyralis laetana* FABRICIUS, 1775 — by subs. design. (WALSINGHAM, 1907, Entomologist's Mag., **43**: 151); earlier designation by WESTWOOD 1840, Synopsis Genera Br. Insects: 107, was incorrect (*Pyralis lundana* FABRICIUS, 1775 was selected for the type-sp.).

Epicharis HÜBNER, [1825], ibid.: 376. Type-sp.: [*Tortrix*] *dorsana* HÜBNER, [1813] = *Tortrix unculana* HAWORTH, [1811] — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 7); preoccupied by *Epicharis* KLUG, 1807.

Anchylopera STEPHENS, 1829, Syst. Cat. Br. Insects, **2**: 177. Type-sp.: *Pyralis lundana* FABRICIUS, 1775 = *Phalaena Tortrix badiana* [DENIS & SCHIFFERMÜLLER], 1775 — by subs. design. (CURTIS, 1831, Br. Ent., exp. pl.. 376).

Anticlea STEPHENS, 1834, Ill. Br. Ent., *Haustellata*, **4**: 113. Type-sp.: *Pyralis laetana* FABRICIUS, 1775 — by subs. design. (CURTIS, 1836, Br. Ent., expl. pl. 583, as *Tortrix ramella* CURTIS, 1836). Preoccupied by *Anticlea* STEPHENS, 1834.

Philalcea STEPHENS, 1834, ibid.: 396. Type-sp.: *Pyralis laetana* FABRICIUS, 1775 — heredit.; proposed as a replacement name for *Anticlea* STEPHENS, 1834.

Phoxopteris TREITSCHKE, 1829, Schmett. Eur., **7**: 232. Type-sp.: *Pyralis laetana* FABRICIUS, 1775 — by subs. design. (CURTIS, 1831, Guide: 170). Subs. designations: STEPHENS, 1834, Ill. Br. Ent., *Haustellata*, **4**: 114 — [*Tortrix*] *lancealana* HÜBNER, [1799]; DUPONCHEL, 1834, Hist. nat. Lépid. Papillons Fr., **9**: 22 — [*Tortrix*] *siculana* HÜBNER, [1799] = *Tortrix apicella* [DENIS & SCHIFFERMÜLLER], 1775; DESMAREST, 1857 [in:] CHENU, Encyclop. Hist. nat. Papillons noct.: 224 — *Tortrix unguicella* LINNAEUS, 1758 (as *unguicana*, for *Phoxopteryx*).

Phoxopteryx SODOFFSKY, 1837, Bull. Soc. Imp. Naturalistes Mosc., **6**: 93—97; *Phoxopteria* WALCOTT, 1923, J. Dep. Agric. P. Rico, **7**: 201 — incorrect subs. spelling of *Phoxopteris* TREITSCHKE, 1829.

Sideria GUENÉE, 1845, Annls Soc. ent. Fr., (2) **3**: 156. Type-sp.: *Tortrix achatana* [DENIS & SCHIFFERMÜLLER], 1775 — design. by monot.

Siderea STAINTON, 1859, Manual Br. Butterflies & Moths, **2**: 196 — incorrect subs. spelling of *Sideria* GUENÉE, 1845.

Venation: In forewing all veins separate, m_2 and cu_1 more or less bent anteriorly, chorda weak, originating at 2/3 distance $r_1 - r_2$, terminating before base of r_5 or atrophying; M absent; in hindwing $m_3 - cu_1$ stalked or completely fused, m_2 strongly approching to the latter or extending from one point.

Male genitalia (Figs 238—150): Tegumen slender; pedunculus long, provided with a broadening or a strong anterior process extending from inner edge; uncus well developed, partially or entirely bifurcate, ill-defined, preserved as a small prominence or completely atrophied; socius drooping, often with very long free end or broadly fused with tegumen, broad, rarely very weak or heavily sclerotized; tuba analis membranous with delicate basal linkages. Angle of sacculus distinct, more or less expanding posteriorly, scarcely haired; neck well developed; cucullus variably angulate, often slender, bristled; basal cavity reaching end of sacculus; basal process delicate, simple, bent ventrally. Aedeagus simple; caulis usually short; cornuti numerous short spines of deciduous type often

arranged in an oblique row. Musculature: m_1 long, originating near middle of pedunculus, terminating at base of uncus; m_2 extending from between bases of pedunculi, inserting on neck of basal process; m_4 from process of pedunculus to dorso-posterior portion of the process; m_4 median, entering deep in the valva.

Female genitalia (Figs 522—535): Sterigma rather weakly sclerotized posteriorly, often cup-shaped, provided with antevaginal part variably expanding outwards and often with lateral prominences; dorsal portion of the cup-shaped part usually membranous dorsally; colliculum short, provided with inner sclerite; ductus seminalis originating at base of ductus bursae dorsally. Two strongly elongate, flat signa with blade-shaped terminations and weak basal margins present.

Early stages: SWATSCHEK (1958) provides a diagnosis based on chaetotaxy of 16 European species.

Bionomy: Usually two generations yearly; hibernation in larval stage. Larvae spin leaves of deciduous trees, often of *Betulaceae* and *Salicaceae*, or feed on fruits. Rarely have been observed as the pests in orchards.

Distribution: Known of Holarctic, Oriental and Neotropical regions. In this subregion there are over 50 known species.

Comments. The supposed autapomorphies of *Ancylis* are the shape of the apical part of the forewing and the shape of the signum. It was traditionally divided into *Anchylopera* and *Ancylis* s. str. and that arrangement was accepted by KUZNETSOV (1978). The species of *Anchylopera* characterize with atrophied uncus, but such a reduction appears in numerous genera and the uncus is rather variable within *Ancylis*. The vestiture of the slender socii varies from a delicate (hairs) to rigid (bristles); in the species with broad socii the vestiture is constantly rigid and the uncus atrophies in almost all species. Basing on that variation and a variable distribution of the mentioned characters I am not differentiating any subgenera.

Dasodis DIAKONOFF

Dasodis DIAKONOFF, 1982, Zool. Verh., Leiden, 193: 49. Type-sp.: *Dasodis microphthora* DIAKONOFF, 1982. Oriental.

Venation: In forewing $r_3 - r_5$ approximated basally, $m_3 - cu_1$ less so, bent, chorda missing, *M* distinct, terminating at m_3, *pcu* wanting; in hindwing $m_3 - cu_1$ stalked to 2/3, *pcu* vestigial, all remaining veins separate.

Male genitalia (Fig. 251): Tegumen large; inner process of pedunculus strongly developed; uncus atrophied; socius very large, densely haired, terminating in an invardly directed sharp hook, with well defined outer edge and indistinct inner edge. Valva simple, long; angles of both sacculus and cucullus not expressed; cucullus slightly expanding posteriorly, hairy; basal cavity and neck ill-defined. Aedeagus simple; caulis moderate; a few short cornuti arranged in a row present.

Female genitalia and early stages unknown.

Bionomy: Little known; food plant of type-species is *Schefflera (Araliaceae)*; larva feeds in leaves.

Distribution: Apart of the type-species distributed from Sri Lanka to Micronesia one south Palaearctic representative of this genus (*D. cladophora* DIAKONOFF) is described from Saudi Arabia.

Comments. In the shape of the forewing *Dasodis* resembles the preceding genus; it shows also some similarities in the male genitalia, e. g. in the presence of a strong apodeme of muscle 4. Originally compared with *Rhopobota* and the Micronesian *Eumarissa*-group of genera.

Gephyroneura OBRAZTSOV

Gephyroneura OBRAZTSOV, 1968, J. N. Y. ent. Soc., **76**: 181. Type-sp.: *Laspeyresia hemidoxa* MEYRICK, 1907 — by orig. design.

Venation: Chorda originating before mid-distance $r_1 - r_2$ terminating before middle $r_4 - r_5$, *M* to before base of m_2, *pcu* vestigial; in hindwing $rr - m_1$ approximate (in female) or connate (in male), $m_3 - cu_1$ stalked to before middle, connecting with radial stem by a very short vein. Dorsal margin of hindwing thickened.

Scent organ: Bunch of scales situated at pedunculus above valva.

Male genitalia (Fig. 252): Tegumen short with shoulders rounded, bristled; uncus short, bilobed; socius weakly sclerotized, provided with a row of strong setae along posterior edge, fused with scaphium; tuba analis membranous. Basal cavity short; basal process long, rod like; angles of sacculus and cucullus small, the latter bristled; neck not differentiated. Aedeagus simple; caulis short; vallum penis fairly well sclerotized; cornuti very short.

Female genitalia (Fig. 536): Sterigma atrophied; distal part of ductus bursae sclerotic, broad, median parts slender, long; ductus seminalis originating in broad basal portion of the ductus bursae, ventrally; signum funnel-shaped, weakly expanding basally.

Early stages and bionomy unknown.

Distribution: Type species described from India, but was recorded from Japan. Monobasic.

Comments. The supposed autapomorphies of this genus are the structures of the socius and the valva. The type-species is unknown to me and the above redescription is based on the data published by CLARKE (1958) and OBRAZTSOV (1968). KUZNETSOV (1976) described in this genus one Chinese species *(perdigna)* but its systematic position seems distinct. Originally *Gephyroneura* was compared with *Pseudophiaris* and *Eucosmomorpha*.

Enarmonodes DANILEVSKIJ & KUZNETSOV

Enarmonodes DANILEVSKIJ & KUZNETSOV, 1968 [in:] KUZNETSOV, Ènt. Obozr., **47** (3): 584. Type-sp.: *Grapholitha recreantana* KENNEL, 1900 — by orig. design.

Venation: In forewing chorda weakly preserved, extending from 2/3 distance between $r_1 - r_2$, terminating at base of r_5; *M* distinct, terminating at base of m_2; *pcu* vestigial. In hindwing $m_3 - cu_1$ connate, remaining veins separate.

Scent organ: Bunch of hair like scales situated on pedunculus above valva.

Male genitalia (Figs 253, 254): Tegumen slender, somewhat expanding dorsolaterally; helmet-shaped lobe at top of tegumen representing strongly altered, fused socii. Valva slender; basal cavity broad, distal edge weakly sclerotized; angle of sacculus weak, with bristled area reaching end of basal cavity; neck scarcely haired; cucullus rounded, provided with large proximal fold overlaping end part of neck. Aedeagus armed with postmedian process; coecum penis short; caulis long, slender; cornuti wanting.

Female genitalia (Fig. 537, 538): Sterigma in form of postvaginal plate convex around ostium bursae, developing a slender anterior edge; colliculum sclerotic, with large lateral sac; ductus seminalis originating in posterior part of broad ductus bursae. Signum present.

Early stages and bionomy unknown.

Distribution: Eastern part of Palaearctic subregion (Amur territory, South Primore, Kunashir Isl.). Three species known to date.

Comments. Originally supposed to be intermediate between *Olethreutini* and *Eucosmini*, however, closest to *Enarmonia*. *E. luteiceps* KUZNETSOV is not included in the above diagnosis.

Enarmonopsis KUZNETSOV

Enarmonopsis KUZNETSOV, 1969, Ènt. Obozr., **47** (2): 357. Type-sp.: *Argyroploce major* WALSINGHAM, 1900 — by orig. design.

Venation as in *Enarmonia*.

Scent organ: A broad concavity of ventro-lateral lobe of seventh tergite hidden under the sternite of same segment, provided with slender scales. Found in female of type species only.

Male genitalia (Figs 256, 257): Tegumen strong with shoulders gently convex; uncus long, hairy, well sclerotized; socius broad, hairy or bristled, connected with lateral lobes of tuba analis. Valva slender or with broad basal portion and distinct angle of sacculus; neck more or less distinct; cucullus weakly expressed, terminating in one or two sharp prominences; basal cavity well defined. Aedeagus species specific, in type-species with very large ventro-terminal process; caulis fairly short; cornuti missing.

Female genitalia (Figs 539—541): Sterigma in form of a cup, open dorsally; lamella postvaginalis very slender, if developed; ostrium bursae in membranous cup, not protected by any sclerite (at least in type-species). Ductus bursae long, broadening in basal part; ductus seminalis postbasal or submedian, ori

ginating ventrally. Signum single, with broad basal plate. Subgenital sternite large, in type-species expanding terminally where connected with lateral edges of sterigma by means of inner lobes.

Early stages and bionomy unknown.

Distribution: Far east of Palaearctic subregion, incl. the islands (Kunashir, Sakhalin etc.). Two species described.

Comments. The supposed autapomorphics of this genus are the fusion of the socii with the linkages of tuba analis, the structure of the sterigma and the scent organ in female. Described as a subgenus of *Enarmonia*.

Semnostola Diakonoff

Semnostola Diakonoff, 1959, Ark. Zool., (2) **12** (13): 174. Type-sp.: *Semnostola mystica* Diakonoff, 1959 — by orig. design. Oriental.

Ancyloides Kuznetsov, 1964, Ent. Obozr., **43** (4): 882. Type-sp.: *Eucosmomorpha (Ancyloides) magnifica* Kuznetsov, 1964 — by orig. design. Established as a subgenus of *Eucosmomorpha* Obraztsov.

Venation: All veins separate or in forewing $r_4 - r_5$ connate, $m_3 - cu_1$ approximated basally and in hindwing $rr - m_1$ stalked to about middle, $m_3 - cu_1$ strongly approximated basally.

Scent organs (except for groups of scales on tegumen and outer part of valva) not found.

Male genitalia (Fig. 255): Tegumen high with differentiated terminal portion; uncus vestigial or absent; socius drooping, weak, hairy; tuba analis simple, membranous or weakly sclerotized ventro-laterally. Valva long; basal cavity long, with weakly expressed distal edge; angle of sacculus indistinct or atrophied, long hairs above sacculus; neck absent; cucullus not developed or rudimentary, delicately spined and haired posteriorly, provided with ventro-terminal pollex; basal process usually large, situated on discal surface. Aedeagus slender; caulis long; cornuti innumerous spines, if present. Musculature (Kuznetsov & Stekolnikov, 1977, for *magnifica*): m_1 atrophied, m_2 extending from between bases of pedunculi, m_4 from postbasal part of pedunculus, both muscles fusing anteriorly, attached to dorsal surface of basal process; m_5 subventral, reaching beyond middle of sacculus, slender.

Female genitalia (Figs 542—544): Sterigma ill-defined, weakly sclerotized, with antevaginal plate slender; ductus bursae may develope a cingulum; ductus seminalis from before the latter, or more anterior, originating ventrally; colliculum weakly developed, usually membranous. Pair of signa, usually differing in size. Subgenital sternite weak, concave, often folding posteriorly.

Early stages and bionomy unknown.

Distribution: Apart of 4 Oriental species 3 species were found in Palaearctic subregion (Far East).

Comments. The supposed autapomorphy of this genus is the shape of the valva, especially its cucullus. It seems be closely related with *Anathamna*

MEYRICK but differs in a lack of a basal sclerite of the distal portion of the corpus bursae. *Ancyloides* has not yet been synonymized with *Semnostola*, however, KUZNETSOV & STEKOLNIKOV (1977) placed its type-species in that genus.

Neoanathamna KAWABE

Neoanathamna KAWABE, 1978, Tinea, **10** (19): 182. Type-sp.: *Neoanathamna cerinus* KAWABE, 1978 — by orig. design.

Venation: All veins separate, in hindwing $m_3 - cu_1$ strongly approximated basally.

Scent organ: A large submembranous lobe connected with outer portion of pedunculus, situated above valva, provided with very long, hair like scales originating anteriorly.

Male genitalia (Figs 258—260): Pedunculus slender; distal part of tegumen very short, terminating in a small prominence from base of which extend the socii; top of tegumen long hairy, hairs of socius weak; tuba analis membranous with a pair of ventro-anterior sclerites. Basal cavity long, reaching angle of sacculus ventrally; sacculus long hairy, a row of outer hairs reaching base of the neck; cucullus ovate, slightly expanding ventrally, armed with long discal, short marginal and one or two outer spines (the latter originating in middle of outer surface); basal process strong, ventral, marked with basal prominence, provided with a slender rod strengthening base of scent organ. Aedeagus simple; caulis long, expanding medially; large bunch of deciduous cornuti in vesica.

Female genitalia (Fig. 545): Sterigma fused with distal part of subgenital sternite, in form of an aciculate concavity extending posteriorly into a pair of lobes, coalescent with broad, fairly well sclerotized colliculum. Ductus seminalis anterior, originating dorsally; pair of dagger like signa with indistinct basal parts in corpus bursae.

Early stages and bionomy unknown.

Distribution: Japan (Honsyu, Shikoku etc.); monotypical.

Comments. Distinct by its supposed autapomorphies, viz., by the shape of top part of the tegumen (much shorter than in *Semnostola*), the structure of the basal cavity of the valva and the presence of the outer spines of the cucullus. The fusion of the sterigma and the subgenital sternite is most probably of convergent importance. Originally compared with *Anathamna* MEYRICK and *Semnostola*, being also close to *Tokuana*.

Tokuana KAWABE

Tokuana KAWABE, 1978, Tinea, **10** (19): 181. Type-sp.: *Tokuana imbrica* KAWABE, 1978 — by orig. design.

Venation: Chorda originating before mid-distance $r_1 - r_2$; in hindwing $m_3 - cu_1$ short stalked.

Scent organ: Small membranous prominence on lateral part of pedunculus just above valva clothed with fairly long scales.

Male genitalia (Fig. 261): Tegumen very high, with short apical part; uncus sclerotic, bifid; socius situated at base of the latter, small, hairy; tuba analis almost entirely membranous. Basal cavity long, reaching angle of sacculus; sacculus slender, long, hairy; neck very slender, bent, sclerotic; cucullus large, transversely ovate, rounded, bristled posteriorly, marked with a short ventral tip; basal process broad. Aedeagus simple; a pair of plate-shaped cornuti, one armed with a thorn; caulis long, slender.

Female genitalia (Fig. 546): Sterigma tubular, sclerotic, aciculate, with reduced posterior margin, fused with subgenital sternite. Ductus bursae broad, with weak aciculate sclerite near middle; ductus seminalis originating at base of ductus bursae, dorsally; signa, two blades with weak basal parts. Subgenital sternite weakly concave posteriorly.

Early stages and bionomy unknown.

Distribution: Japan: Yakushima Island. Monobasic.

Comments. The supposed autapomorphies of *Tokuana* are the structure of the valva and the sterigma. Closely related with *Neoanathamna*, but with more specialized valva.

Eucosmomorpha Obraztsov

Eucosmomorpha Obraztsov, 1951, Tijdschr. Ent., 93; 99. Type-sp.: *Tortrix rhediella*: Haworth, [1811] = [*Tortrix*] *albersana* Hübner, [1813] — by orig. design.

Venation: Chorda extending from before middle $r_1 - r_2$, reaching base of r_4, often vestigial; *M* weak, terminating at mid-way $m_2 - m_3$, or atrophying; in hindwing $rr - m_1$ and $m_3 - cu_1$ strongly approximated or connate.

Male genitalia (Fig. 262): Tegumen slender, high; uncus atrophied; socii fused to form an apical hairy lobe; tuba analis sclerotized ventro-laterally. Valva long bristles; basal cavity long, reaching end of sacculus; cucullus very slender, tapering terminally, armed with a stout terminal pollex; spines of cucullus very thin. Aedeagus slender; caulis long; cornuti bent medially, deciduous. Musculature (Kuznetsov & Stekolnikov, 1977; *albersana*): m_1 atrophied; m_2 from submedian portion of ventral surface of pedunculus to posterior (basal) portion of basal process; m_4 very short, originating at small prominence of pedunculus terminating at top of basal process; r_5 long, subventral, inserting at the end of basal cavity, below the level of neck.

Female genitalia (Fig. 547): Sterigma a weak, somewhat concave plate surrounding ostium bursae; colliculum distinct but weakly sclerotized; ductus seminalis ventral, originating at beginning of colliculum; signum single, ventral.

Early stages: Swatschek (1958) provides a diagnosis based on the chaetotaxy of the type-species of this genus and *Enarmonia*.

Bionomy: Single generation a year; hibernate fully grown larvae; larvae

feed in spun leaves (or in rolled leave) and pupate in feeding place. Food-plants are *Lonicera* and *Symphoricarpos*.

Distribution: Palaearctic subregion; two species known, *albersana* is transpalaearctic.

Comments. This genus is close to *Enarmonia* and *Pseudophiaris*. Its supposed autapomorphies are the fused socii and the shape of the cucullus. Its systematic position is insufficiently clear, but certainly it is not synonymous with *Enarmonia* as SWATSCHEK (1958) supposes. OBRAZTSOV (1961) included *Eucosmomorpha* in *Grapholitina* beyond *Diamphidia* and *Pseudophiaris*; KUZNETSOV (1958) placed it in *Enarmoniina*; in Polish Lepidoptera (RAZOWSKI, 1988) is was provisionally included in *Eucosmina*.

Enarmonia HÜBNER

Enarmonia HÜBNER, [1826], Verz. bekannter Schmett.; Anzeiger: 63. Type-sp.: *Tortrix woeberiana* [DENIS & SCHIFFERMÜLLER], 1775 = *Phalaena formosana* SCOPOLI, 1763 — by subs. design. (WALSINGHAM, 1895, Trans. ent. Soc. London, **1895**: 516). *Enarmonia* is an emendation of *Ernarmonia* HÜBNER, [1825], ibid.: 375 which is an invalid spelling (Opin. Decl. int. Comm. zool. Nomencl., **10**: 349).

Venation: In forewing chorda originates in mid-distance $r_1 - r_2$, reaching base of r_5; M strong terminating at base of m_2 or mid-distance $m_2 - m_3$. In hindwing $m_3 - cu_1$ connate.

Male genitalia (Figs 263—266): Pedunculus long, slender; uncus simple, rather weakly sclerotized, haired dorso-laterally; socius broad, lateral, hairy; tuba analis membranous. Valva small, with long basal cavity; angle of sacculus atrophying; neck indistinct; cucullus small, bristled, expanding, provided with minute ventrolateral thorn. Aedeagus simple; caulis fairly short, broad, embracing aedeagus dorsally; cornuti missing.

Female genitalia (Fig. 548): Sterigma completely reduced; distal part of ductus bursae forming a short, sclerotic tube; ductus seminalis extending from mid-part of ductus bursae. Single, plate-shaped signum developed.

Early stages: SWATSCHEK (1958) included it in his diagnosis of *Enarmonia* placing it in *Eucosmini*.

Bionomy: Larva lives under bark; hibernate 3—5 instar larvae pupating in the feeding place. Polyphagous on *Prunaceae (Prunus, Malus)*; an occasional pest in orchards.

Distribution: Palaearctic subregion; the type-species is transpalaearctic; three species known.

Comments. The supposed autapomorphies of *Enarmonia* are the shape of the cucullus and the situation of its pollex.

Pseudophiaris OBRAZTSOV

Pseudophiaris OBRAZTSOV, 1961, Tijdschr. Ent., **14** (5): 54. Type-sp.: *Phiaris sappadana* DELLA BEFFA & ROCA, 1937 — by orig. design.

Venation: In forewing chorda originating in mid-distance $r_1 - r_2$, terminating just before r_5; M vestigial, reaching base of m_2. In hindwing $m_3 - cu_1$ extending from one point.

Male genitalia (Fig. 267): Tegumen high, with distal part differentiated thanks to lateral membranization before base of socii; uncus absent, apical prominence of tegumen weakly concave medially; socius small, drooping, scarcely haired; tuba analis membranous, with distinct lateral sclerites linking with pedunculi. Basal cavity indistinct; disc gradually membranized basad; sacculus angulate, clothed with long hairs beyond middle; neck weak, naked, scaled externally; cucullus small, provided with spines and bristles, hardly expanding dorsally, strongly so ventro-posteriorly where a stout pollex present; basal process well developed. Aedeagus simple; caulis long; cornuti deciduous.

Female genitalia (Fig. 549): Sterigma broad, weakly sclerotized except for lateral parts of postvaginal plate, followed by aciculate membrane; antevaginal plate very slender, ill-defined. Irregular, weak sclerite in median portion of ductus bursae representing a cingulum; two inequally large signa present: the anterior being a long, folded plate, the posterior very short thorn like with a basal sclerite. Subgenital sternite broad, weakly concave in middle posteriorly.

Early stages and bionomy unknown.

Distribution: Carnic Alps (Italy).

Comments. Closely related to *Eucosmomorpha*, as compared originally, but with a well developed, drooping socii and more primitive top part of the tegumen and the valva. The probable synapomorphies of the two genera are the presence of the pollex and the shape of the valva. The supposed autapomorphy of this genus is a presence of a lobe of the upper part of the cucullus.

Rhadinoscolops OBRAZTSOV

Rhadinoscolops OBRAZTSOV, 1968, J. N. Y. ent. Soc., **76**: 187. Type-sp.: *Pyralis koenigiana* FABRICIUS, 1775 — by orig. design.

Venation: Chorda from base of r_2 to before m_1; M to beyond mid-distance between $m_2 - m_3$, cu_1 from angle of median cell. In hindwing $rr - m_1$ closely approximated; $m_3 - cu_1$ connate.

Male genitalia (Fig. 268): Tegumen fairly long; uncus vestigial, concave apically; socius weak, lateral, scarcely hairy; tuba analis membranous. Basal cavity long, slender, terminating subdorsally; basal process simple, upcurved; angle of sacculus weakly expressed, marked with bunch of subventral long hairs; neck developed; cucullus expanding and rounded dorsally, convex caudally, protruding ventrally into a long, sharp process. Aedeagus simple; caulis fairly long; cornuti a group of long spines.

Female genitalia (Fig. 550): Sterigma in form of a lamella postvaginalis, with ostium bursae located at its top; distal portion of ductus bursae forming a sclerotic antrum (?colliculum); ductus seminalis lateral, extending from broadening of basal portion of ductus bursae; signum absent.

Early stages and bionomy unknown.

Distribution: Oriental and Australian regions (spread from Assam to Australia), and probably Japan. The data from Congo are doubtful. Monobasic genus.

Comments. Unknown to me, the above redescription is based on the original diagnosis and illustrations. OBRAZTSOV compared it with *Osthelderiella*, *Eucosmomorpha*, *Pseudophiaris* and other genera placed by him in *Grapholitina*.

Osthelderiella OBRAZTSOV

Osthelderiella OBRAZTSOV, 1961, Mitt. münch. ent. Ges., **51**: 150. Type-sp.: *Osthelderiella amardiana* OBRAZTSOV, 1961 — by orig. design.

Venation: Chorda extending from mid-distance $r_1 - r_2$ to half way $r_3 - r_4$; trace of M reaching middle distance $m_2 - m_3$. In hindwing $m_3 - cu_1$ long stalked, originating far from m_2. No cubital bristles in hindwing.

Male genitalia: Pedunculus long, slender, distal part of tegumen small; socius broad, latero-terminal, hairy; tuba analis membranous. Basal cavity slender reaching "basis of cucullus"; sacculus short, weakly convex, provided with subterminal lobe; pulvinus present; cucullus long, slender, provided with large anterior process situated ventrally; caulus long; cornuti missing.

Female, early stages and bionomy unknown.

Distribution: North Iran.

Comments. Unknown to me; this redescription is based on the original diagnosis and a photography of the male genitalia. Originally compared with *Matsumuraeses*. The elongate, tapering terminally process of the anterior part of the ventral edge of the cucullus situated just beyond an indistinct neck is a probable autapomorphy of this genus. The analysis of the above mentioned photography does not allow to judge on the systematic position of *Osthelderiella*.

Grapholitini

This tribe has usually been subdivided into two subtribes. PIERCE & METCALFE (1922) proposed the names *Ephippiphoridii* and *Lipoptychidii*, then DANILEVSKIJ & KUZNETSOV (1968) used the names *Dichroramphae* and *Laspeyresiae*. However, the oldest name was *Grapholithini* based on the generic name *Grapholitha* TREITSCHKE, 1830 = *Graphoilta* TREITSCHKE, 1829 applied to the tribe of Tortrices (c. f. RAZOWSKI, 1976), now used for the tribe *(Grapholitini)* and subtribe *(Grapholitina)*. For the second subtribe I am adopting the oldest name *Lipoptychina* instead of *Dichroramphae*.

DANILEVSKIJ & KUZNETSOV (1968) treated *Dichroramphae* = *Lipoptychina* as more primitive group, however, they show several more advanced characters than the *Grapholitina*. The sterigma of *Lipoptychina* is fused with the seventh sternite whilst in *Grapholitina* they are separate similarly as in all more primitive

tribes of the family. The sclerite protecting the ostium bursae is asymmetrical, fused with more anterior sclerotic areas of the ductus bursae, a more or less distinctly sclerotized convexity of the base of the ductus bursae is developed and some further progressive characters expressed in the reductions (very simple tegumen, atrophy of the socii, strongly reduced vestiture of the valva etc.) are present. In the forewing pattern the inner spots of the "mirror" are absent whilst a row of black spots developes at the termen. In *Grapholitina* the "mirror" is usually complete, with black inner spots and at least with anterior limiting line. Thus I am treating the *Lipoptychina* as a more advanced subtribe.

The most important papers on *Grapholitina* were published by OBRAZTSOV (1953 a, 1958—1964) and DANILEVSKIJ & KUZNETSOV (1968), the latter being a thoroughgoing monograph of the Palaearctic fauna.

Grapholitina

The generic system of this subtribe is still insufficiently developed because of too scarce amount of the apomorphic characters. DANILEVSKIJ & KUZNETSOV (1968) criticized the system of OBRAZTSOV (1958—1964) and proposed their own arrangement based on bionomic and morphological characters. They distinguished two main branches viz., that of *Grapholita* in which they included *Pammene*, *Pammenodes*, *Strophedra* and *Selania* and the branch of *Cydia* with *Leguminivora* and *Fulcrifera*. To the first they included the dendrophilous genera characterized also by the wing venation in the males and the type of the scent organs. The second branch characterizes with the presence of the diverticle of the corpus bursae and some similarities in the bionomy. DANILEVSKIJ & KUZNETSOV suggested that the abdominal coremata show a progressive development. However, that character is most probably the autapomorphy of the tribe, thus its absence in the particular genera or species must be regarded as a secondary reduction. The lateral bunches of the scent scales of the intersegmental membrane 8—9 occur in almost all genera of *Grapholitina* (except for *Cirriphora*, *Fulcrifera*, *Lathronympha*, *Pammene* and *Pammenodes*). In *Cydia* they are wanting in all but one species (*C. maackiana* DANILEVSKIJ). The presence of the anal fold of the hindwing is also of no phylogenetic importance as that character belongs to the general plan of the subfamily and in *Grapholitini* occurs in two genera only *(Fulcrifera, Leguminivora)*. The presence of the scent glands in the males situated along the hindwing veins is little studied; in the genera close to *Pammene* they are found near the veins *sc* and *rr*, whilst in *Cydia* are situated at vein a_3. The development of the diverticle of the corpus bursae is treated as a synapomorphy of some genera, but it is not correlated with any other apomorphic character, thus there are some doubts in that interpretation. Several further characters may be treated as the autapomorphies of the particular genera only, thus the proposed system, cannot be sufficiently supported.

In *Matsumuraeses* two pairs of the coremata between abdominal segments

7 and 8 and 8 and 9 are developed. That character could be an autapomorphy of this monobasic group. Well developed socii may speak of its primitive position. The second group possesses one pair of coremata only, between segments 8 and 9, atrophying however, in some taxa. Within this group of the genera two branches are distinguished, the group with tergal abdominal scent organs and the group without such structures. The latter is seemingly more primitive as the presence of the scent tergal organs, not found in any other *Tortricidae* to this date, is treated as a supposed synapomorphy. The former branch consists of the genera closely related with *Grapholita* in which the corpus bursae is simple and the group with developed diverticle of the corpus bursae. In the group of *Grapholita* the position of *Diamphidia* is still unclear, but that genus may be an offshoot of the main bulk, characterized by the autapomorphic structure of the distal part of the valva. *Selania* is regarded as a genus more advanced than *Grapholita* as having a transformed corema, reduced to a single, strongly sclerotized scale and a peculiar sclerite strenghtening the distal part of the corpus bursae. The position of *Lathronympha* is completely unclear, as no synapomorphy with any other genus is found. All its characters are either of convergent importance or those structures are completely reduced. It is thus placed at the end of this group of the genera, and could differentiate from their branch earlier than the preceding genera. All the remaining genera constituting the branch of *Cydia* developed a diverticle of the distal part of the corpus bursae. *Leguminivora* is probably the most primitive genus of that bulk, characterizing with a patch like sublateral socii. The remaining genera of this group does not show any synapomorphy except for some reductions, and form two lines, one represented by *Cydia* + *Fulcrifera*, the other by *Cirriphora*. The supposed autapomorphy of *Cirriphora* besides the spinose outer surface of the base of the valva is a peculiar anastomosing duct in the distal portion of the corpus bursae being probably a transformed diverticle. *Fulcrifera* is more advanced than *Cydia* as a development of the lobe dorsal to aedeagus shows. The group of the genera closely related to *Pammene* developed, as mentioned above, the tergal abdominal scent organs occurring on the segments 5 and 6—8. In *Pammenodes* a peculiar scent organ is present on the 5th tergite only and there is no evidence that is a result of a reduction or specialization. Other genera building the main bulk of this group characterize with a presence of the scent structures on the tergites 6—8 and show a tendency of a fusion of the veins of the anterior portion of the hindwing in the males. In *Parapammene* and *Pseudopammene* the distal parts of *sc*–*rr* are fused with one another and in that area occur numerous small scent glinds; the two genera show some supposed autapomorphies, and both preserved the coremata. *Pammene* has similarly fused posterior halves of the mentioned veins, but the scent glands are absent, probably in a course of a reduction. In some species of this genus (sugenus *Eucelis*) the position of those veins is plesiomorphic. *Pammene* shows also some specializations such as the shape of the aedeagus and the sterigma, and obvious reductions, as a complete atrophy of the coremata. The position of the genus

Strophedra is doubtful. The external characters and the fusion of the hindwing veins $rr - m_1$ speaks of its affinity with the discussed group, but the tergal scent organs are absent. That may be regarded as a secondary reduction, however. In this genus the coremata are preserved similarly as in *Pseudopammene*, but the position of the bunch of scales is more anterior. The autapomorphy of *Strophedra* is a presence of a thorn like process of the distal edge of the subgenital sternite. I am treating *Strophedra* as an offshoot of the main branch of the *Pammene* group.

Matsumuraeses Issiki

Matsumuraeses Issiki, 1957, Icones Heterocerorum Jap. Color. natural., 1: 57. Type-sp.: *Semasia phaseoli* Matsumura, 1900 — by monot.

Venation: In forewing all veins separate, chorda extending from mid-distance $r_1 - r_2$, median stem fully developed; in hindwing $m_3 - cu_1$ short stalked, *pcu* atrophying.

Scent organs: In anal region of hindwing occur groups of species specific modified scales; coremata in the intersegmental membrane of 7 and beyond 8 segment (in *M. ussuriensis* (Caradja) with hair like and lancet-shaped scales, respectively; fig. 269); rather short scales at the end of small eighth sternite, and a weaker group on the former sternite. Subgenital tergite specialized, forming an oblique pocket to contain the scale tuft on each side laterally.

Male genitalia (Figs 269—272): Tegumen fairly large, more or less expanding terminally, with weak apical portion; socii fused with tegumen or (and) with one another, large, long hairy or very small, minutely bristled, forming a dorso-posterior plate. Neck of valva very slender, ventral incision very deep, angulation of sacculus distinct, that of cucullus variable; basal cavity rather short, its covering membrane often with a ventro-posterior hairy patch, or distal edge of the cavity convex, hairy. Neck of valva naked. There are two types of cucullus: a broad, subtriangular (e. g. in *M. phaseoli* (Mats.) or rounded ventrally and produced dorsally (in *M. capax* Raz. & Yas.). Musculature (Kuznetsov & Stekolnikov, 1983 — *phaseoli*): m_2 originating near middle length of pedunculus, above base of m_4, terminating below costa of valva near the end of basal cavity, m_4 inserting at top of basal process; m_5 from medio-posterior portion of caulis to end of sacculus and neck.

Female genitalia (Figs 551, 552): Sterigma rather weakly sclerotized, in form of postvaginal plate provided with hairy end part, and membranous anterior portion surrounding ostium bursae, or short, broad, forming a very thin sclerotic ring around ostium. Ductus bursae slender, provided with elongate submedian sclerite or incomplete tube; ductus seminalis originating in distal part of corpus bursae or anterior portion of ductus bursae; signa long, flattened terminally. Subgenital sternite species specific, in the species close to *phaseoli* short, deeply incised posteriorly, in other ones large, weakly concave.

Early stages: RAZOWSKI & YASUDA (1975) provide the data on chaetotaxy of larva and characterize the pupa.

Bionomy: Eggs are deposited under the leaves or on petals. The larvae live in rolled leaves or in seeds; the food plants are chiefly *Papilionaceae (phaseoli* is a pest of soybeen, *Glycine)*; one species is found to feed on *Barleria, Acanthaceae.*

Distribution: This is an East Asiatic genus; of 14 known species 7 are Oriental, 2 are common of that region and Palaearctic subregion, and 5 are exclusively Palaearctic in distribution. The areals of the species are little known, but are probably not wide, however, *M. falcana* (WALSM.) is known to occur in Nepal, China, Taiwan and Japan.

Comments. OBRAZTSOV (1960) located *Matsumuraeses* between *Leguminivora* and *Collicularia*, DANILEVSKIJ & KUZNETSOV (1968) placed it at the beginning of their system of the subtribe and DIAKONOFF (1972) suggested it is close to *Cryptophlebia* WALSINGHAM at the very end of the *Grapholitini.* The autapomorphies of this genus are seemingly the presence of the additional coremata on the seventh segment, the structure of the eighth tergite and the fusion of the socii. The species form two groups differing mainly in the shape of the postvaginal plate and the cucullus. The socii vary within the first group being very large and elongate, with long hairs *(phaseoli)* or with short hair (in *capax*). In the second group they are small, convex or plate-shaped, with more or less distinct median groove devoid hairs. The data on this genus are gathered in the paper by RAZOWSKI & YASUDA (1975).

Diamphidia OBRAZTSOV

Diamphidia OBRAZTSOV, 1961, Tijdschr. Ent., **104**: 51. Type-sp.: *Pammene petulantana* KENNEL, 1901 — by orig. design.

Venation: In hindwing of males $rr - m_1$ entirely fused with one another; $m_2 - cu_1$ distinctly separate.

Scent organs: Coremata well developed, with long, hair like scales; groups of dense scent scales on sternite 8 present.

Male genitalia (Fig. 273): Tegumen expanding in middle apically; valva slender; neck long, almost naked; ventral incision long, gentle; cucullus proportionally small, provided with large outer lobe extending distally and bearing a strong ventral spine. No cornuti in vesica present.

Female genitalia (Fig. 553): Sterigma a broad weakly sclerotized postvaginal plate; surrounding of ostium bursae short, expanding distally, rather distinctly sclerotized. Ductus bursae of slender type; ductus seminalis originating at anterior edge of cingulum situated in middle part of ductus bursae. Eighth sternite with deep, semicircular concavity of posterior edge; signa well developed.

Bionomy: The larva of oriental *D. elliptcia* (MEYR.) lives in stems. No further data available.

Distribution: The representatives of this genus are known of the eastern part of Palaearctic subregion (1 species) and of the Oriental region (1 species from Java).

Comments. The presence of a large, expanding posteriorly outer lobe of the valva and the development of its ventro-terminal spine are the probable autopomorphies of this genus.

Grapholita Treitschke

Venation: Forewing with chorda and *M* developed; in hindwing $m_3 - cu_1$ extending from one point, rarely very short stalked.

Scent organs (fig. 277): Coremata in the intersegmental membrane 8—9, with scale tufts on the glandular patches attached to elongate sclerites.

Male genitalia: Terminal prominence of tegumen often present, anterior convexity usually well developed; socius vestigial, represented by a group of hairs or completely atrophied. Valva distinctly incised ventrally; neck naked or with innumerous hairs; outer, membranous edge of cucullus often extending posteriorly; angulation both of sacculus and cucullus species specific; bristles and spines preserved on cucullus, rarely beyond basal cavity. Aedeagus simple; cornuti of the two types.

Female genitalia: Sterigma in form of a weak postvaginal plate, or almost completely atrophied; sclerites of ductus bursae characteristic of subgenera; corpus bursae simple; two signa present, exceptionally one of them or both atrophied. Seventh sternite usually weakly solerotized.

Early stages: Swatschek (1958) did not found any generic differences between the representatives of *Grapholita* and *Cydia*. Some data are given by Danilevskij & Kuznetsov (1968).

Bionomy: Larvae are chiefly carpophagous but also feed on leaves or in stems; the way of feeding is often bound with the larval instars. Several species are important economically.

Distribution. The genus has probably a world wide distribution, however, the species described from the tropics require reexamination.

Comments. The position of the genus is discussed in the characteristics of the subtribe. It is extremely similar to *Cydia* both genitalically and in the larval morphology (cf. Swatschek (1958)). The only difference is the presence of the diverticle of the corpus bursae in the branch of *Cydia* treated provisionally as its autapomorphy. However, there is also a possibility that it was secondarily reduced in *Grapholita*. The genus is usually divided into two subgenera characterized as follows.

Subgenus 1: *Grapholita* Treitschke

Grapholita Treitschke, 1829, Schmett. Eur., **7**: 232. Type-sp.: *Tortrix lunulana* [Denis & Schiffermüller], 1775 = *Pyralis dorsana* Fabricius, 1775 — by subs. design. (Walsingham, 1895, Trans. ent. Soc. London, **1895**: 517).

Grapholitha TREITSCHKE, 1830, ibid., **8**: 203 — nom. emend. for *Grapholita* TREITSCHKE, 1829.

Ephippiphora DUPONCHEL, 1834, Annls Soc. ent. Fr., **3**: 442. Type-sp.: *Pyralis dorsana* FABRICIUS, 1775 = *Tortrix lunulana* [DENIS & SCHIFFERMÜLLER], 1775 — by monot.

Stigmonota GUENÉE, 1945, ibid.: 182. Type-sp.: *Tortrix lunulana* [DENIS & SCHIFFERMÜLLER], 1775 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 32).

Endopisa GUENÉE, 1845, ibid.: 182. Type-sp.: *Grapholitha nebritana* TREITSCHKE, 1830 — by subs. design. (DESMAREST, 1857 [in:] CHENU, Encyclop. Hist. nat. Papillons Nocturnes: 224) FERNALD's (1908: 32) designation of the type, (*Endopisa pisana* GUENÉE, 1845 = *Pryalis nigricana* FABRICIUS, 1794) is subsequent.

Scent scales of the coremata usually hair like, long.

Male genitalia (Figs 274, 275): Tegumen simple or spinose (in *G. discretana* (F.), *G. compositella* (WOCKE) and their allies); socii vestigial or wanting; valva simple with short neck and usually deep ventral incision. Aedeagus in majority of species short, often stout; cornuti very often of deciduous type, with exception of the species close to *G. jungiella* (L.) in which they are strong, non-deciduous.

Female genitalia (Figs 554, 555): Sterigma variably developed, often with short or atrophying postvaginal plate, but in several species forming an antevaginal sclerite protecting the ostium bursae at least proximally or extending also dorsally; lateral or latero-proximal prominences or processes may occur. In some species (*discretana* and *compositella* grups of species) ductus bursae slender, fairly long; ostium bursae in a weakly sclerotized cup-shaped broadening; cingulum long, sometimes incomplete; ductus seminalis anteriorly to the latter, often approaching corpus bursae. In other species (close to *jungiella*) ostium bursae situated in a short sclerite, ductus bursae broad, with internal spinose sclerite (species close to *dorsana*), cingulum well sclerotized, posterior, provided with a lateral lobe from before which extends ductus seminalis. The latter, with a few exceptions, slender, without basal bulb. Subgenital sternite simple, weakly sclerotized, or with specialized posterior areas.

Bionomy: Larvae feed in generative organs of plants, in younger instars also attacking leaves or stems, or live there until pupation. This subgenus is bound with *Leguminosae*, however, a few species are feeding on other plants, e. g. on *Humulus* and *Cannabis (Cannabaceae)*.

Distribution: The subgenus is Holarctic in repartition; the majority of species (ca 50) is Palaearctic, ca 20 are exclusively Nearctic and a few species are typical of the Oriental region. DANILEVSKIJ & KUZNETSOV (1968) divided the palaearctic species into six sections.

Subgenus 2: ***Aspila*** STEPHENS

Aspila STEPHENS, 1834, Ill. Br. Ent., *Haustellata*, **4**: 104. Type-sp.: *Pseudotomia Aspila lediana*: STEPHENS, 1834 = *Coccyx janthinana* DUPONCHEL, 1834 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 27, 58).

Opadia GUENÉE, 1845, ibid., (2) **3**: 182. Type-sp.: *Grapholitha funebrana* TREITSCHKE, 1835 — by monot.

Coptoloma LEDERER, 1859, Wien. Ent. Mschr., 3: 124, 370. Type-sp.: *Coccyx janthinana* DUPONCHEL, 1834 — by monot.

Scales in male hindwing fringes specialized, species specific. Coremata with lancet-shaped broad scales usually.

Male genitalia (Figs 276): Cornuti of deciduous type only.

Female genitalia (Figs 556): Postvaginal plate of sterigma partially reduced; sclerite surrounding ostium bursae often extending posteriorly, elongate; its lateral or latero-anterior lobes represent the sterigma. Ductus bursae broad, short; ductus seminalis usually median, originating from before sclerite representing cingulum, small, plate-shaped or variably swung, rarely almost complete.

Bionomy: This subgenus it closely bound with *Rosaceae*. The larvae live in fruits, exceptionally in young twigs (*G. molesta* (BUSCK)). Two species (*G. funebrana* (TREIT.), *G. inopinata* (HEINR.)) are serious pests.

Distribution: Mainly Palaearctic subregion, as only a few species are North American.

Comments. DANILEVSKIJ & KUZNETSOV (1968) divided this subgenus into 3 sections, the groups of species closely related to *funebrana*, *janthinana* and *molesta*.

Selania STEPHENS

Selania STEPHENS, 1834, Ill. Br. Ent., *Haustellata*, 4: 121. Type-sp.: *Carpocapsa leplastriana* CURTIS, 1831 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 27).

Chretienia OBRAZTSOV, 1968, J. N. Y. ent. Soc., 76 (4): 224. Type-sp.: *Grapholitha rhezelana* CHRÉTIEN, 1915 — by orig. design.

Venation as in *Grapholita*; hindwing with *sc* separate or connected with *rr*, occasionally forming a small elongate loop (found in *leplastriana*, cf. DANILEVSKIJ & KUZNETSOV, 1968); $m_3 - cu_1$ separate or stalked (in *rhezelana*).

Scent organ (figs 279, 281): Transformed coremata of 8—9 segment, if present.

Male genitalia: Terminal prominence of tegumen more or less distinct. Valva with ill-defined neck, variably concave ventral edge and rather weakly sclerotized posterior edge of basal cavity, cucullus small, or weakly differentiated. Two groups of cornuti in vesica: anterior bunch of deciduous cornuti and posterior group of non-deciduous ones, each group showing a tendency to atrophy.

Female genitalia similar to those in *Grapholita*; sterigma weakly sclerotized; ostium bursae protected by variably long sclerite; cingulum present; ductus seminalis extending from distal part of corpus bursae, broad or bulbous basally; v-shaped sclerite opposite to base of ductus seminalis; two weak signa, if developed.

Bionomy: Larvae in stems, flowers and seeds of *Rosaceae*. Number of generations increases in the south from one to several (in *S. capparidana* (Z.)).

Distribution: Western part of the subregion.

Comments. DANILEVSKIJ & KUZNETSOV (1968) synonymized *Chretienia* and treated it as a "section *capparidanae*". The problem cannot be solved on the basis of available material thus I am gathering the known data for the two groups only. The only synapomorphy of the two is the presence of v-shaped sclerite of the corpus bursae.

The monobasic group *Selania* s. str. characterizes with all veins separate. Scent organ in form of transverse rows of scales on subgenital segment and spherical scales on outer surface of valva. Male genitalia (Fig. 278): Cucullus gradually expanding posteriorly, armed with a slender row of spines, and 1—3 stronger marginal thorns; two groups of cornuti present; a group of hairs on the membrane of basal cavity occurs; neck of valva scarcely hairy. Female genitalia (Fig. 557): Cingulum anterior, large; base of ductus seminalis in form of very large sac from which extends a very thin dorso-anterior duct; in corpus bursae dorsal papilla and signa present; subgenital sternite with arch-shaped transverse sclerotic belt extending distally as far as to posterior incision. Bionomy: Larvae live in *Brassica (Cruciferae)* and some other plants, hibernate young larvae, pupation out of feeding place.

The species closely related to *rhezelana ("Chretienia")* are characterized as follows: Hindwing $m_3 - cu_1$ stalked; scent organ in form of a specialized coremata, reduced to single, thick scale. Male genitalia (Fig. 280): Cucullus small, more or less expanding ventrally, with broad area of spines, without thick marginal spines; saccular group of hairs extends towards well developed neck; groups of either deciduous or non-deciduous cornuti in vesica. Female genitalia: Sclerite of ductus bursae ring-shaped, submedian; sclerite surrounding ostium bursae variably developed; ductus seminalis very broad basally, then very slender; v-shaped sclerite of distal part of corpus bursae weak or completely reduced; signa absent.

Lathronympha MEYRICK

Lathronympha MEYRICK, 1926, Entomologist, **59**: 27. Type-sp.: [*Tortrix*] *hypericana* HÜBNER, [1799] = *Pyralis strigana* FABRICIUS, 1775 — by orig. desig.

Venation: In forewing chorda extending from 3/4 distance between r_1 and r_2 and terminates at r_5; *M* strong, reaching mid-distance $m_2 - m_3$.

Scent organs absent.

Male genitalia (Figs 282, 283): Tegumen producing apically; valva thick, with neck short, devoid vestiture; cucullus elongate, armed with spines, and hairs, weak group of setae at distal edge of basal cavity extending ventrally; aedeagus simple; cornuti missing. Musculature (KUZNETSOV & STEKOLNIKOV, 1977): m_2 extending from base of pedunculus, m_4 from before its end, both attached to end part of valval apodeme; m_5 inserted in valva ventro-medially.

Female genitalia (Fig. 558): Sterigma weakly sclerotized consisting of postvaginal plate and a narrow anterior ring, the former convex and marked with

small group of hairs laterally, ostium being situated in a concavity; ductus bursae very long, slender; ductus seminalis median, slender; corpus bursae simple, with pair of well developed signa.

Bionomy: Larva of *strigana* feed in roots then in stems and finally in spun leaves, flowers or seeds of *Hypericum (Guttiferae)*. Hibernate the larvae of 1—3 instars; two, in the south more generations yearly.

Early stages: SWATSCHEK (1958) describes the chaetotaxy confirming a distinct position of this genus.

Distribution. A few Palaearctic species are distributed in the western and eastern parts of the subregion, with large Siberian disjunction.

Comments. As mentioned on p. 200 the genus does not show any autapomorphy, except the reductions; a very thick valva it characteristic of this genus.

Leguminivora OBRAZTSOV

Leguminivora OBRAZTSOV, 1960, Tijdschr. Ent., **103**: 129. Type-sp.: *Grapholitha glycinivorella* MATSUMURA, 1900 — by orig. design.

Venation: Chorda extending in distal part of the distance $r_1 - r_2$, *M* preserved in median part only, $m_3 - cu_1$ approaching to one another basally and posteriorly; in hindwing $m_3 - cu_1$ stalked to beyond middle, a_1 weakly preserved.

Scent organs (Fig. 285): Coremata subdorsal with both broad and slender scales hidden in large posterior pocket of sternal region just before genital apparatus. Numerous broad, rather short scales on eigth sternite posteriorly. Hindwing with anal fold.

Male genitalia (Fig. 284): Tegumen long, broad terminally, with proximal portion expanding dorsally. Socius vestigial, in form of long haired patch situated before end of tegumen laterally. Cucullus broad, somewhat expanding posteriorly, with rather weak ventral angulation; posterior edge of basal cavity naked. Aedeagus long, simple; cornuti wanting.

Female genitalia (Fig. 559): Ovipositor fairly long; sterigma in form of a weakly sclerotized, indistinct postvaginal plate marked with some terminal hairs; ostium bursae protected by a short sclerite; ductus bursae long, membranous; ductus seminalis median; corpus bursae with posterior diverticle; signa well developed.

Early stages: No data on chaetotaxy.

Bionomy: Larvae feed in seeds of *Leguminosae* and *Anacardiaceae*; it is often an important pest of soybeen *(Glycine)*. Probably two generations yearly.

Distribution: Palaearctic subregion and Oriental region. Known from India in the south and Sakhalin in the north-east. A few species known to date.

Comments. DANILEVSKIJ & KUZNETSOV (1968) treat it as a primitive genus close to *Cydia* and *Fulcrifera*, joining them on a basis of some symplesiomorphies

and the presence of probably apomorphic diverticle of the corpus bursae. The genus is characterized by supposedly autapomorphic structure of the abdominal scent organ.

Cydia Hübner

Venation: Forewing chorda extending from middle distance between $r_1 - r_2$, *M* long, terminating between $r_5 - m_1$; hindwing $m_3 - cu_1$ stalked to middle or beyond it, remaining veins separately.

Scent organs: In male hindwing vein a_3 naked, accompanied by glandular cups; anal fold often present; scales of hindwing fringes specialized, characteristic specifically. No abdominal organs.

Male genitalia: Tegumen more or less prominent apically; socii absent, vestiges only in *G. maackiana* Danil. Valva variable in shape, neck usually distinct, naked, vestiture species specific, often concavities of disc or ribs present. Aedeagus characteristic of subgenera; cornuti both of deciduous and fixed type, if developed. Musculature (Kuznetsov & Stekolnikov, 1973 — *pomonella*): m_2 originating below base of pedunculus, attached to top-part of basal process of valva; m_4 from lower part of pedunculus to apex of basal process; m_5 on caulis, subdorsally.

Female genitalia: Sterigma represented by postvaginal plate in several groups marked with median, proximal process; antevaginal plate indistinct or atrophied; ostium bursae in a membranous or at least partly sclerotized concavity of sterigma; cingulum or other sclerites of ductus bursae present, exceptionally a colliculum like structure developed; ductus seminalis extending from anterior part of ductus bursae. Diverticle of corpus bursae present. Eighth sternite variable in shape, often characteristic specifically or subgenerically.

Early stages: Swatschek (1958) provided the description of chaetotaxy of larva.

Bionomy: Larvae live in various parts of plants, mainly in generative organs, or under bark.

Distribution: About 100 species occur in this subregion, less than 50 are known of the Nearctic subregion. It is also found in Oriental region; the data from remaining areas request revision (numerous species were described under the names *Laspeyresia* and *Cydia*).

Comments. This genus is usually subdivided into 2—3 groups, called the subgenera. Danilevskij & Kuznetsov (1968) divided it into *Endopisa*, *Laspeyresia* s. str. and *Kenneliola* and separated them on the basis of a combination of several minor characters. There is no character distributed throughout a ıy subgenus except for the shape of the aedeagus, which is, however, of rather limited importance (a presence of the lateral process is developed convergently within many *Tortricidae* genera). The curved aedeagus of *Kenneliola* is the most constant autapomorphy and that subgenus seems to be the most advanced. In

that subgenus the postvaginal part of the sterigma is weak and does not develope anterior process, what also may be considered as a reduction. In *Cydia* s. str. which seems be most primitive the aedeagus is simple and the anterior process of the postvaginal plate occurs in numerous species. For *Endopisa* of the mentioned authors I use the name *Collicularia* as *Endopisa* is a junior synonym of *Grapholita*. Its differing character is the presence of the lateral process of the aedeagus, as the process of the postvaginal plate is shared with the preceding subgenus. BROWN (1983) followed WALSINGHAM (1914) in synonymization of *Melissopus* RILEY to which belong several Nearctic species characterized with the extending laterotermínal portions of the tegumen. However, that character varies within that group I am preserving *Melissopus* as valid until reexamination of the American material. In the detailed study of the genus DANILEVSKIJ & KUZNETSOV (1968) distinguished several sections. As a supposed autapomorphy one can treat the presence of the proximal process of the lamella postvaginalis occurring in the majority of the species; the importance of a subdivision of the subgenital sternite is insufficiently explained; the presence of the scent glands situated at the third anal vein is a supposed symplesiomorphy of this genus and *Danilevskia*.

Subgenus 1: ***Cydia*** HÜBNER

Cydia HÜBNER, [1825], Verz. bekannter Schmett.: 375. Type-sp.: *Phalaena pomonella* LINNAEUS, 1758 — by subs. design. (WALSINGHAM, 1897, Proc. zool. Soc. London, **1897**: 130).

Laspeyresia HÜBNER, [1825], ibid.: 381. Type-sp.: *Tortrix corollana* HÜBNER, [1823] — by subs. design. (WALSINGHAM, 1897, Proc. zool. Soc. London, **1897**: 58). Subjective junior synon. of *Cydia* HÜBNER preoccupied by *Laspeyresia* R. L., 1817.

Erminea KIRBY & SPENCE, 1826, Introduction to Ent., **3**: 123. Type-sp.: *Phalaena pomonella* LINNAEUS, 1758 — by monot.

Carpocapsa TREITSCHKE, 1829, Schmett. Eur., 7: 231. Type-sp.: 1775 = *Phalaena pomonella* LINNAEUS, 1758 — by subs. design. (CURTIS, 1831, Br. Ent., **8**: 352).

Coccyx TREITSCHKE, 1829, ibid.: 230. Type-sp.: [*Tortrix*] *strobilana* HÜBNER, [1799] = *Phalaena strobilella* LINNAEUS, 1758 — by subs. design. (DESMAREST [in:] CHENU, 1857, Encyclop. Hist. nat. Papillons Nocturnes: 224). Subsequent designation of type-sp. was by FERNALD, 1908, Genera *Tortricidae*: 19.

Semasia STEPHENS, 1829, Nomenclature Br. Ins.: 47. Type-sp.: *Phalaena pomonella* LINNAEUS, 1758 — by subs. design (FERNALD, 1908, op. cit.: 23).

Carpocampa HARRIS, 1841, Report Ins. Massachusetts: 351 — injustified emend. of *Carpocapsa* TREITSCHKE.

Cerata STEPHENS, 1852, List Specimens Br. Animals Colln Br. Mus., **10**: 77. Type-sp.: *Penthina servillana* DUPONCHEL, 1836 — by orig. design.

Pseudotomoides OBRAZTSOV, 1959, Tijdschr. Ent., **102**: 200. Type-sp.: *Phalaena strobilella* LINNAEUS, 1758 — by orig. design.

Erminia OBRAZTSOV, 1959, ibid.: 176 — subs. incorrect spelling of *Erminea* KIRBY & SPENCE, 1826.

Adenoneura WALSINGHAM, 1907. Fauna Hawaiiensis, **1** (5): 677. Type-sp.: *Adenoneura falsifalcellum* WALSINGHAM, 1907 — by orig. design.

Phanetoprepa OBRAZTSOV, 1968, J. N. Y. ent. Soc., **76** (4): 236. Type-sp.: *Phanetoprepa agenjoi* OBRAZTSOV, 1968 = *Semasia demissana* KENNEL, 1901 — by orig. design., synon. n.

In the hindwing vein a_3 not approaching wing edge; no other wing scent organs than those at mentioned vein.

Male genitalia (Figs 286—292): Aedeagus simple, without lateral process; cornuti of constant type except in the members of the species closely related to *C. duplicana* (ZETT.) in which cornuti are strongly reduced or wanting. Shape of valva species specific; neck distinct, often deeply concave; saccular and anterior groups of spines present, group of cucullus very broad, neck naked; distal edge of basal cavity occasionally strengthened with a rib.

Female genitalia (Figs 560—564): Postvaginal plate often membranously connected with the ostium vicinity, in other cases as in following subgenus; proximal process strong; cingulum postmedian or posterior, often elongate, fusing with the sclerite of the ostium to form a colliculum; occasionally a large, complicate sclerite in median and proximal parts of ductus bursae (some armed with thorns); ductus seminalis originates between sclerites or anteriorly to colliculum; signa well developed.

Bionomy: The subgenus is bound mainly with conifers; larvae under the bark; some species (e.g. close to *servilana*) feed in deciduous trees, those of the *pomonella* group bore the fruits; several species are very important economically.

Distribution: Forest zone of the Holarctic region (over 60 species; in this subregion occurs over 30 species).

Subgenus 2: *Collicularia* OBRAZTSOV

Collicularia OBRAZTSOV, 1960, Tijdschr. Ent., **103**: 134. Type-sp.: *Catoptria microgrammana* GUENÉE, 1845 — by orig. design.

In hindwing a_3 close to anal edge; in some species there is a fold near vein *cu* in which a scale pencil is hidden, and anal fold is present.

Male genitalia (Fig. 293): Aedeagus often with a lateral or dorsal process; cornuti deciduous, weakly developed, if present, constant cornuti rarely occur; distal edge of basal cavity weakly sclerotized; cucullus large; neck distinct; hairs or spines on angle of sacculus, often a row of spines extending from ventral angle of cucullus to upper part of the edge of basal cavity, the spines of neck often characteristically arranged.

Female genitalia (Fig. 565): Postvaginal plate of sterigma with anterior process; proximal and lateral edges of sterigma strongly sclerotized, fused and forming an often incomplete ring connected with postvaginal, weaker plate; dorsal surface membranous; ostium bursae sclerotized ventrally or entirely, or an elongate ventral sclerite extends towards middle of fairly long ductus bursae; cingulum ring-shaped, incomplete or absent; ductus seminalis median or anterior, situated before cingulum or a sclerite developed by fusion of the latter with other sclerotic areas. Some structures are homological to colliculum. Subgenital sternite divided into 3 parts, or simple; the subdivision of the sternite begins at the proximal edge.

Bionomy: The larvae are carpophagous, bound with *Fagaceae*, exceptionally utilizing *Aceraceae* or *Rutaceae* (1 species only).

Distribution: Ca 50 species occurs in Palaearctic subregion, in the eastern part of which a few species were found. Two species are Nearctic, a few Oriental and 1 is known of Ethiopian Region.

Subgenus 3: ***Kenneliola*** PACLT

Kenneliola PACLT, 1951, Rev. fr. Lepid., **13**: 127. Type-sp.: [*Tortrix*] *inquinatana* HÜBNER, [1796—99] — replacement name for *Crobylophora* KENNEL.

Crobylophora KENNEL, 1910 [in] SPULER, Schmetterlinge Eur., **2**: 294. Type-sp.: [*Tortrix*] *inquinatana* HÜBNER, [1796—99] — by monot.; preoccupied by *Crobylophora* MEYRICK, 1881. *Crobilophora* [sic!] OBRAZTSOV, 1959, Tijdschr. Ent., **102**: 176 — incorrect subs. spelling.

Scent organs: Anal fold of hindwing developed, scales in anal area species specific; cubital or other groups of scales may occur, in *maackiana* a large fold at vein *cu*.

Male genitalia (Fig. 294): Aedeagus simple, broad basally, flattened dorsoventrally, bent; its surface often spined; cornuti strongly reduced or missing, exceptionally long, thin (3 spines in *C. caradjana* RBL.). Valva with transversely oblique folds between large cucullus and basal cavity; sacculus often with prominent convexity; neck usually free of vestiture.

Female genitalia: Sterigma weakly sclerotized, long, often membranous along middle; vicinity of ostium bursae semimembranous or weakly sclerotized, rarely its sclerites are strong. Ductus bursae sclerotized posteriorly, rather short, without inner thorns; ductus seminalis from before distal sclerite, often with basal strengthening plate.

Bionomy: The species feed on deciduous trees, mainly on *Fagaceae*, the larvae are chiefly carpophagous, and only the species closely related with *C. exquisitana* (RBL.) live under bark.

Distribution: Over 20 species occur in the eastern and western parts of this subregion; several species are Nearctic.

Danilevskia KUZNETSOV

Danilevskia KUZNETSOV, 1970, Ent. Obozr., **49** (2): 446. Type-sp.: *Danilevskia silvana* KUZNETSOV, 1970 — by orig. design.

Venation as in *Cydia*; in hindwing $rr - m_1$ anastomosing postbasally; $m_3 - cu_1$ stalked to middle.

Scent organ: Group of small scent glands at the end of a_3.

Male genitalia (Fig. 295): Tegumen broad apically, provided with thin apical process. Angulation of sacculus distinct, hairy; neck and cucullus broad. Aedeagus very slender; coecum penis long; cornuti missing; caulis large, bent.

Female, early stages and bionomy unknown.

Distribution: Known from Southern Sikhote Alin (East Asia).

Comments: The present genus is hardly distinguishable from *Cydia*; their synapomorphy is the presence of the scent glands at the hindwing vein a_3; the only probable autapomorphy is the possession of the apical process of tegumen; the elongate coecum penis is of limited importance, as various stages of its development are to be found within the group.

Fulcrifera Danilevskij & Kuznetsov

Fulcrifera Danilevskij & Kuznetsov, 1968, Fauna SSSR, **5** (1): 454. Type-sp.: *Laspeyresia luteiceps* Kuznetsov, 1962 — by orig. design.

Venation: In forewing chorda from middle distance between $r_1 - r_2$; *M* atrophying proximally; in hindwing $rr - m_1$ approaching to one other basally, $m_3 - cu_1$ stalked to before middle, a_3 wanting; *pcu* in both pairs of wing atrophying medially.

Scent organs: Anal fold in male hindwing developed.

Male genitalia (Fig. 296): Distal part of tegumen variably broad; socius indistinct, terminal, or represented by groups of long hairs only. Neck of valva distinct but short; cucullus large with strong setae (spines) in ventral and anterior portions; that ventroanterior cluster of spines may extend on the neck on which other hairs or spines are absent. Aedeagus slender; cornuti usually wanting; a sclerotic lobe extends from zone dorsally to aedeagus.

Female genitalia (Fig. 566): Sterigma, a weakly sclerotized scobinate postvaginal plate; surrounding of ostium bursae sclerotic; in some species the edges of that sclerite may distinctly extend posteriorly, or form a cup like portion of the sterigma. Ductus bursae slender, colliculum not developed; ductus seminalis median; corpus bursae with diverticle developed, at least in some species. Subgenital sternite weak, with rather ill-defined edges.

Early stages unknown.

Bionomy: The genus is most probably bound with *Fabaceae*; larvae live in flowers, seeds and stems; number of generation: probably 1—2 a year.

Distribution: Southern parts of this subregion, from North Africa through Arabia, Central Asia as far as to Kurile Islands. Over 10 species described; one is Oriental in distribution.

Comments. The presence of fulcrum is a probable autapomorphy of this genus; *Laspeyresia refrigescens* (Meyr.) included in this genus by Danilevskij & Kuznetsov (1968) distinctly differs from the remaining species and is omitted from this diagnosis.

Cirriphora Obraztsov

Cirriphora Obraztsov, 1951, Tijdschr. Ent., **93** (1950): 99. Type-sp.: *Grapholitha pharaonana* Kollar, 1859 — by orig. design.

Venation variable; chorda from beyond middle $r_1 - r_2$ to 3/4 of that distance or even from beyond r_2 terminating at r_4 or r_5; in hindwing $rr - m_1$ extending

from one point, or, more frequently, stalked to middle; $m_3 - cu_1$ from one point, or separate.

Scent scales only on costal edge of hindwing.

Male genitalia (Fig. 297): Cucullus small, expanding ventrally, provided with small spine; outer wall of basal area of valva clothed with numerous, minute thorns; aedeagus simple; cornuti wanting.

Female genitalia (Fig. 567): Sterigma in posterior part weakly sclerotized, indistinct, with a few hairs terminally; ostium bursae in a very short, sclerotic cup; ductus bursae slender; ductus seminalis subterminal; a small anastomosing duct in posterior part of corpus bursae; signa developed.

Early stages unknown.

Bionomy: Larva in galls on *Tamarix (Tamaricaceae)*; one generation yearly; pupation in feeding place.

Distribution: Known from North Africa, Arabia and Asia Minor.

Comments. The supposed autapomorphies of this monobasic genus are the presence of thorns of the outer surface of the base of valva and the anastomosing duct of corpus bursae.

Pammenodes Danilevskij & Kuznetsov

Pammenodes Danilevskij & Kuznetsov, 1968, Fauna SSSR, **5** (1): 334. Type-sp.: *Pammene glaucana* Kennel, 1901 — by orig. design.

Venation: Inner veins of forewing cell absent; all veins separate.

Scent organs: Group of large androconial scales in a deep concavity of 5th abdominal tergite; no lateral scale pencils.

Male genitalia (Fig. 298): Dorso-anterior portion of tegumen distinctly convex, apical part somewhat expanding; neck of valva distinct; cucullus large; vestiture, except that on cucullus, weak consisting of hair. Anterior part of subgenital tergite separate from posterior sclerite (as in *Parapammene*), expanding apically; sternite very small.

Female genitalia (Fig. 568): Sterigma weakly sclerotized; ostium bursae protected by ventral sclerite; ductus bursae slender, with weak sclerite in posterior half; ductus seminalis at the latter; corpus bursae simple; signa well developed.

Early stages and bionomy unknown.

Distribution: South Primore and Japan only.

Comments. The supposed autapomorphy of this genus is a presence of the abdominal scent organ on the fifth tergite. Danilevskij & Kuznetsov (1968) show in their figure (but do not comment on it) a similar structure, however, devoid any scales on the preceding tergite.

Pseudopammene Komai

Pseudopammene Komai, 1980, Tinea, **11** (1): 2. Type-sp.: *Pseudopammene fagivora* Komai, 1980 — by orig. design.

Venation: In forewing all veins separate, chorda extending from 2/3 r_1-r_2 to base of r_5, *M* also fully developed, reaching mid-distance between m_2 and m_3, *pcu* vestigial. In hindwing *sc* – *rr* connected just beyond median cell; m_3-cu_1 stalked almost to wing edge.

Scent organs: Scent scales along distal thirds of *sc* and radial branch of median cell. Bunch of hair like long scales originating on elliptic area of lateral portion of eighth tergite (Figs 300, 301) and a group of broad scales attached to the end of eighth sternite situated at the level of costa of valva.

Male genitalia (Fig. 299): Tegumen fairly high; uncus wanting; socius completely atrophied; sclerites of tuba analis weak, lateral sclerites linking it with pedunculus slender, sclerotic. Angles of sacculus and cucullus distinct; neck partially naked; basal cavity short; basal process small. A group of short, deciduous cornuti in vesica.

Female genitalia (Fig. 569): Ovipositor somewhat elongate; sterigma slender, with distinctly sclerotized lateral edges of postvaginal plate, antevaginal sclerite not developed; ostium bursae protected by ventro-lateral sclerite; cestum anterior, accompanied by weak postmedian sclerites; ductus seminalis long, originating at cestum, laterally; signa typical of the tribe. Subgenital sternite small, deeply incised distally.

Early stages: Larva described and illustrated by KOMAI (1980, orig. descript.).

Bionomy: Probably univoltine; hibernation probably in pupal stage; larvae bore in nuts of beech, pupating in soil or on it, in a silken cocoon.

Distribution: Known of Japan: Honsyu only; monobasic genus.

Comments. The supposed autapomorphies of this genus are the structures of the scent organs discussed on p. 200.

Parapammene OBRAZTSOV

Parapammene OBRAZTSOV, 1960, Tijdschr. Ent., **103** (1—2): 125. Type-sp.: *Grapholitha selectana* CHRISTOPH, 1881 — by orig. design.

Venation: In forewing all veins separate; in male hindwing *sc* – *rr* in distal parts coalescent, in females free; remaining veins separate; small glandular cups along median parts of *sc* and costal arm of median cell.

Scent organs as in *Grapholita*; coremata with long, scales extending laterally from the membrane between segments 8 and 9.

Male genitalia (Fig. 302, 303): Tegumen broad, with distinct proximal convexity and weak apical prominence. Ventral concavity of valva well developed, thus neck distinct; vestiture of cucullus strong, that of anterior group and (or) sacculus weak, consisting of hair, neck at least partially naked. Aedeagus simple, bent; cornuti of non-deciduous type. Musculature (KUZNETSOV & STEKOLNIKOV, 1977 — *selectana*): m_2 inserting at end of basal process, originating before middle of pedunculus; m_4 from lower portion of the latter to dorso-posterior part

of basal process; m_5 attached medially to caulis, reaching beyond distal edge of basal cavity.

Female genitalia (Fig. 570): Sterigma membranous or weakly sclerotized, exceptionally better differentiated, or with sclerotic lateral portions. Ostium bursae protected by a ring-shaped sclerite from dorsal part of which occasionally extend an elongate process; cingulum median, accompanied by a thread like sclerite extending basally, originating in dorsal area, swung, terminating ventrally; ductus seminalis anterior, originating far from cingulum, often just beyond corpus bursae; anterior part of the latter more or less distinctly differentiated to form a bulbous sac; signa well developed. Subgenital sternite deeply concave posteriorly, usually expanding in middle anteriorly.

Early stages unknown morphologically.

Bionomy: Larva in stems of *Quercus* and *Tilia*.

Distribution: An Oriental genus entering (4 species) the eastern part of this subregion; known from Western Oriental region (India—Sri Lanka—Java).

Comments. The supposed autapomorphies of this genus are the differentiate anterior portion of the corpus bursae and distinct process of the anterior part of the subgenital sternite of the males.

Pammene Hübner

Venation: Forewing chorda vestigial, extending from middle of $r_1 - r_2$ to base of r_5; M absent; hindwing veins $sc - rr$ characteristic of males of the subgenera, in females distinctly separate; $m_3 - cu_1$ stalked to middle.

Scent organs: Transverse rows of scent scales (fig. 307) on tergites 6—7 except for the species closely related with *populana* and *P. nannodes* Walsm. Cup-shaped glands at $sc - rr$ in male hindwing (cf. p. 199).

Male genitalia: Uncus vestigial, in form of a weak apical prominence of tegumen, or wanting; valva simple, with variably developed neck, often weakly incised ventrally; sacculus and cucullus in many species more or less expanding ventrally; vestiture variable, usually neck clothed with hair of (and) spines, often with a peculiar group of spines situated at ventral edge of basal cavity. Aedeagus provided with ventral prominence or process showing a tendency to a reduction; cornuti non-deciduous, arranged in a row. Musculature (Kuznetsov & Stekolnikov, 1977 — *germmana*): m_2 originating at base of pedunculus, laterally, terminating at top of basal process; m_4 from lower portion of pedunculus to beyond attachement of the former muscle; m_5 subdorsally on caulis, entering deep into valva.

Female genitalia: Postvaginal plate of sterigma concave, with lateral edges limited by an inner rib, often expanding laterally into narrow plates; anterior edge in many species expanding, fused entirely with lateral parts, occasionally producing into lateral processes; ostium bursae protected by sclerotic cup or funnel fused with sterigma, or membranous. Ductus bursae very short; cingulum anterior, often incomplete; ductus seminalis very broad, originating just at

cingulum, or with bulbous base; signa well developed. Seventh sternite variable, often short, with more or less elongate lateral portions being separate from the main part by means of ribs or folds.

Early stages described by SWATSCHEK (1958) on basis of several European species.

Bionomy discussed at the descriptions of subgenera.

Comments. The supposed autapomorphies of *Pammene* are the presence of the ventral prominence or process of the aedeagus, the structure of the sterigma, especially the occurrence of the rib limiting ventral edges of the marginal plate and probably also the structure of the subgenital sternite. The aedeagus and sterigma vary specifically, and the former shows a tendency to atrophy of the lobe. Its ventral edge is straight in several species *(Eucelis)*, however, one of its species (*gallicana* GUENÉE) characterizes with curved distal part of andeagus similarly is in many species of nominative subgenus. DANILEVSKIJ & KUZNETSOV (1968) compare this genus with *Parapammene* from which it differs in the venation and absence of androconies of 8—9 abdominal segments, and with *Pammenodes* so in the venation and distribution of tergal organs. Those authors distinguish several sections in the nominate subgenus. I am preserving the two subgenera, however, they differ mainly in the bionomy only; the remaining characters may be treated as the reductions.

Subgenus 1: *Pammene* HÜBNER

Pammene HÜBNER, [1825], Verz. bekannter Schmett.: 378. Type-sp.: *Tortrix trauniana* [DENIS & SCHIFFERMÜLLER], 1775 — by subs. design. (WALSINGHAM & DURRANT, 1901, Entomologist's Mag., **37**: 189).

Palla BILLBERG, 1820, Enumeratio Insect.: 90. Type-sp.: [*Phalaena*] *rhediella* CLERCK, 1759 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 52), preoccupied by *Palla* HÜBNER, [1819].

Hemimene HÜBNER, [1825], Verz. bekannter Schmett.: 378. Type-sp.: *Pyralis populana* FABRICIUS, 1787 — by subs. design. (WALSINGHAM & DURRANT, 1901, Entomologist's Mag., **37**: 190; subsequent designation: FERNALD, 1908, Genera *Tortricidae*: 8, type-sp.: *Phalaena Tinea petiverella* LINNAEUS, 1758).

Pseudotomia STEPHENS, 1829, Syst. Cat. Br. Insects, **2**: 175. Type-sp.: *Pseudotomia strobilella*: STEPHENS, 1828 = [*Tortrix*] *argyrana* HÜBNER, [1799] — by subs. design. (WESTWOOD, 1840, Introd. mod. Classif., **2**, Synopsis Gen. Br. Ins.: 107).

Heusimene STEPHENS, 1834, Ill. Br. Ent., *Haustellata*, **4**: 96. Type-sp.: *Tortrix fimbriana* HAWORTH, [1811] = *Pammene inquilana* FLETCHER, 1938 — by subs. design. (WESTWOOD, 1840, op. cit.: 107).

Pyrodes GUENÉE, 1845, Annls Soc. ent. Fr., (2) **3**: 187. Type-sp.: *Epiblema rhediana* HÜBNER, [1825] = [*Phalaena*] *rhediella* CLERCK, 1759 — by monot., preocc. by *Pyrodes* SERVILLE, 1832 in *Coleoptera*, replaced by *Hemerosia* STEPHENS, 1852.

Orchemia GUENÉE, 1845, ibid.: 192. Type-sp.: *Orchemia gallicana* GUENÉE, 1845 — by subs. design. (BRUAND, 1847, Cat. syst. Microlepid. Doubs: 50).

Hemerosia STEPHENS, 1852, List Specimens Br. Animals Colln. Br. Mus., **10**: 6. Type-sp.: [*Phalaena*] *rhediella* CLERCK, 1759 — heredit., replacement name for *Pyrodes* GUENÉE, 1845.

Phthoroblastis LEDERER, 1859, Wien. ent. Mschr., **3**: 370. Type-sp.: [*Tortrix*] *ephippana* HÜBNER, [1817] = *Pyralis populana* FABRICIUS, 1787 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 38).

Sphaeroeca MEYRICK, 1895, Handbook Br. Lepidopt.: 490. Type-sp.: *Pseudotomia (Eudemis) obscurana* STEPHENS, 1834 — by monot., preoccupied by *Sphaeroeca* LAUTERBORN, 1894.

Metasphaeroeca FERNALD, 1908, Genera *Tortricidae*: 62. Type-sp.: *Pseudotomia (Eudemis) obscurana* STEPHENS, 1834 — heredit., replacement name for *Sphaeroeca* MEYRICK.

Venation dimorphic; veins *sc*–*rr* fusing to beyond median cell with one another in the male.

Male genitalia (Figs 305, 306): Ventral edge of valva often deeply concave; ventral angulation of cucullus in many species distinct, or the latter very long, slender; sacculus often with small group of spines at basal cavity; aedeagus bent subterminally, or with large ventral process or convexity.

Female genitalia (Figs 571, 572) as described for the genus.

Bionomy: Larvae are chiefly carpophagous, some species, however, are causing galls, some feed in leaves or (innumerous species) in the stems (*P.purpureana* CONST.) or under bark (*P. suspectana* (Z.)). The feeding pattern may change (DANILEVSKIJ & KUZNETSOV, 1968) in course of development. The food plants are the deciduous trees *(Aceraceae, Betulaceae, Rosaceae, Salicaceae)*. Hibernate the last instar larvae pupating in spring, mainly in feeding place. The species are monovoltine, rarely there are two generations yearly. Some species are important economically.

Distribution: Spread in the deciduous forest zone of this subregion (ca 100 species), the Nearctic fauna is represented by a few species; *Pammene* was also found in Oriental region, and under that name many tropical species were described, however, all need reexamination.

Subgenus 2: ***Eucelis*** HÜBNER

Eucelis HÜBNER, [1825], Verz. bekannter Schmett.: 394. Type-sp.: *Tortrix mediana* [DENIS & SCHIFFERMÜLLER], 1775 = *Pyralis aurana* FABRICIUS, 1775 — by monot.

Trycheris GUENÉE, 1845, Annls Soc. ent. Fr., (2) 3: 190. Type-sp.: *Tortrix mediana* [DENIS & SCHIFFERMÜLLER], 1775 = *Pyralis aurana* FABRICIUS, 1775 — by monot.

Venation: All veins except for m_1–cu_1 of the hindwing separate.

Male genitalia: Neck of valva weakly differentiated; angulation of both sacculus and cucullus indistinct; vestiture of sacculus, cucullus and anterior group coalescent, no distinct upper group of sacculus. Aedeagus simple, usually with straight ventral edge.

Female genitalia as described for the genus.

Bionomy: Larvae in seeds of *Apiaceae.*

Distribution: A few known species are Palaearctic.

Strophedra HERRICH-SCHAEFFER

Strophedra HERRICH-SCHAEFFER, 1853, Syst. Bearb. Schmett. Eur., 5: 94. Type-sp.: *Strophosoma vigeliana* HERRICH-SCHAEFFER, 1853 = *Pyralis nitidana* FABRICIUS, 1794 — hereditarius.

Strophosoma HERRICH-SCHAEFFER, 1853 ibid. 5: 8, 29. Type-sp.: *Strophosoma vigeliana*

HERRICH-SCHÄFFR 1853 = *Pyralis nitidana* FABRICIUS 1794 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 34, identified as *flexana* ZELLER, 1849), preoccupied by *Strophosoma* BILLBERG, 1820 in *Coleoptera*.

Venation: In forewing chorda and *M* well preserved, the former extending from beyond middle distance $r_1 - r_2$ to halfway between bases $r_4 - r_5$. Hindwing: $rr - m_1$ completely coalescent in male, separate in female; $m_3 - cu_1$ stalked to middle; *pcu* and anal veins well developed.

Scent organs (figs 309, 310): Bunch of scent scales at ventral edge of 8th tergite and elongate scales on sternite of same segment.

Male genitalia (Fig. 308) as in *Grapholita*; uncus vestigial but distinct; tegumen tapering terminally; neck of valva differentiated, scarcely hairy; cucullus broad; any processes wanting; spines on cucullus only.

Female genitalia (Fig. 573): Sterigma weak, in form of two scobinate patches; ostium surrounded by a very slender, incomplete ring; ductus bursae rather broad, with subterminal cingulum; ductus seminalis broad, median, extending anteriorly to cingulum; signa well developed. Subgenital sternite armed with slightly asymmetrically situated thorn like process of the median portion of the posterior incisure.

Early stages: SWATSCHEK (1958) included the representatives of this genus in *Pammene* giving their characteristics.

Bionomy: Larvae live among spun leaves of *Fagaceae*. Hibernation in larval stage; pupation in cocoon; one or more (in the south) generations a year.

Distribution: All known species (3) are Palaearctic in distribution; the areal of the genus is divided into three parts, the western, the northern and the eastern being correlated with the repartition of the host plants.

Comments. The supposed autapomorphy of *Strophedra* is the presence of the process of the posterior edge of the eighth sternite of the female. DANILEVSKIJ & KUZNETSOV (1968) treat it as allied to *Diamphidia* on the basis of fused veins $rr - m_1$.

Lipophychina

The systematic position of this subtribe and some morphological data are given with the characteristics of the tribe, p. 198. The subtribe is monobasic.

Dichrorampha GUENÉE

Dichrorampha GUENÉE, 1845, Annls Soc. ent. Fr., (2) 3: 185. Type-sp.: *Grapholitha plumbagana* TREITSCHKE, 1830 — by subs. design. (FERNALD, 1908, Genera *Tortricidae*: 33).

Lipoptycha LEDERER, 1859, Wien. ent. Mschr., 3: 370. Type-sp.: *Coccyx bugionana* DUPONCHEL, 1843 — by subs. design. (BUSCK, 1906, Proc. biol. Soc. Wash., 19: 175).

Lipoptychodes OBRAZTSOV, 1953, Mitt. münch. ent. Ges., 43: 60. Type-sp.: *Coccyx bugionana* DUPONCHEL, 1843 — by orig. design.

Dichroramphodes OBRAZTSOV, 1953, ibid.: 77. Type-sp.: *Dichroramphodes gueneeana* OBRAZTSOV, 1953 — by orig. design.

Paralipoptycha OBRAZTSOV, 1958, Tijdschr. Ent., **101** (3—4): 244. Type-sp.: *Phalaena plumbana* SCOPOLI, 1763 — by orig. design.

Venation: In forewing chorda indistinct, extending from 1/3 distance between bases of $r_1 - r_2$ to halfway $r_4 - r_5$; *M* atrophying basally; hindwing $rr - m_1$ far from one another at median cell; $m_3 - cu_1$ originating in one point.

Scent organs: Often occurs costal fold in male forewing.

Male genitalia (Figs 311—313): Tegumen simple, weakly expanding terminally; valva species specific; cucullus distinct; neck and angle of sacculus well differentiated; posterior edge of basal cavity sclerotic. Outer part of cucullus hairless, often more or less extending distally or (and) ventrally occasionally forming prominences or processes. Aedeagus usually with large dorsal slit; cornuti non deciduous, if present. Musculature (KUZNETSOV & STEKOLNIKOV, 1973 — *D. plumbana* (SCOPOLI)): m_5 strong, inserting beyond edge of basal cavity.

Female genitalia (Figs 574, 575): Sterigma fused with subgenital sternite by means of lateral sclerites or thick membrane; postvaginal part scobinate, usually short, convex; ostium protected by asymmetric ventral sclerite extending or folding laterally or even forming an incomplete tube reaching to beyond middle of ductus bursae; ductus seminalis in majority of species anterior; anterior part of ductus bursae or distal portion of corpus bursae strengthened by more or less distinct sclerotic prominence. One signum, exceptionally an ill-defined second signum in corpus bursae.

Early stages: SWATSCHEK (1958) provides the generic diagnosis based on the chaetotaxy of 8 European species.

Bionomy: The species are univoltine; hibernate the mid-instar larvae. The food plants belong exclusively to *Compositae*, mainly to the species of *Achillea* and *Tanacetum*.

Distribution: *Dichrorampha* is a Holarctic genus; the majority of the species (ca 90) occurs in Palaearctic subregion, ca 20 live in North America. The species distributed in the mountains have usually small areals or are endemic, those of the lowland are widely spread.

Comments. The autapomorphies are discussed in the diagnosis of the subtribe (p. 198). The species were often placed in two genera, *Dichrorampha* and *Lipoptycha* differing in the presence of the costal fold in the male in the latter. OBRAZTSOV distinguished then (see synonymy) three taxa, viz., *Lipoptychodes*, *Paralipoptycha* and *Dichroramphodes*. DANILEVSKIJ & KUZNETSOV (1968) divided this genus into *Dichrorampha* s. str. and *Lipoptycha* and now I am suppressing the latter treating the reduction of the costal fold as a convergency analogically occurring in many genera of *Tortricidae*. The above mentioned authors divided *Dichrorampha* into numerous sections. Those groups of species need, however, rearrangement and reconsideration. The "section *grunerianae*" is in that paper treated as the most primitive group of the genus and its subgenus *Lipoptycha* having rather simple valva, distinct neck, semicircular cu-

cullus and longitudinally subdivided caulis as more advanced than *Dichrorampha*. However, the split of caulis occurs also in other species and seems to be of apomorphic importance. The "section *plumbanae*" *(Paralipoptycha)* characterizes with pair of lobes of the caulis, but such structures are found also in various more primitive genera of the *Tortricidae* and are treated as belonging to the general plan of the family. In the latter section should also be included the species of "*agilanae*" in which the lobes of caulis are also present, usually naked. In two species (*D. aerataena* (P. & M.) of "*plumbanae*" and *D. klimeschiana* TOLL of "*agilanae*") those lobes are dorsal, originating at zone. Their position is probably of little importance as all mentioned characters are in the species with ventrally situated lobes extremely close. Based on various characters the species of those two sections should be placed at the beginning of the *Dichrorampha* system.

Unplaced *Grapholitini*

Cirrilaspeyresia RAZOWSKI

Cirrilaspeyresia RAZOWSKI, 1961, Acta zool. cracov., **5** (14): 675. Type-ps.: *Euxanthis imbecillana* KENNEL, 1901 — design. by monot.

Venation: In forewing all veins separate; in hindwing $rr-m_1$ and m_3-cu_1 stalked to middle.

Male genitalia (Fig. 314): Tegumen fairly broad, with rounded shoulders; uncus (or a process of top part of tegumen) slender, sclerotic, naked; socius broad, scarcely haired; tuba analis weakly sclerotized. Basal cavity of valva long, with distinct posterior edge; angle of sacculus rounded, hairy; neck slender, marked with posterior comb like sclerite; cucullus short, distinctly sclerotized, dentate and heavily spined caudally; basal process small. Aedeagus long, swung, provided with apical spines; single non-deciduous cornutus in vesica.

Female genitalia (Fig. 576): Sterigma short, sclerotic, entirely fused with posterior edge of subgenital sternite; distal part of ductus bursae funnel-shaped, sclerotic; colliculum bulbous, provided with median sclerite situated beyond a slender sclerotization. Two signa with broad bases and short blades present. Subgenital sternite broad, weakly concave posteriorly, aciculate and scaled, with group of lancet-shaped scales laterally.

Early stages and bionomy unknown.

Distribution. NW Africa (Algeria) only. Monotypical.

Comments. This genus is very characteristic especially by its specialized cucullus provided with strong, caudal spines. Further autapomorphies are the presence of spines of the subgenital sternite and the presence and shape of the uncus. The fusion of sterigma and subgenital sternite may prove convergent. Such fusion is noticed in *Dichrorampha* and also in *Tokuana* and *Neoanathamna*.

Cryptophelebia WALSINGHAM

Cryptophlebia WALSINGHAM, 1899, Indian Mus. Notes, 4 (3): 105. Type-sp.: *Cryptophlebia carpophaga* WALSINGHAM, 1899 = *Arothrophora ombrodelta* LOWER, 1898 — by orig. design.
Pogonozada HAMPSON, 1905, Ann. Mag. nat. Hist., (7) **16**: 589. Type-sp.: *Pogonozada distorta* HAMPSON, 1905 — design. by monot.

Venation: In forewing chorda extending from beyond base of r_2 to base of r_5; *M* reduced; all veins separate. In hindwing $rr-m_1$ approximated basally; m_3-cu_1 short stalked, or connate.

Scent organs: Male hindtibia with groups of extending scales; male hindwing specialized, with more or less expanding anal portion forming a fold; often scales of cilia altered. Abdominal organ often highly complicate. In *ombrodelta* (Figs 315, 316) the sclerites of 7th segment typically developed, subgenital segment strongly specialized. Anterior edge of tergite slender, doubly arched, completely separate, membranously connected with its posterior plate anterior edge of which situated in an invaginated membrane, bent terminally. Posterior arms of that plate extending laterally, concave posteriorly, provided with rows of dense short scales situated in middle portions of its posterior edges. Between anterior sclerite of the segment and its posterior plate a concave, ovate, shallow cup filled with very long hair like scales extending mediad into a slightly expanding sclerite armed with rigid scales directed towards median line of symmetry. Sternite small, consisting of two sclerites; anterior, complicate structure extends sublaterally into a pair of heavy rods membranously connected with the posterior plate laterally to its anterior lobe. Lateral parts of posterior plate elongate, developing ovate concavities that bear scaled scent glands and hidden in latero-dorsal, shallow pockets situated in the membrane near main part of corema (described with the dorsal structures) finely scaled, convex posteriorly; smaller, scaled areas laterally to sclerotic rods with which they fuse. ZAGATTI and CASTEL (1987) discussed and illustrated the androconial system in the ethiopian species *C. leucotreta* (MEYRICK).

Male genitalia (Figs 317—319): Tegumen short, broad; uncus atrophying, replaced by a small apical prominence; socius missing; tuba analis with ventrolateral sclerite, membranously connected to distinct posterior sclerites of tegumen; pedunculus fused with vinculum. Valva very thick, "swallen"; angles of sacculus and cucullus well developed; neck indistinct; strong spines on cucullus present, situated at edges of depressed surface of cucullus, accompanied with long hairs; basal process variable, often large; basal cavity with indistinct median portion of posterior edge. Aedeagus simple; cornuti small, of deciduous type.

Female genitalia: Sterigma in form of postvaginal plate and often with small basal cup; occasionally lateral parts sclerotic, more or less expanding posteriorly; median portion of sterigma elongate, membranous or weakly sclerotized, sculpured; colliculum occasionally present; cingulum present or completely atrophied; ductus seminalis ventral, originating at cingulum; two distinct signa

in corpus bursae. Subgenital sternite weak, deeply incised in middle posteriorly.

Early stages: Some data provided by DIAKONOFF (1957).

Bionomy: The larvae attack leaves, pods, seeds, fallen fruits of various plants *(Papilionaceae, Mimosaceae, Sapindaceae, Caesalpiniaceae, Rutaceae)*, being chiefly the borers.

Distribution: Pantropical genus; one species is found in Japan, 3 in China. Over 20 species described.

Comments. The above redescription concerns the nominate subgenus. DIAKONOFF described *Phanerophlebia* (1957, Tijdschr. Ent., **100**(2): 142; type-sp.: *Cryptophlebia (Phanerophlebia) perfracta* DIAKONOFF, 1957; Oriental) as a second subgenus characterized with ventral process of distal part of valva situated just before angle of the cucullus and some differences in the pattern of the forewing. That genital character may prove of lesser importance as similar structures develope in other species of this genus, e. g. in *C. etiennei* DIAKONOFF from Reunion Is. I shall return to this problem in the following parts of the series.

The supposed autapomorphies of *Cryptophlebia* are structure of the abdominal scent organ and the differentiation of their scales; the spherical valva is probably synapomorphic with *Metriophlebia* DIAKONOFF from Seychelles and probably also the New World *Ecdytolopha* ZELLER and *Pseudogalleria* RAGONOT (cf. DIAKONOFF, 1957). OBRAZTSOV (1961) and some other authors placed *Cryptophlebia* in *Grapholitini*, but DANILEVSKIJ & KUZNETSOV (1968) transfered it to *Eucosmina*. In this work I am following OBRAZTSOV'S point of view, however, I do not agree with his placing it near *Enarmonia*.

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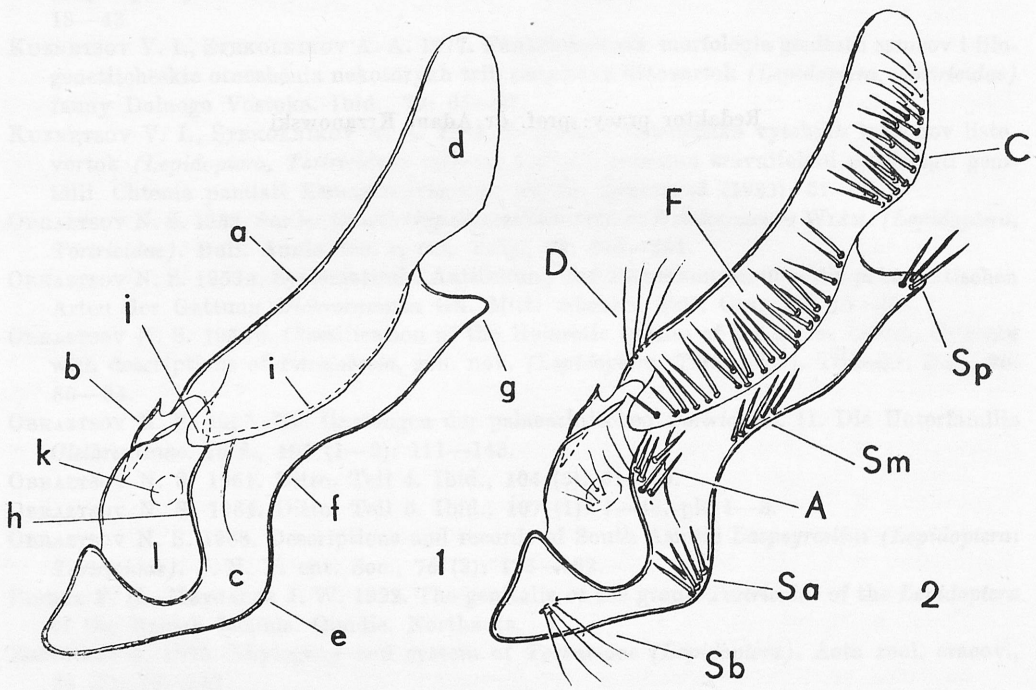
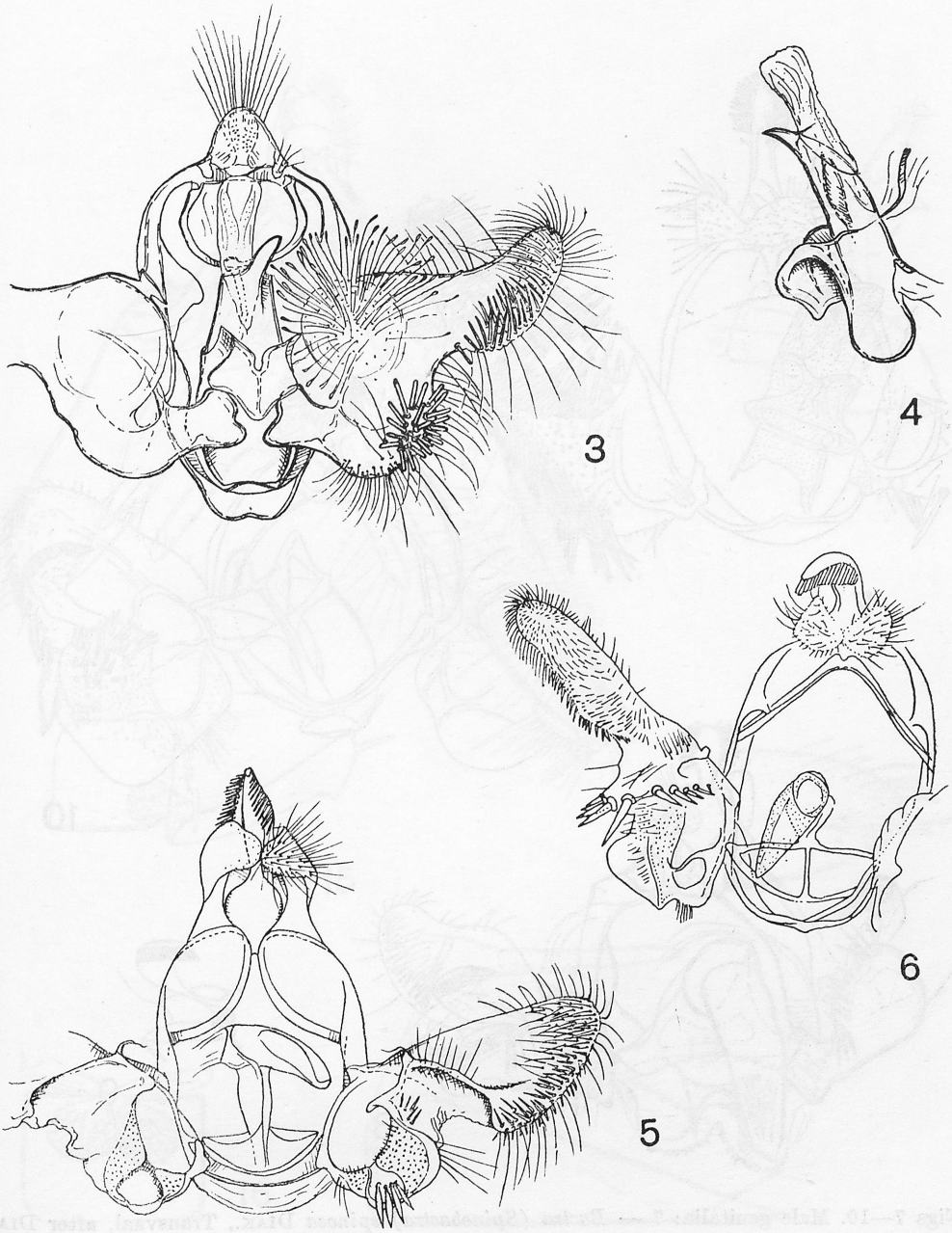
STRESZCZENIE

Praca zawiera redeskrypcje 124 rodzajów palearktycznych *Olethreutinae*, przedstawione w układzie przyjętym w pierwszej części tej serii. Dodatkowo we wstępie przanalizowano morfologię walwy.

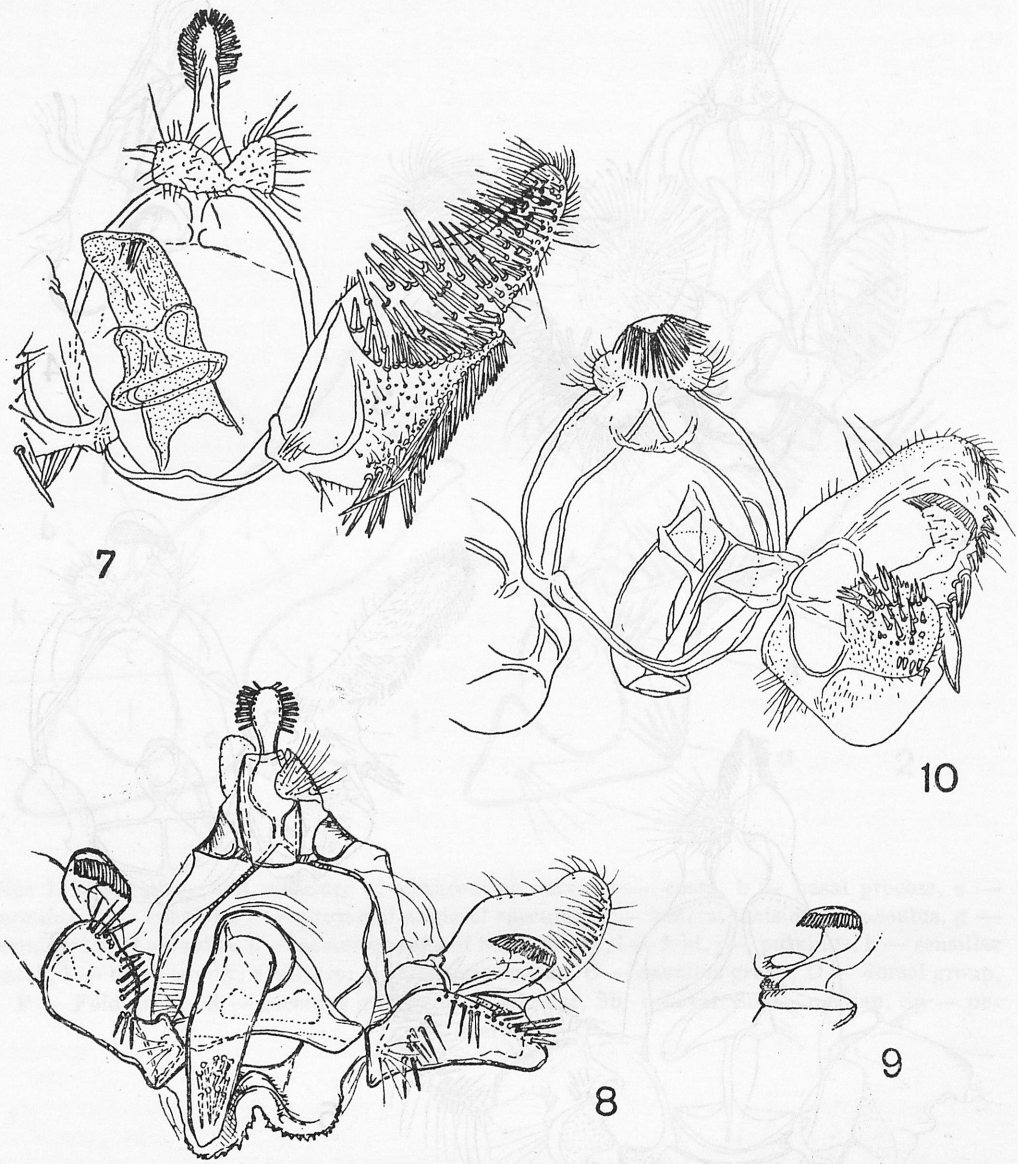
Redaktor pracy: prof. dr Adam Krzanowski



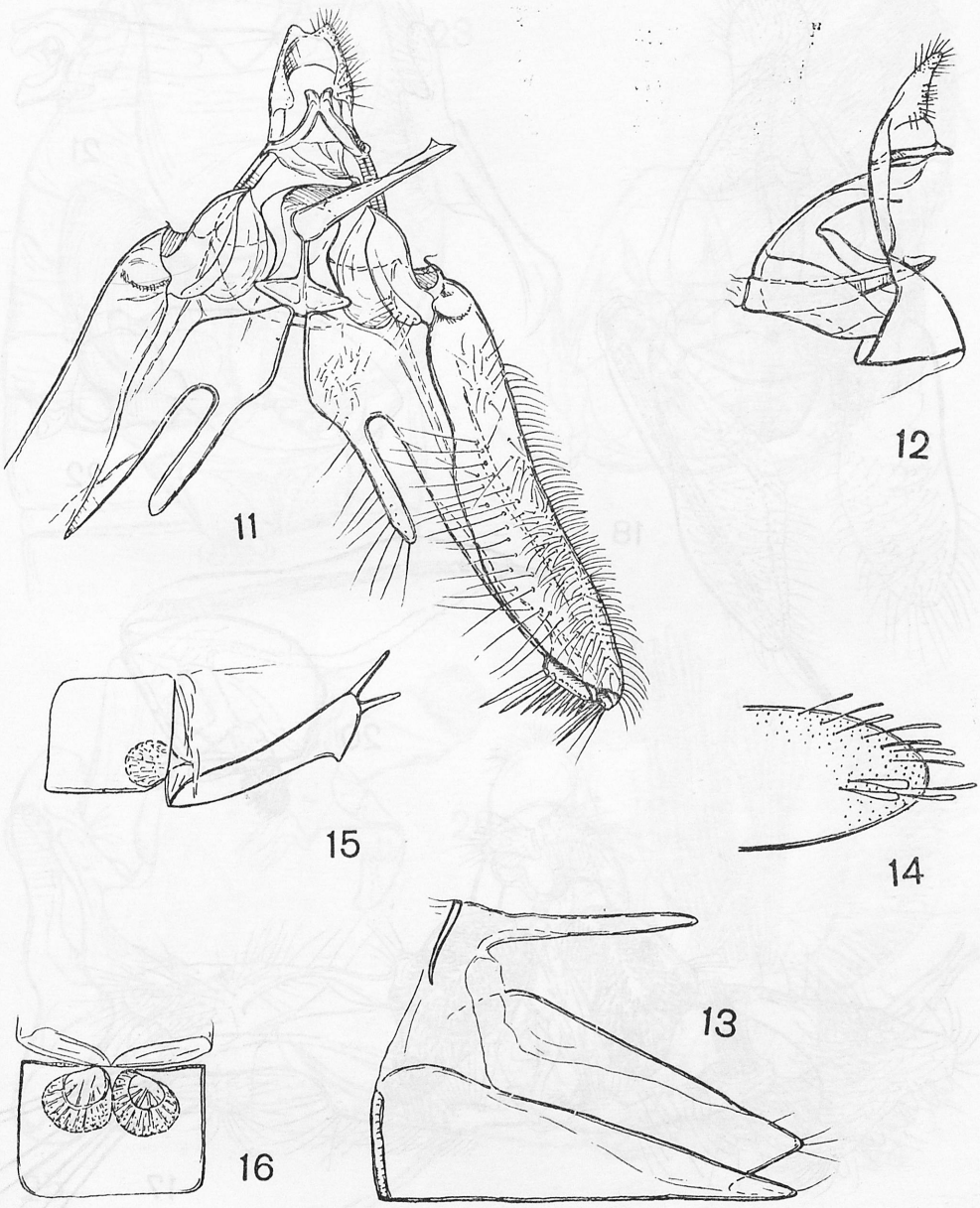
Figs 1, 2. Structure and vestiture of olethreutine valva; a — costa, b — basal process, c — sacculus, d — cucullus, e — proximal angle of sacculus, f — ventral incision of sacculus, g — termination of sacculus, h — posterior edge of basal cavity, i — fold, j — pulvinus, k — sensillar patch, l — basal cavity; vestiture: A — anterior group, C — cucullus group, D — dorsal group, F — Fold group, S — sacculus group, Sa — angular, Sb — basal, Sm — median, Sp — posterior



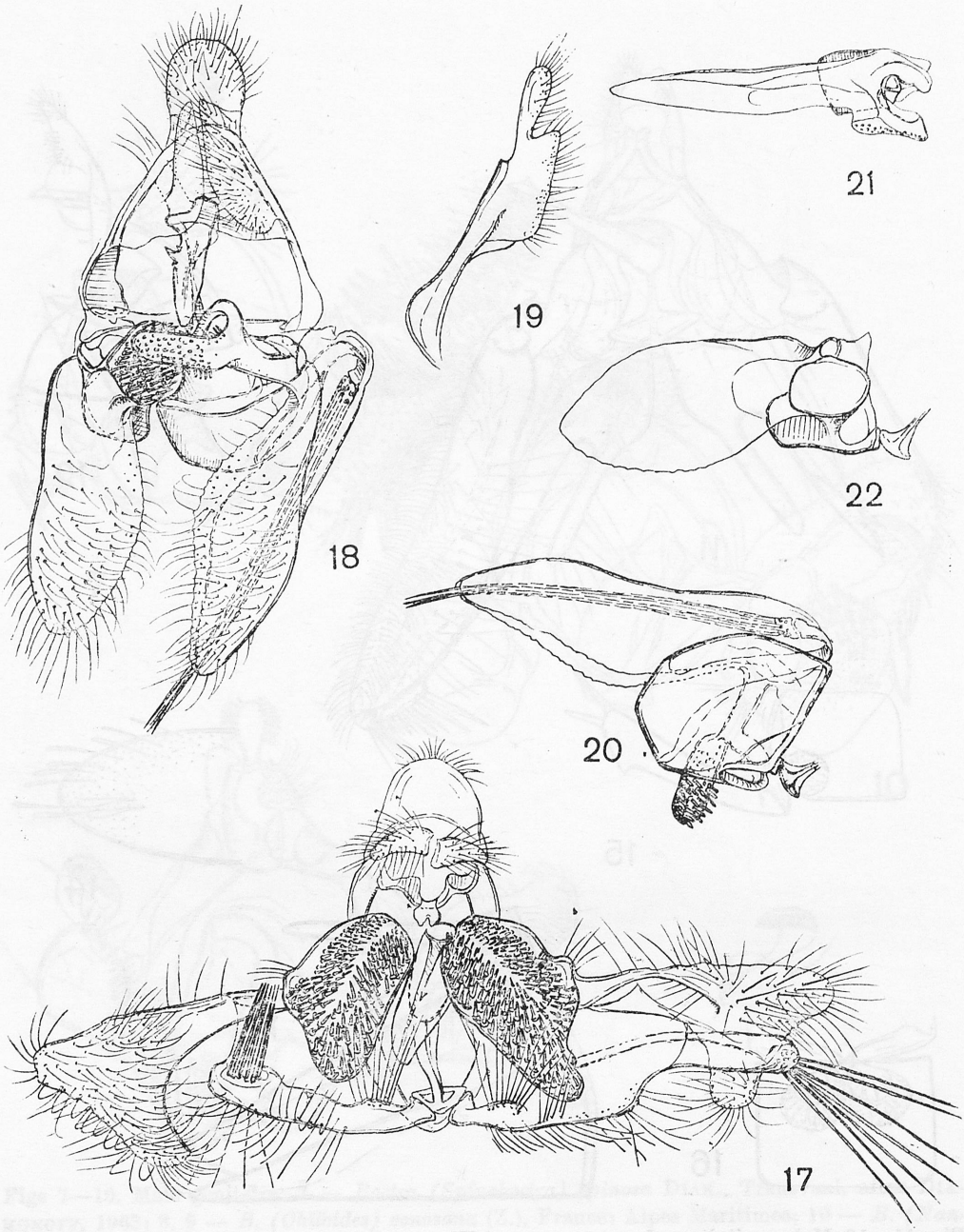
Figs 3—6. Male genitalia: 3, 4 — *Microcorses mirabilana* KUZN., Japan: Hokkaido; 5 — *Bactra (B.) lancealana* (HBN.), Poland; 6 — *B. (Noteraula) noteraula* (WALSM.), New Zealand, after DIAKONOFF, 1956



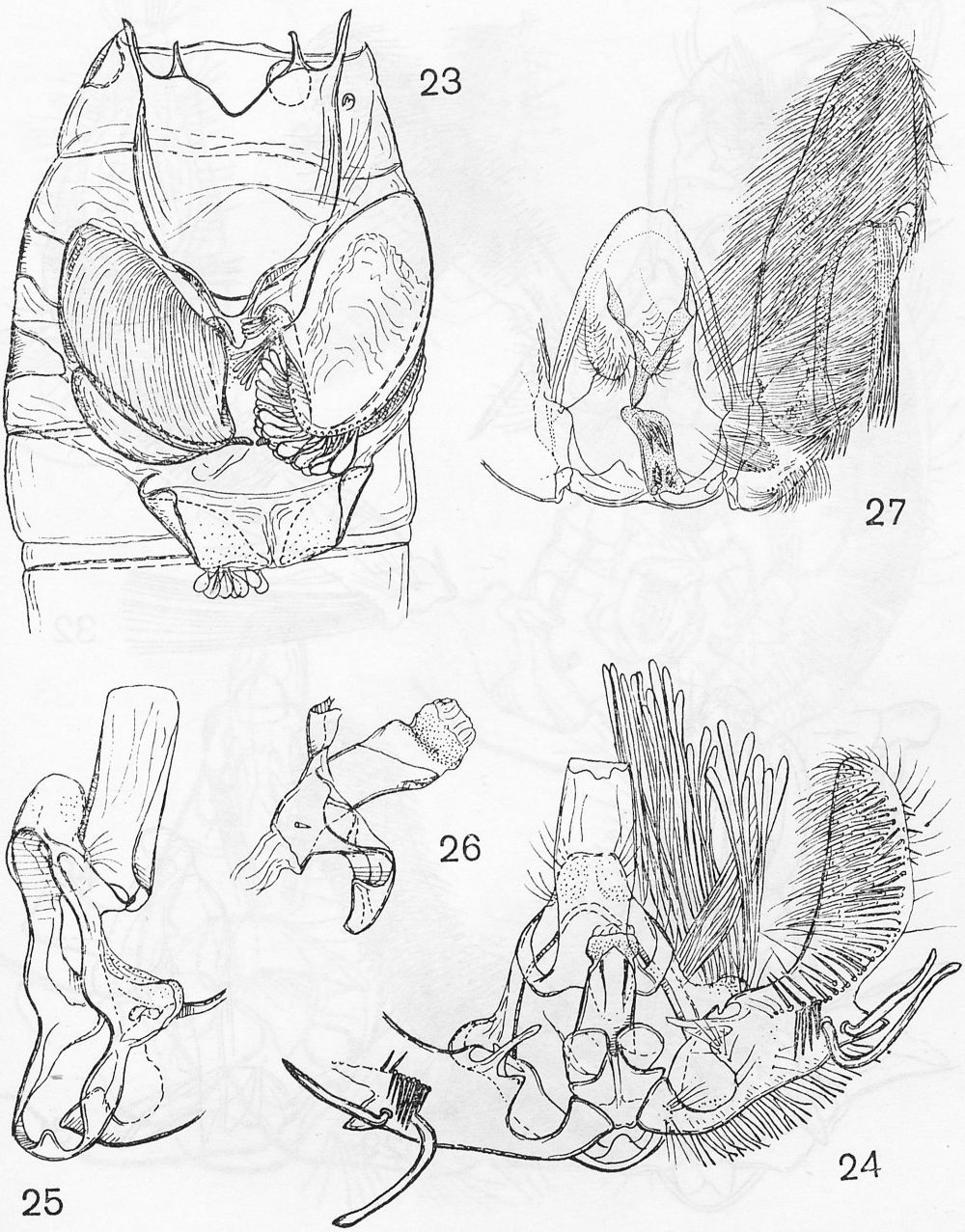
Figs 7—10. Male genitalia: 7 — *Bactra (Spinobactra) spinosa* DIAK., Transvaal, after DIAKONOFF, 1963; 8, 9 — *B. (Chiloides) venosana* (Z.), France: Alpes Maritimes; 10 — *B. (Nannobactra) minima psila* DIAK., Canary Is., after DIAKONOFF, 1964



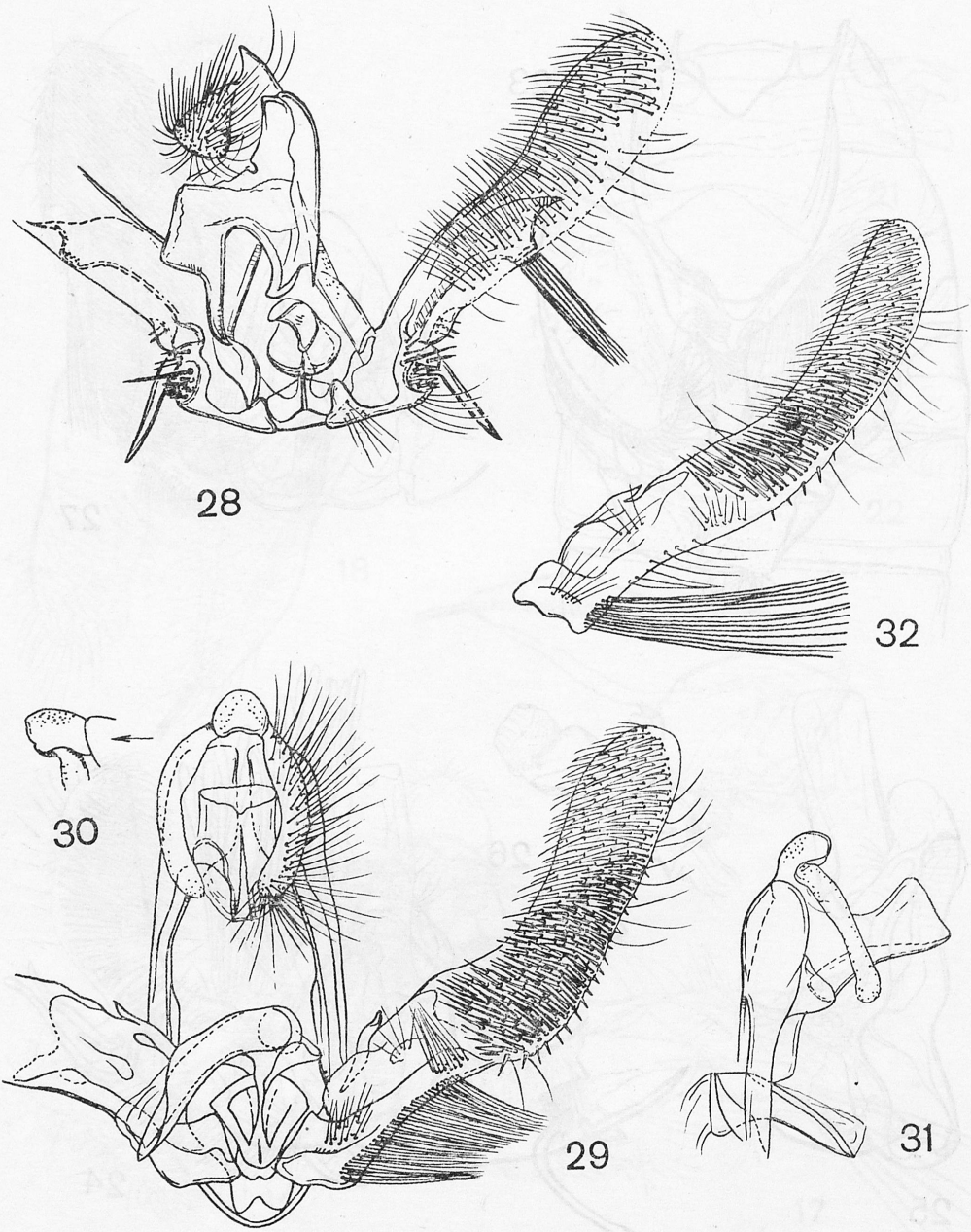
Figs 11—16. Male genitalia and scent organs of *Ukamenia sapporensis* (MATS.), Japan: Honsyu



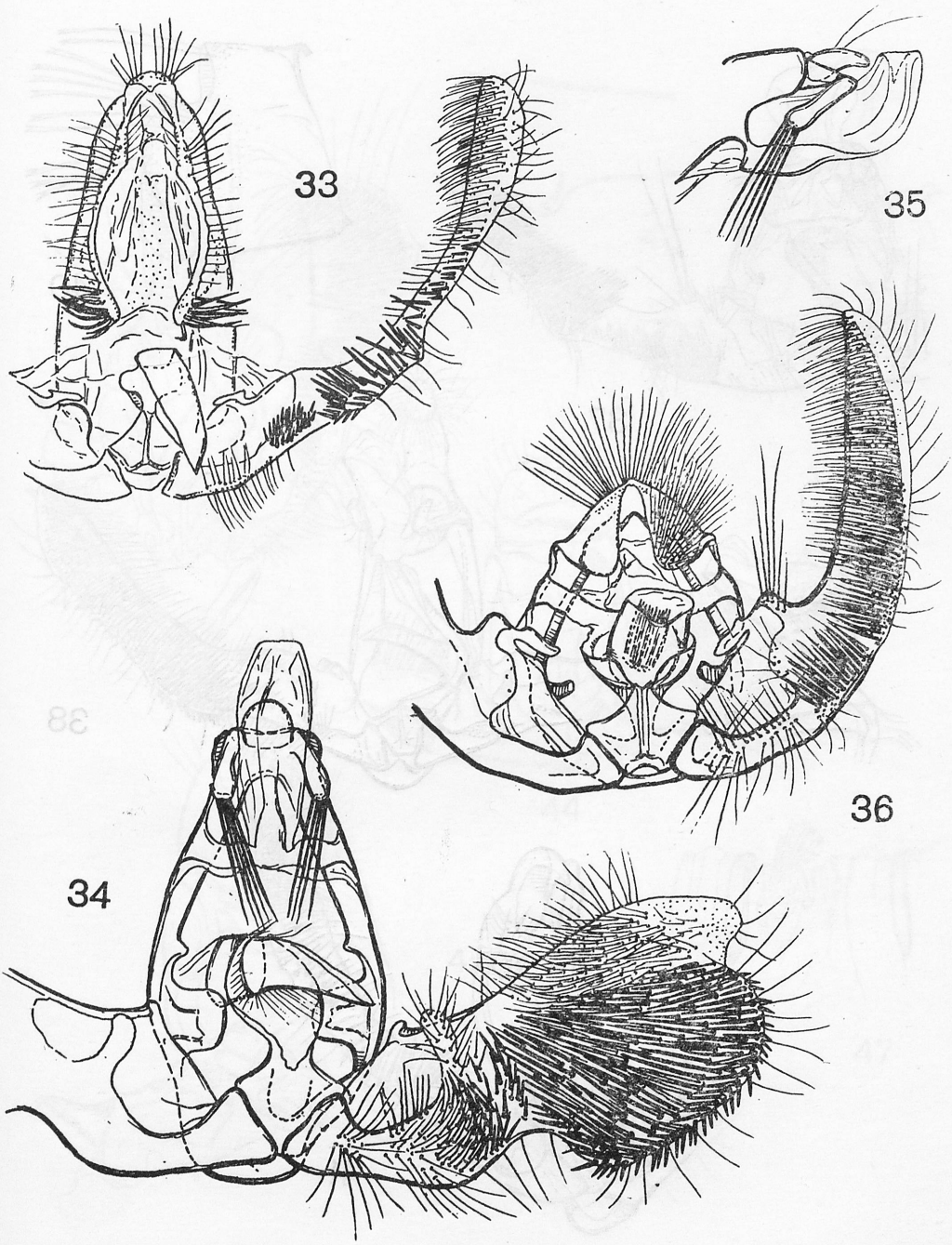
Figs 17—22. Male genitalia and scent organs: 17 — *Hiroshiinouea stellifera* KAW., Japan Yakushima Is.; 18—22 — *Gatesclarkeana idia* DIAK., Japan: Yakushima Is.



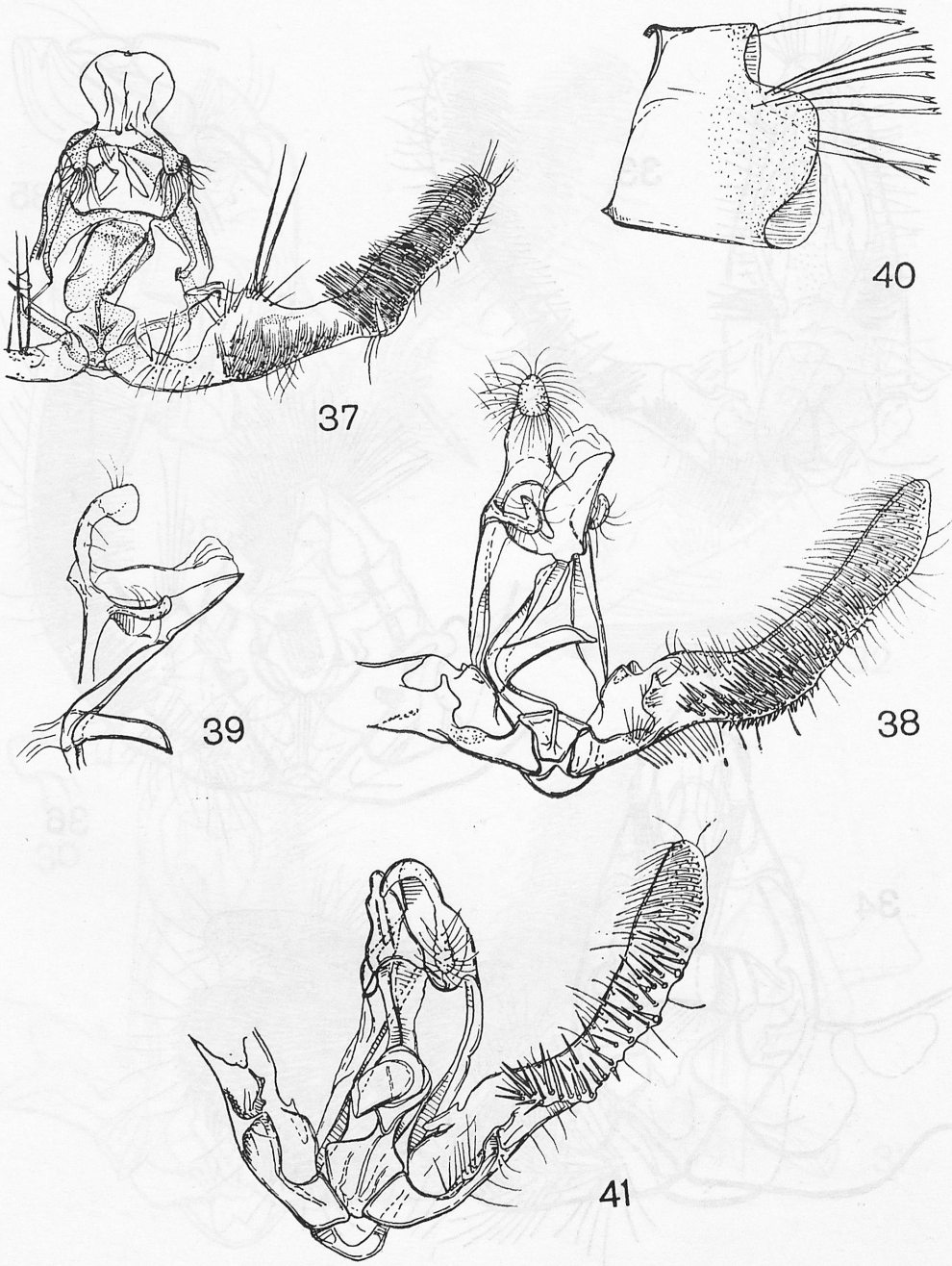
Figs 23—27. Male genitalia and scent organ: 23 — *Gatesclarkeana idia* DIAK., Japan: Yakushima Is.; 24—26 — *Rhodocosmaria occidentalis* DIAK., Japan: Ogasawara Is.; 27 — *Eubrochoneura parasema* DIAK., Solomon Is., after DIAKONOFF, 1966



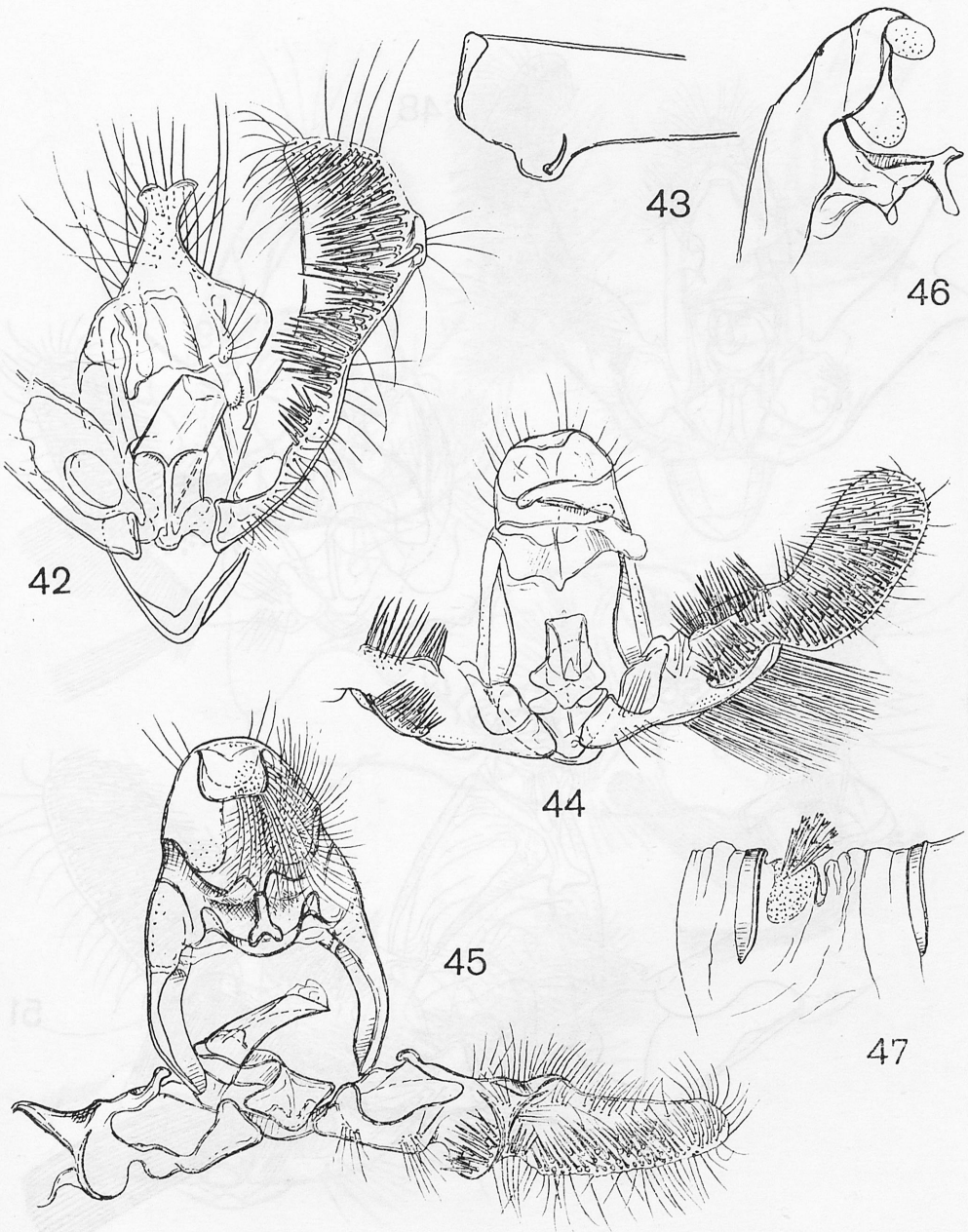
Figs 28—32. Male genitalia: 28—? *Eubrochoneura altissima* KAW., Japan: 29, 30 — *Eudemis porphyrana* (HBN.), Poland; 31, 32 — *E. profundana* ([DEN. & SCHIFF.]), Poland



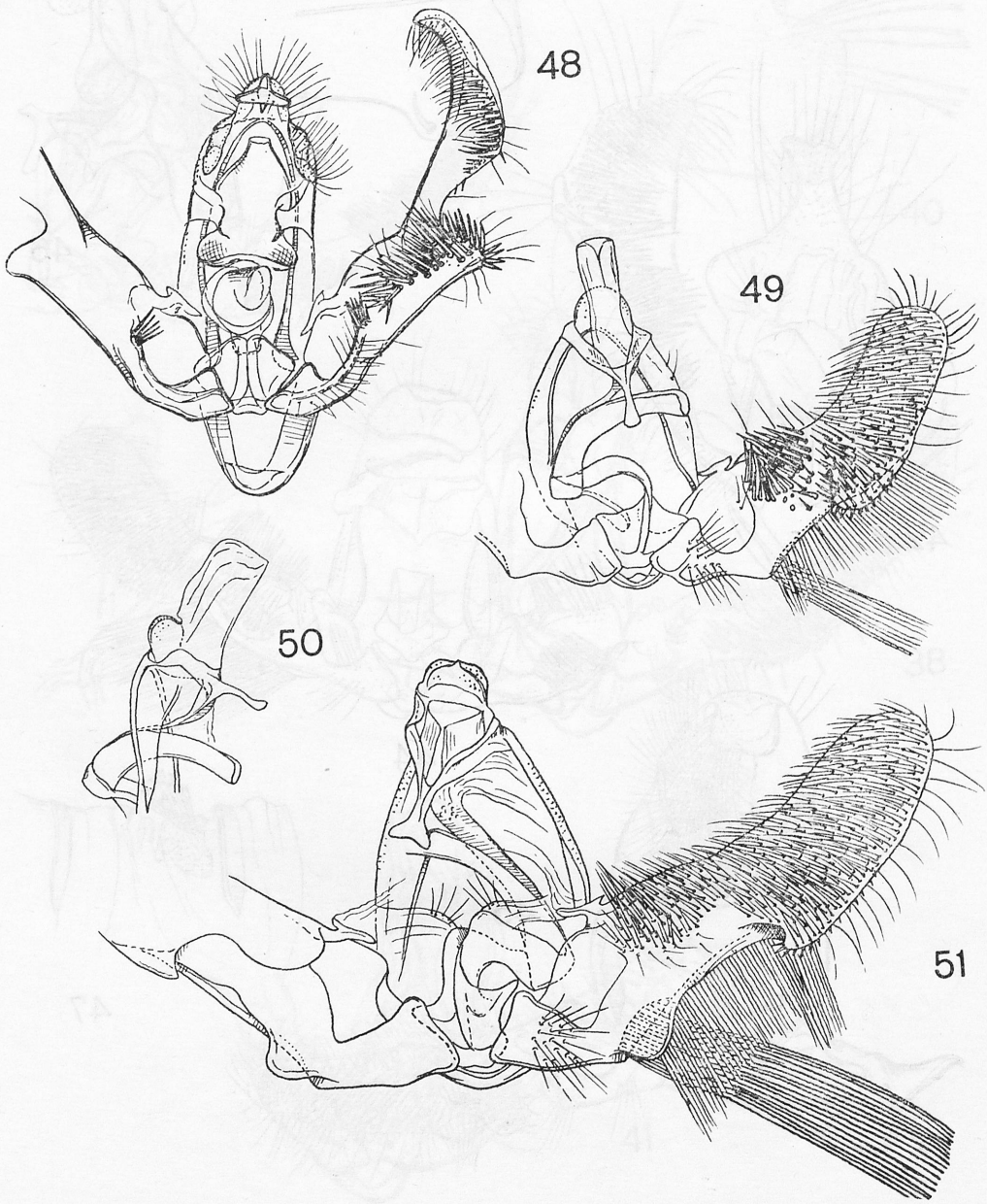
Figs 33—36. Male genitalia: 33 — *Sorolopha agana* (FALK.), after FALKOVITSH, 1966; 34, 35 — *Eudemopsis pompholycias* (MEYR.), Japan: Honsyu; 36 — *Phecasiophora confixana* (WALK.), North America



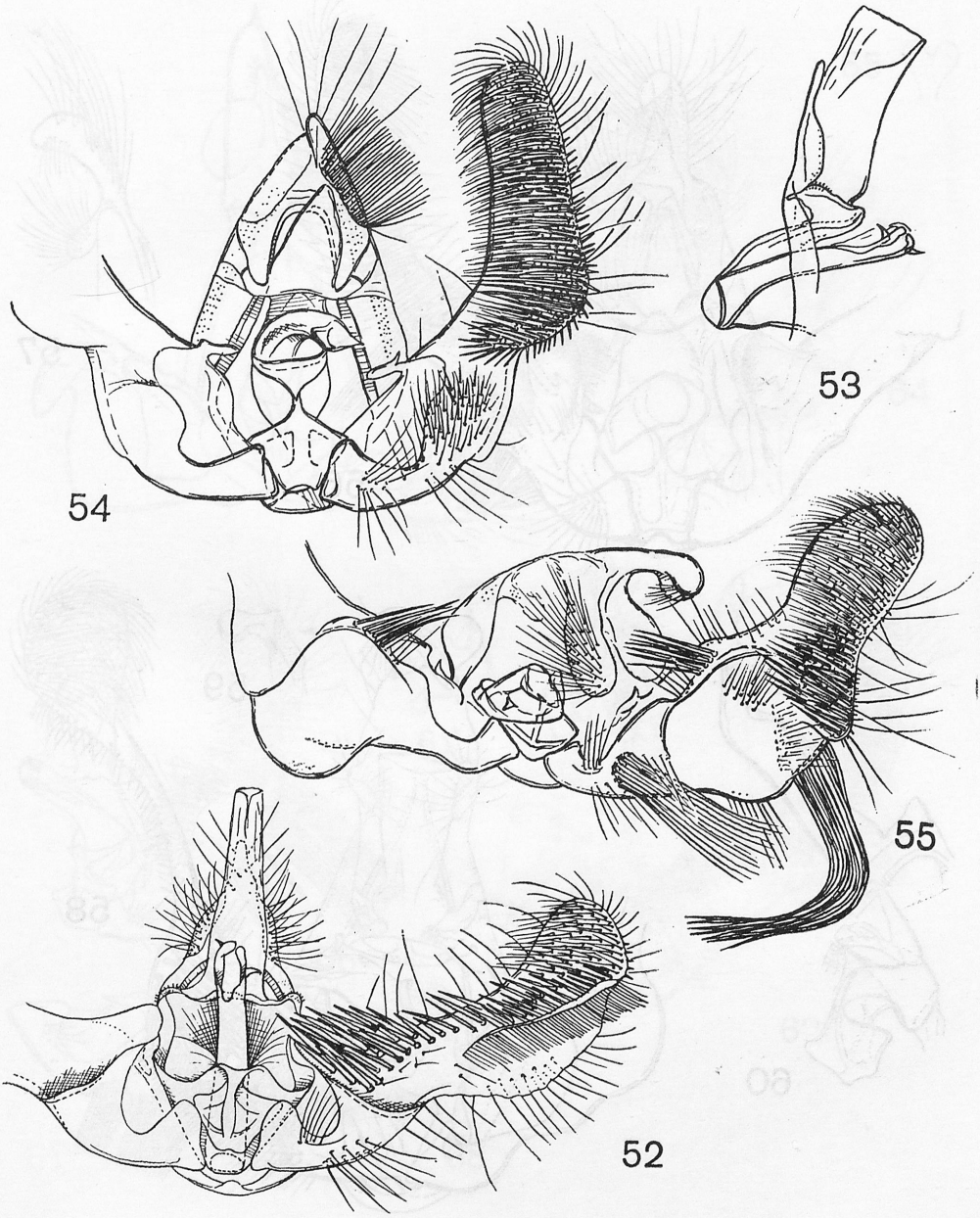
Figs 37—41. Male genitalia and scent organ: 37 — *Psilacantha manifesta* DIAK., British New Guinea, after DIAKONOFF, 1973; 38—40 — *Dactylioglypha tonica* (MEYR.), Japan: Okinawa; 41 — *Statherotoxys hedraea* (MEYR.), Japan



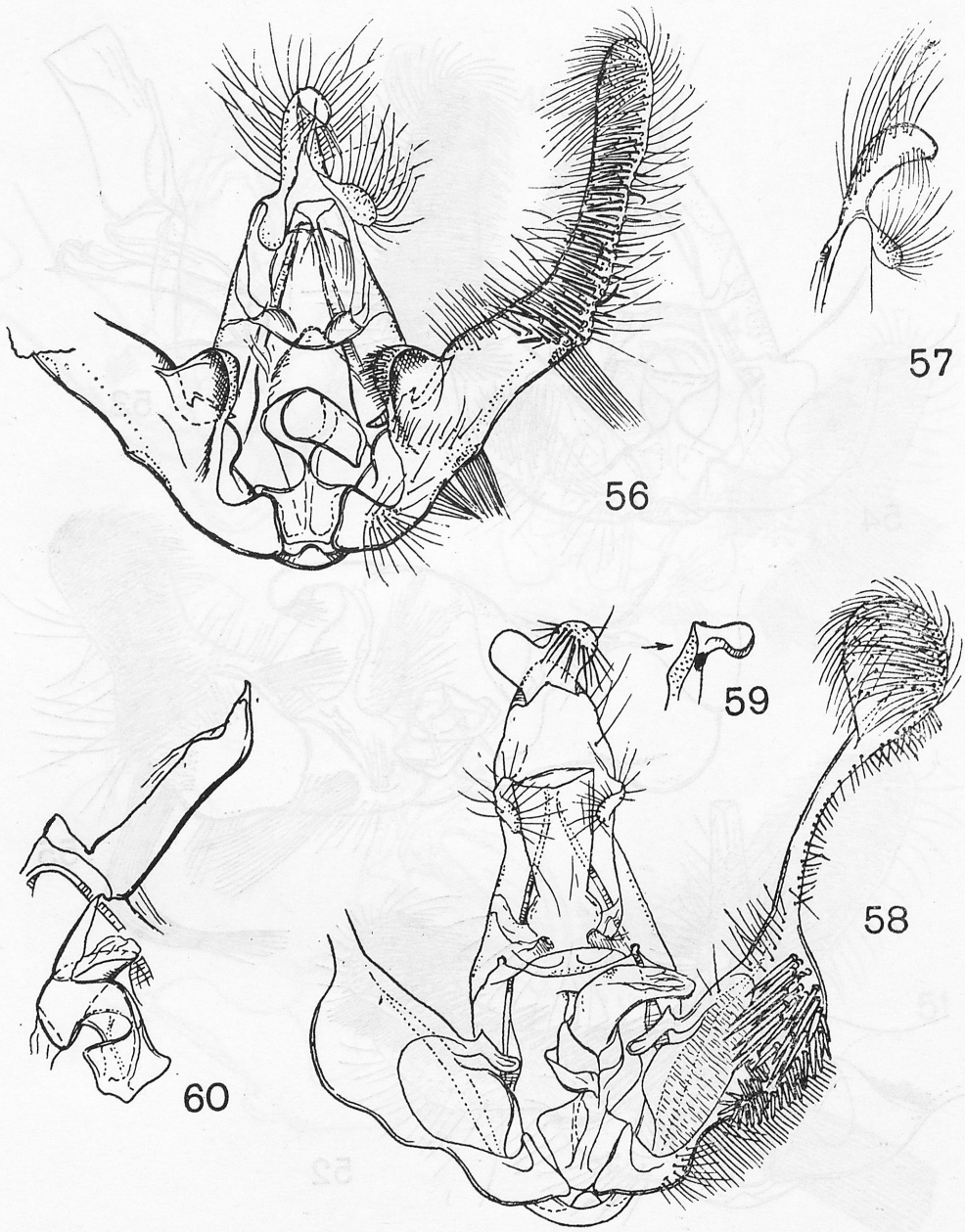
Figs 42—47. Male genitalia and scent organ: 42, 43 — *Statherotis towadensis* KAW., Japan; 44 — *Proschistis marmaropa* (MYER.), Japan; 45—47 — *Statheromantis pictana* (KUZN.), Kuril Is.



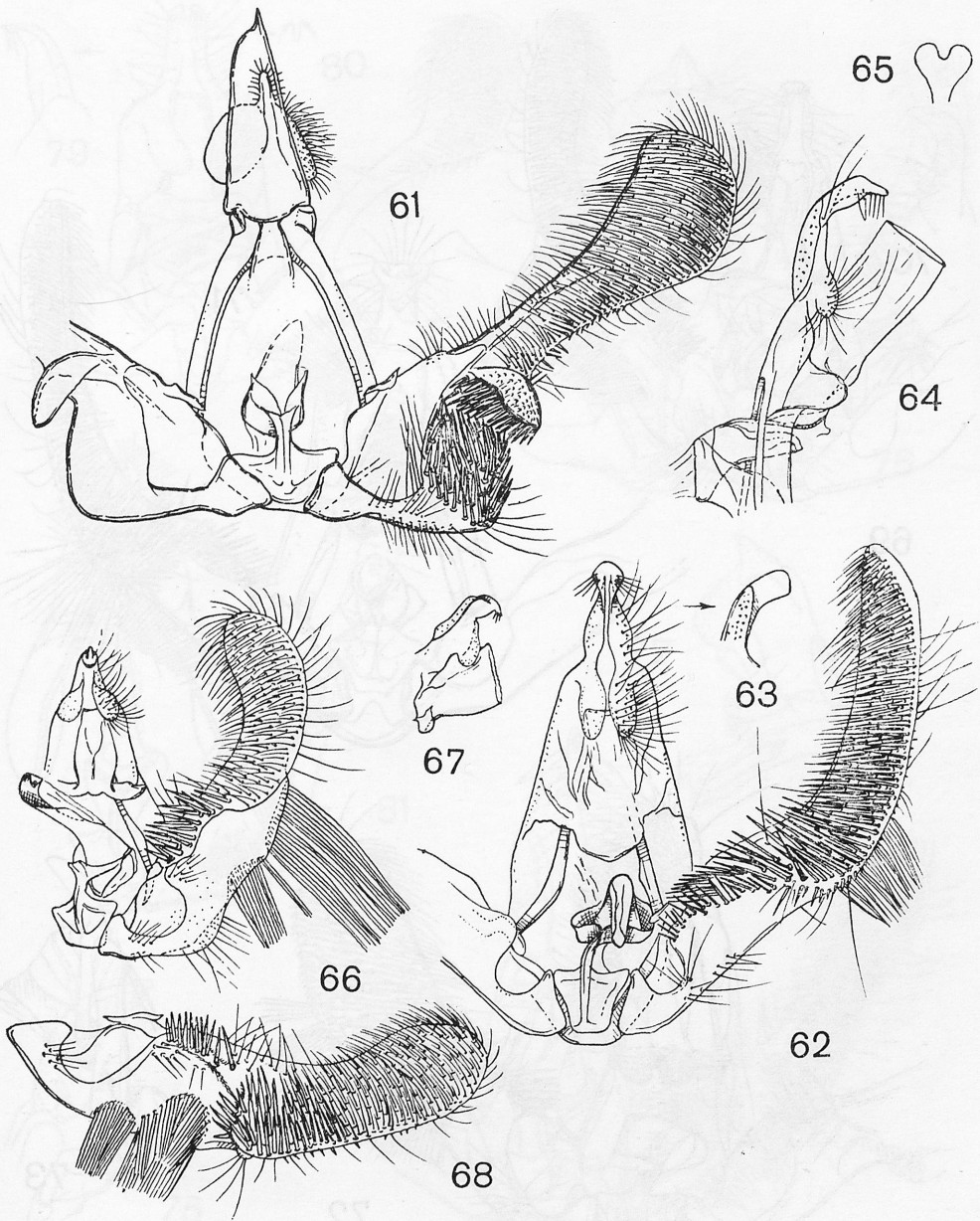
Figs 48—51. Male genitalia: 48 — *Rhodacra pyrrhocrossa* (MEYR.), Japan; 49, 50 — *Aterpia anderreggana* (GUEN.), Poland; 51 — *A. corticana* ([DEN. & SCHIFF.]), Poland



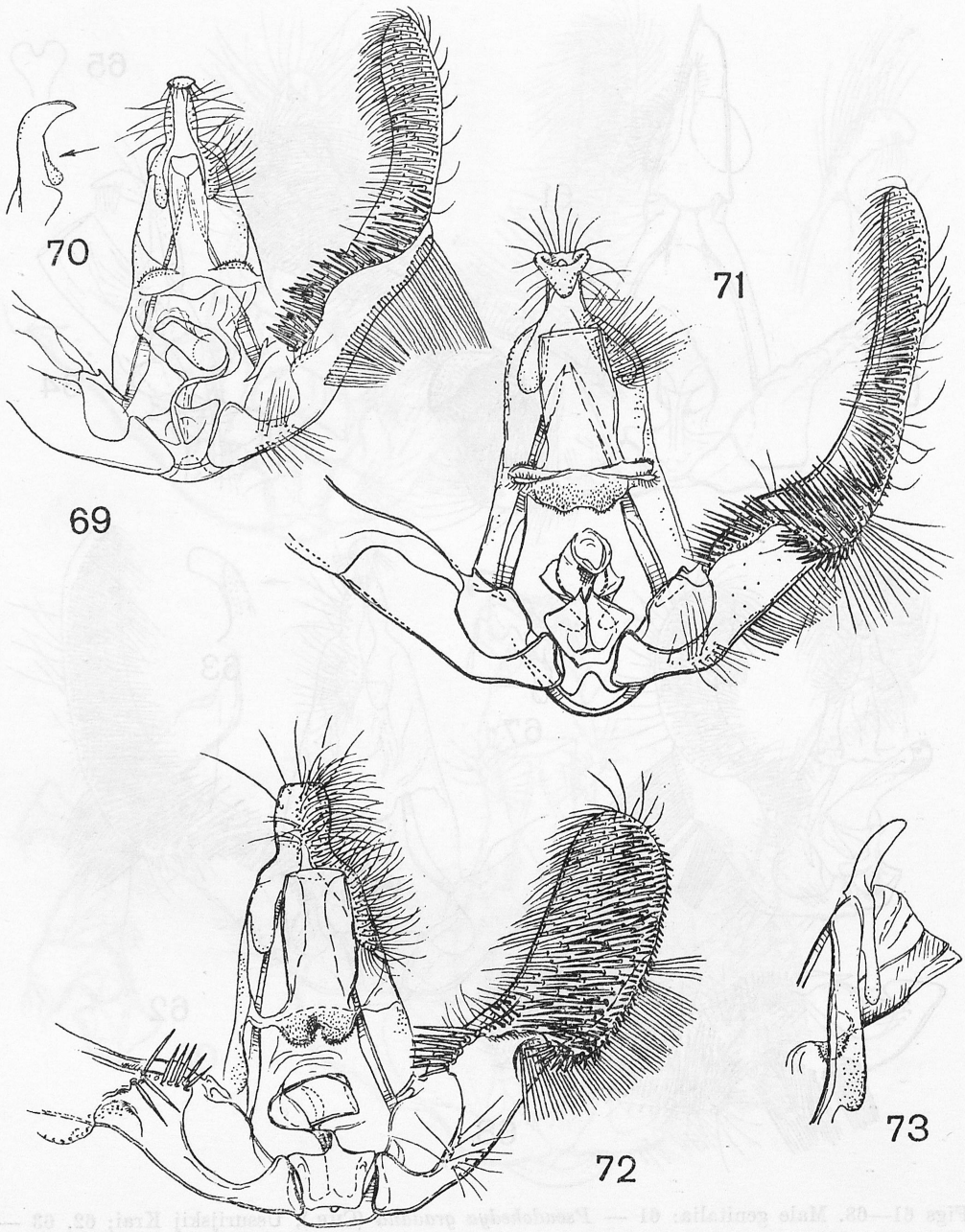
Figs 52—55. Male genitalia: 52, 53 — *Selenodes textana* (FRÖL.), Poland; 54 — *Neostatherotis nipponica* OKU, Japan: Honsyu; 55 — *Temnolopha mosaica* LOW., Japan



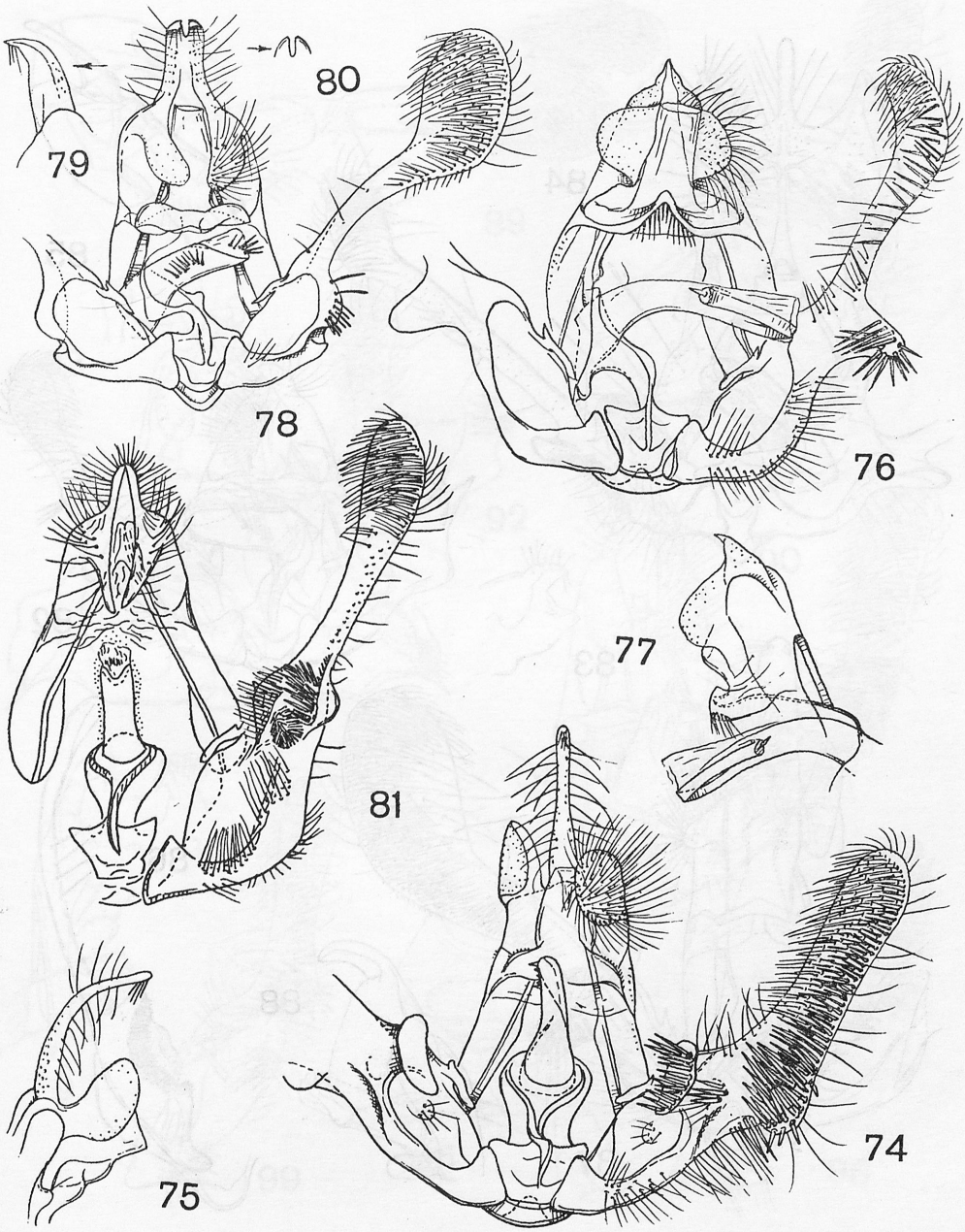
Figs 56—60. Male genitalia: 56, 57 — *Saliciphaga acharis* (BUTL.), Manchuria; 58, 59 — *Pseudosciaphila branderiana* (L.), Poland; 60 — *Pseudohedya gradana* (Chr.), Ussurijskij Krai



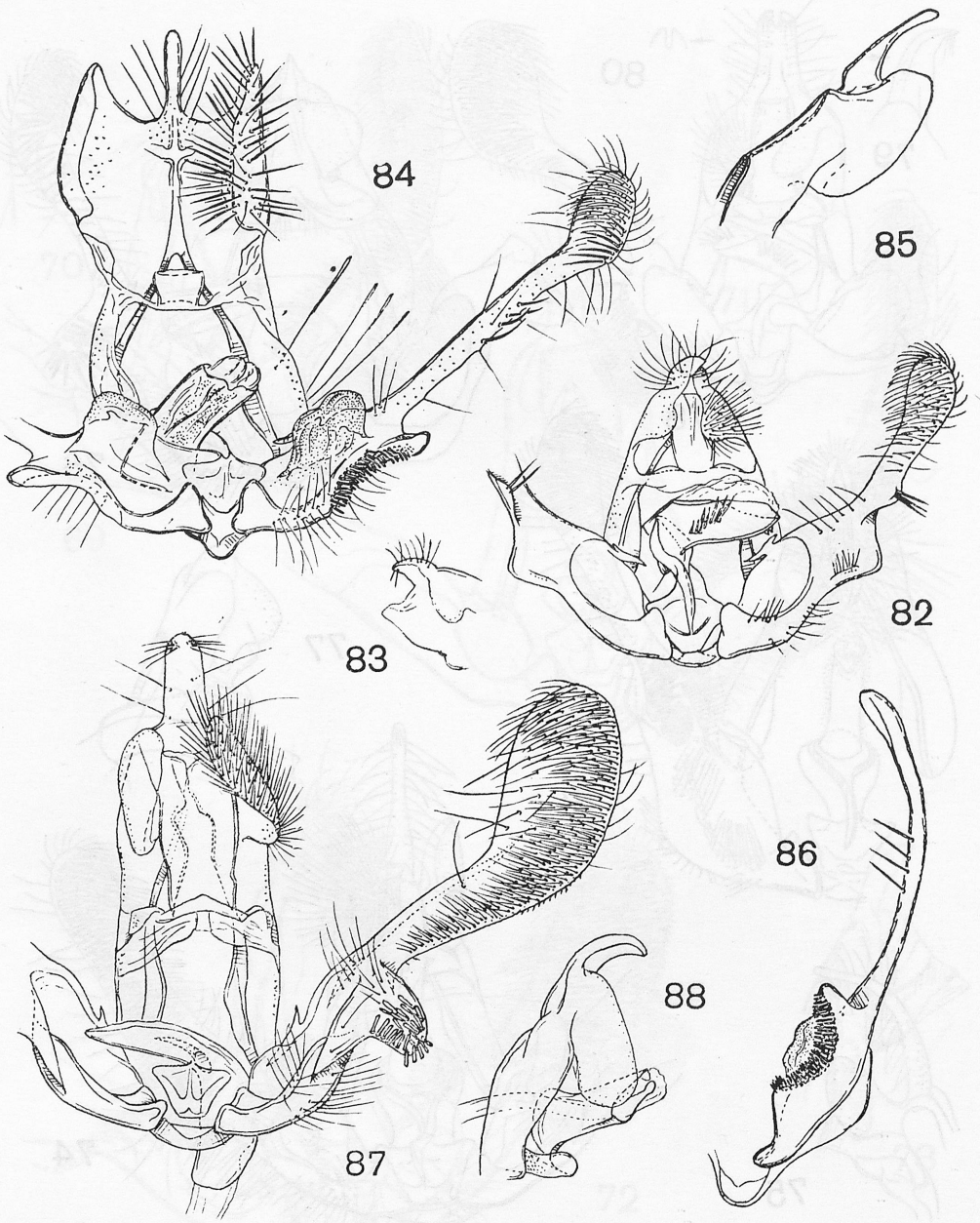
Figs 61—68. Male genitalia: 61 — *Pseudohedya gradana* (CHR.), Ussurijskij Krai; 62, 63 — *Hedya salicella* (L.), Poland; 64, 65 — *H. nubiferana* (HAW.), Poland; 66, 67 — *H. pruniana* (HBN.), Poland; 63 — *H. ochroleucana* (FRÖL.), Poland



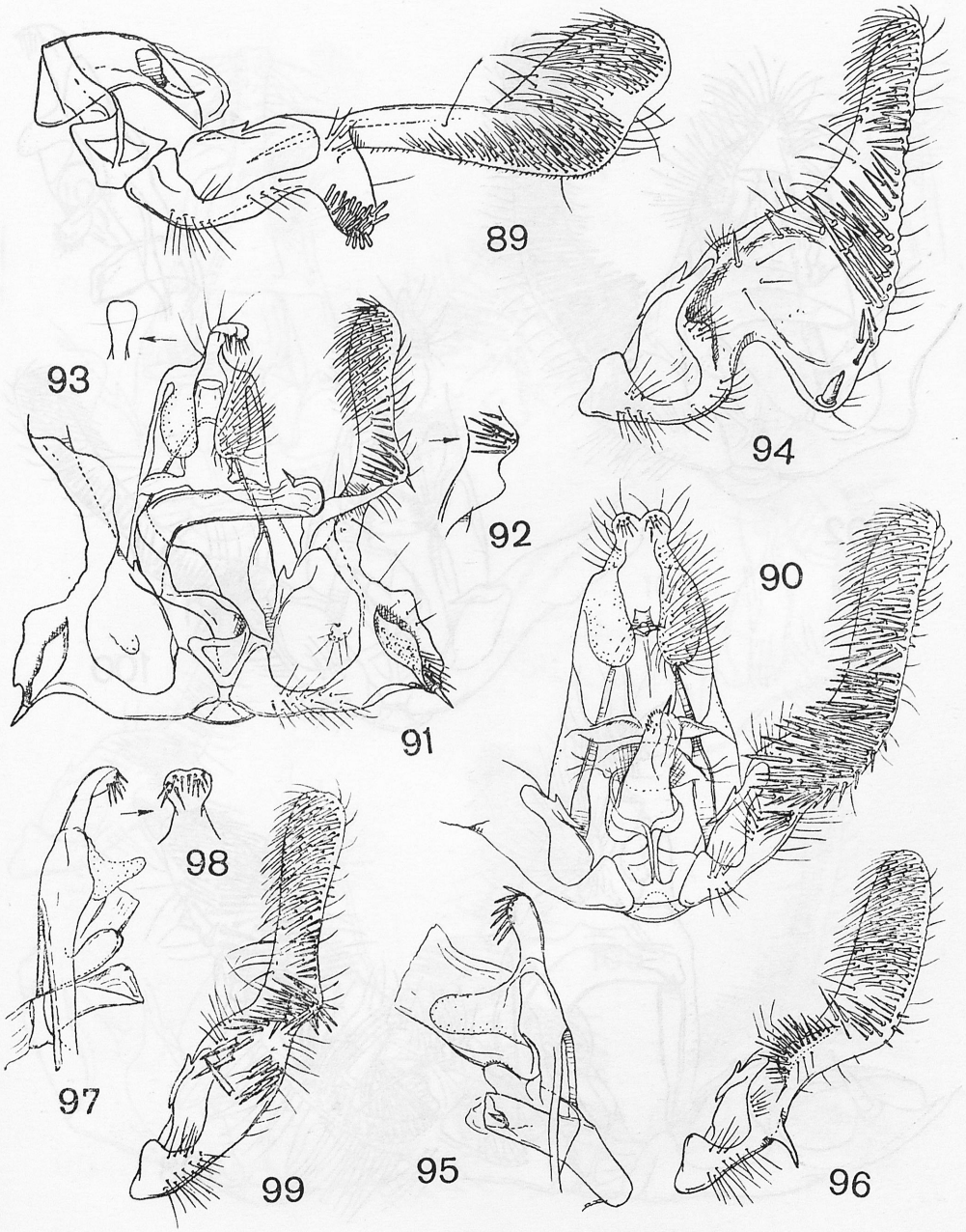
Figs 69—73. Male genitalia: 69, 70 — *Hedya dimidiana* (Cl.), Poland; 72, 73 — *Dudua scaeaspis* (Meyr.), China: Likiang 71 — *D. aprobola* (Meyr.), Japan: Ogasawara Is.



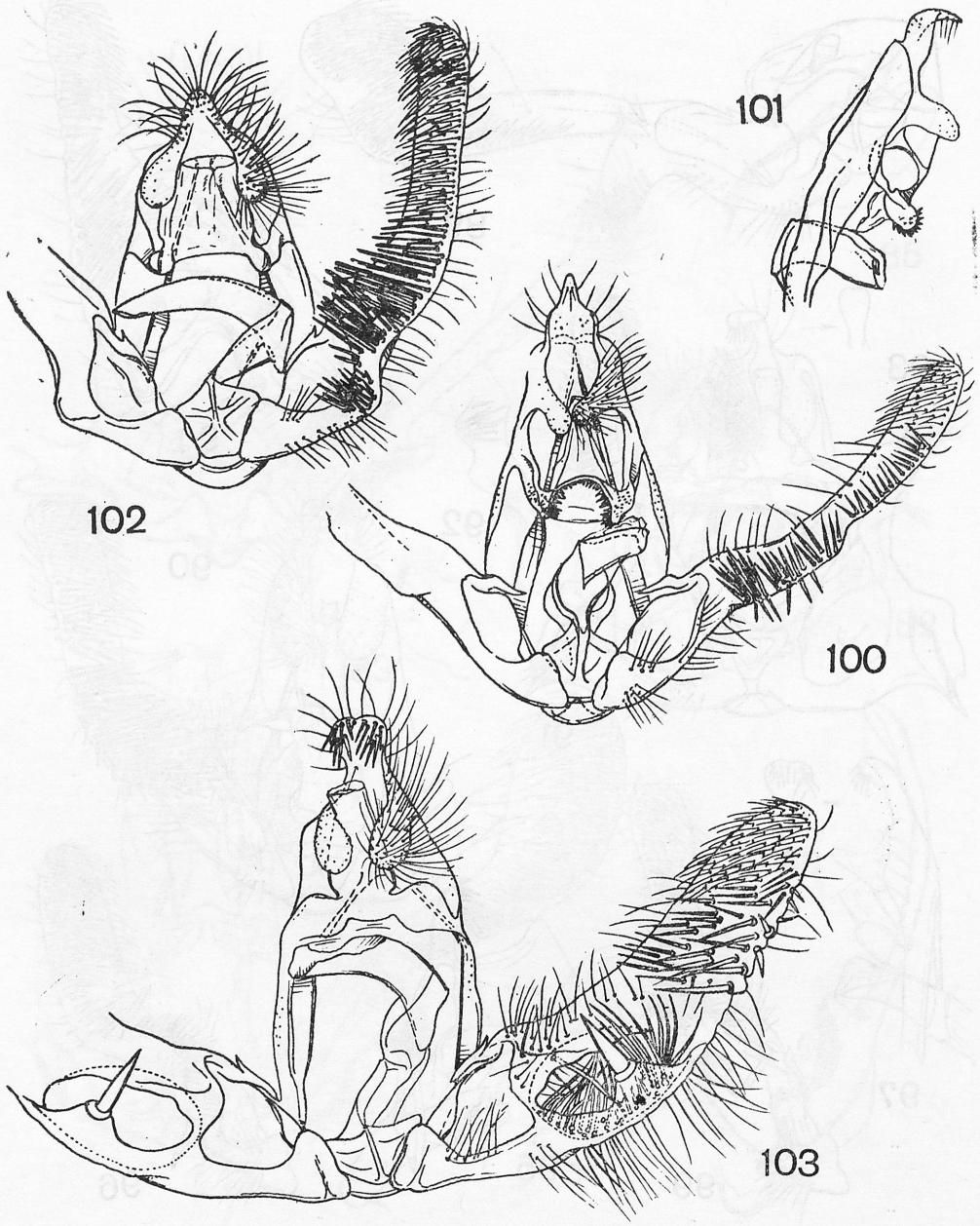
Figs 74—81. Male genitalia: 74, 75 — *Metendothenia atropunctana* (ZETT.), Poland; 76, 77 — *Orthotaenia undulana* ([DEN. & SCHIFF.]), Poland; *Pseudohermenias abietana* (F.), Poland; 81 — *Rudisociaria expeditana* (SNELL.), after FALKOVITSH, 1962



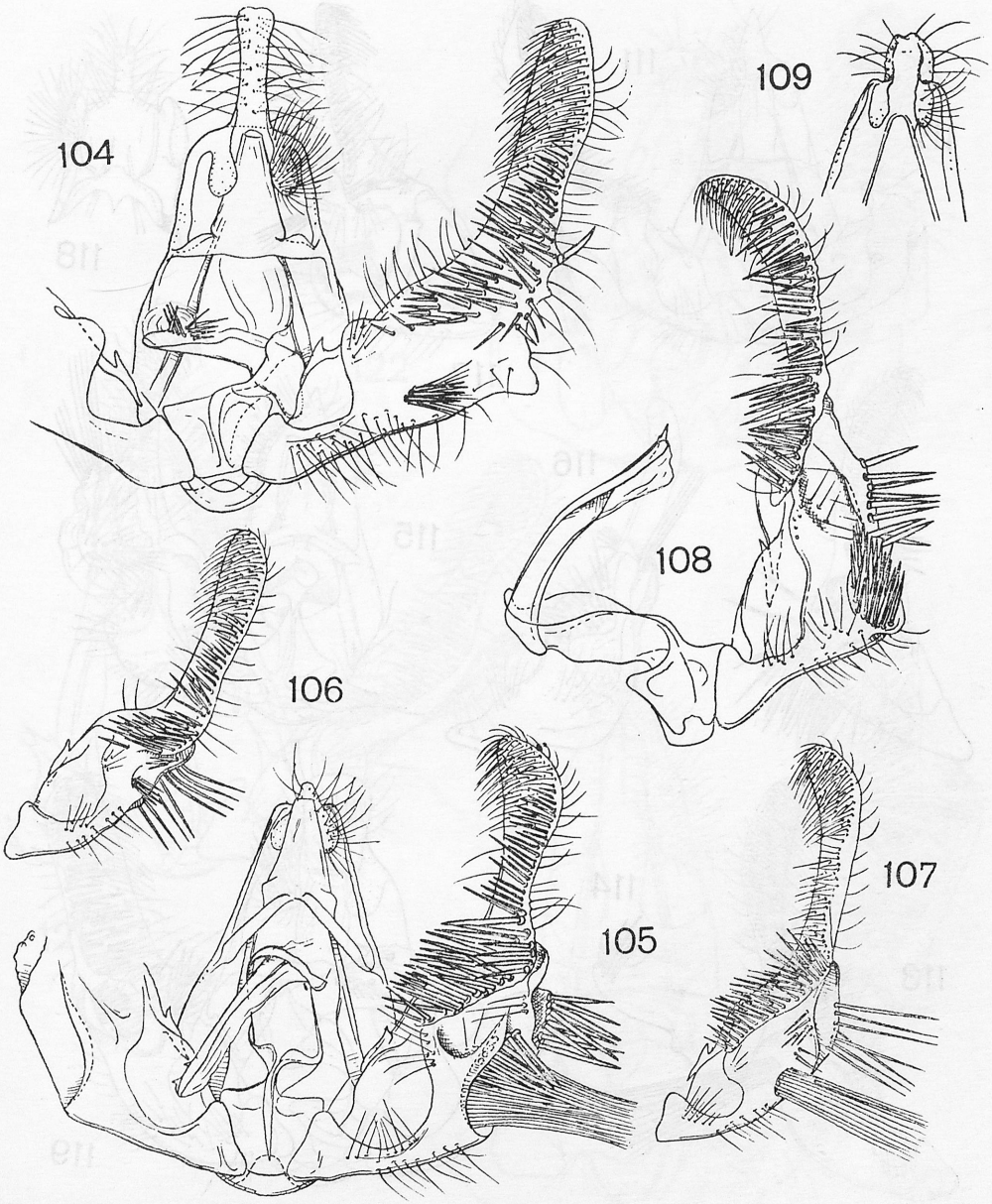
Figs 82—88. Male genitalia: 82, 83 — *Piniphila bifasciana* (HAW.), Poland; 84—86 —*Tia enervana* (ERSCH.), Amur territory; 87 — *Apotomis inundana* ([DEN. & SCHIFF.]), Poland



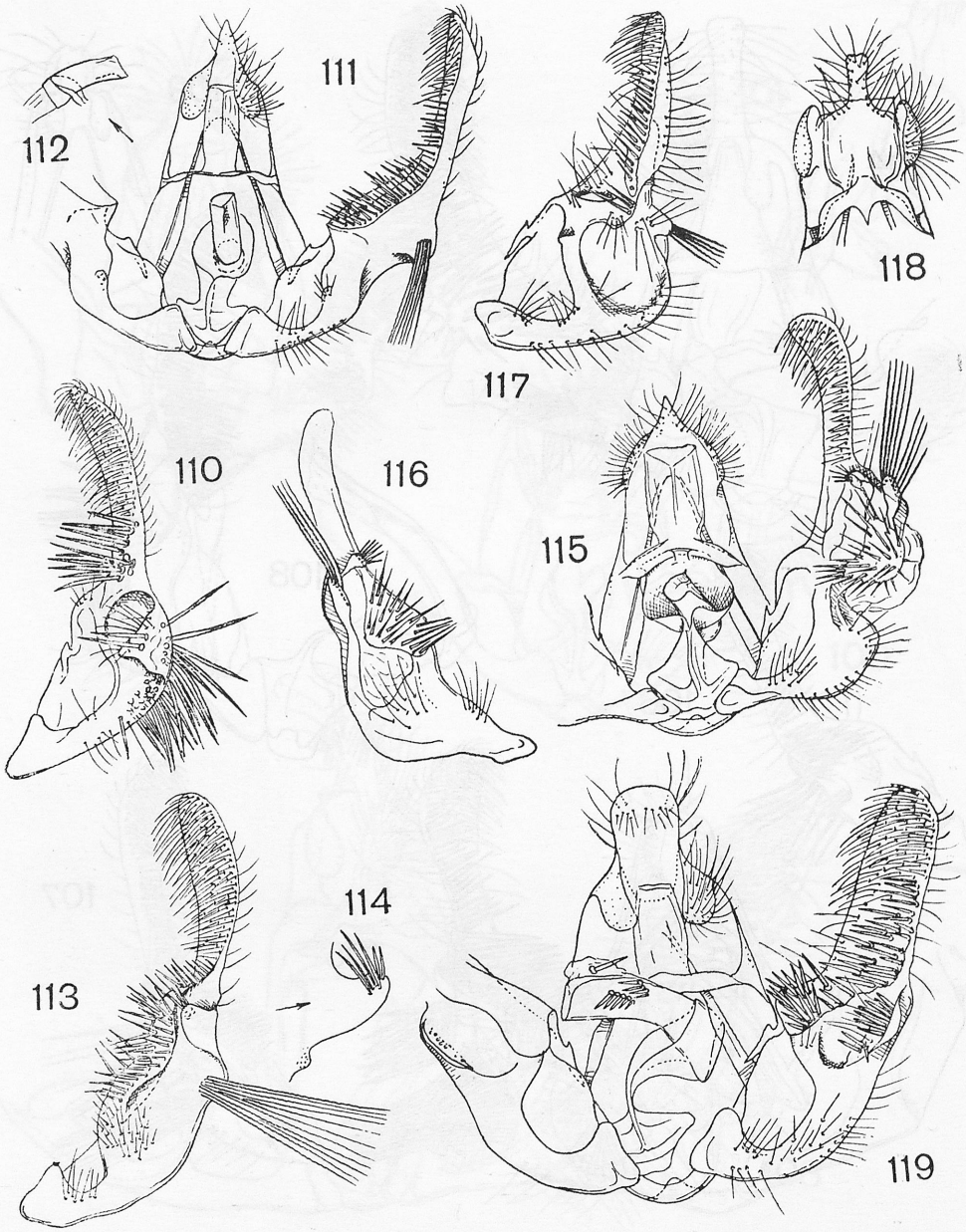
Figs 88—99. Male genitalia: 88 — *Apotomis sororculana* (ZETT.), Poland; 89 — *A. turbidana* HBN., Poland; 90 — *Cymolomia hartigiana* (SAX.), Poland; 91—93 — *Argyroploce arbutella* (L.), Poland; 94, 95 — *A. noricana* (H.-S.), Poland; 96 — *A. lediana* (L.), Poland; 97—99 — *A. dalecarliana* (GUEN.), Poland



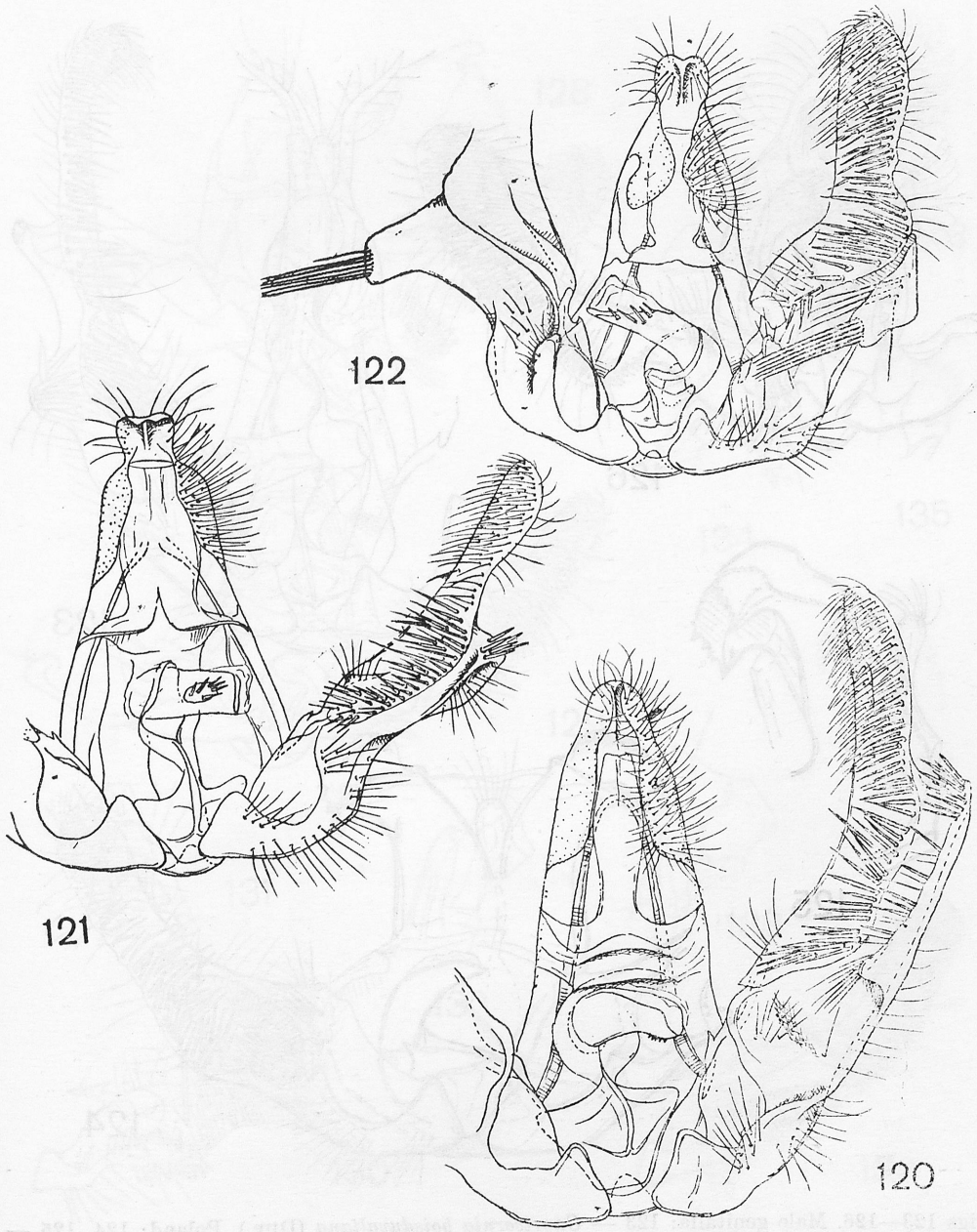
Figs 100—103. Male genitalia: 100, 101 — *Pristerognatha penthinana* (GUEN.), Poland; 102 — *P. fuligana* ([DEN. & SCHIFF.]), Poland; 103 — *Stictea mygindiana* ([DEN. & SCHIFF.]), Poland



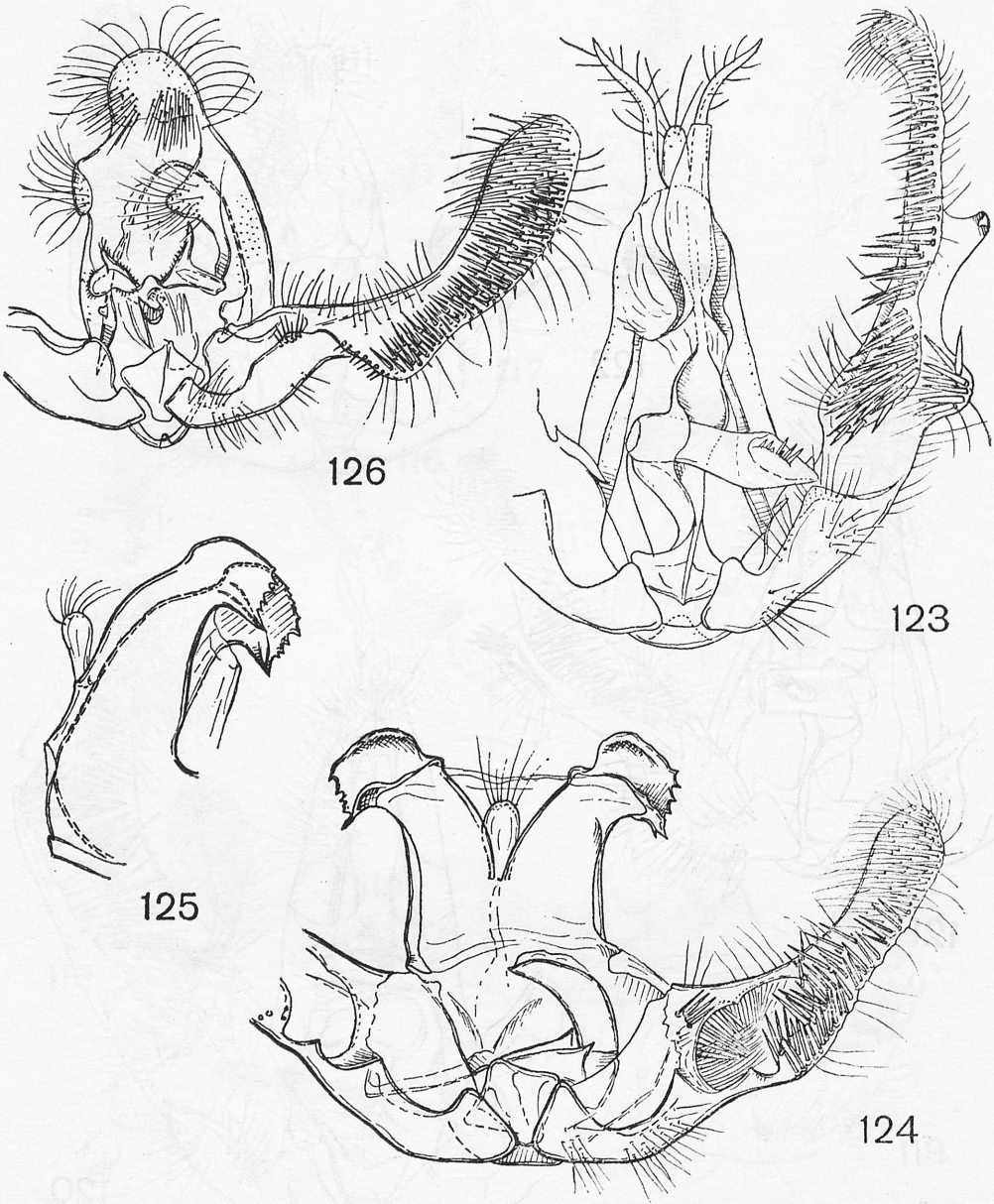
Figs 104—109. Male genitalia: 104 — *Olethreutes arcuella* (Cl.), Poland; 105 — *Celypha striana* ([Den. & Schiff.]), Poland; 106 — *C. capreolana* (H.-S.), Germany; 107 — *C. rurestrana* (Dup.), Poland; 108 — *C. rufana* (Scop.), Poland; 109 — C. *flavipalpana* (H.-S.), Poland



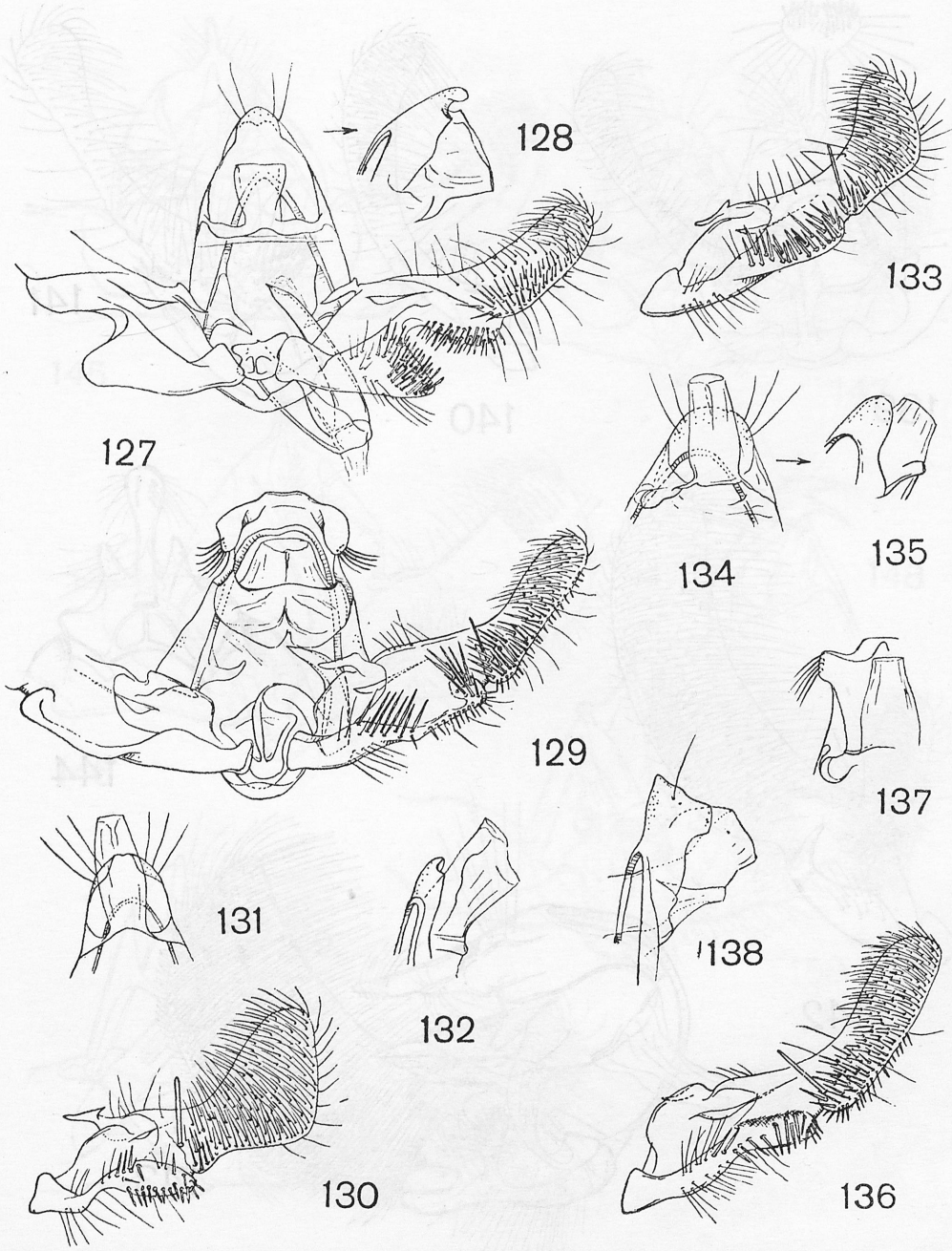
Figs 110—119. Male genitalia: 110 — *Celypha cespitana* (Hbn.), Poland; 11, 112 — *C. aurofasciana* (Haw.), Poland; 113, 114 — *C. rivulana* (Scop.), Poland; 117 — *C. tiedemanniana* (Z.), Poland; 118 — *C. woodiana* (Barr.), Poland; 119 — *Phiaris obsoletana* (Zett.), Poland



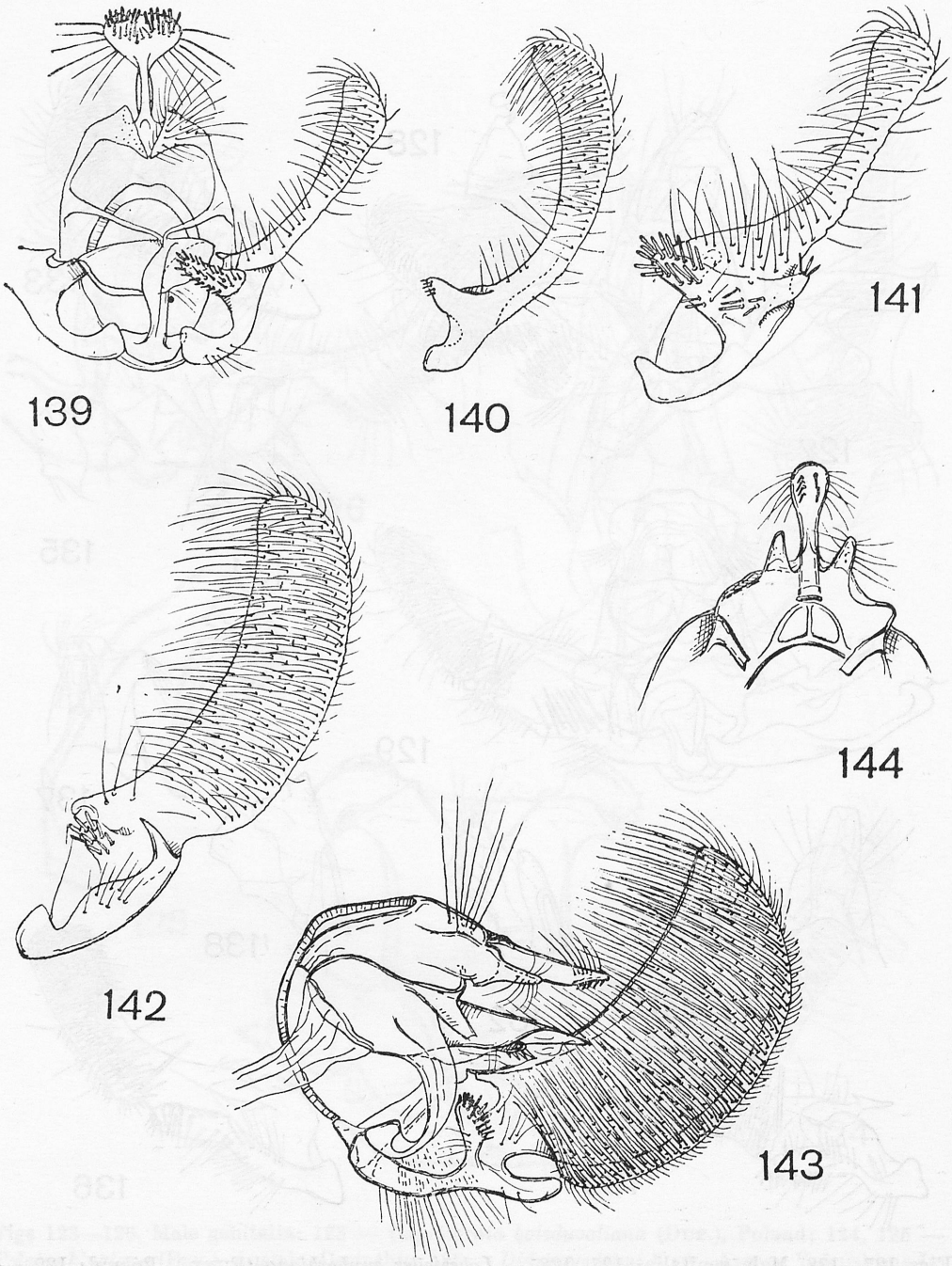
Figs 120—122. Male genitalia: 120 — *Phiaris schulziana* (F.), Poland; 121 — *Ph. palustrana* (Z.), Poland; 122 — *Ph. bipunctana* (F.), Poland



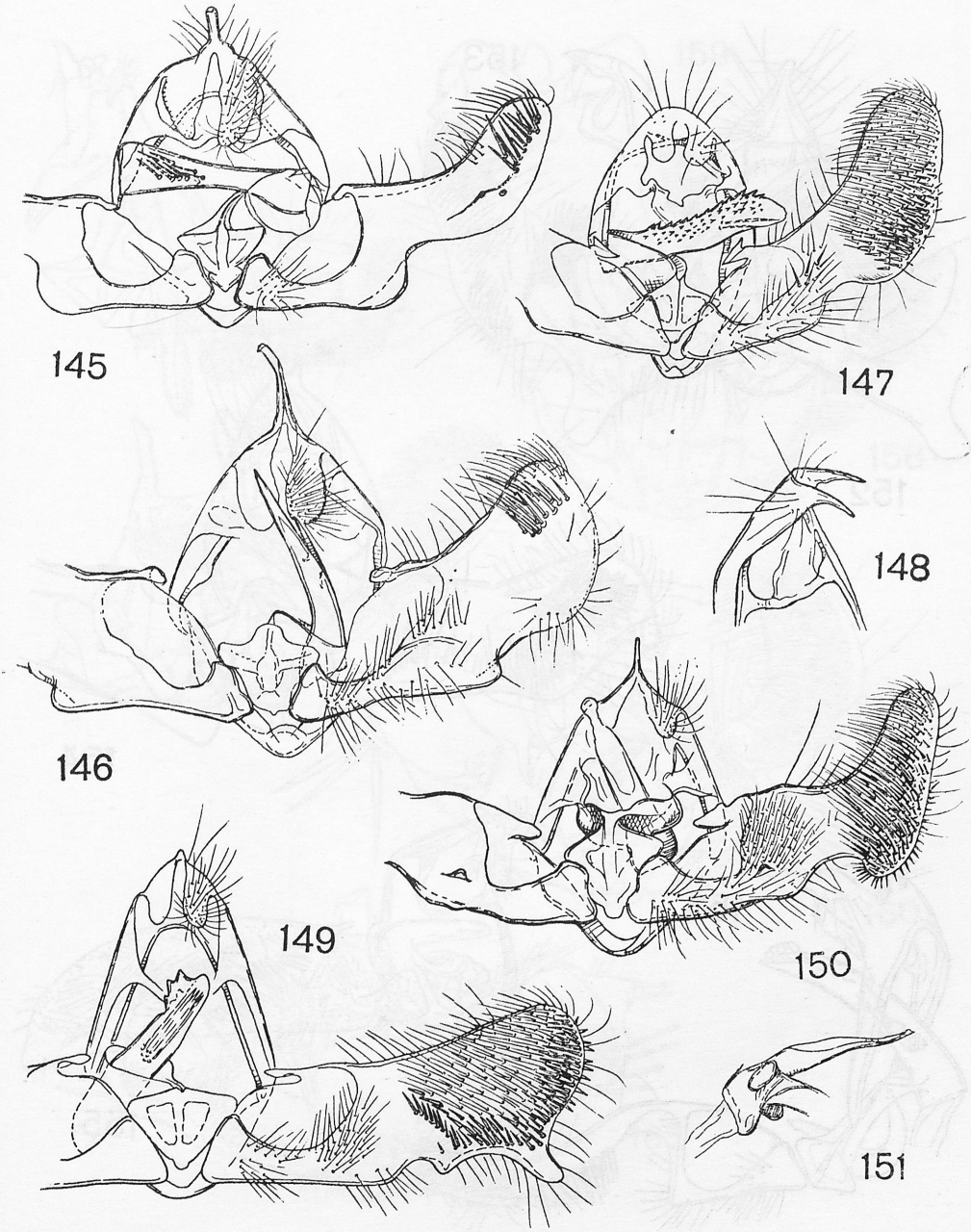
Figs 123—126. Male genitalia: 123 — *Capricornia boisduvaliana* (Dup.), Poland; 124, 125 — *Pelatea klugiana* (Frr.), Austria: Carinthia; 126 — *Didrimys tokui* Kaw., Japan: Yakushima Is.



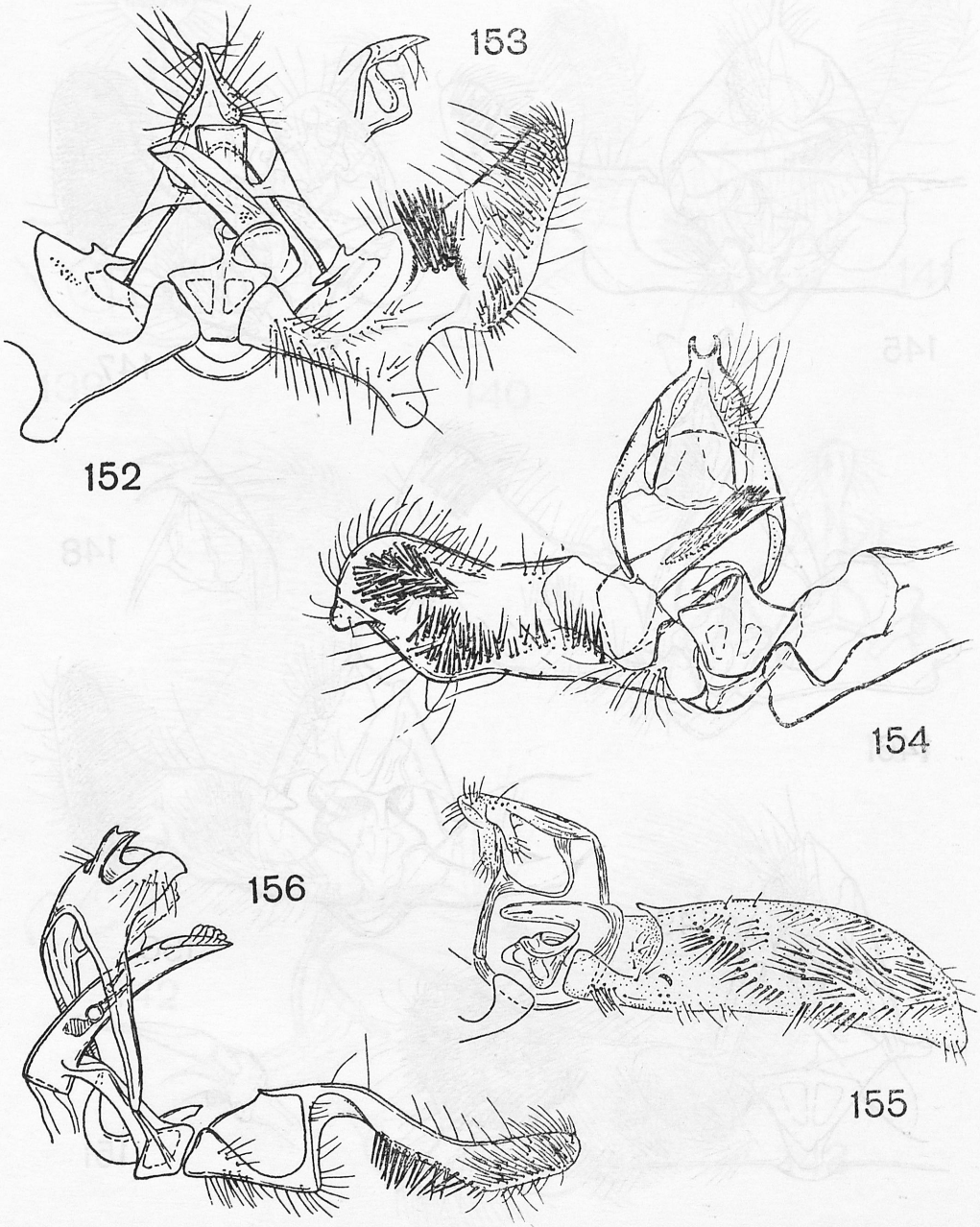
Figs 127—138. Male genitalia: 127, 128 — *Lobesiodes euphorbiana* (Fuey.), Poland; 129 — *Lobesia reliquana* (Hbn.), Poland



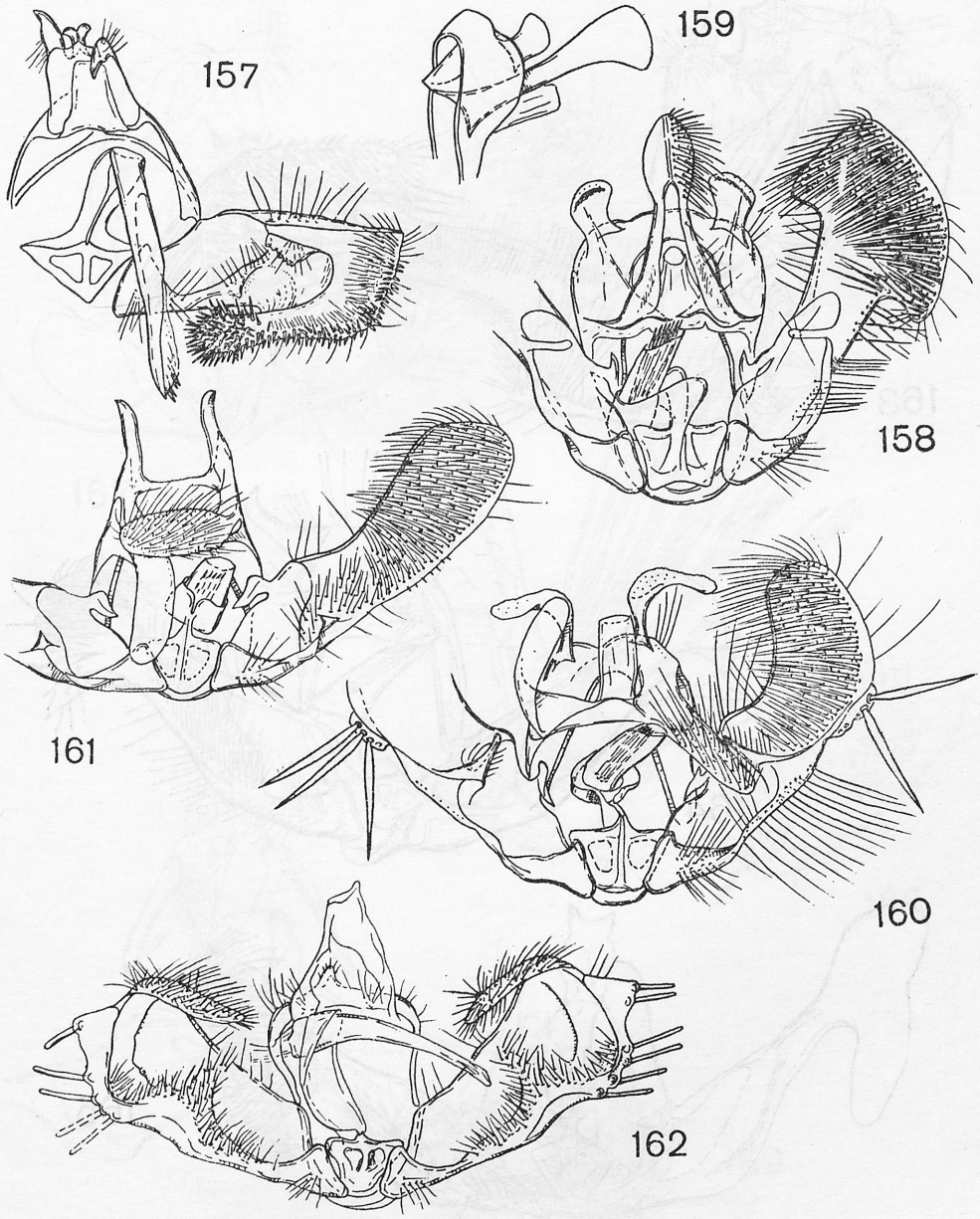
Figs 139—144. Male genitalia: 139 — *Endothenia gentianeana* (Hbn.), Poland; 140 — *E. nigricostana* (Haw.), Poland; 141 — *E. lapideana* (H.-S.), Poland; 142 — *E. quadrimaculana* (H.-S.), Poland; 143, 144 — *E. menthivora* (Okú), Japan: Honsyu



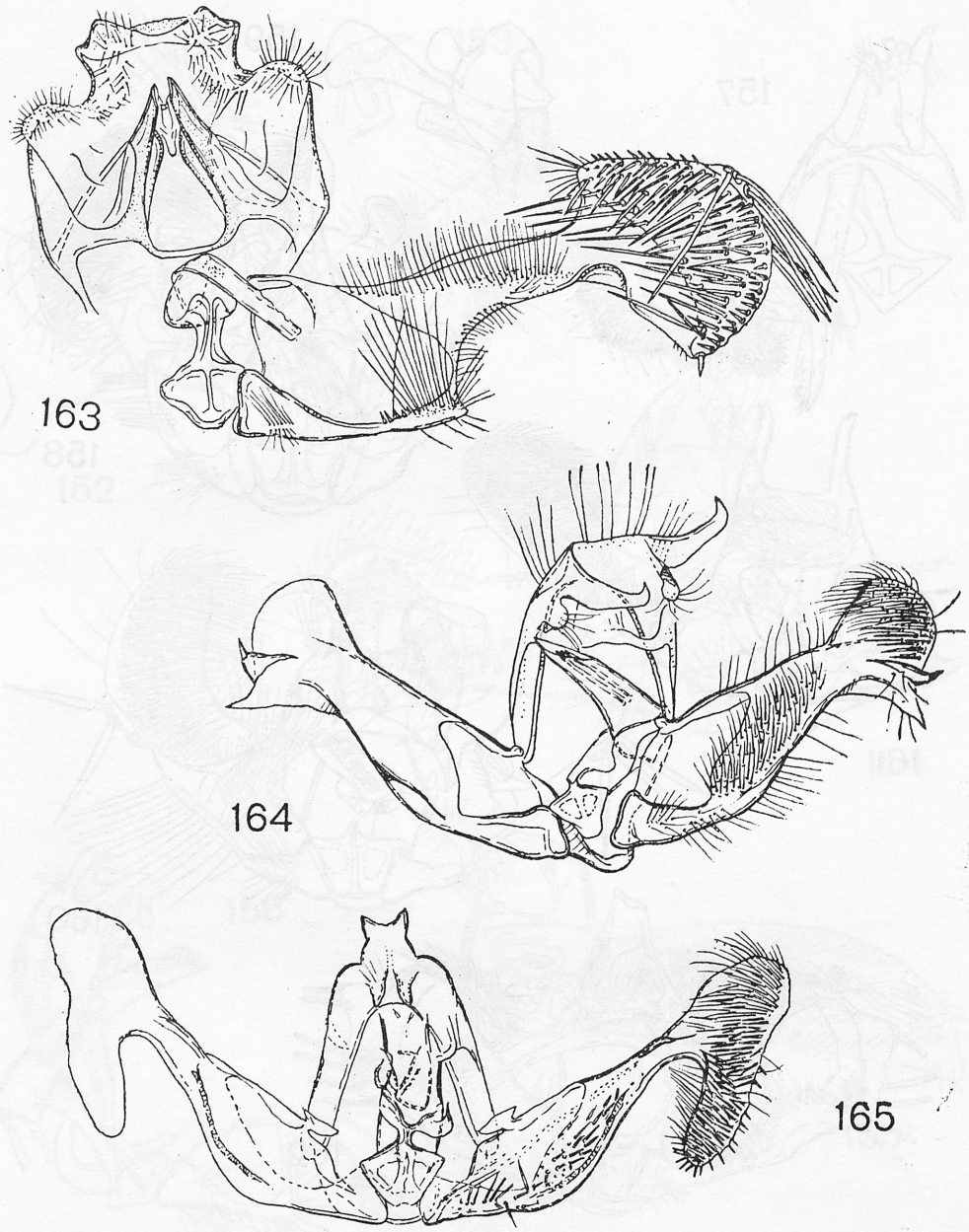
Figs 145—151. Male genitalia: 145 — *Salsolicola emerobia* FALK., USSR: Kazakhstan; 146 — *E. stshetkini* KUZN., USSR: Tadshikistan; 147 — *Eriopsela quadrana* (HBN.), Poland; 148 — *Thiodia dahurica* (FALK.), USSR: Ussurijskij Krai; 149 — *Th. citrana* (HBN.), Poland; 150, 151 — *Th. coeleruana* (DUP.), Spain



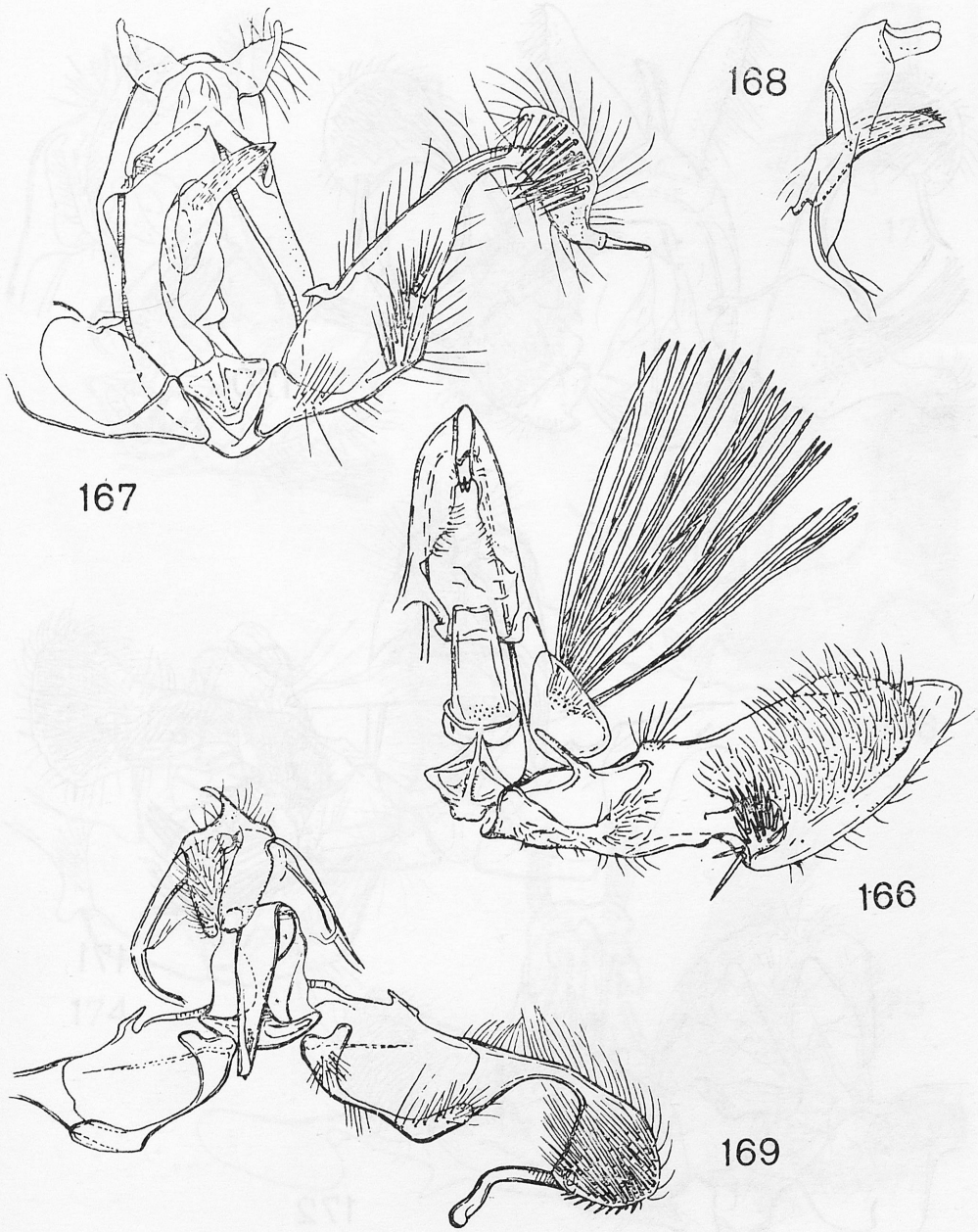
Figs 152—156. Male genitalia: 152, 153 — *Thiodia hastana* (Hbn.), USSR: Ukraina; 154 — *Makivora hagiayi* Oku, Japan: Honsyu; 155 — *Thiodiodes seeboldi* (Rössl.), Spain, after Obraztsov, 1964; 156 — *Asketria lepta* Falk., USSR: Kazakhstan



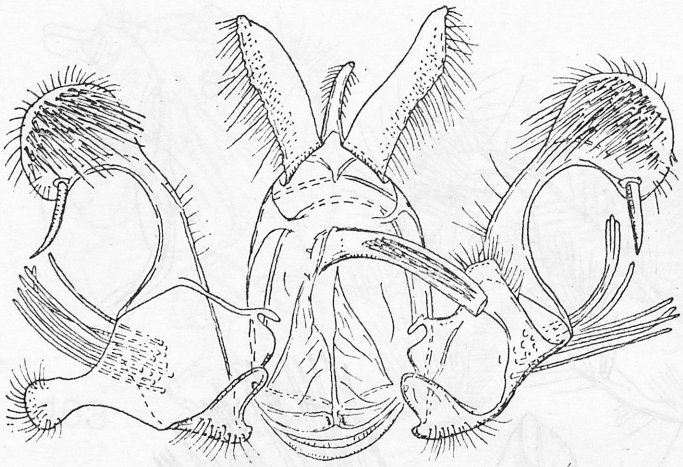
Figs 157—162. Male genitalia: 156 — *Asketria cervinana* (Car.), after Kuznetsov, 1978; 158, 159 — *Rhopobota naevana* (Hbn.), Poland; 160 — *Rh. ustomaculana* (Curt.), Poland; 161 — *Rh. myrtillana* (Westw. & Humphr.), Poland; 162 — *Meteucosma impolitana* Kuzn., USSR: Primorsk, after Kuznetsov, 1985



Figs 163—165. Male genitalia: 163 — *Assulella litigiosa* (MEYR.), China: North Yunnan, after KUZNETSOV, 1973; 164 — *Strepsicrates coriariae* OKU, Japan: Honsyu; 165 — *Lepteucosma oxychrysa* DIAK., N. W. Karakorum, after DIAKONOFF, 1971, left side simplified



Figs 166—169. Male genitalia: 166 — *Noduliferola obstrusa* KUZN., after KUZNETSOV, 1973; 167. 168 — *Spilonota ocellana* ([DEN. & SCHIFF.]), Poland; 169 — *Rhopalovalva exartemana* (KENN.), USSR: Askold Is.



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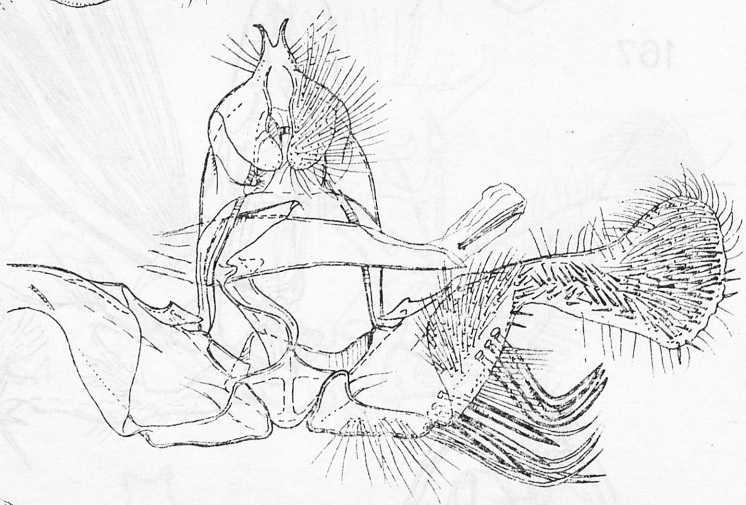

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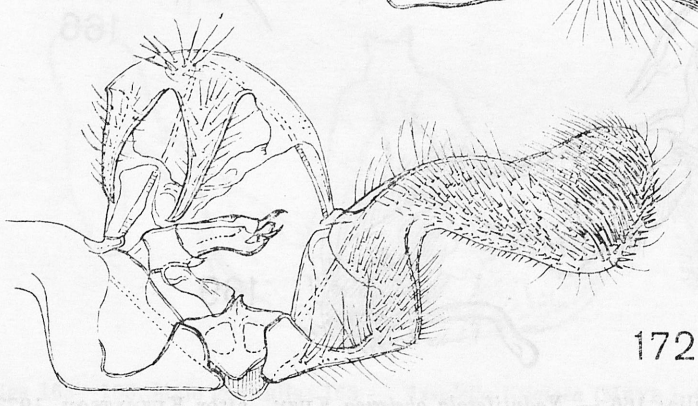

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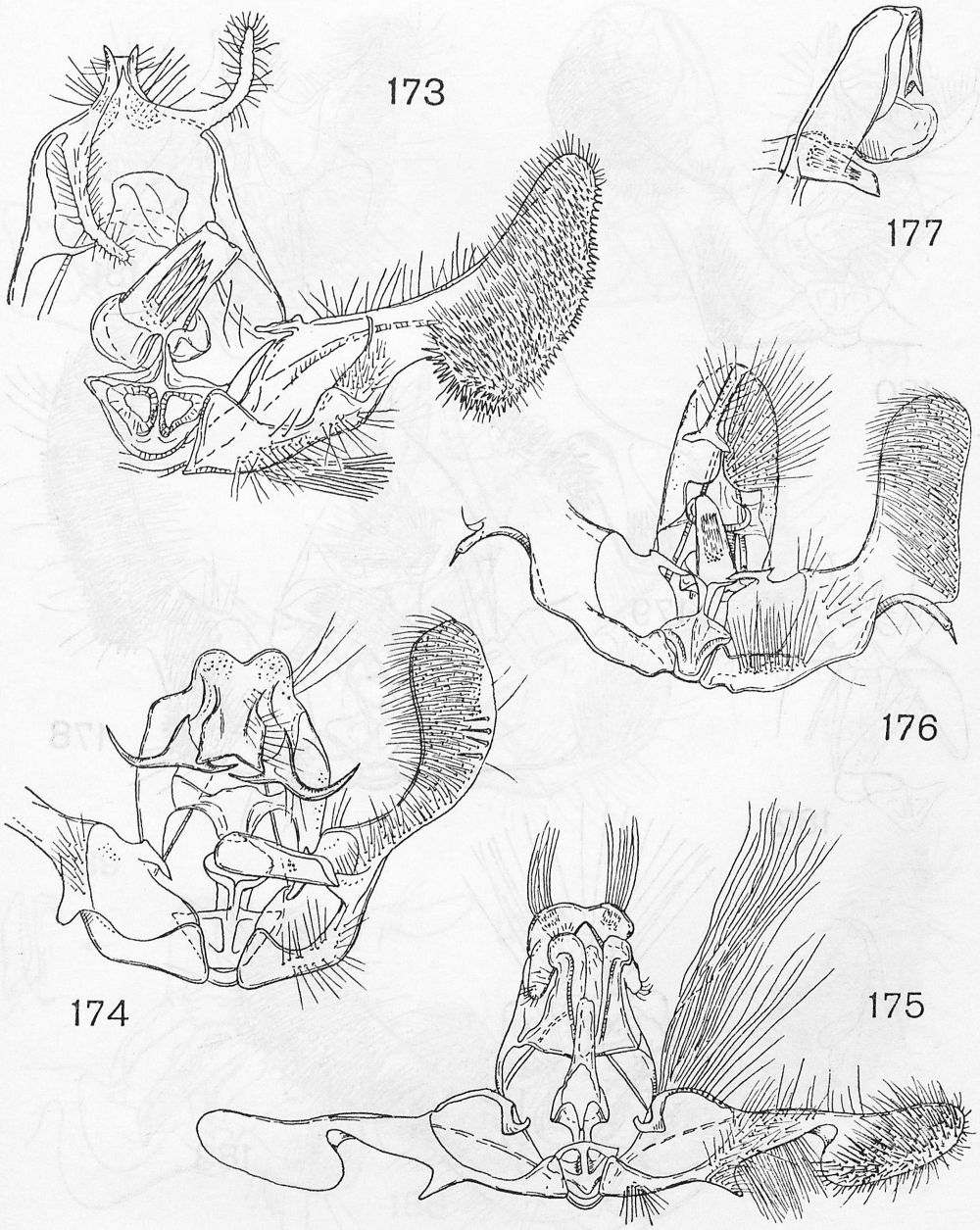
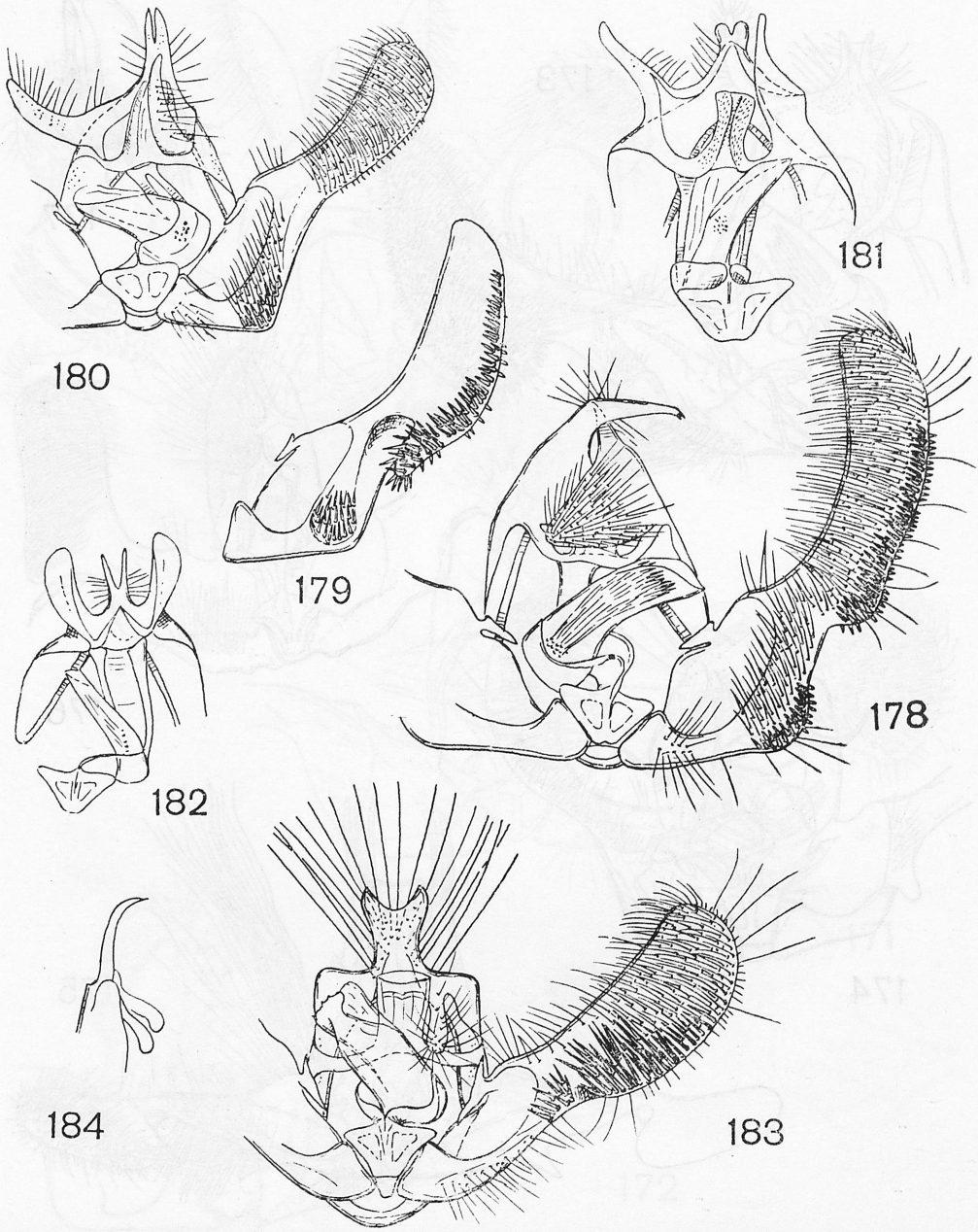
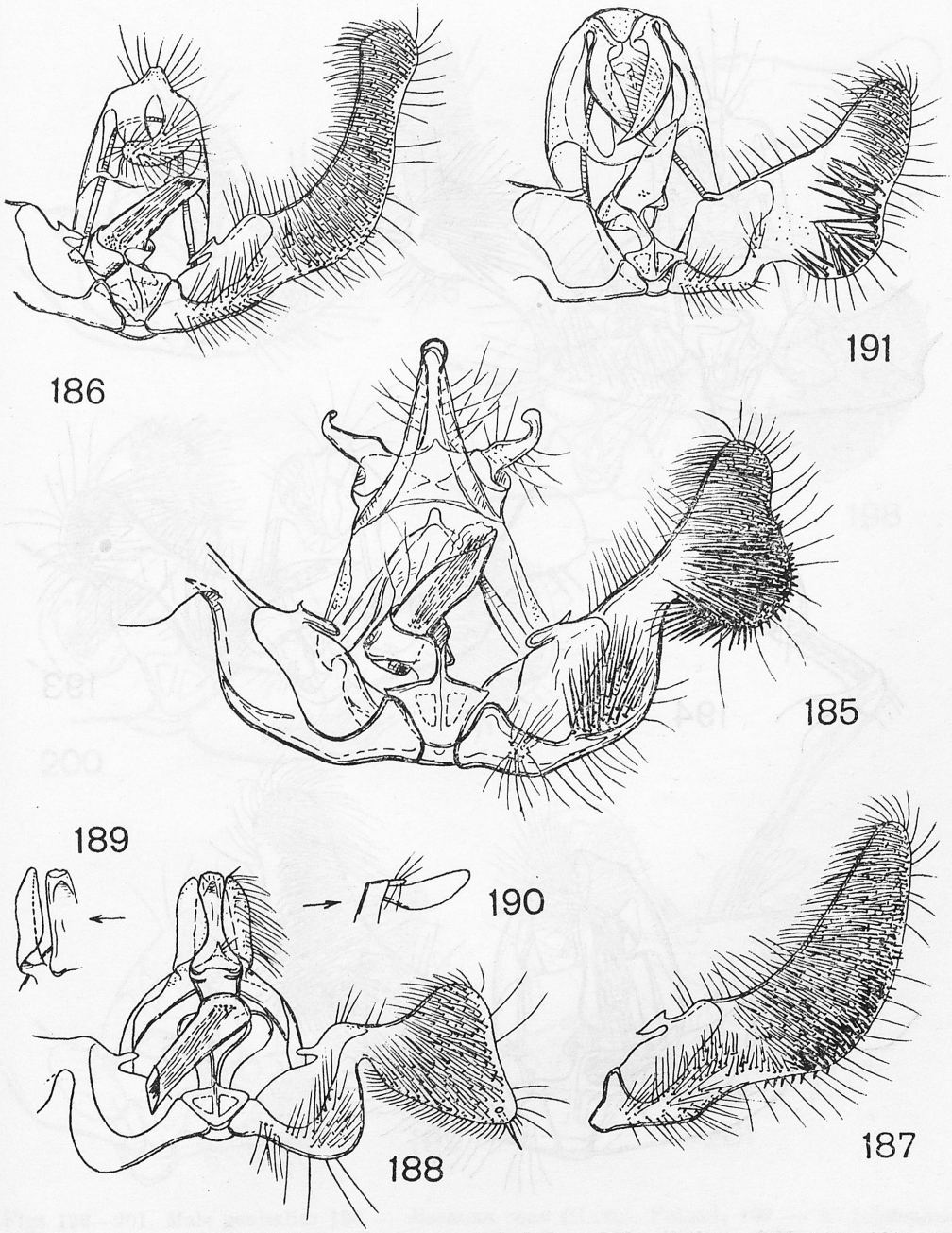
Figs 170—172. Male genitalia: 170 — *Rhopalovalva catharotorna* (MEYR.), after KUZNETSOV, 19; 171 — *Eucoenogenes aestuosa* MEYR., Japan: Honsyu; 172 — *Biuncaria kenteana* (STGR.), KENTEI



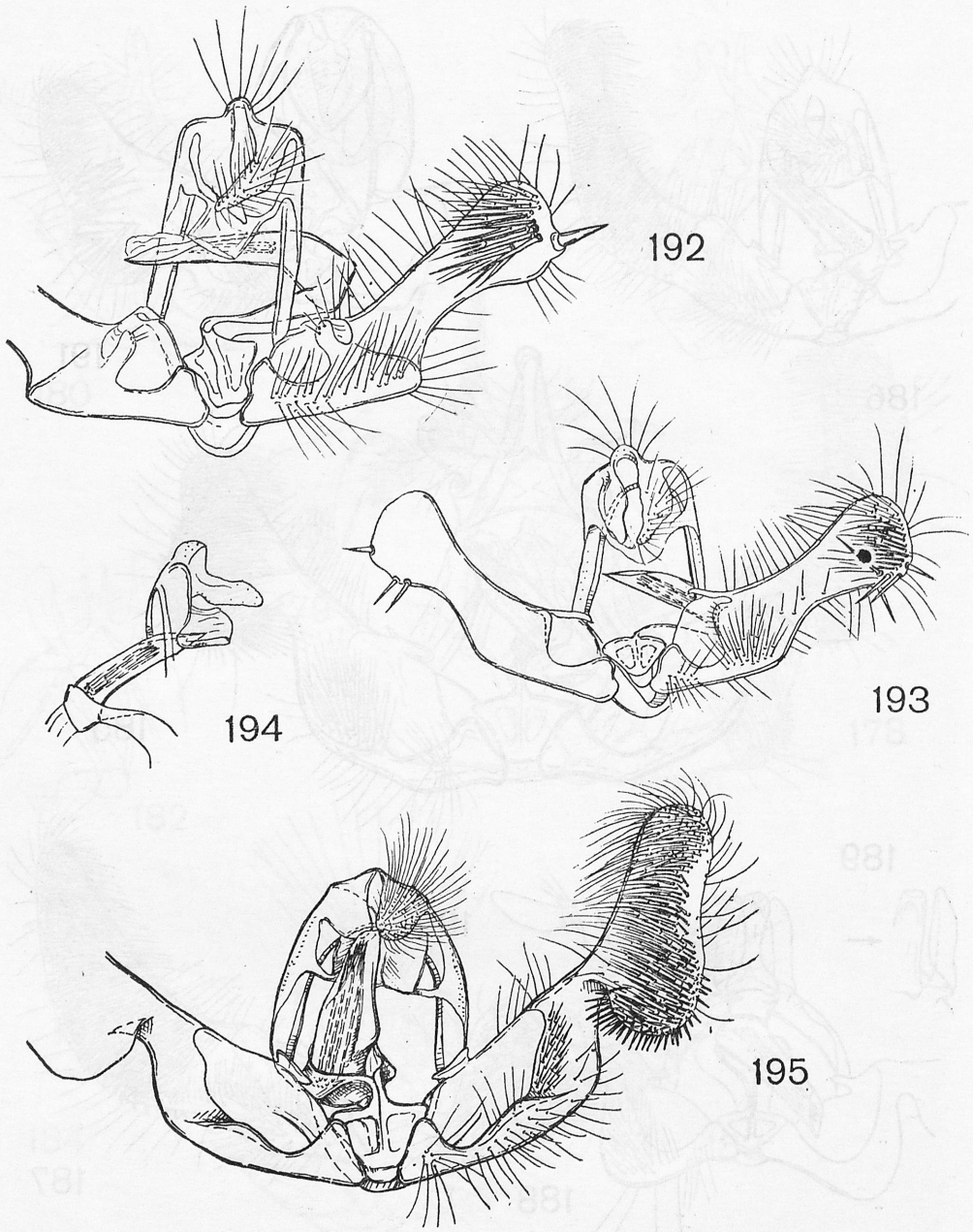
Figs 173—177. Male genitalia: 173 — *Coenobiodes acceptana* KUZN., Japan: Honsyu, after KUZNETSOV, 1973; 174 — *Acroclita consequana* (H.-S.), Spain; 175 — *Peridaedala optabilana* KUZN., after KUZNETSOV, 1979, left side simplified; 176, 177 — *Gibbifera simplana* (F. R.), Spain



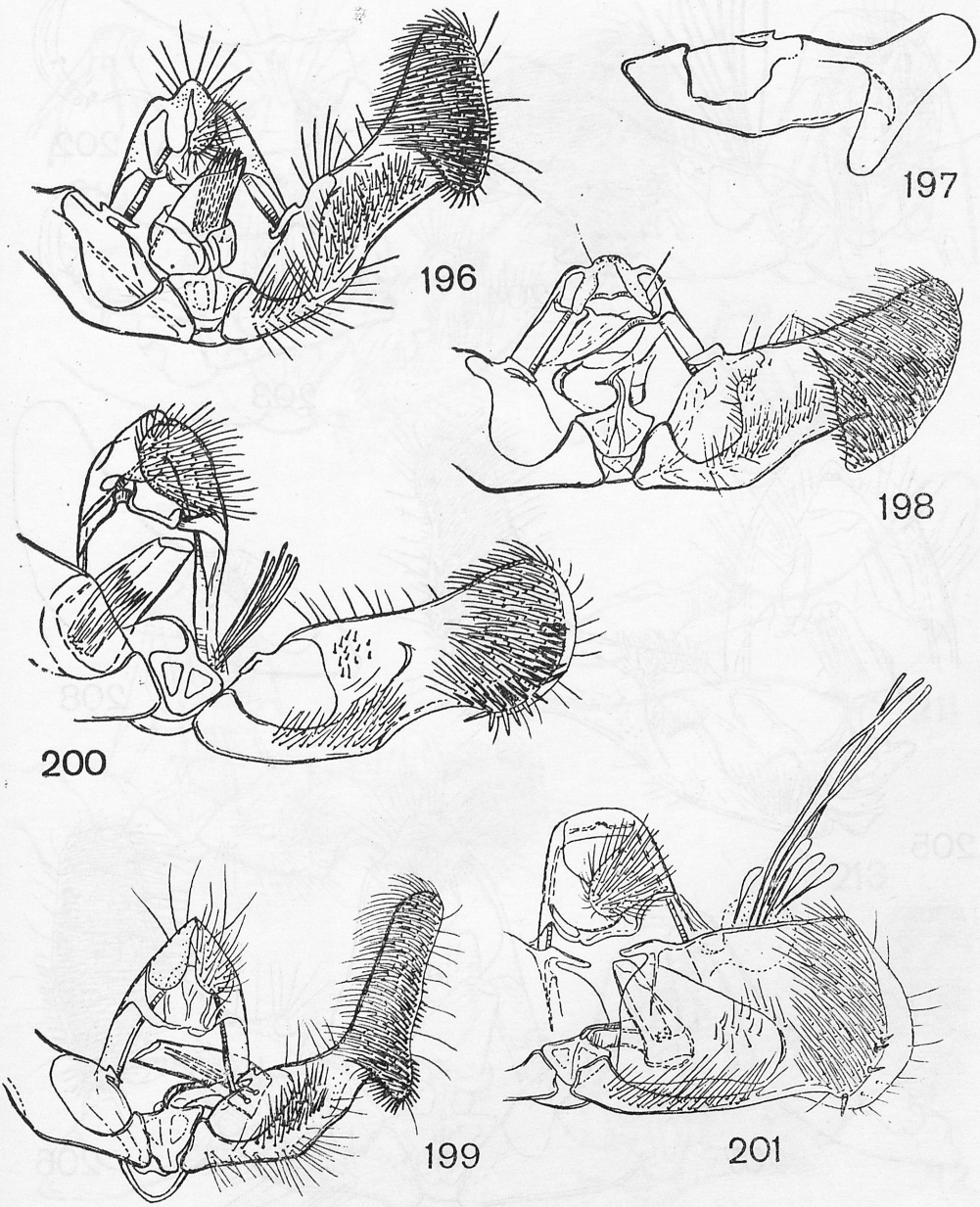
Figs 178—184. Male genitalia: 178 — *Epinotia solandriana* (L.), Poland; 179 — *E. crenana* (Hbn.), Poland; 180 — *E. tedella* (Cl.), Poland; 181 — *E. nigricana* (H.-S.), Poland; 182 — *E. pygmaena* (Hbn.), Poland; 183, 184 — *E. festivana* (Hbn.), Italy



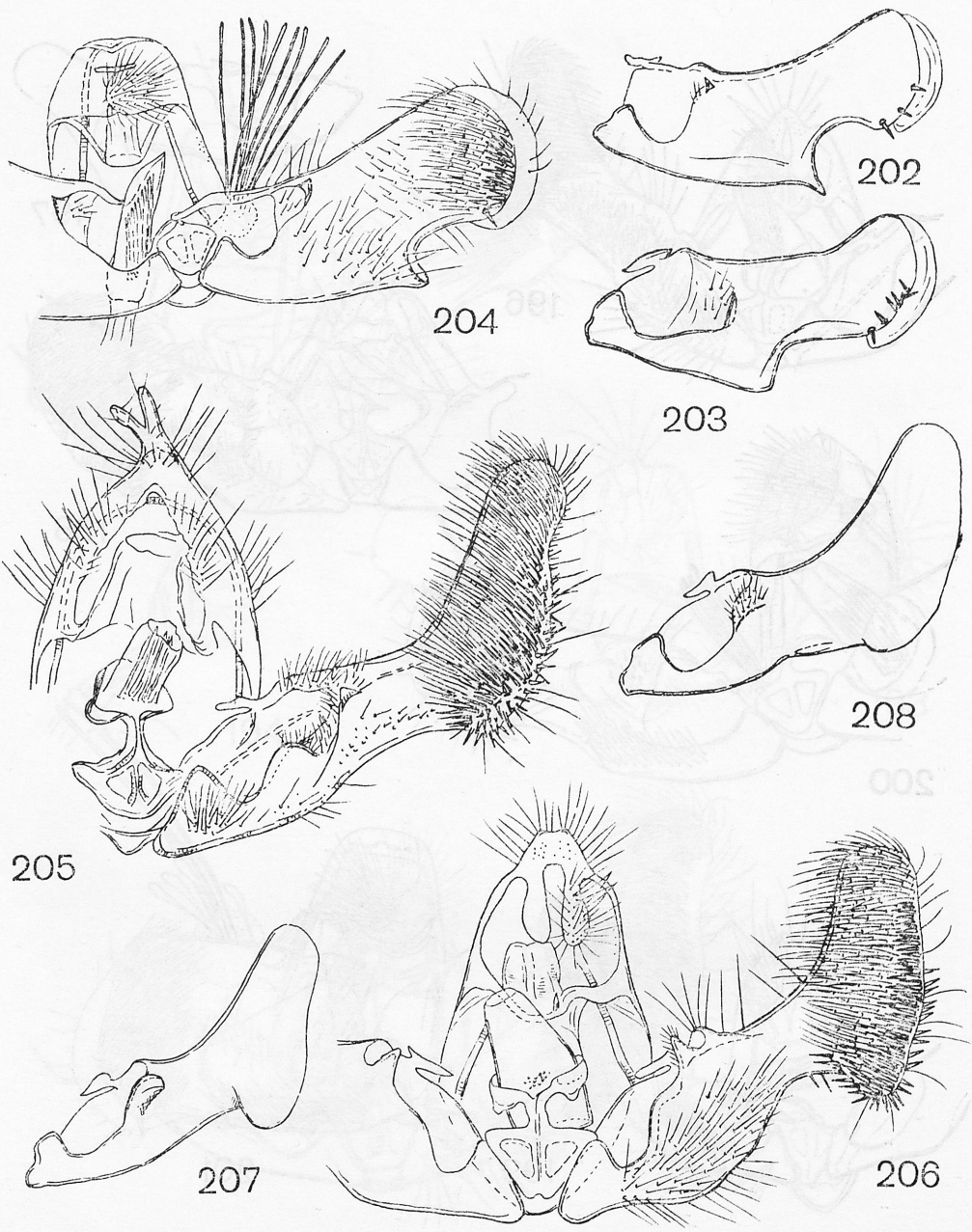
Figs 185—191. Male genitalia: 185 — *Hikagehamakia albiguttata* Oku, Japan: Honsyu; 186 — *Zeiraphera isertana* (F.), Poland; 187 — *Z. griseana* (Hbn.), Poland; 188—190 — *Crocidosema plebeiana* Z., Yugoslavia: Dalmatia; 191 — *Phaneta pauperana* (Dup.), USSR; Ukraina



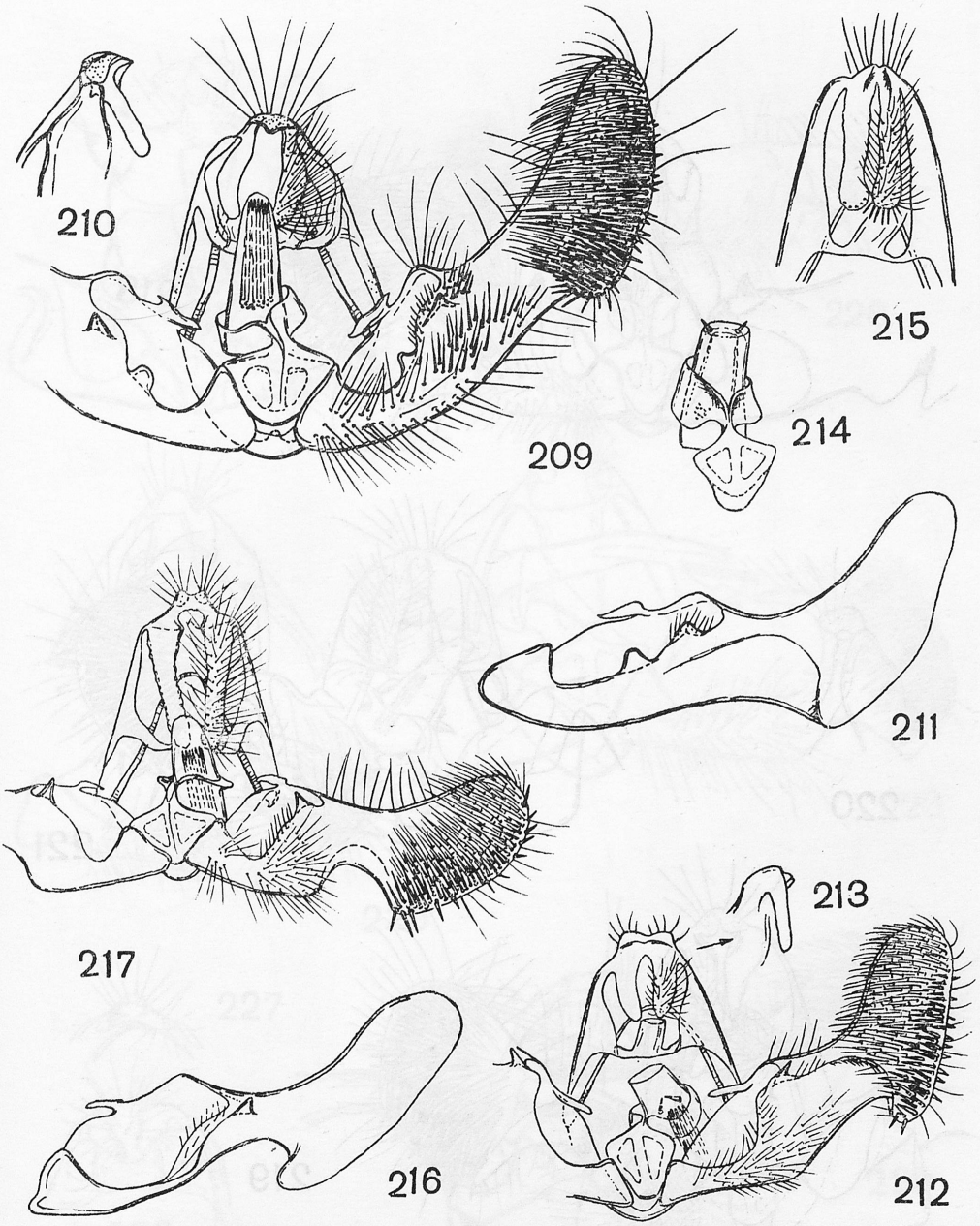
Figs 192—195. Male genitalia: 192 — *Pelochrista caecimaculana* (Hbn.), Poland; 193, 194 — *Ph. decolorana* (Frey.), USSR: Ukraina; 195 — *Hendecaneura impar* Walsm., Japan: Honsyu



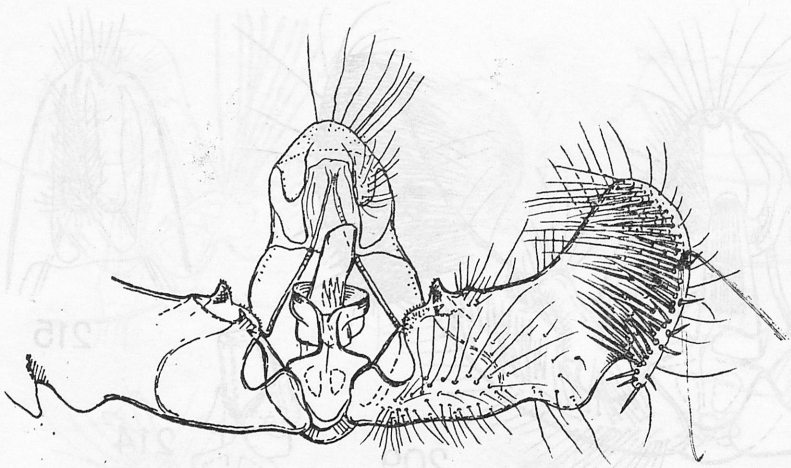
Figs 196—201. Male genitalia: 196 — *Eucosma cana* (HAW.), Poland; 197 — E. *balatonana* (OSTH.), Poland; 198 — E. *ottoniana* (KENN.), USSR: Lob-Noor; 199 — *Epibactra sareptana* (H.-S.), USSR: lower Volga: Sarepta; 200 — *Gypsonoma nitidulana* (LIEN. & Z.), Poland; G. *aceriana* (DUP.), W. Germany



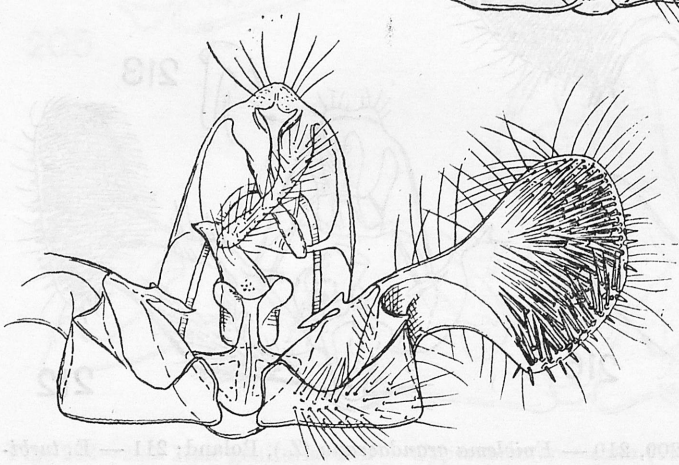
Figs 202—208. Male genitalia: 202 — *Gypsonoma opressana* (TREIT.), Poland; 203 — G. *sociana* (HAW.), Poland; 204 — G. *dealbana* (FRÖL.), Poland; 205 — *Nuntiella extenuata* KUZN., China: Tapaishan, after KUZNETSOV, 1971; 206 — *Epiblema foenella* (L.), Poland; 207 — *E. scutulana* ([DEN. & SCHIFF.]), Poland; 208 — *E. sinuana* ([DEN. & SCHIFF.]), Poland



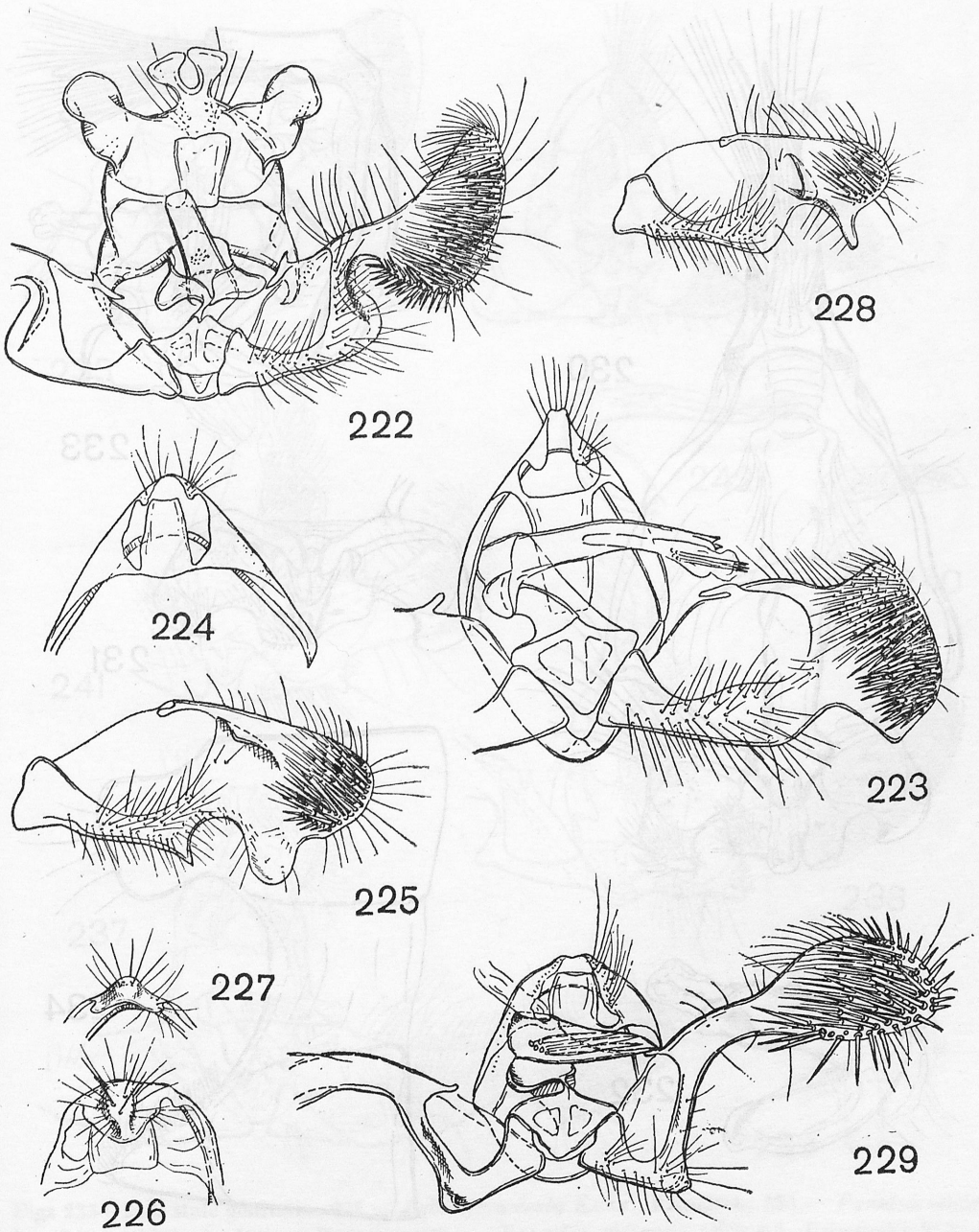
Figs 209—217. Male genitalia: 209, 210 — *Epiblema grandaevana* (Z.), Poland; 211 — E. *turbidana* (TUEIT.), Poland; 212, 213 — *Notocelia uddmanniana* (L.), Poland; 214, 215 — *N. rosaecolana* (DOUBL.), Poland; 216 — *N. trimaculana* (HAW.), Poland; 217 — *Blastesthia turionella* (L.), Poland



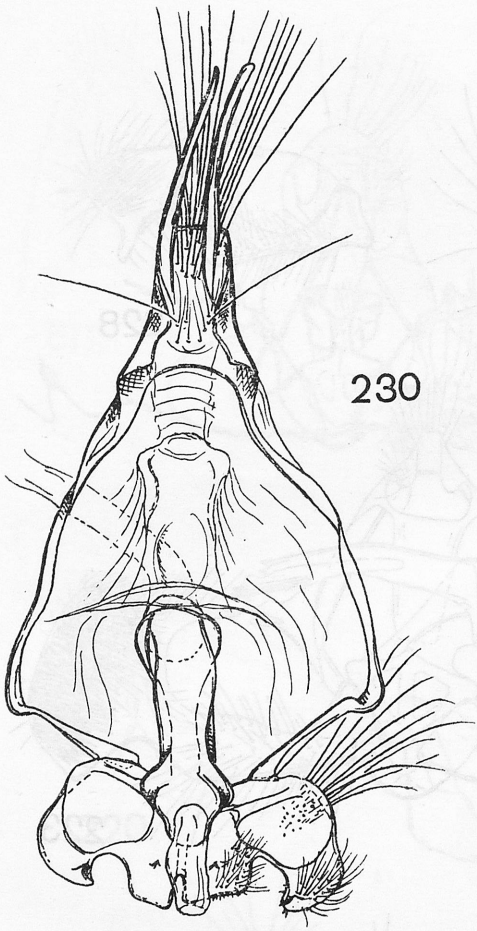


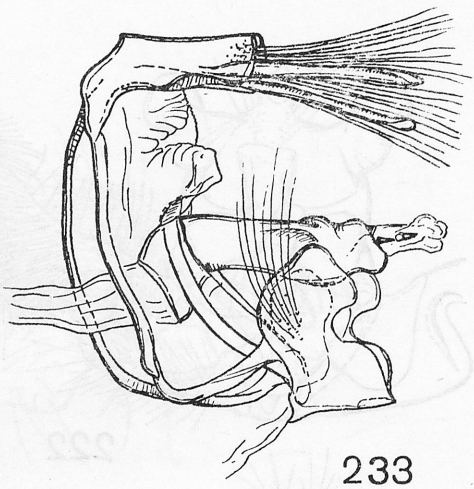


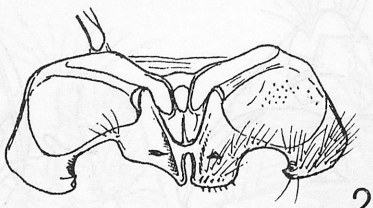
Figs 218—221. Male genitalia: 218 — *Blastesthia tessulatana* (STGR.), S. France; 219, 220 — *Retinia resinella* (L.), Poland; 221 — *Barbara herrichiana* OBR., Poland

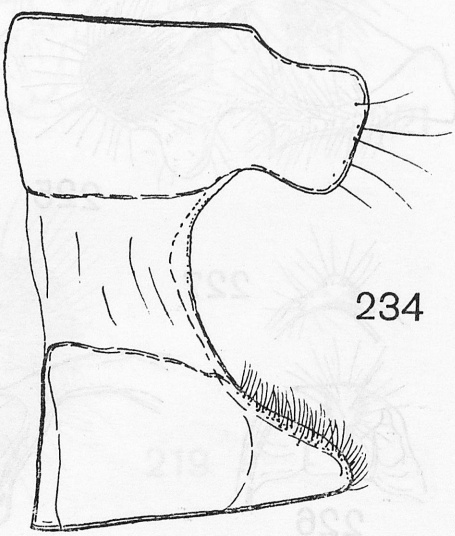


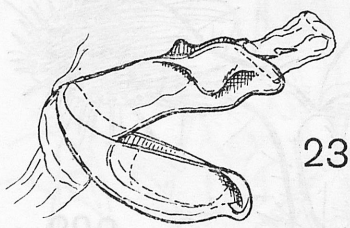
Figs 222—229. Male genitalia: 222 — *Gravitarmata margarotana* (Hein.), E. Germany; 223 — *Rhyacionia buoliana* ([Den. & Schiff.]), Poland; 224, 225 — *Rh. pinivirana* (Z.), Poland; 226—228 — *Rh. duplana* (Hbn.), Poland; 229 — *Clavigesta sylvestrana* (Curt.), S. France



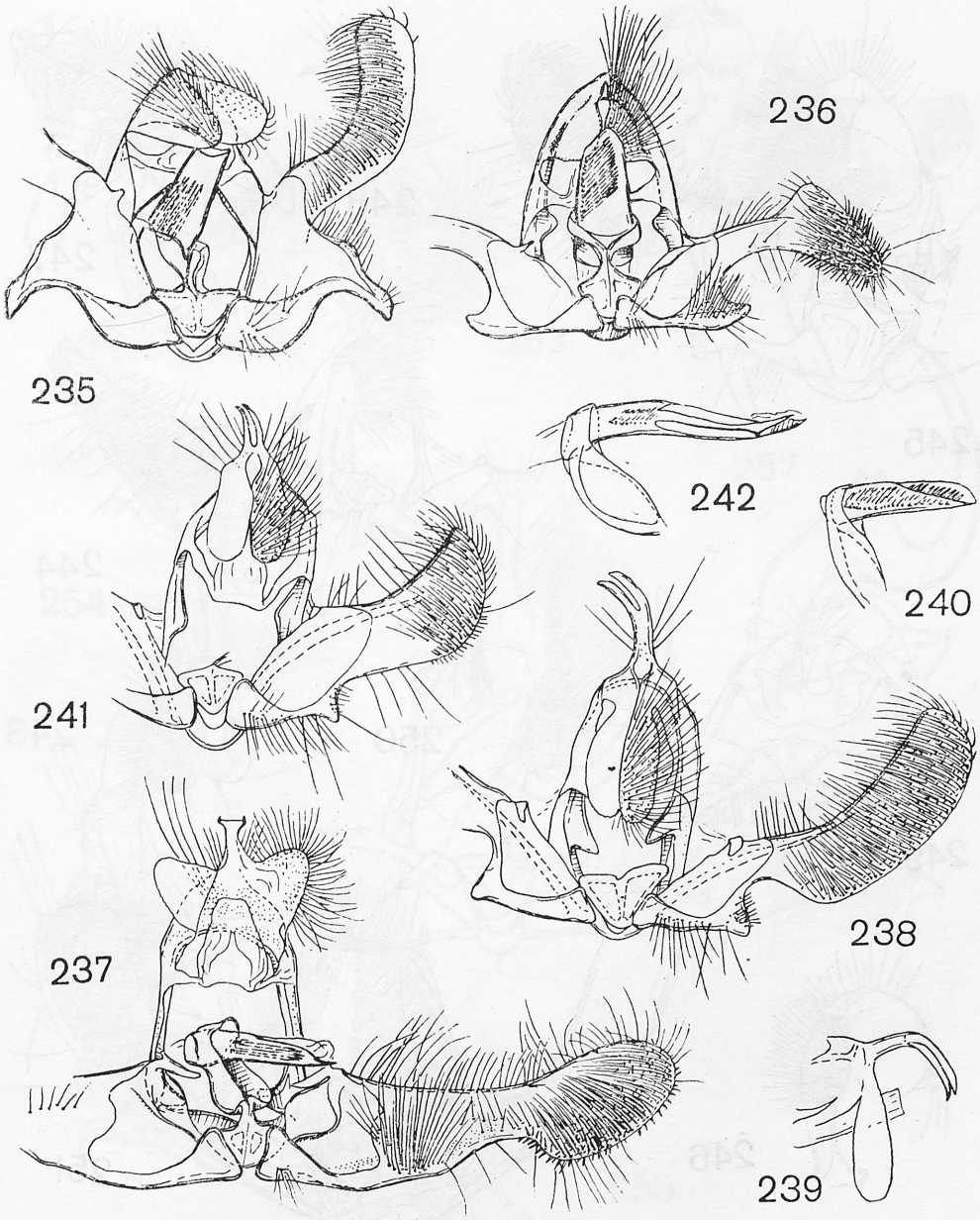




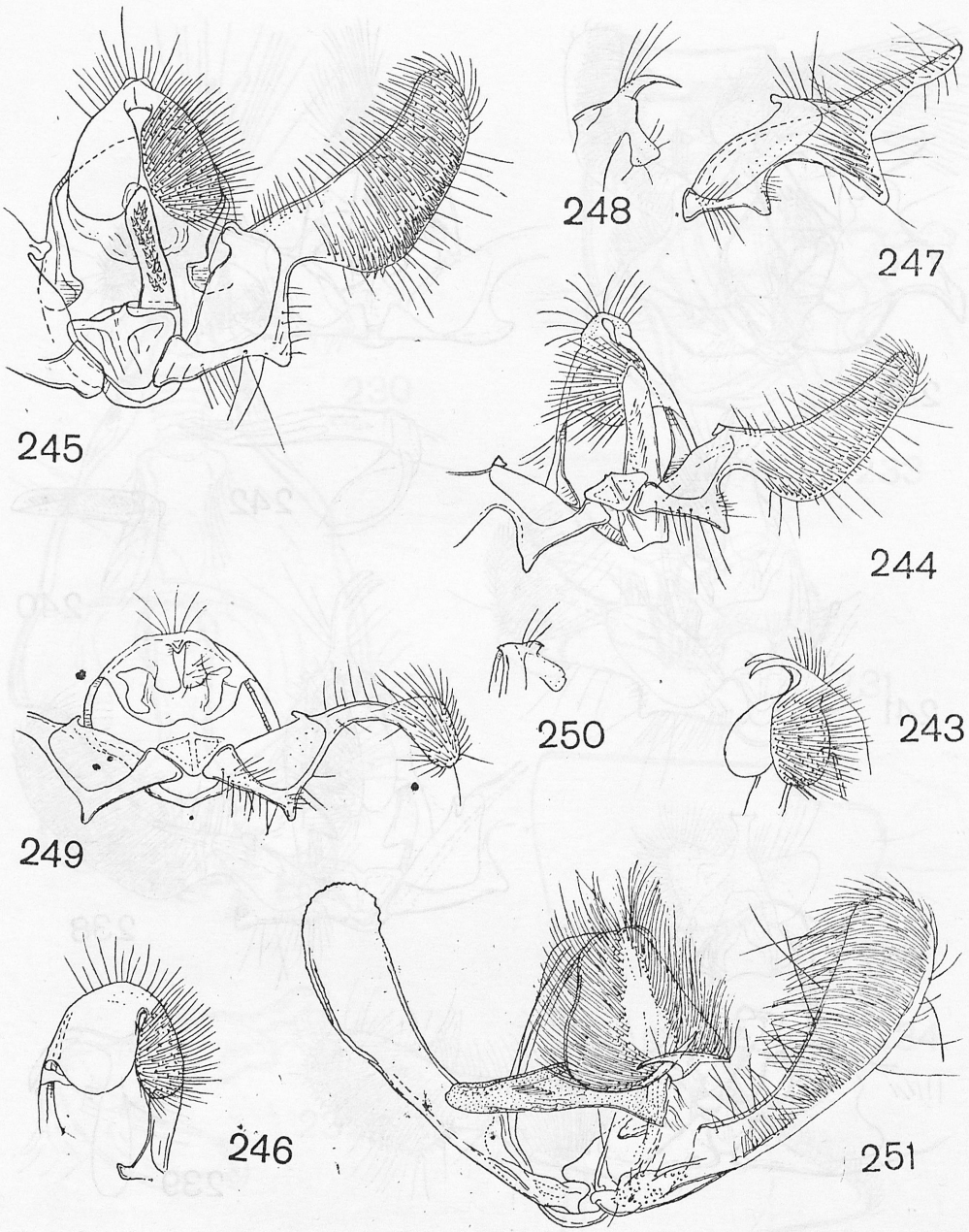




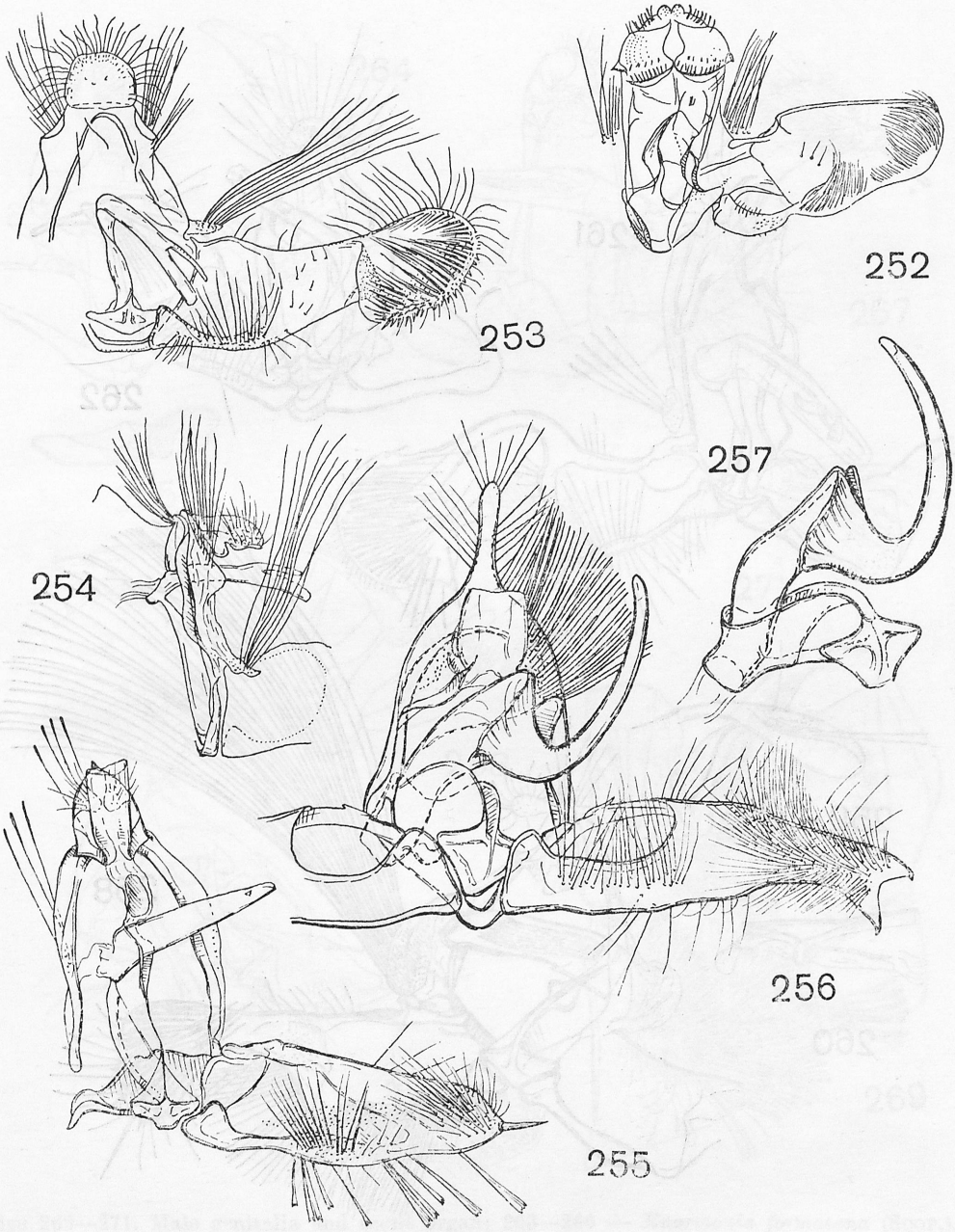
Figs 230—234. Male genitalia and last abdominal segment of *Antichlidias holocnista* MEYR., Japan: Honsyu



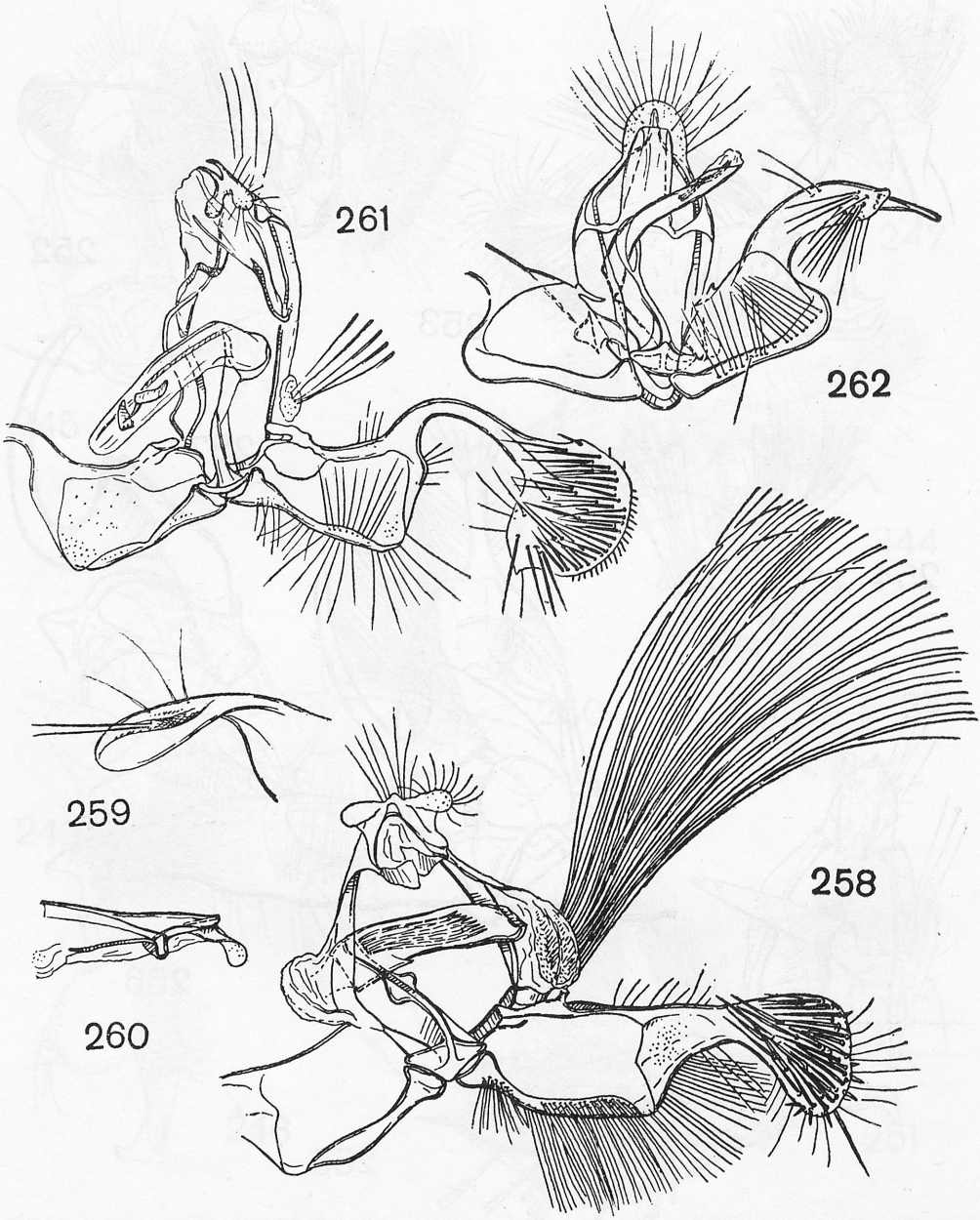
Figs 235—243. Male genitalia: 235 — *Syllibifora devia* KUZN., Primorsk; 236 — *Pseudacroclita hapalaspis* (MEYR.), Japan: Honsyu; 237 — *Kennelia xylinana* (KENN.), Primorsk; 238—240 — *Ancylis laetana* (F.), Poland; 241, 242 — *A. unguicella* (L.), Poland; 243 — *A. unculana* (HAW.), Poland



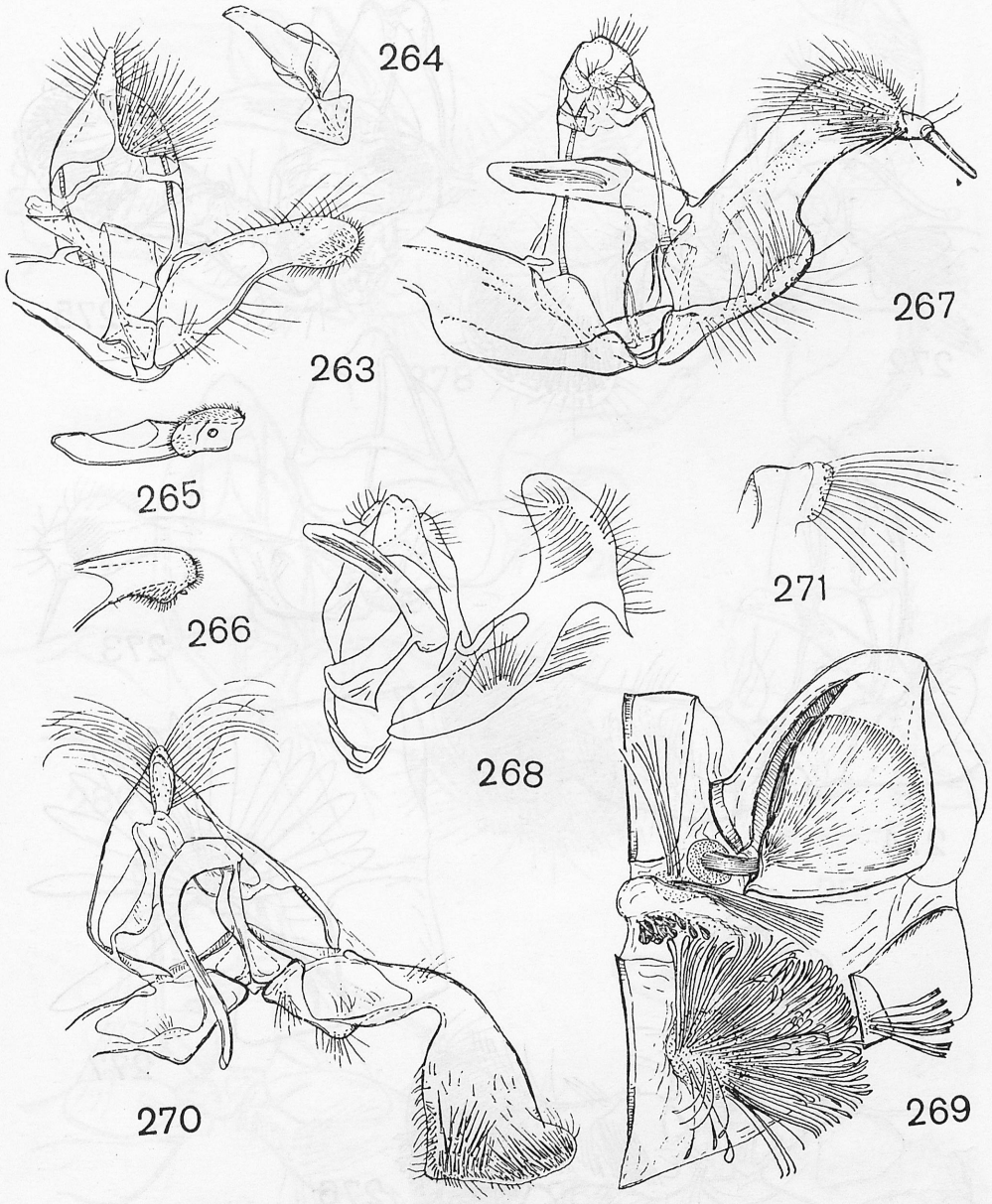
Figs 244—251. Male genitalia: 244 — *Ancylis apicella* ([Den. & Schiff.]), Poland; 245 — *A. achatana* ([Den. & Schiff.]), Poland; 246 — *A. badiana* ([Den. & Schiff.]), Poland; 247, 248 — *A. mitterbacheriana* ([Den. & Schiff.]), Poland; 249, 250 — *A. tineana* (Hbn.), Poland; 251 — *Dasodis microphthora* Diak., Ceylon, after Diakonoff, 1982



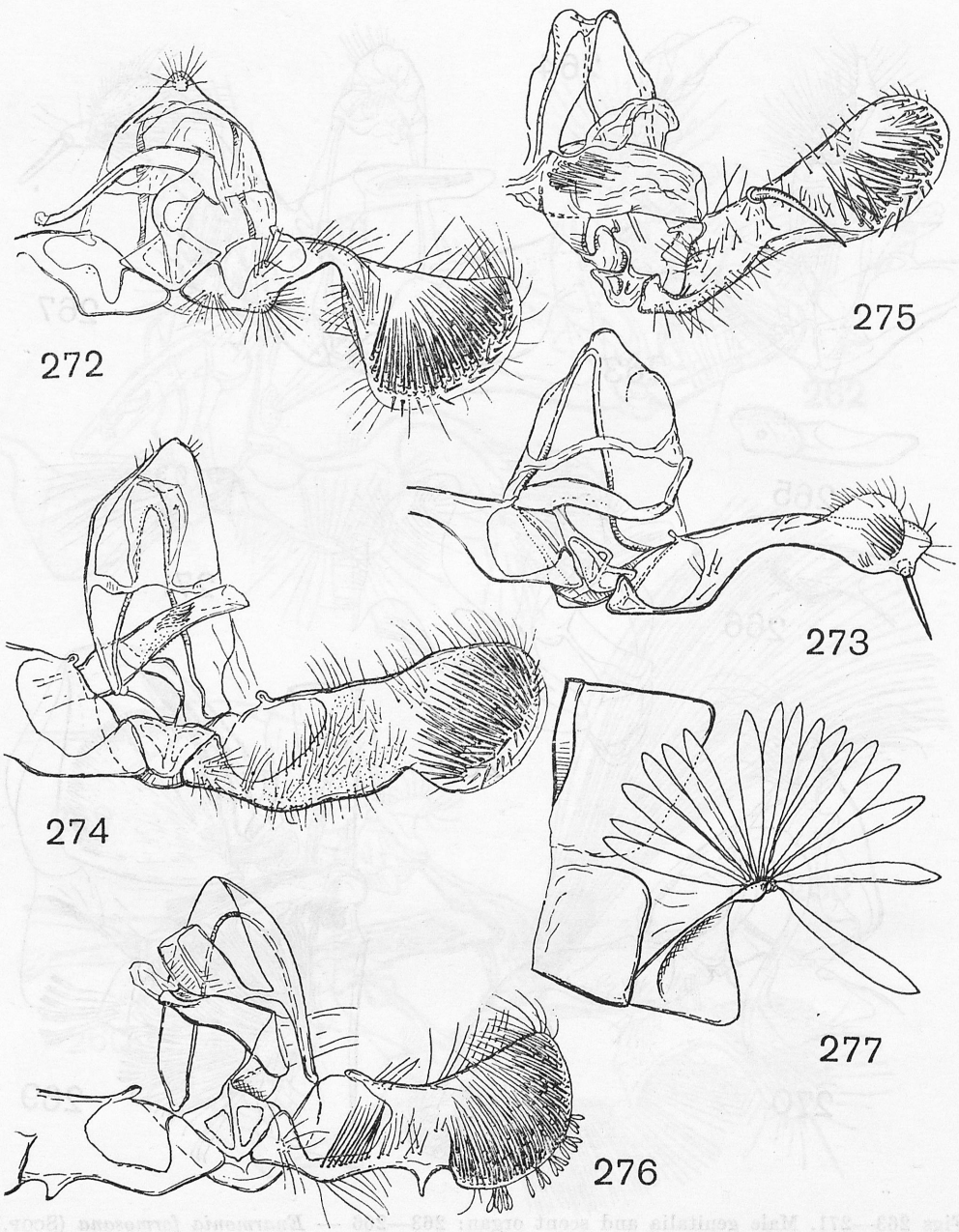
Figs 252—257. Male genitalia: 252 — *Gephyroneura hemidoxa* (MEYR.), Assam. India, after OBRAZTSOV, 1968; 253. 254 — *Enarmonodes recreantana* (KENN.), USSR: Amur Distr., after KUZNETSOV, 1968; 255 — *Semnostola magnifica* (KUZN.), USSR: Primorsk; 256, 257 — *Enarmonopsis major* (WALSM.), USSR: Primorsk



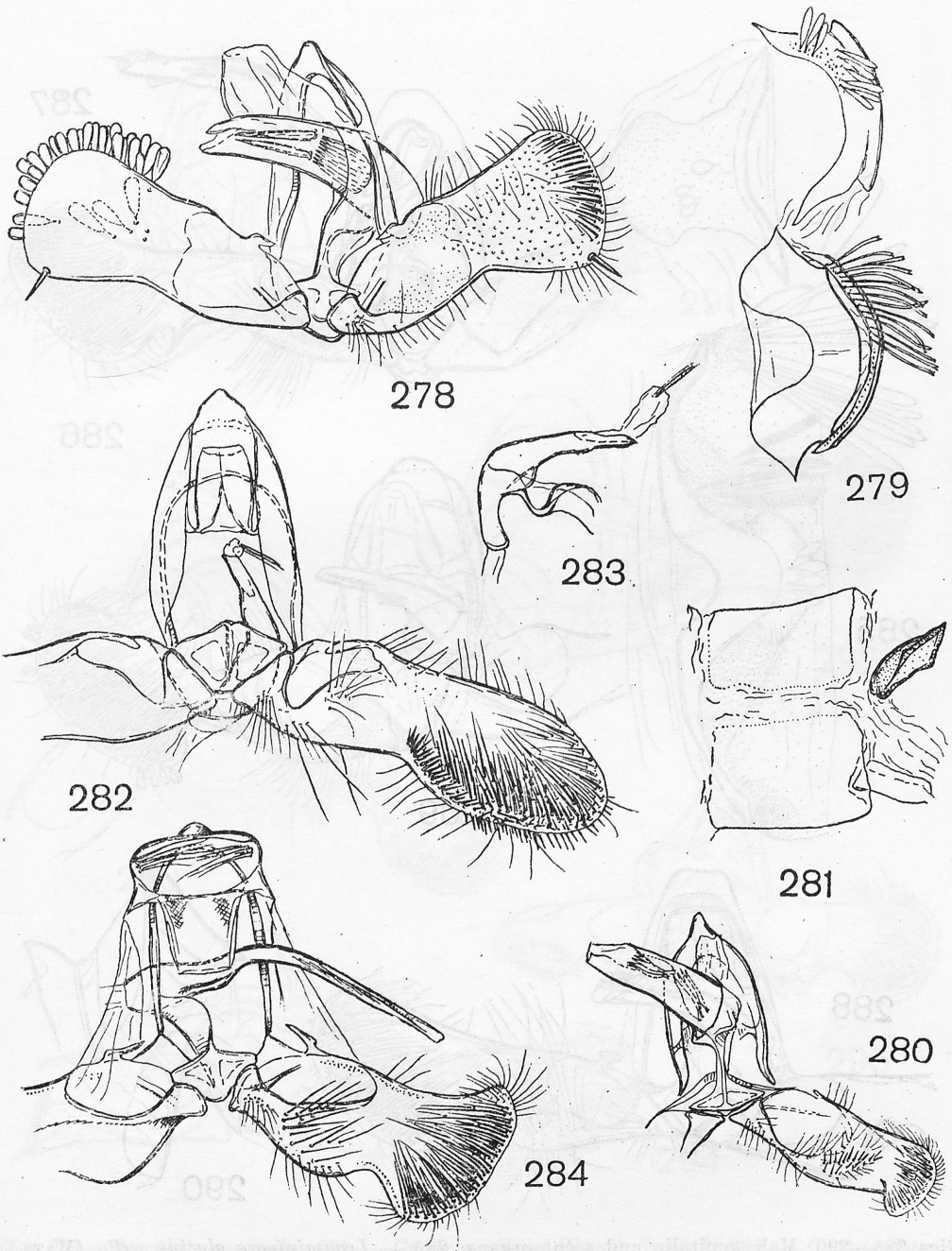
Figs 258—262. Male genitalia: 258—260 — *Neoanathamna cerinus* KAW., Japan: Honsyu; 261 — *Tokuana imbrica* KAW., Japan: Yakushima Is.; 262 — *Eucosmomorpha albersana* (HBN.), Poland



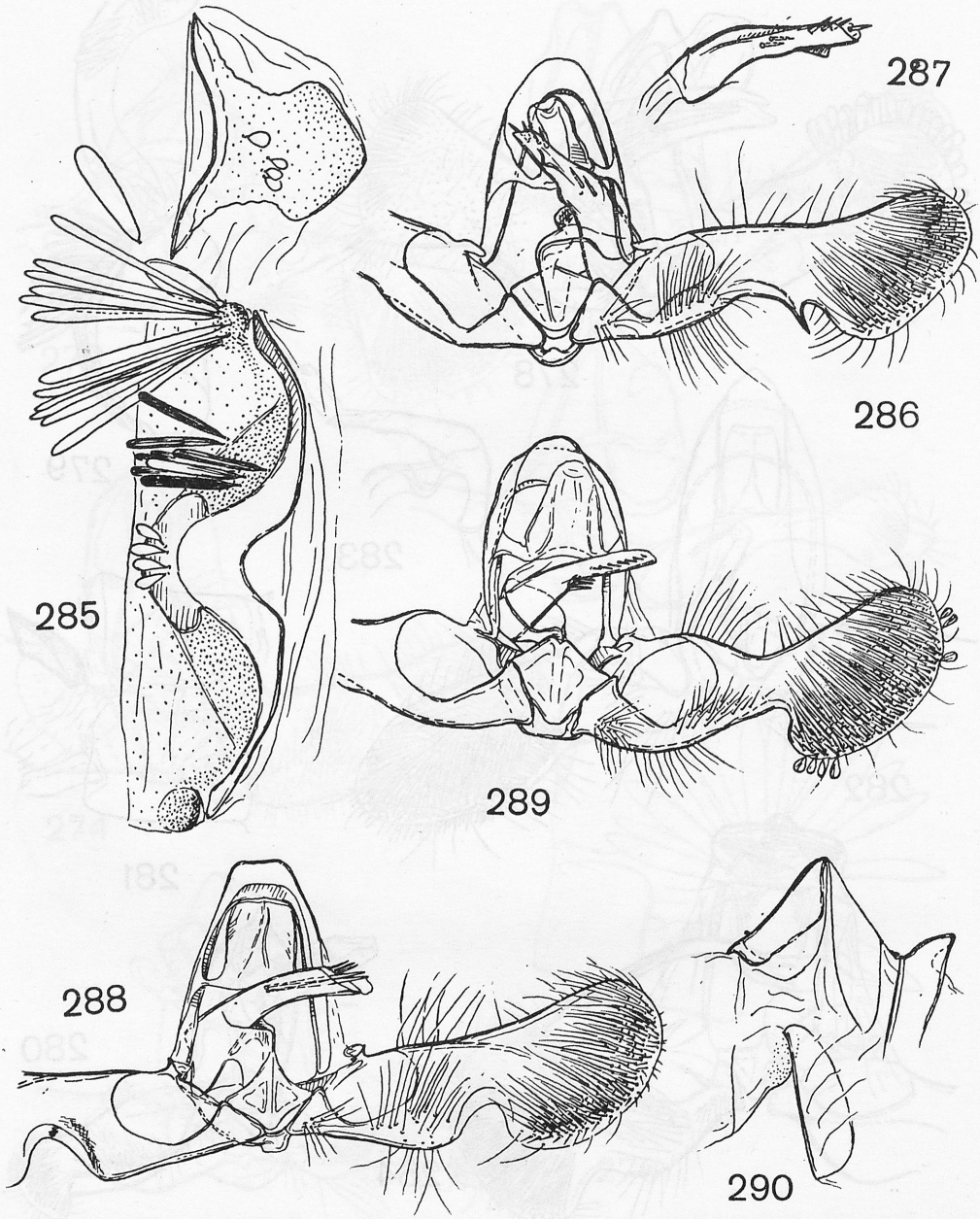
Figs 263—271. Male genitalia and scent organ: 263—266 — *Enarmonia formosana* (Scop.), Poland; 267 — *Pseudophiaris sappadana* (Della Beffa), Italy: Carnic Alps; 268 — *Radinoscolops koenigianus* (F.), Japan: Honsyu, after Obraztsov, 1968, simplified; 269 — *Matsumuraeses falcana* (Walsm.), Japan: Honsyu; 270 — *M. phaseoli* (Mats.), Japan: Honsyu; 271 — *M. falcana* (Walsm.), Japan: Honsyu



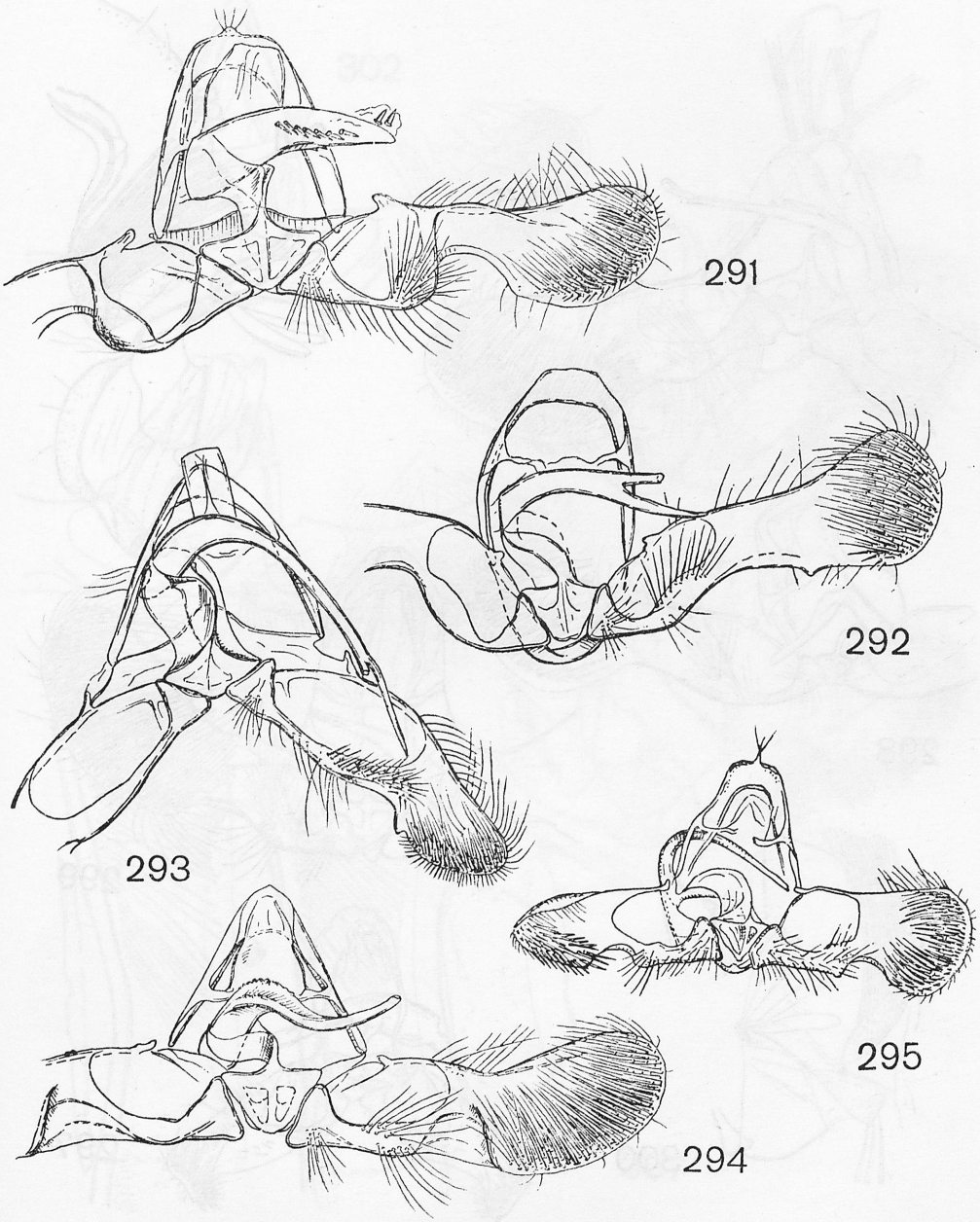
Figs 272—277. Male genitalia and scent organ: 272 — *Matsumuraeses capax* RAZ. & YAS,. Mongolia; 273 — *Diamphidia petulantana* (KENN.), USSR: Primorsk; 274 — *Grapholita dorsana di midiatana* KENN., Spain; 275 — *G. latens* KUZN., China: Liczian. after KUZNETSOV, 1972; 276, 277 — *G. funebrana* (TREIT.), Poland



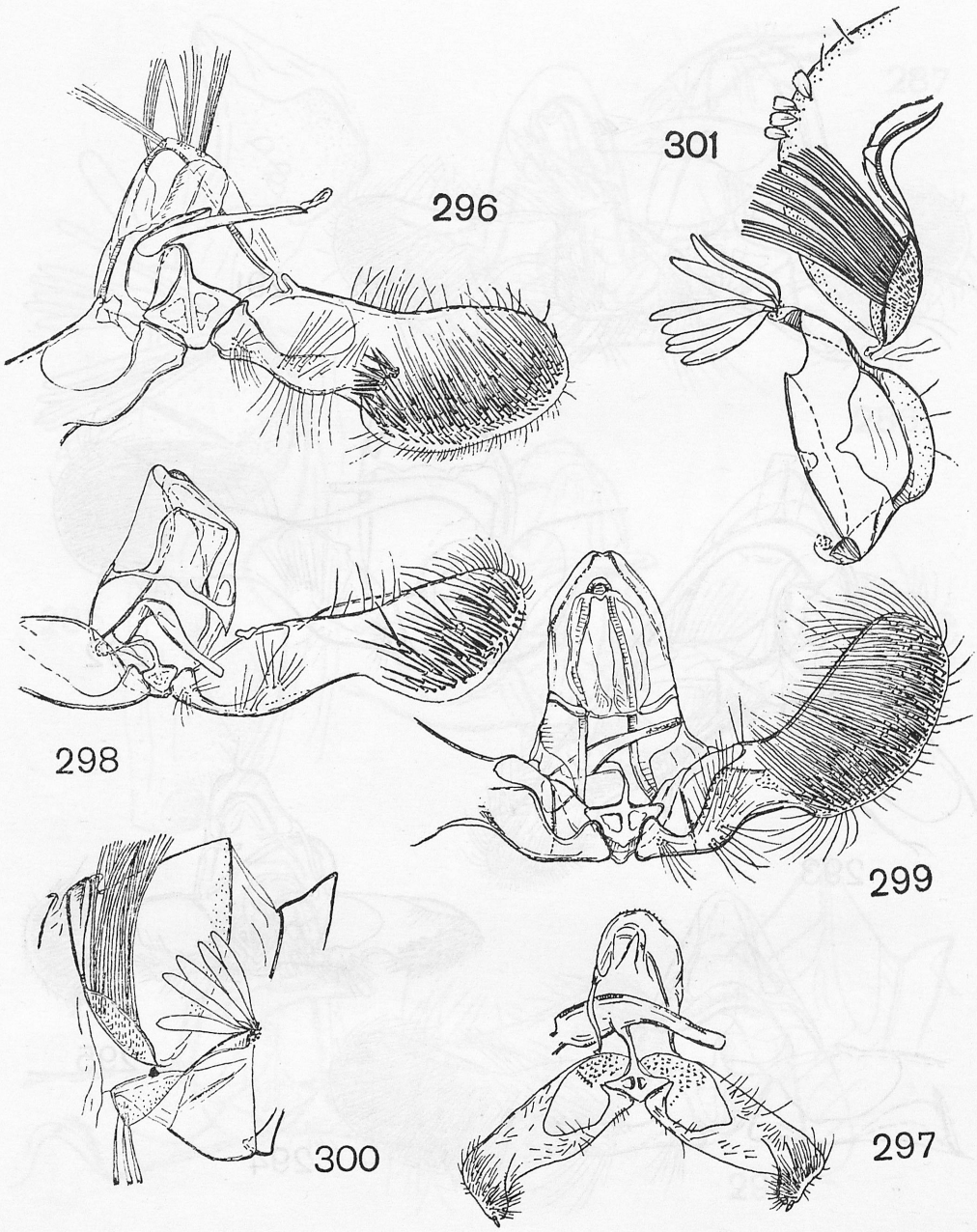
Figs 278—284. Male genitalia and scent organs: 278, 279 — *Setania ieplastriana* (CURT.), Yugoslavia; 280 — *S. lotana* (CHRÉT.), Egypt; 281 — *S.re sedana* OBR., after DANILEVSKIJ & KUZNETSOV, 1968; 282, 283 — *Lathronympha strigana* (F.), Poland; 284 — *Leguminivora glycinivorella* (MATS.), N. Korea



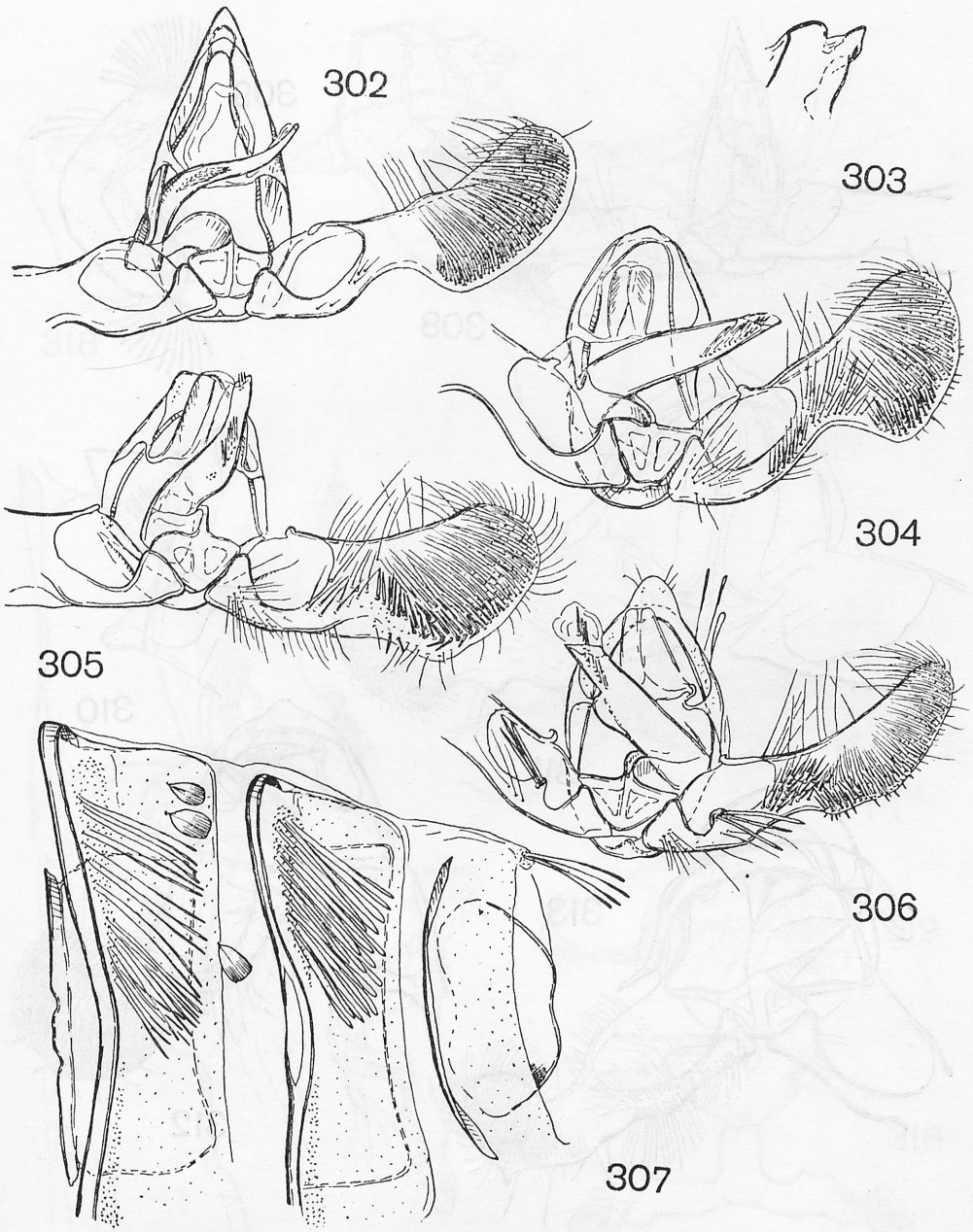
Figs 285—290. Male genitalia and scent organs: 285 — *Leguminivora glycinivorella* (MATS.), N. Korea; 286, 287 — *Cydia pomonella* (L.), Poland; 288 — *C. strobilella* (L.), Poland; 289, 290 — *C. servillana* (DUP.), Poland



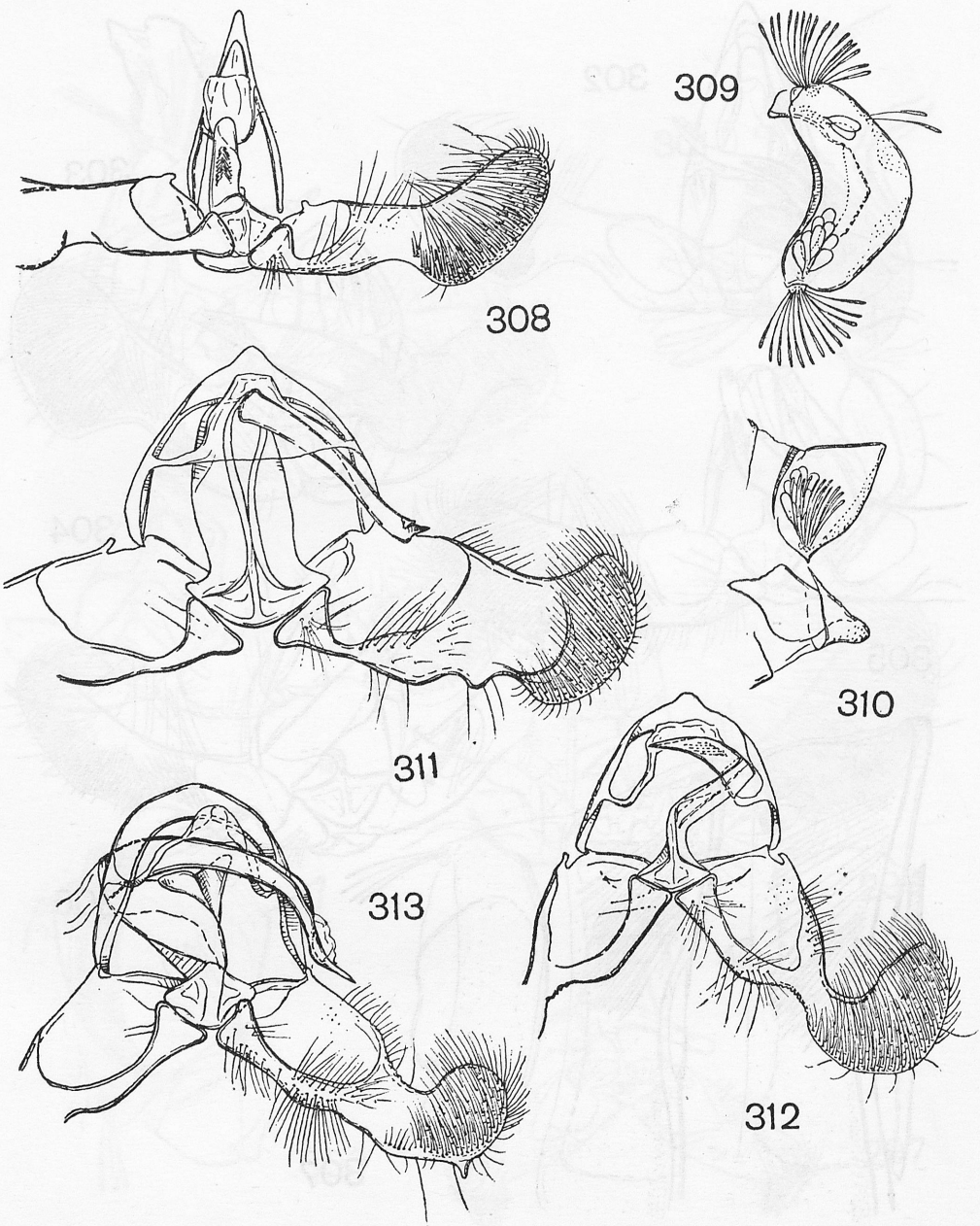
Figs 291—295. Male genitalia: 291 — *Cydia corollana* (Hbn.), Poland; 292 — *C. strigulatana* (Kenn.), Spain; 293 — *C. microgrammana* (Guen.), Poland; 294 — *C. inquinatana* (Hbn.), USSR: Ukraina; 295 — *Danilevskia silvana* Kuzn., USSR: Primorsk, after Kuznetsov, 1970



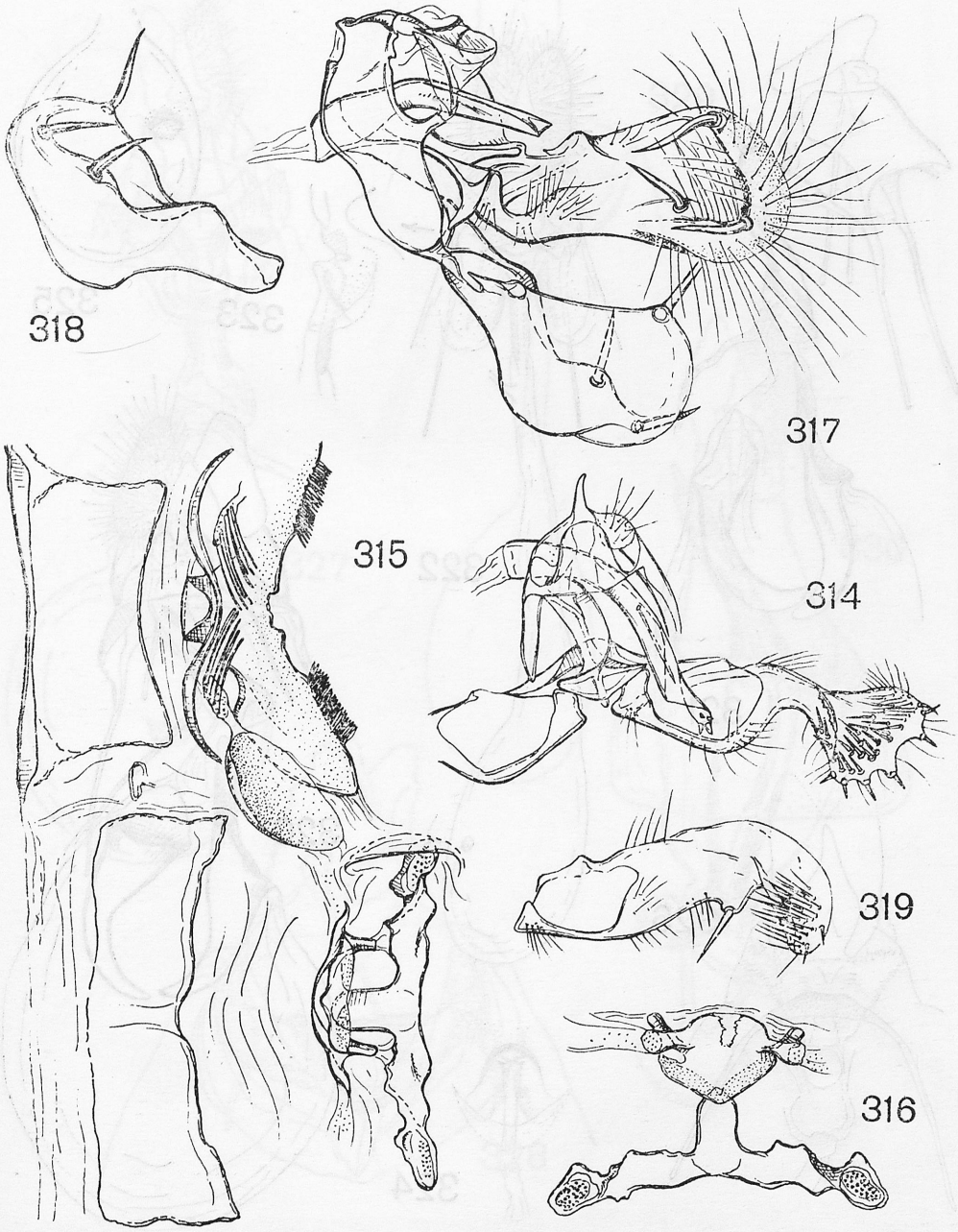
Figs 296—301. Male genitalia and scent organ: 296 — *Fulcrifera luteiceps* KUZN., Mongolia; 297 — *Cirriphora pharaonana* (KOLL.), Algeria, after DANILEVSKIJ & KUZNETSOV, 1968; 298 — *Pammenodes glaucana* (KENN.), USSR: Askold Is.; 299—301 — *Pseudopammene fagivora* KOMAI, Japan: Honsyu



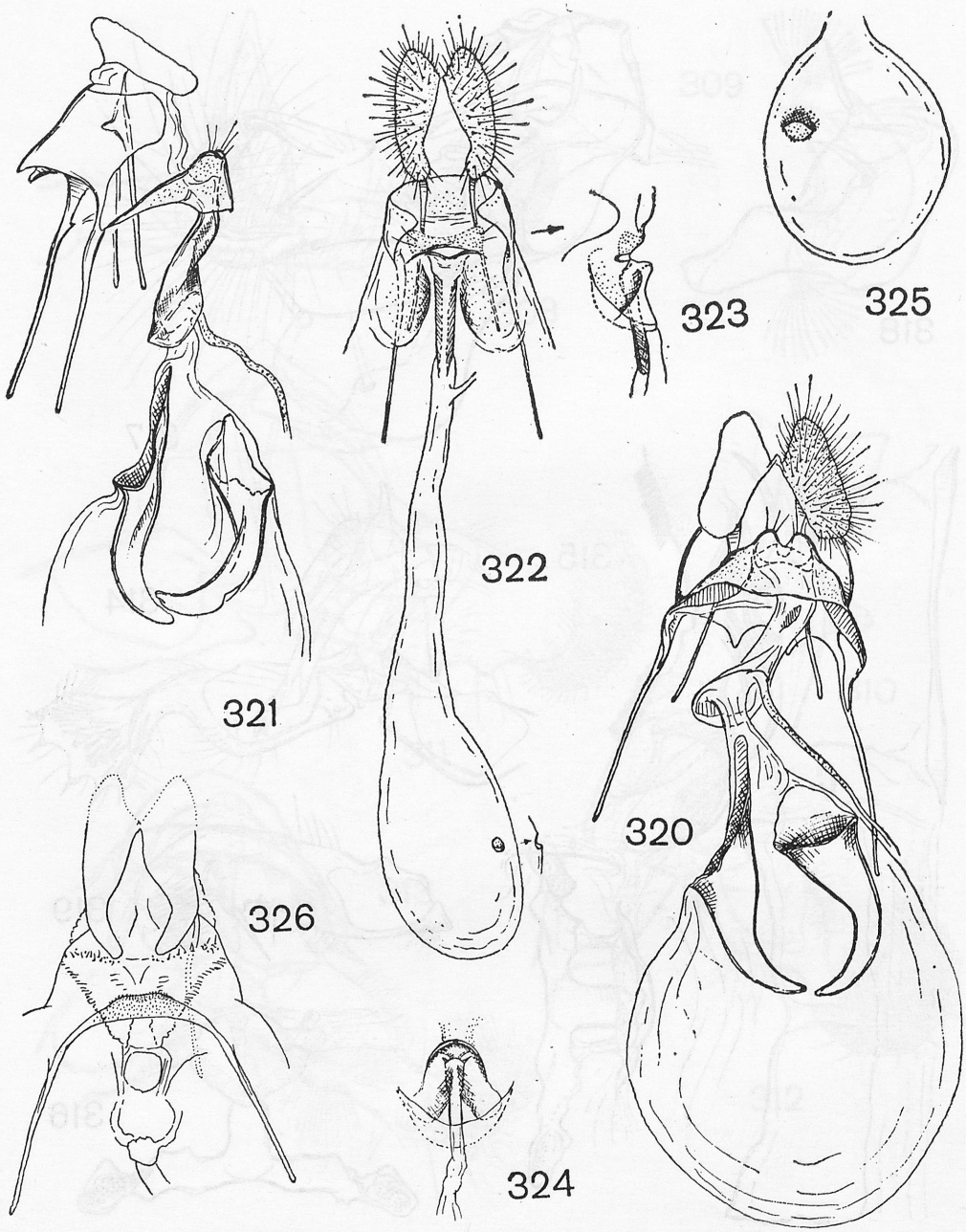
Figs 302—307. Male genitalia and scent organ: 302, 303 — *Parapammene selectana selectana* (Chr.), Japan: Honsyu; 304 — *Pammene trauniana* ([Den. & Schiff.]), Poland; 305 — *P. populana* (F.), Poland; 306, 307 — *P. argyrana* (Hbn.), Poland



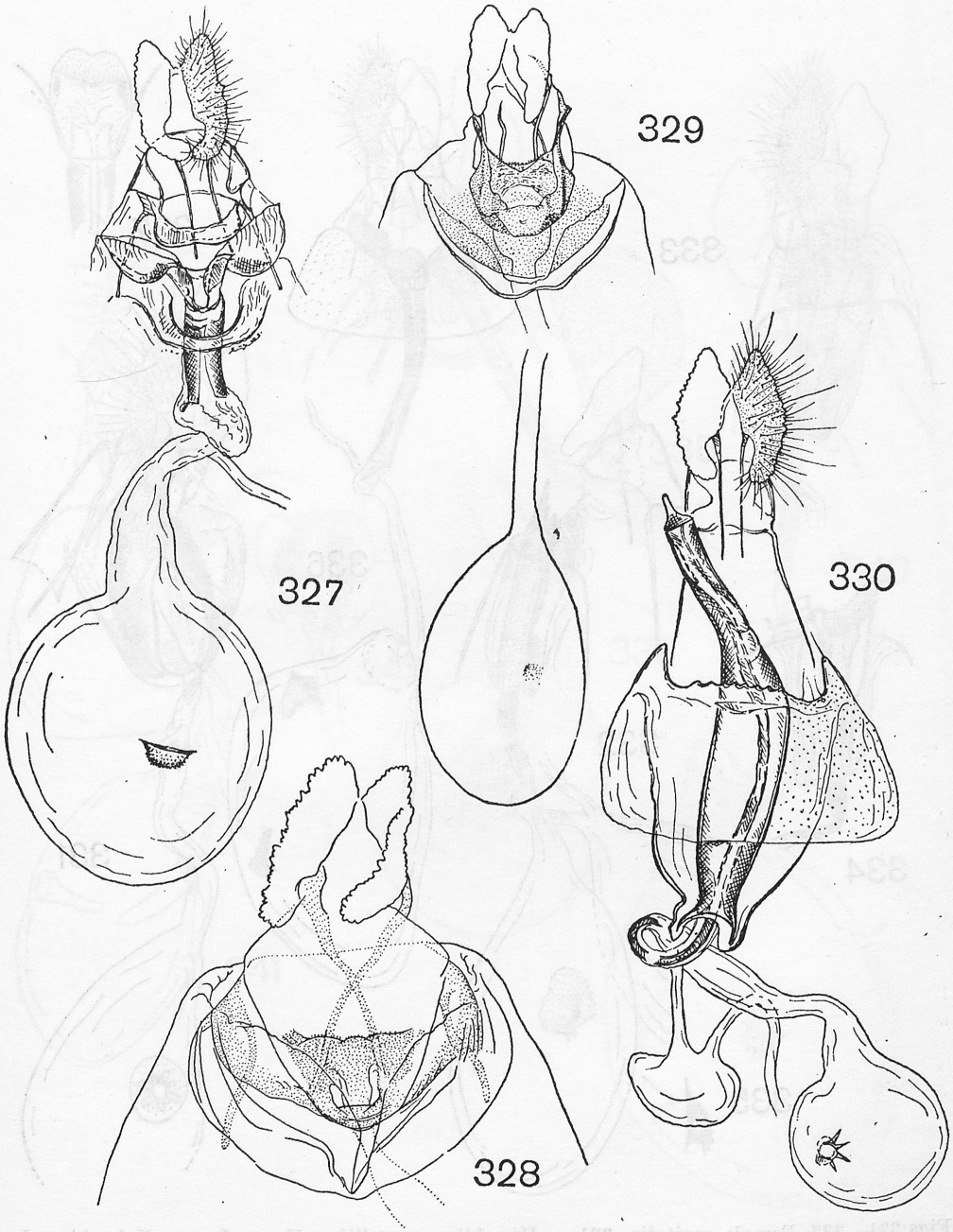
Figs 308—313. Male genitalia and scent organ: 308—310 — *Strophedra nitidana* (F.), Poland; 311 — *Dichrorampha bugionana* (Dup.), Austria; 312 — *D. plumbagana* (Treit.), Poland; 313 — *D. gueneeana* Obr., Poland



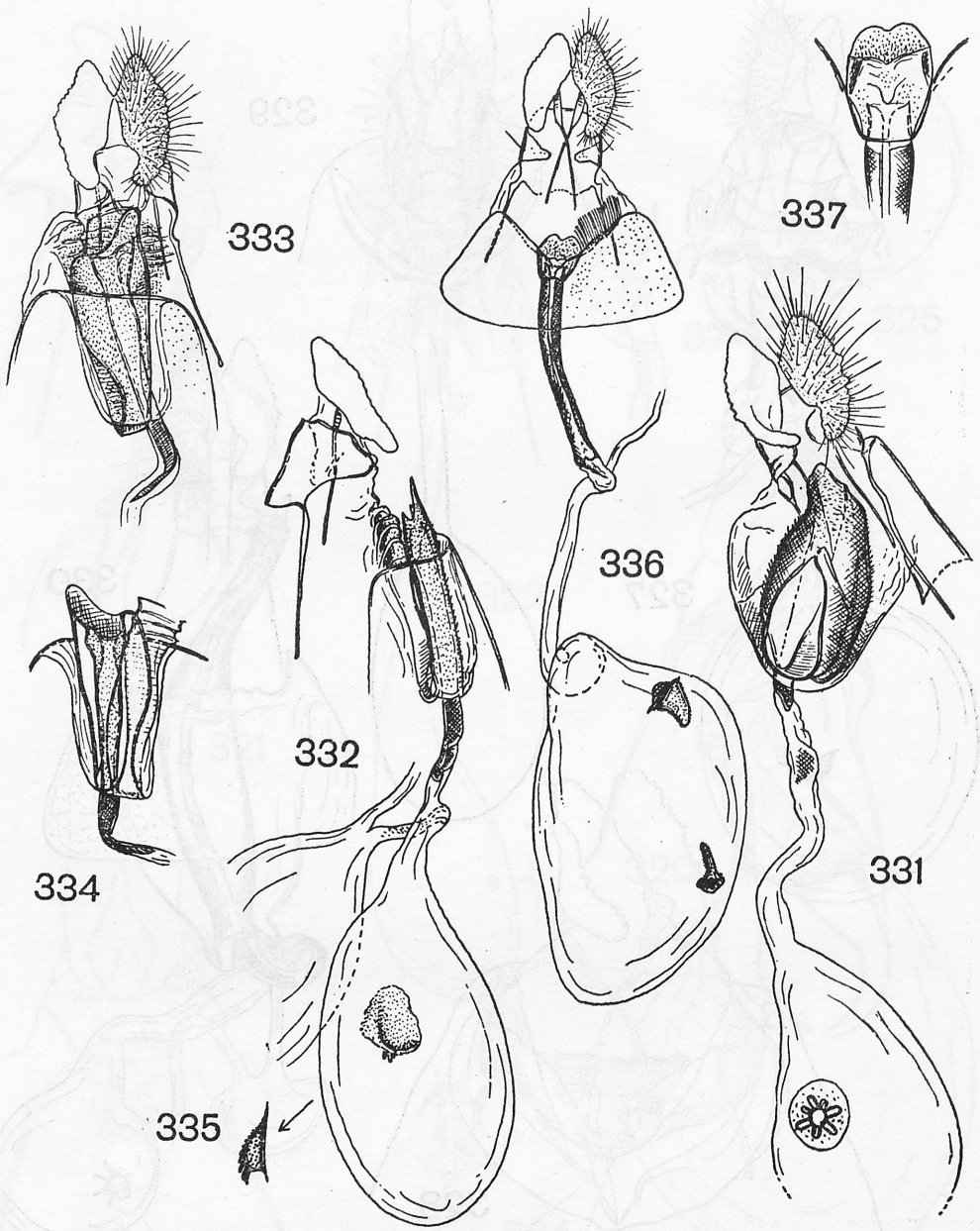
Figs 314—319. Male genitalia and scent organ: 314 — *Cirrilaspeyresia imbecillana* (KENN.), Algeria; 315—318 — *Cryptophlebia ombrodelta* (LOWER), Vietnam; 319 — *C. nota* KAW., Japan



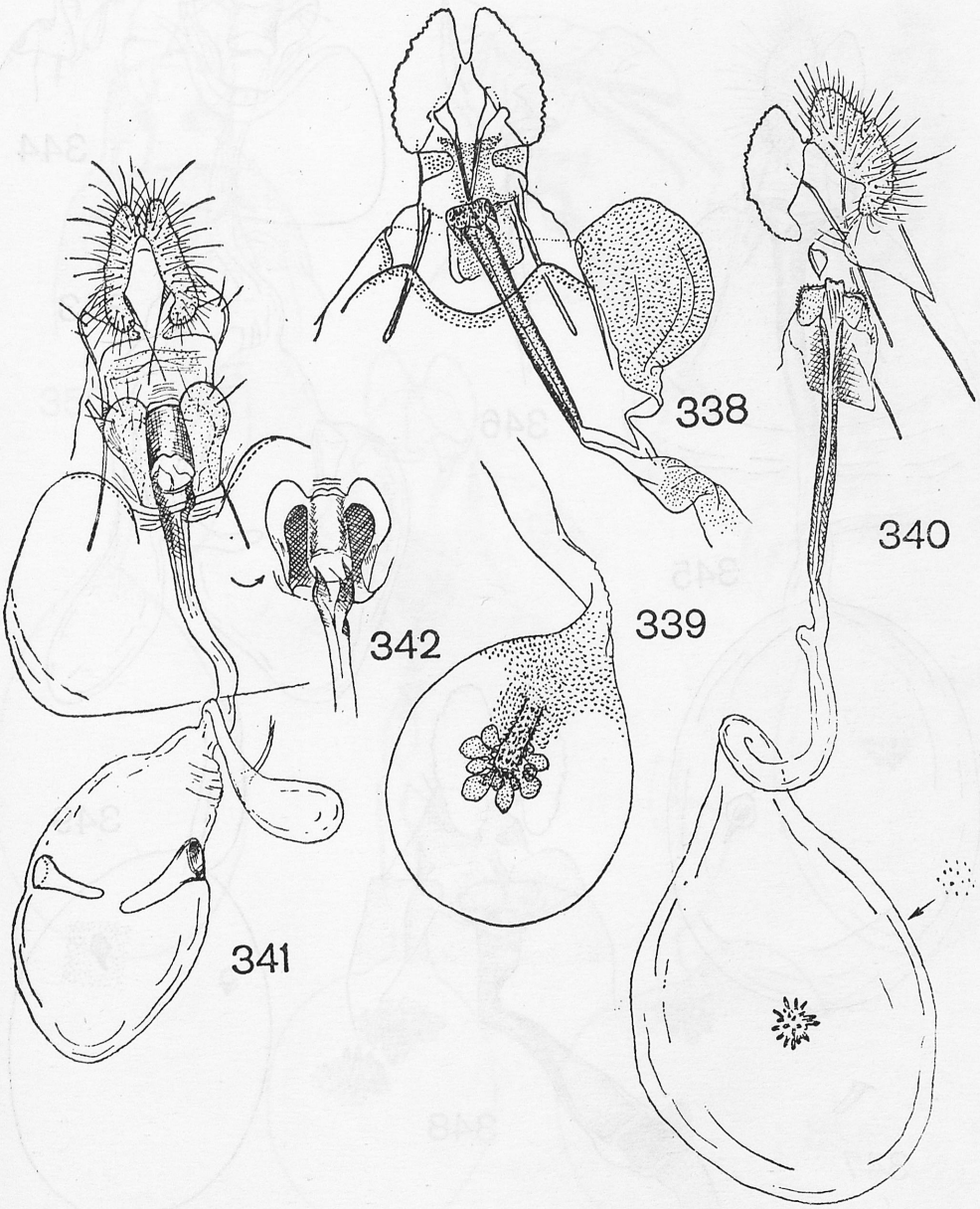
Figs 320—326. Female genitalia: 320, 321 — *Microcorses mirabilana* KUZN., N. Korea; 322 323 — *Bactra lancealana* (HBN.). Poland; 324, 325 — *B. (B.) frufurana* (HAW.), Poland; 326 — *B. (Noteraula) noteraula* (WALSM.), New Zealand, after DIAKONOFF, 1956



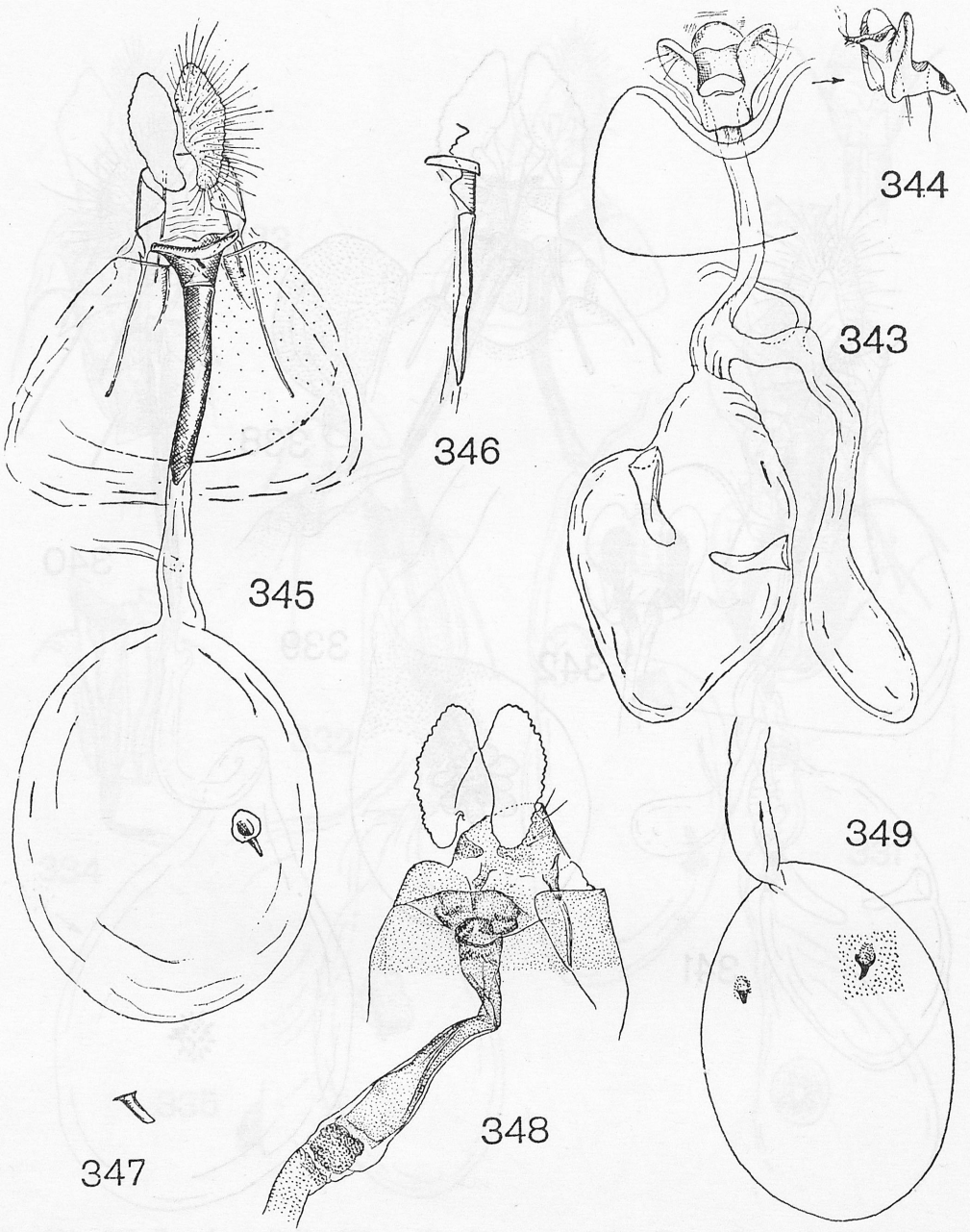
Figs. 327—339. Female genitalia: 327 — *B. (Chiloides) venosana* (Z.), S. France; 328 — *B. (Nannobactra) minima psila* DIAK., Canary Is., after DIAKONOFF, 1964; 329 — *B. (Spinobactra) spinosa* DIAK., Transvaal after DIAKONOFF, 1963; 330 — *Ukamenia sapporensis* (MATS.), Japan: Honsyu



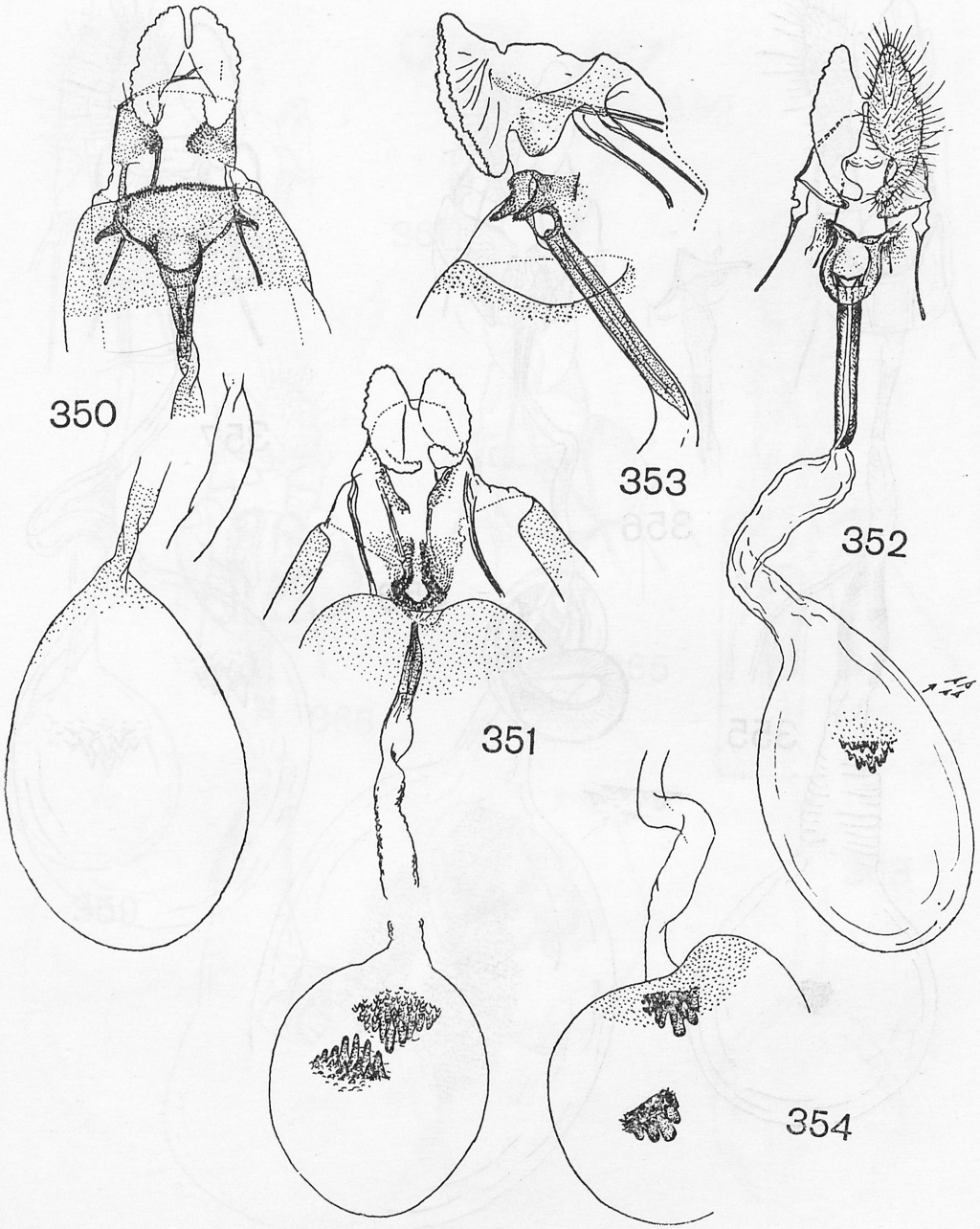
Figs 331—337. Female genitalia: 331 — *Hiroshiinouea stellifera* KAW., Japan: Yakushima Is.; 332—335 — *Gatesclarkeana idia* DIAK., Japan: Yakushima Is.; 336, 337 — *Rhodocosmaria occidentalis* DIAK., Japan: Ogasawara Is.



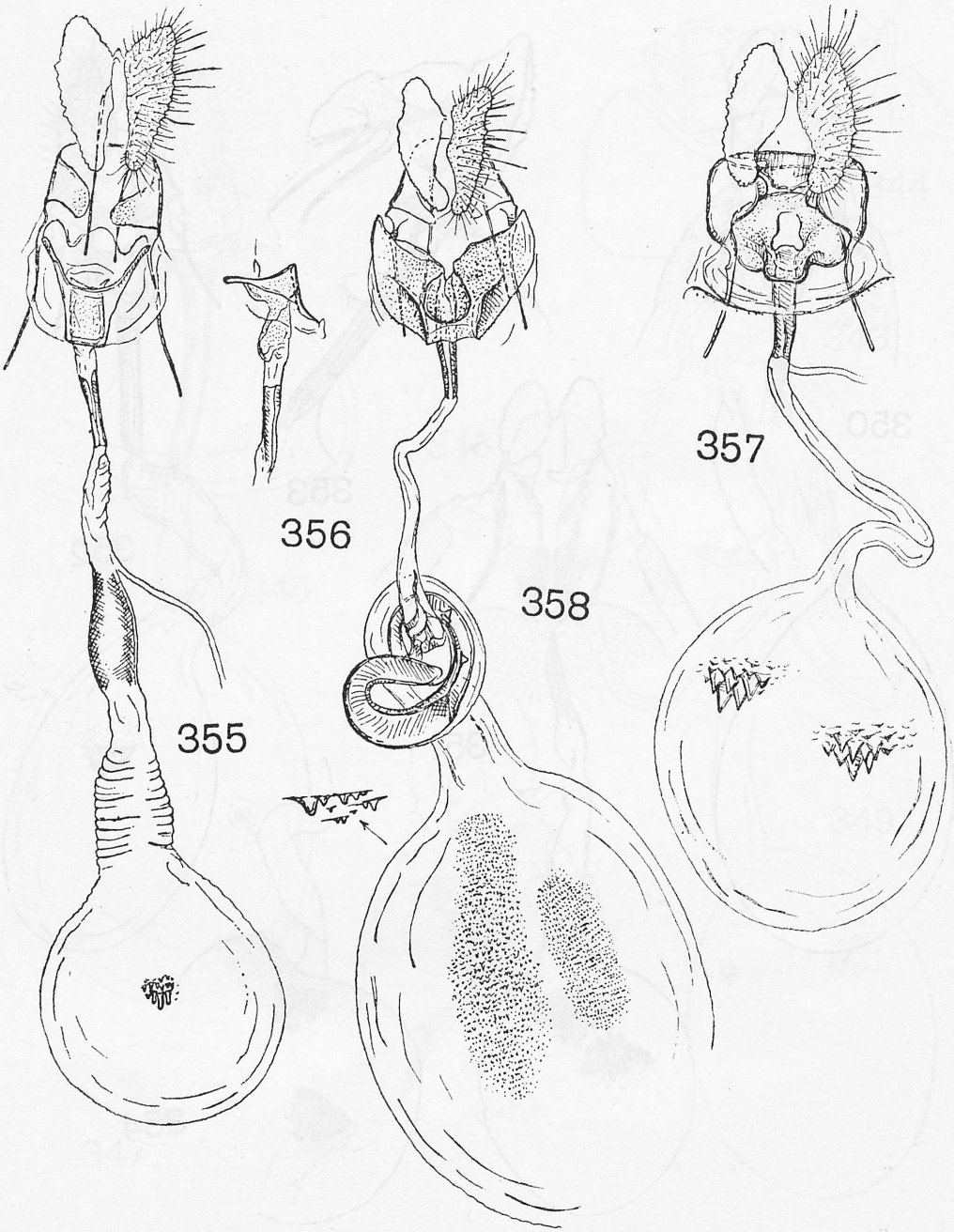
Figs 338—342. Female genitalia: 338, 339 — *Eubrochoneura parasema* DIAK., after DIAKONOFF, 1966; 340 —? *Eubrochoneura altissima* KAW., Japan; 341, 342 — *Eudemis porphyrana* (HBN.), Poland



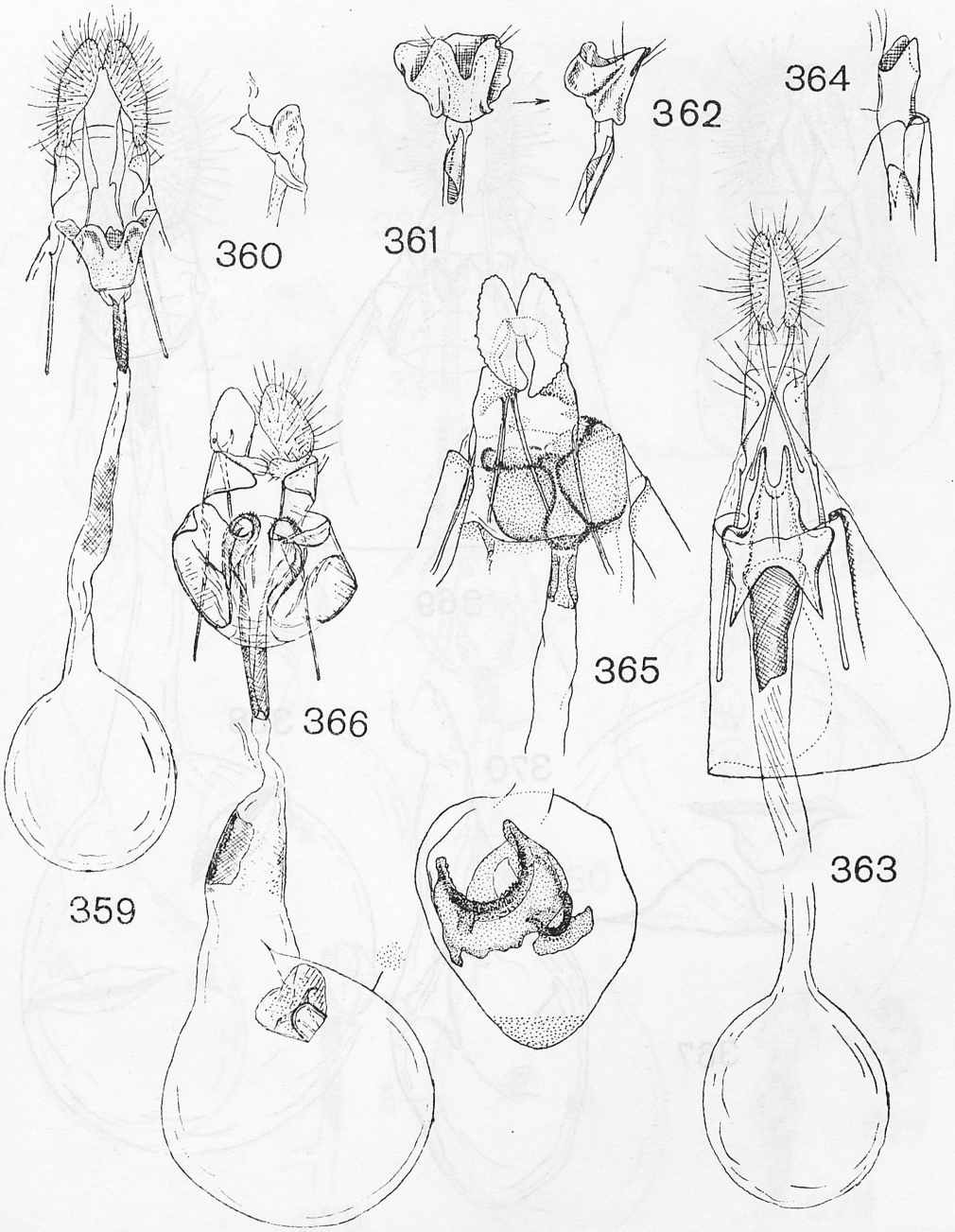
Figs 343—349. Female genitalia: 343, 344 — *Eudemis profundana* ([Den. & Schiff.]), Poland; 345—347 — *Eudemopsis pompholycias* (Meyr.), Japan: Honsyu; 348, 349 — *Phaecasiophora obraztsovi* Diak., after Diakonoff, 1973



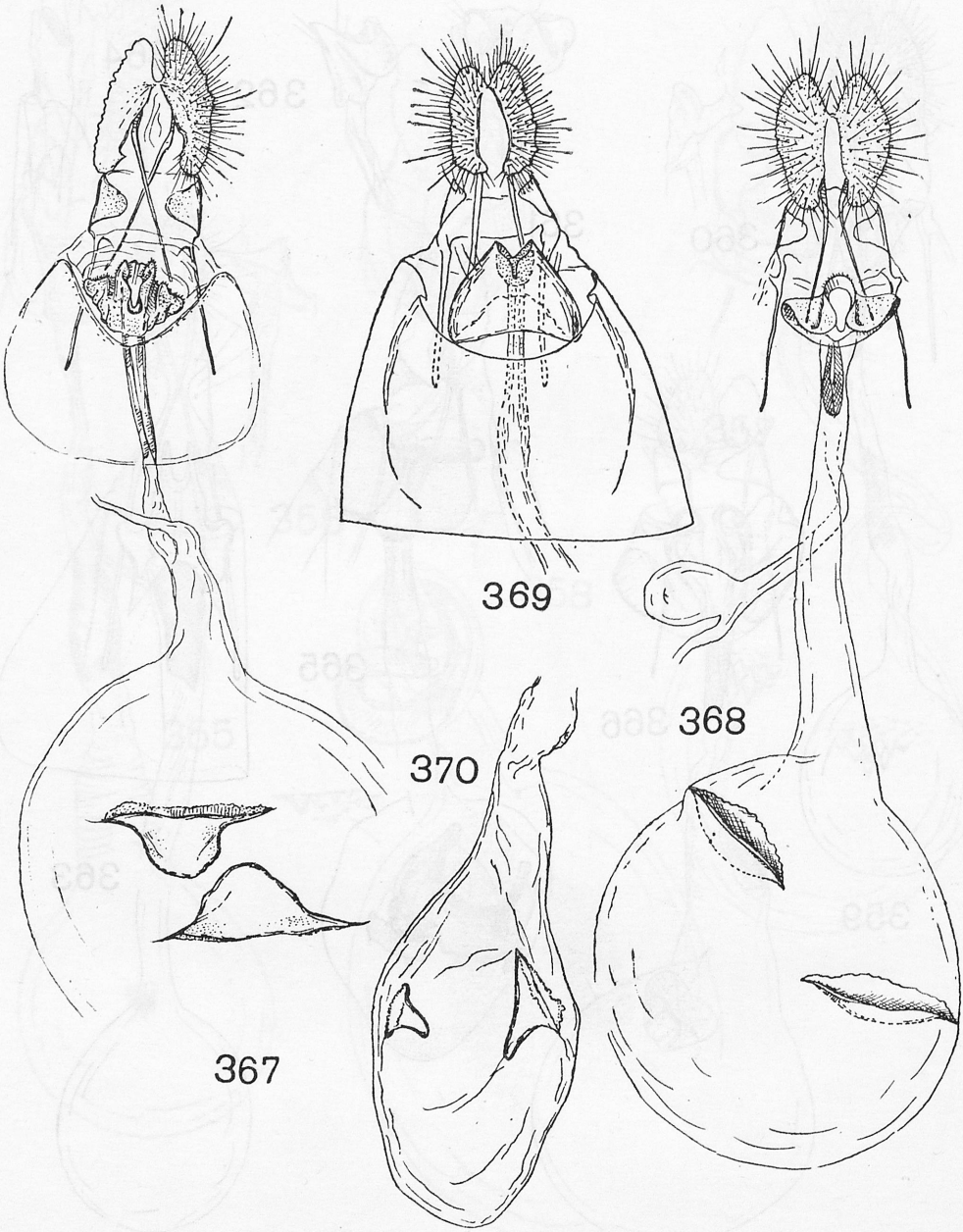
Figs 350—354. Female genitalia: 350 — *Psilacantha manifesta* DIAK., after DIAKONOFF, 1973; 351 — *Dactylioglypha tonica* (MEYR.), Japan: Okinawa; 552 — *Statherotoxys hedraea* (MEYR.) Japan; 353, 354 — *Statherotis leucaspis* (MEYR.), after DIAKONOFF, 1973



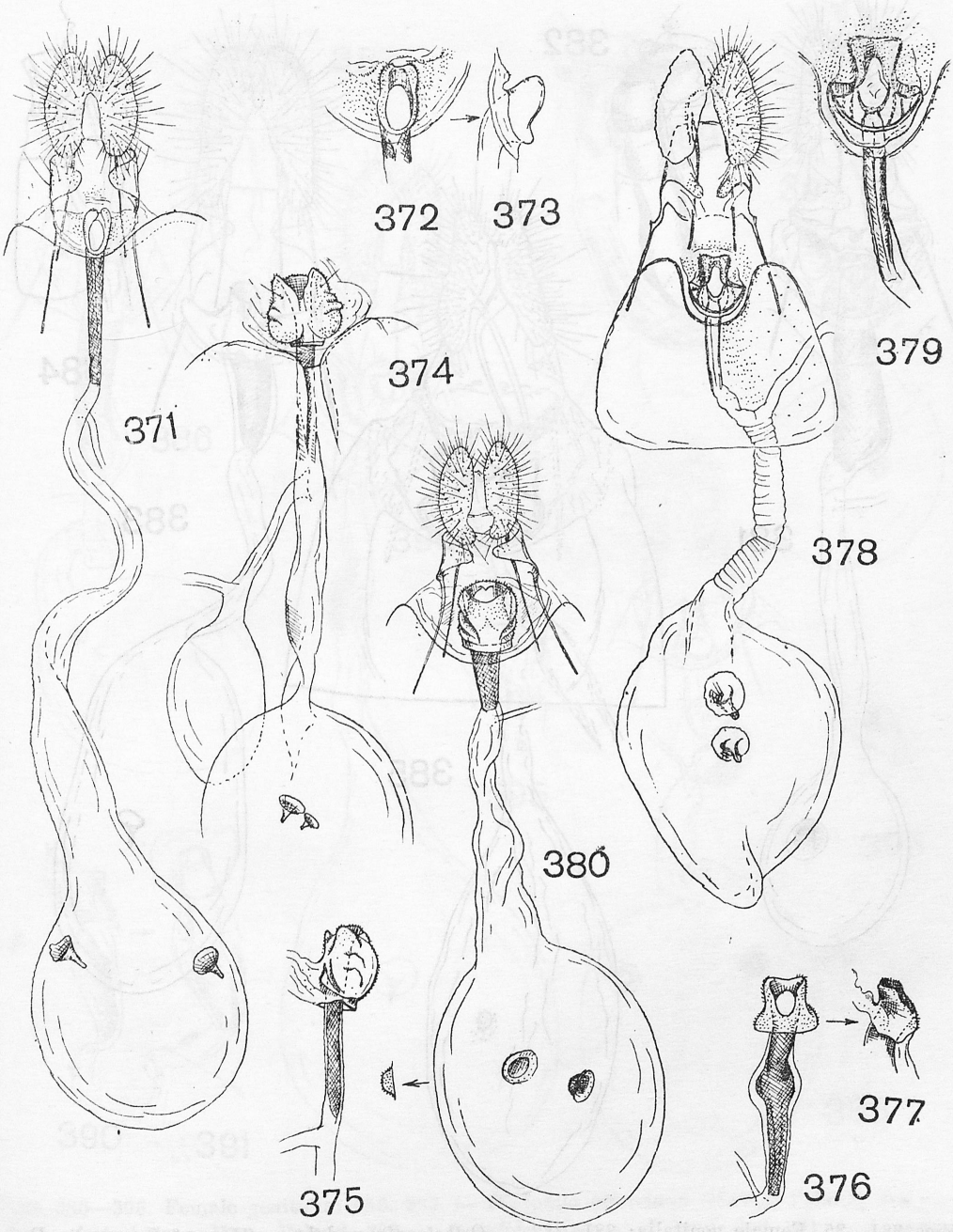
Figs 355—358. Female genitalia: 355, 356 — *Proschistis marmaropa* (MEYR.), Japan: Kushinoraba Is.; 357 — *Statheromantis pictana* (KUZN.), Kuril Is.: Kunashir; 358 — *Rhodacra pyrrhocrossa* (MEYR.), Japan



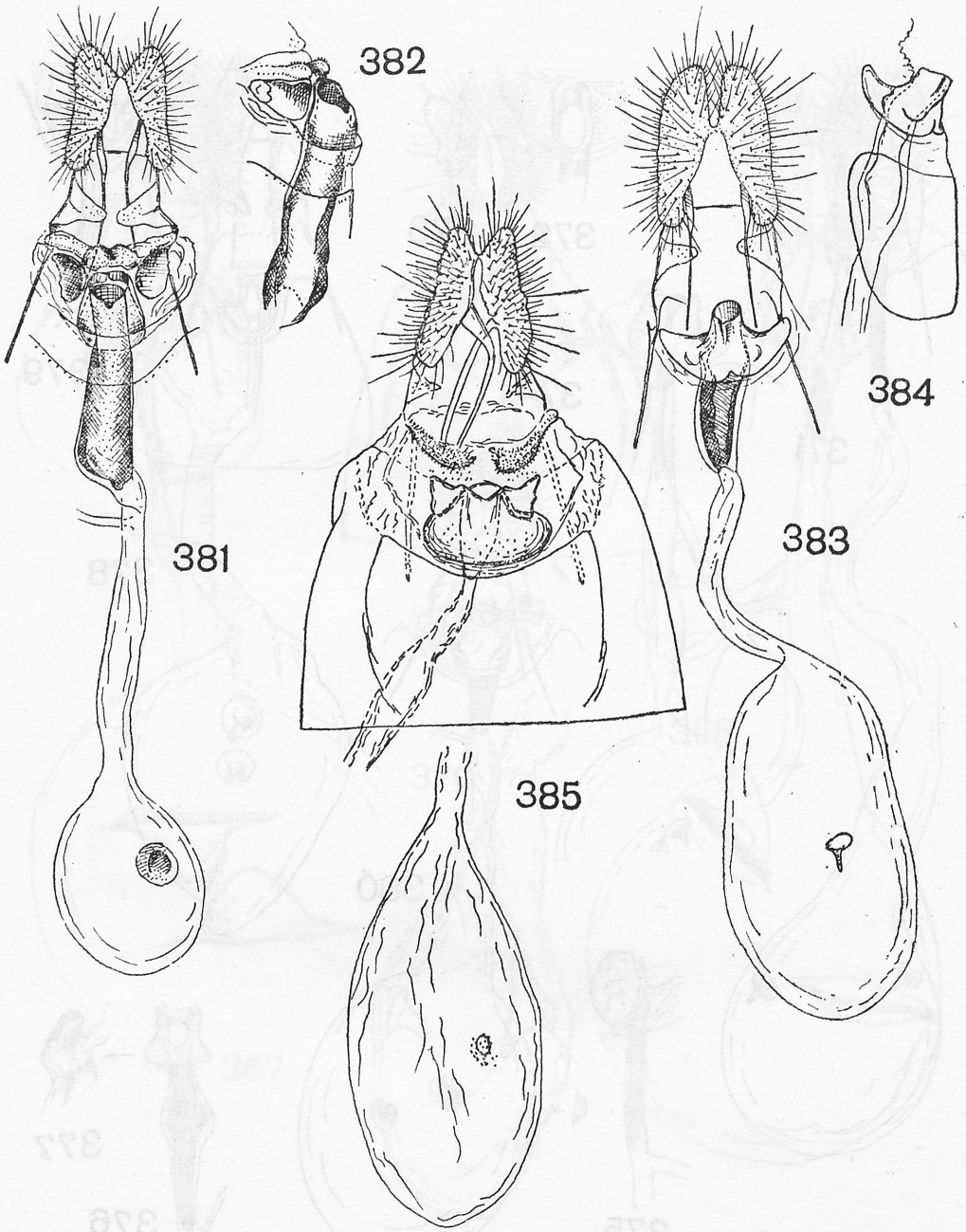
Figs 359—366. Female genitalia: 359, 360 — *Aterpia anderreggana* GUEN), Poland; 361, 362 — *A. corticana* ([DEN. & SCHIFF.]), Poland; 363, 364 — *Selenodes textana* (FRÖL.), Poland; 365 — *Neopotamia leucotona* DIAK., after DIAKONOFF, 1973; 366 — *Temnolopha mosaica* LOW., Japan



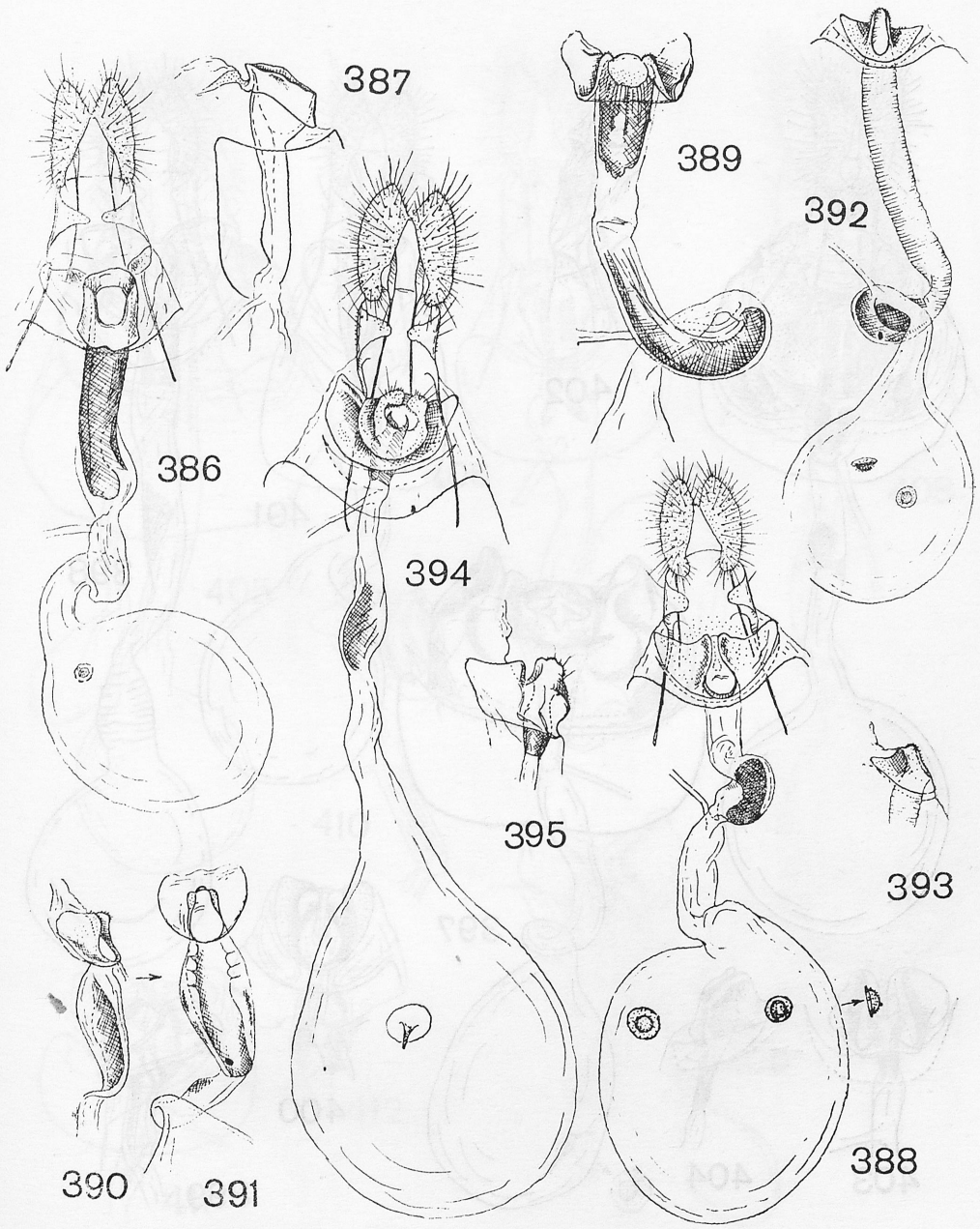
Figs 367—370. Female genitalia: 367 — *Saliciphaga acharis* (BUTL.), Manchuria; 368 — *Pseudosciapbila branderiana* (L.), Poland; 369, 370 — *Pseudohedya gradana* (CHR.), after FALKOVITSH, 1962



Figs 371—380. Female genitalia: 371—373 — *Hedya salicella* (L.), Poland; 374, 375 — *H. nubiferana* (Haw.), Poland; 376, 377 — *H. ochroleucana* (Frön.), Poland; 378, 379 — *Dudua aprobola* (Meyr.), Japan: Oomura; 380 — *Metendothenia atropunctana* (Zett.), Poland



Figs 381—35. Female genitalia: 381, 382 — *Orthotaenia undulana* ([Den. & Schiff.]), Poland; 383, 384 — *Pseudohermenias abietana* (F.), Poland; 385 — *Rudisociaria expeditana* (Snell.), after Falkovitsh, 1962



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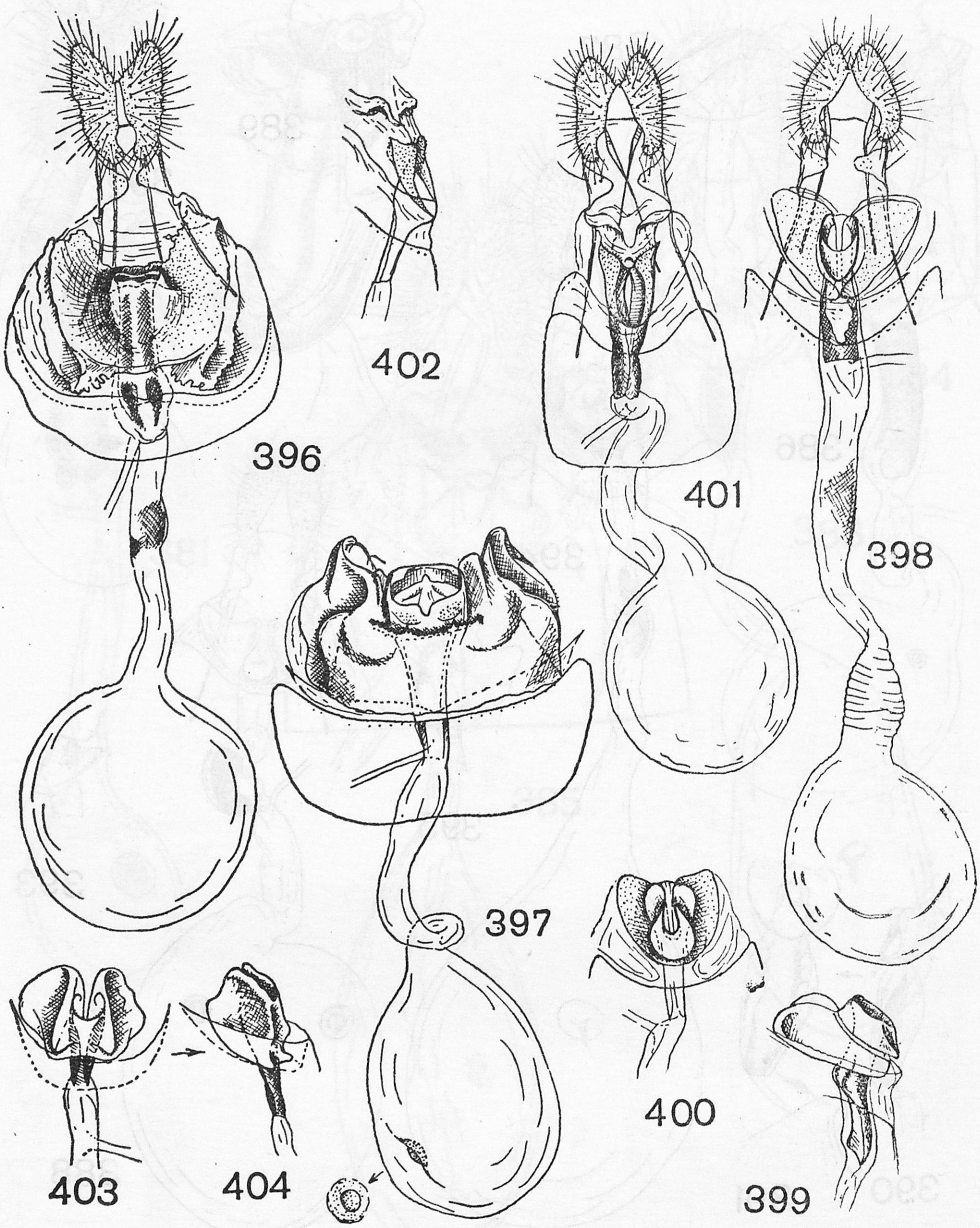

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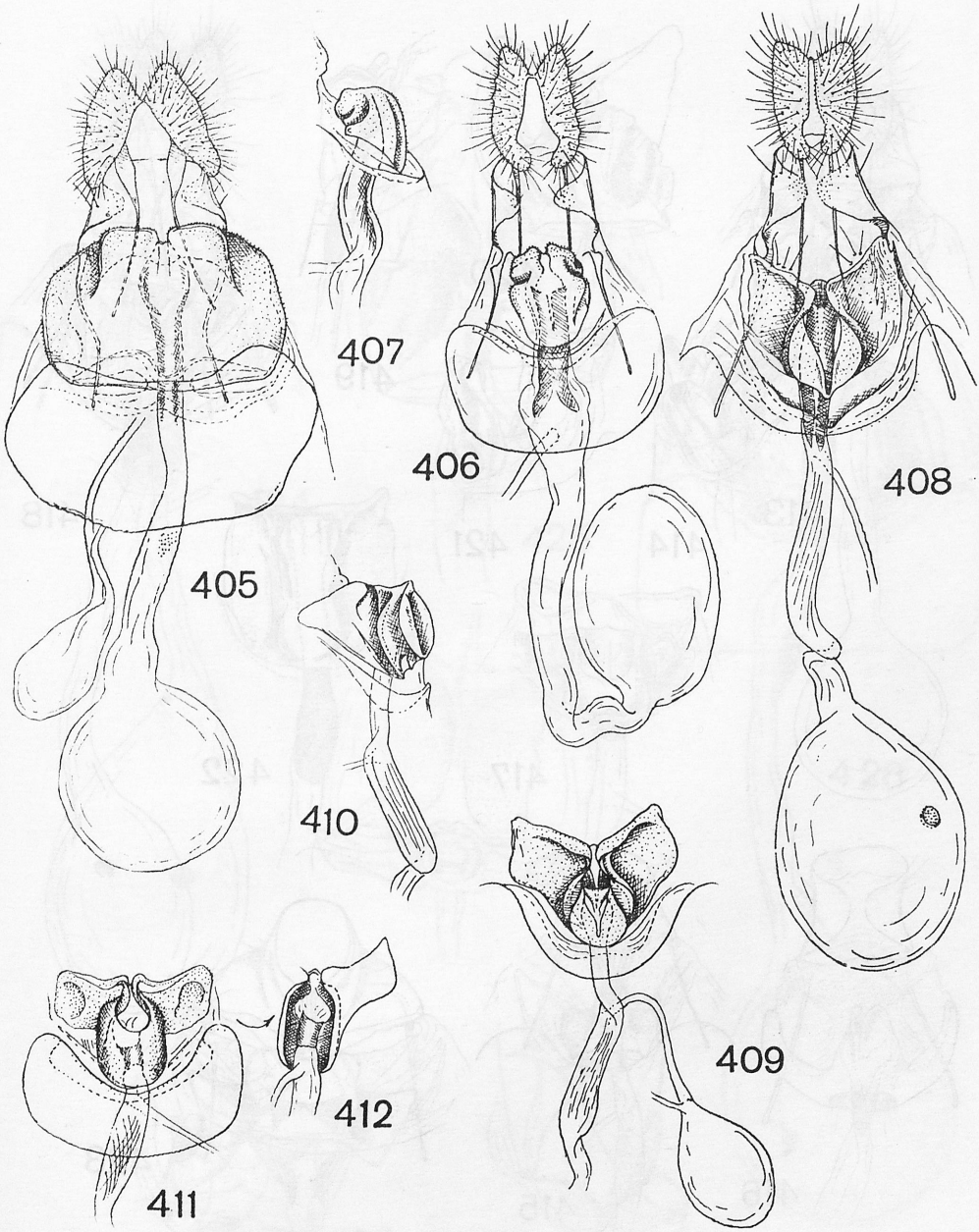

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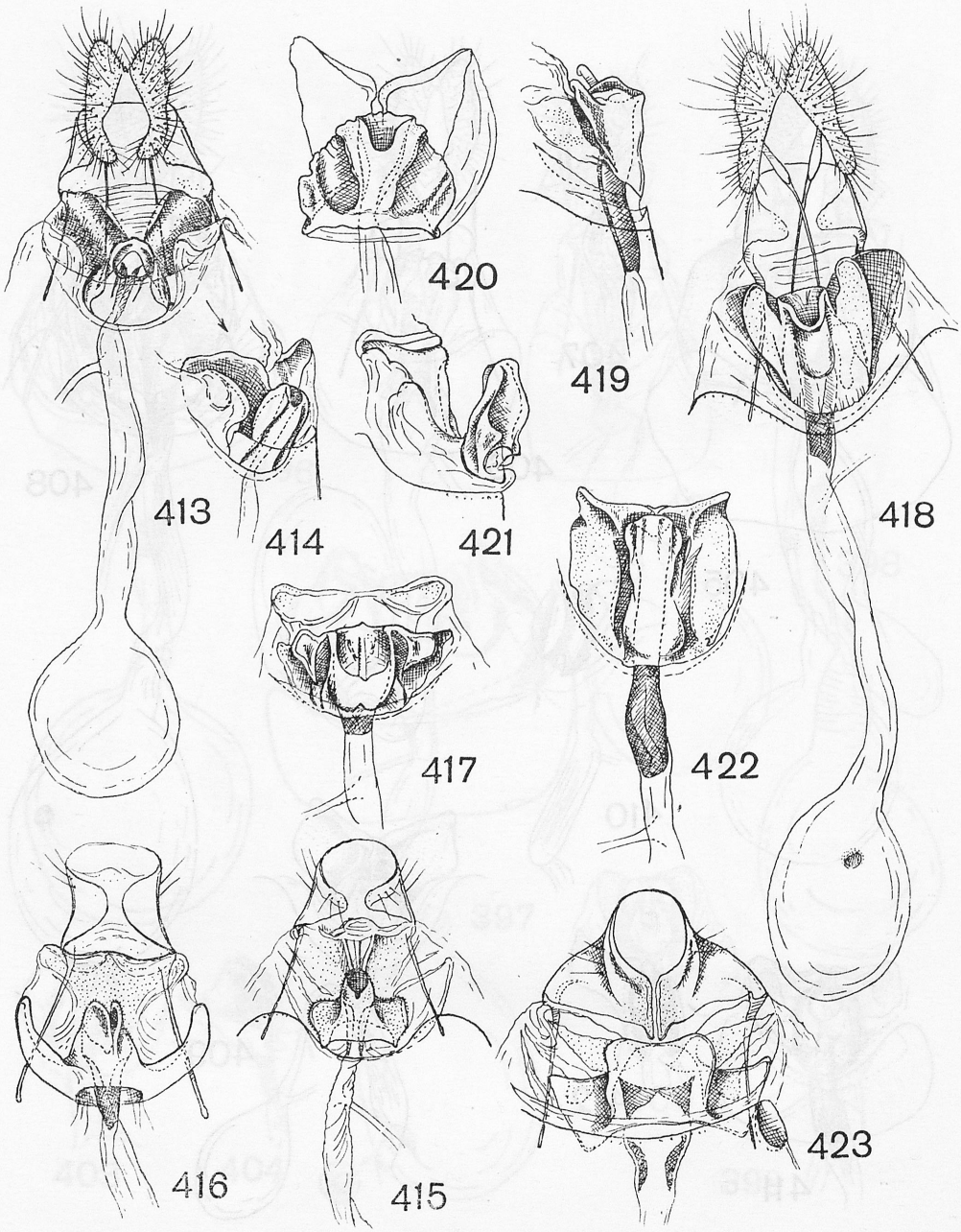

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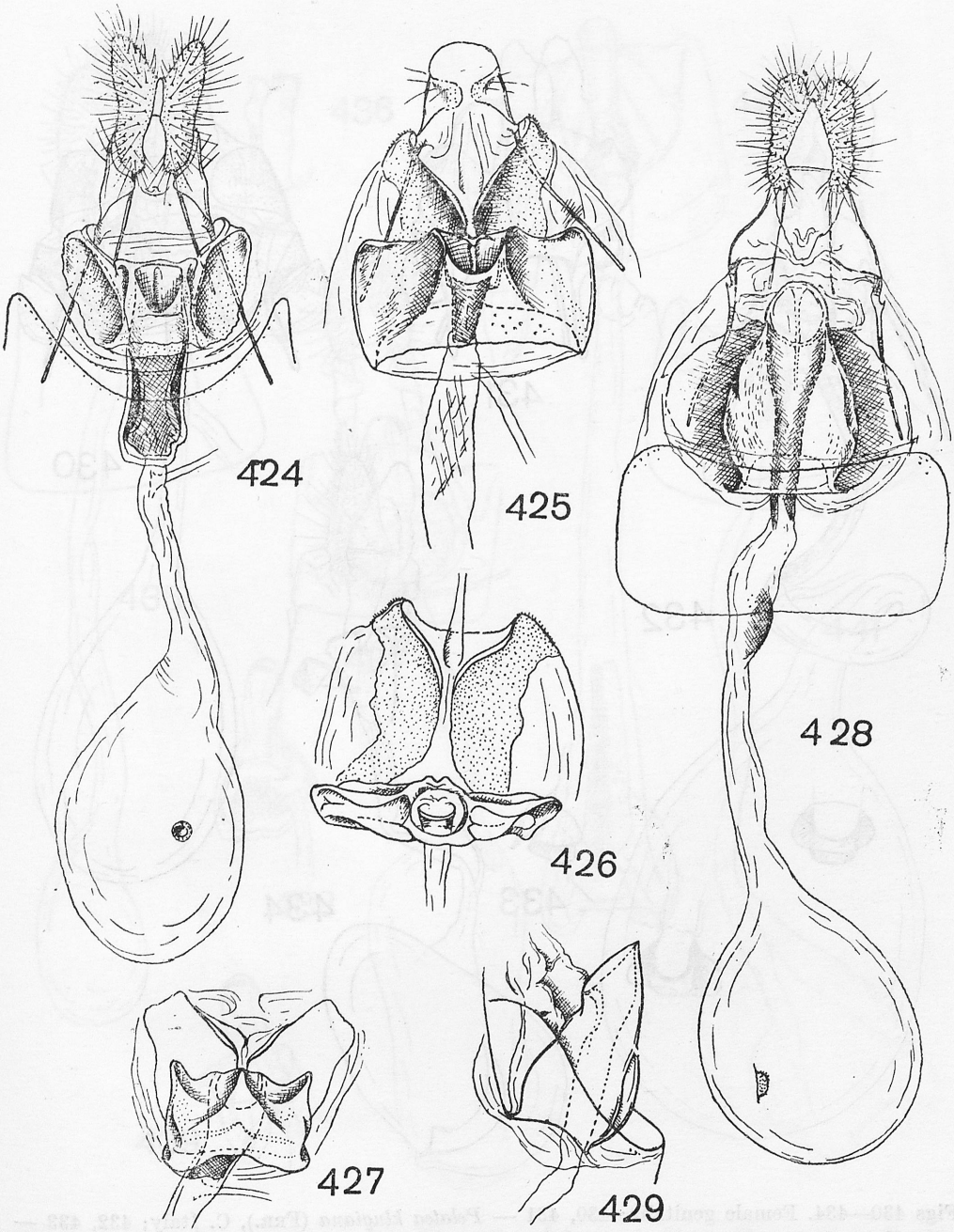

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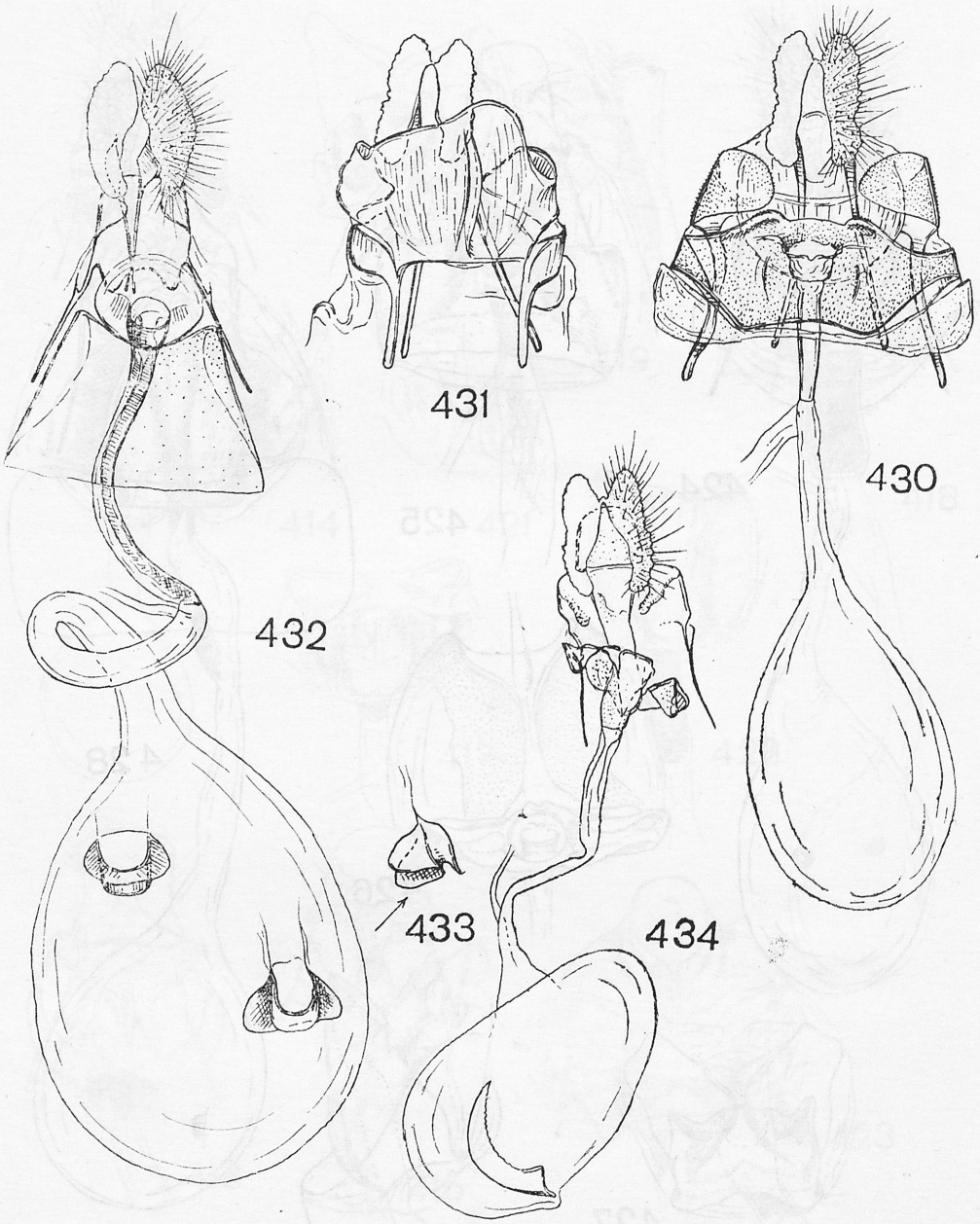

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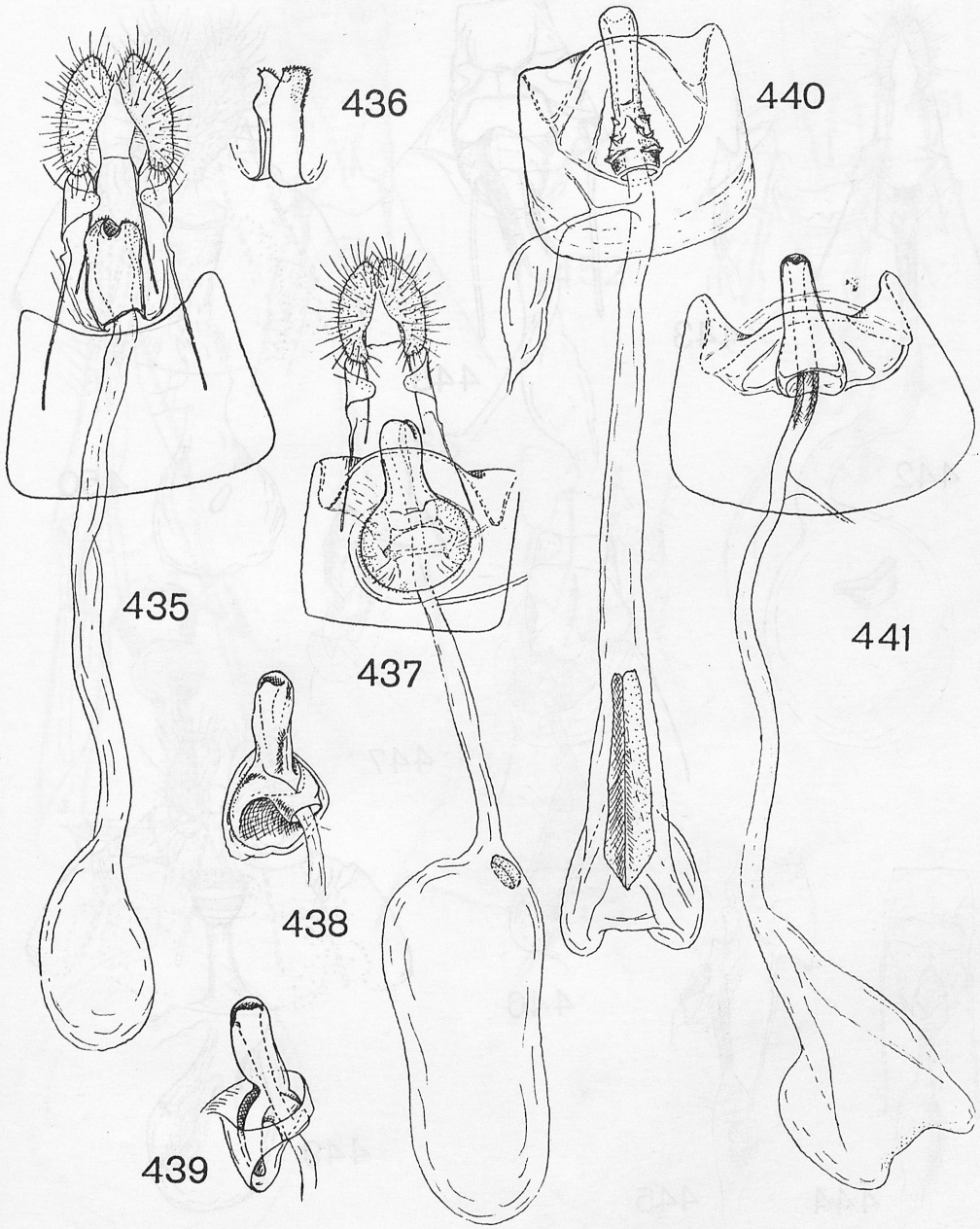

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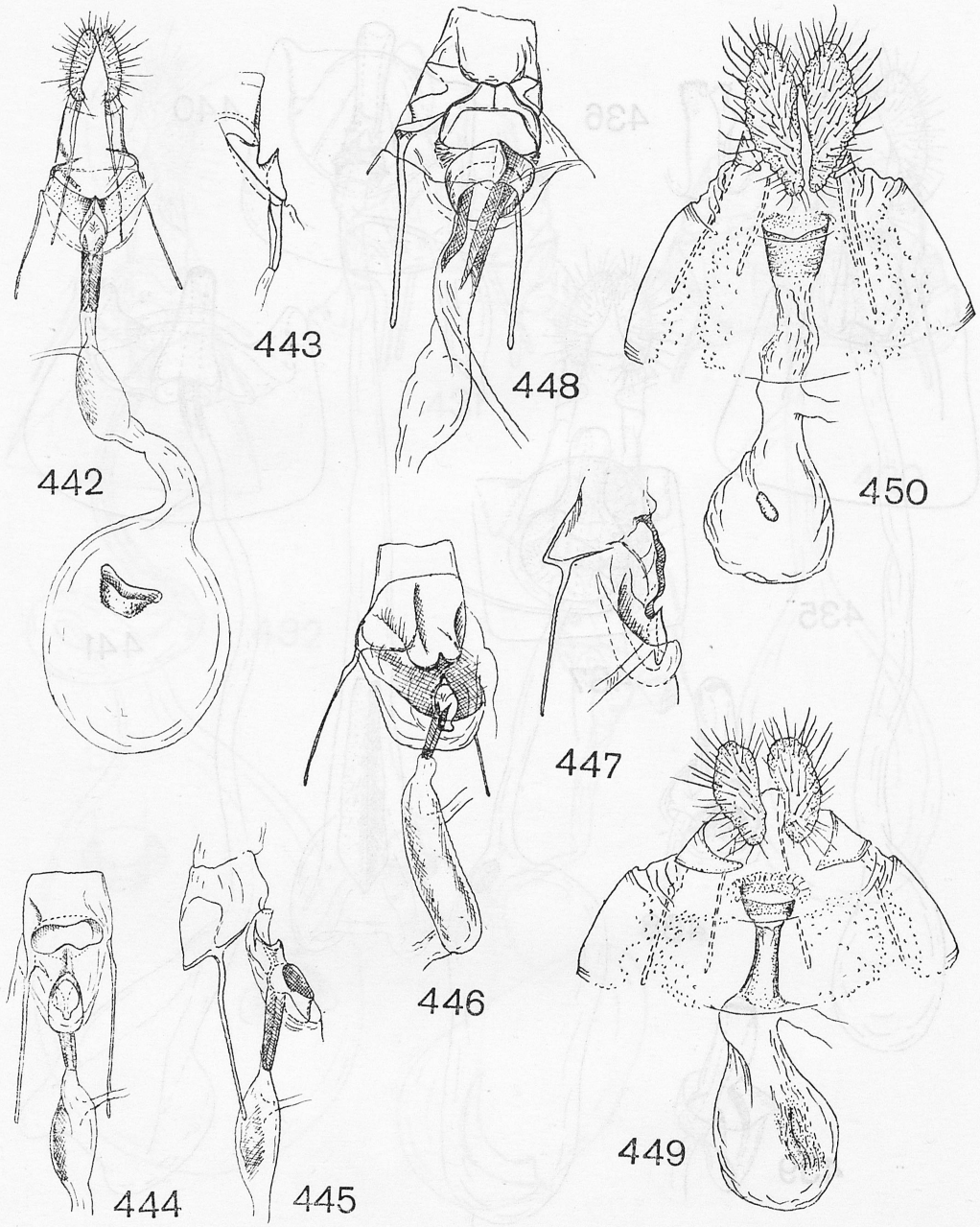

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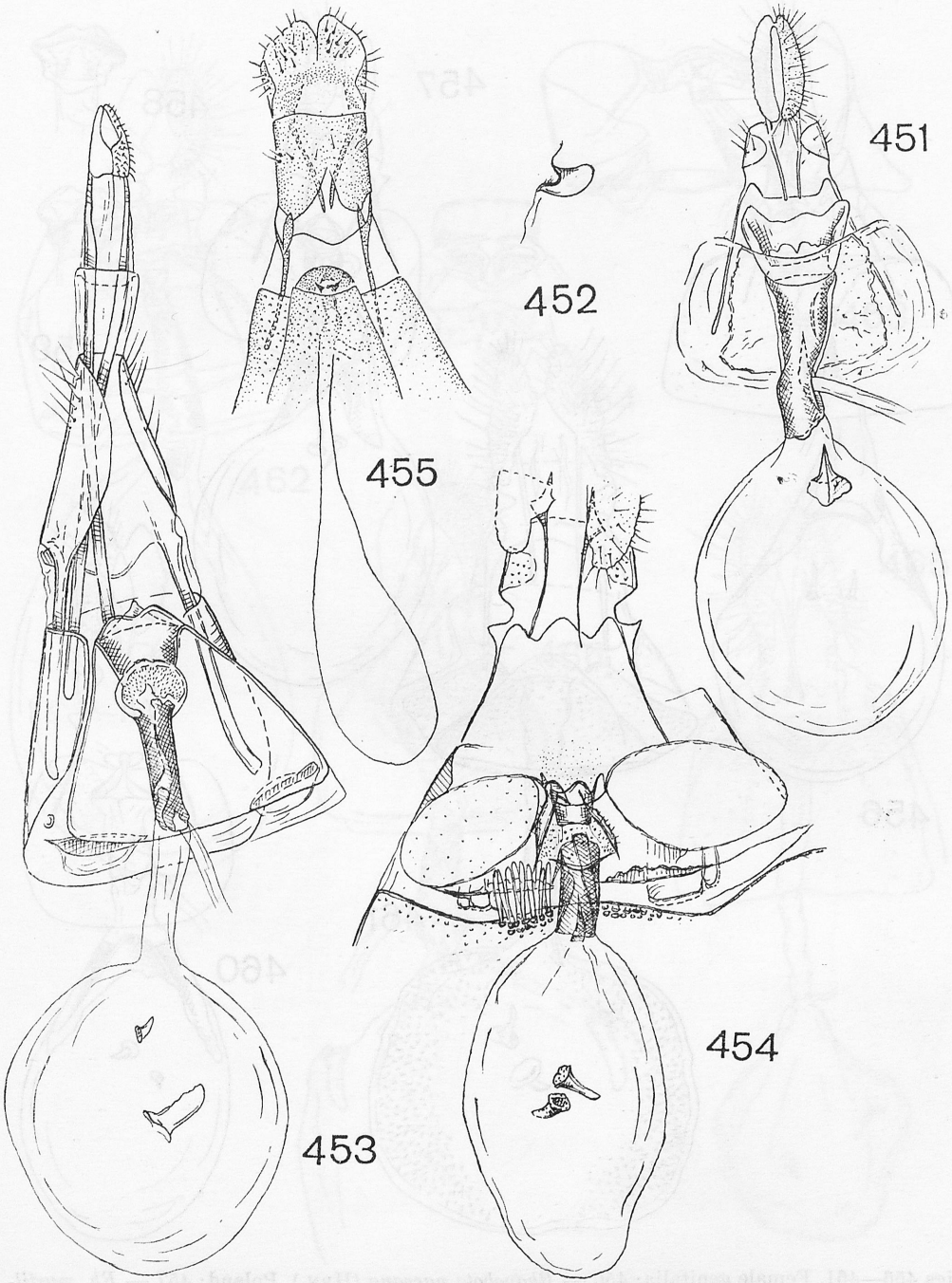

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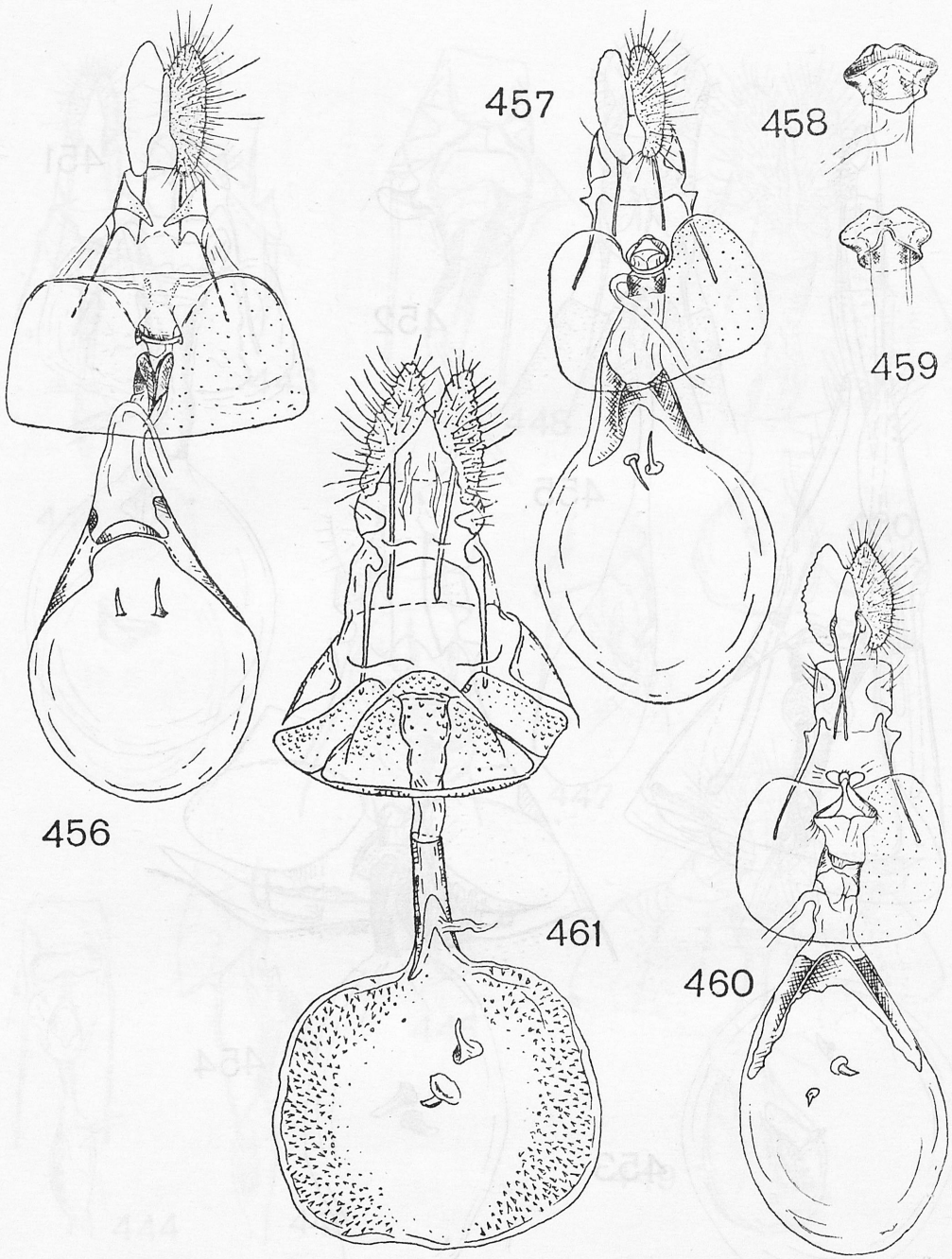

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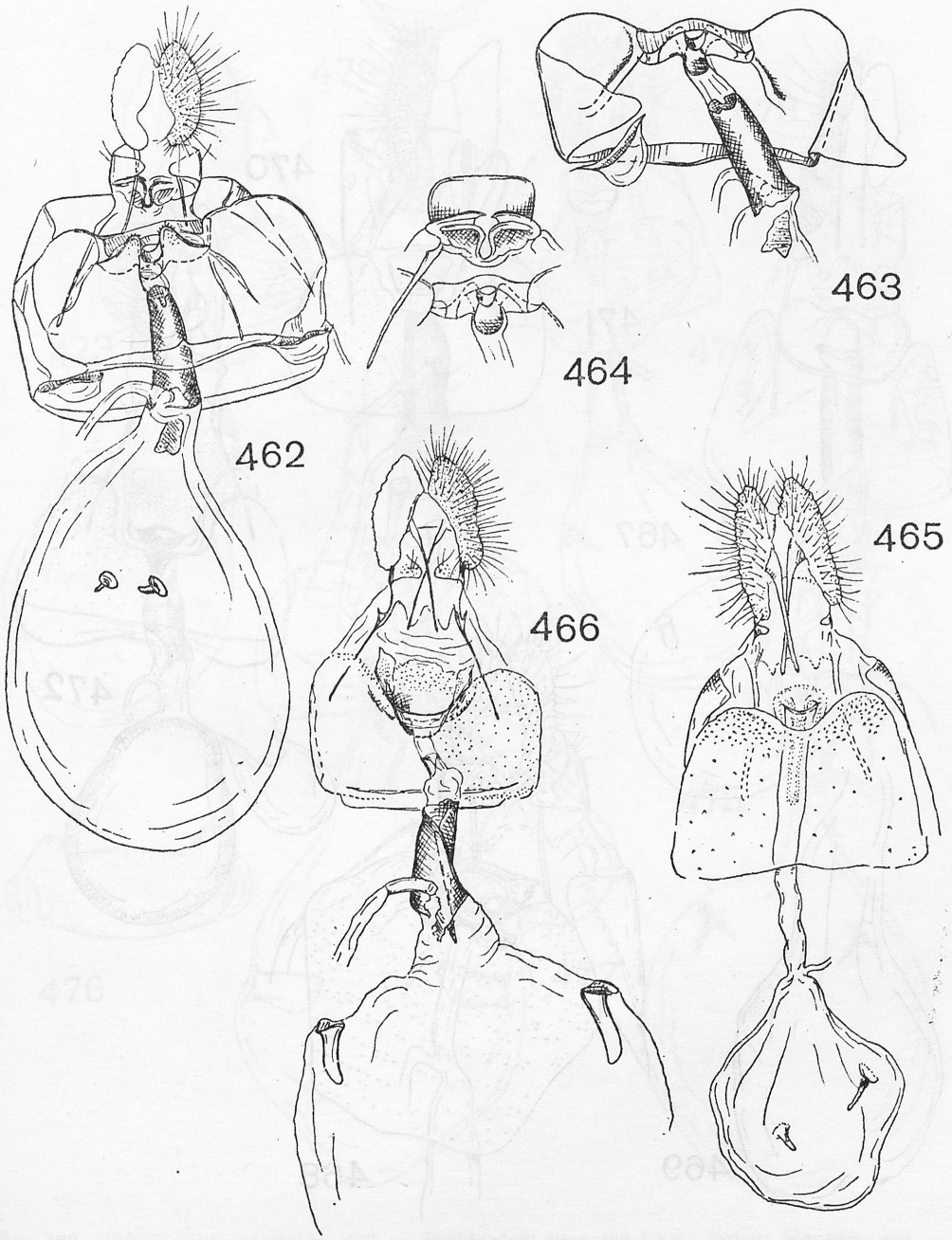

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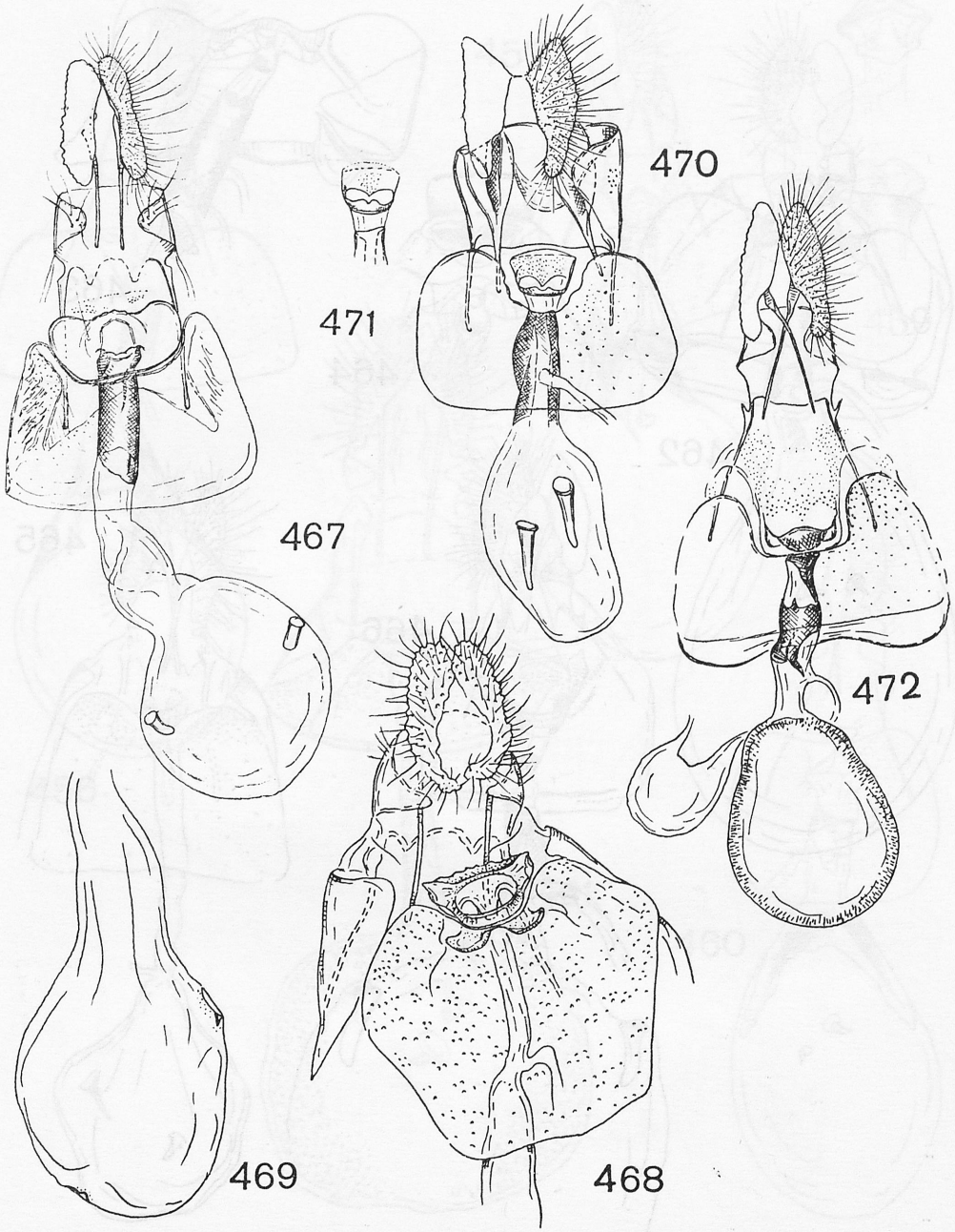

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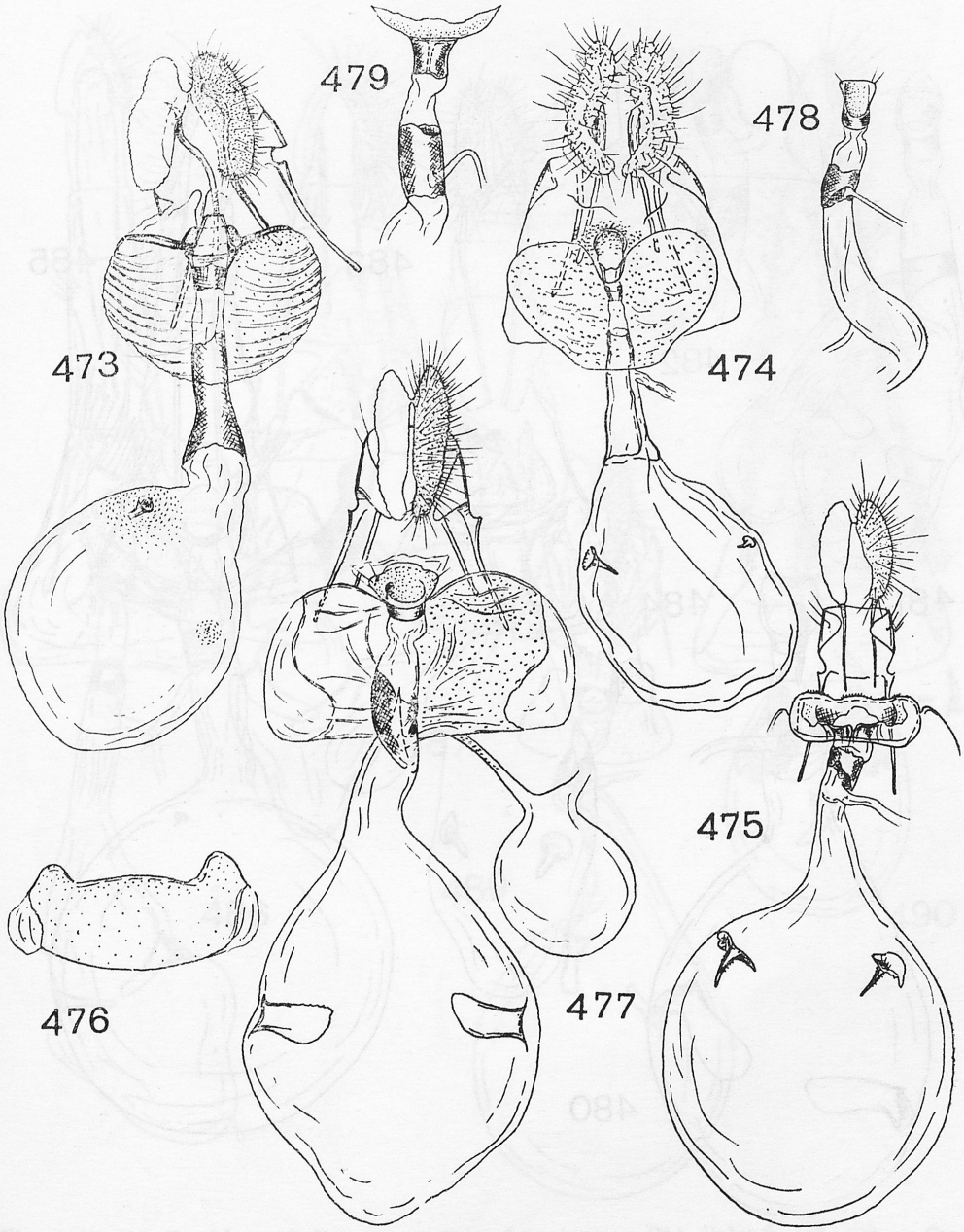

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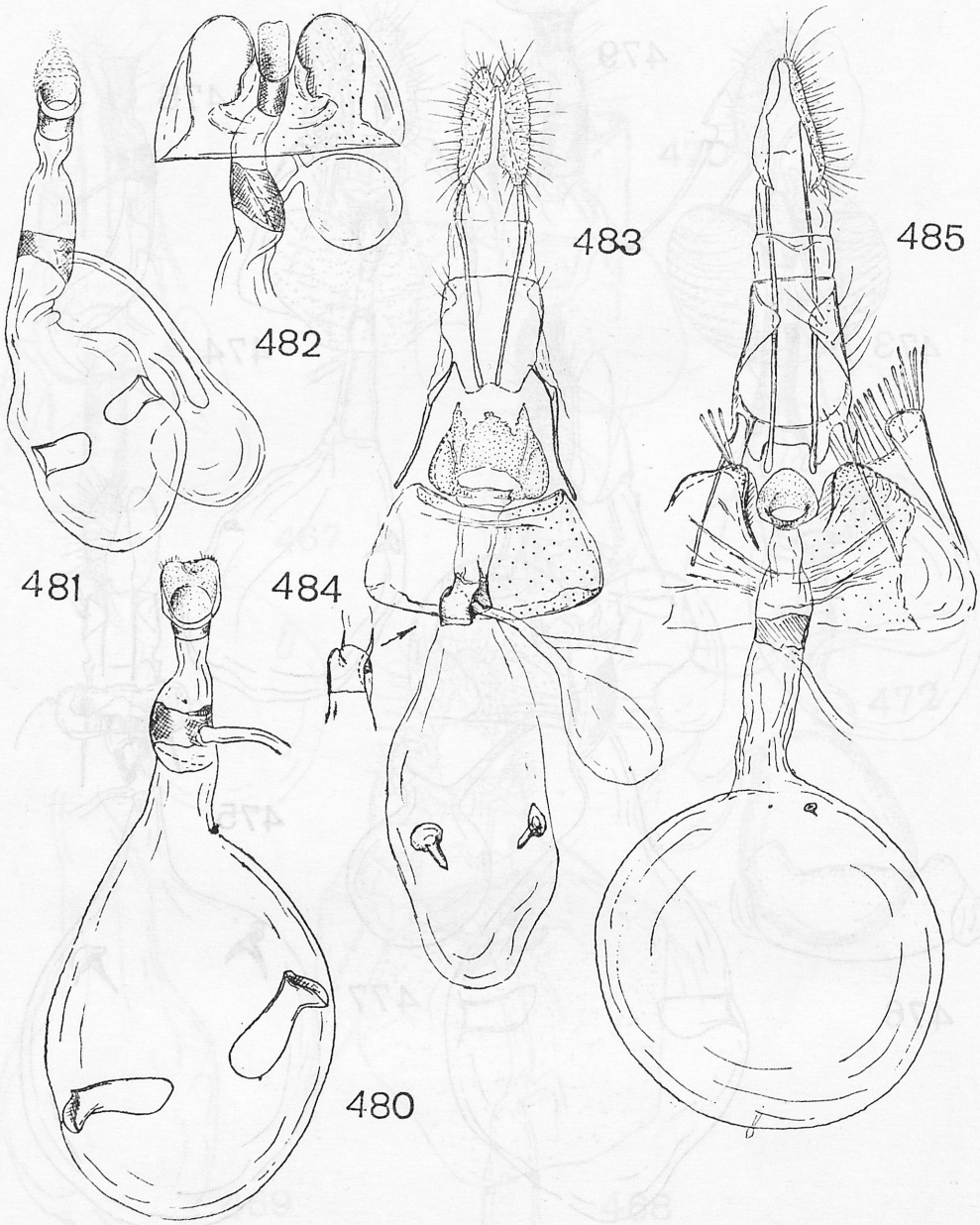

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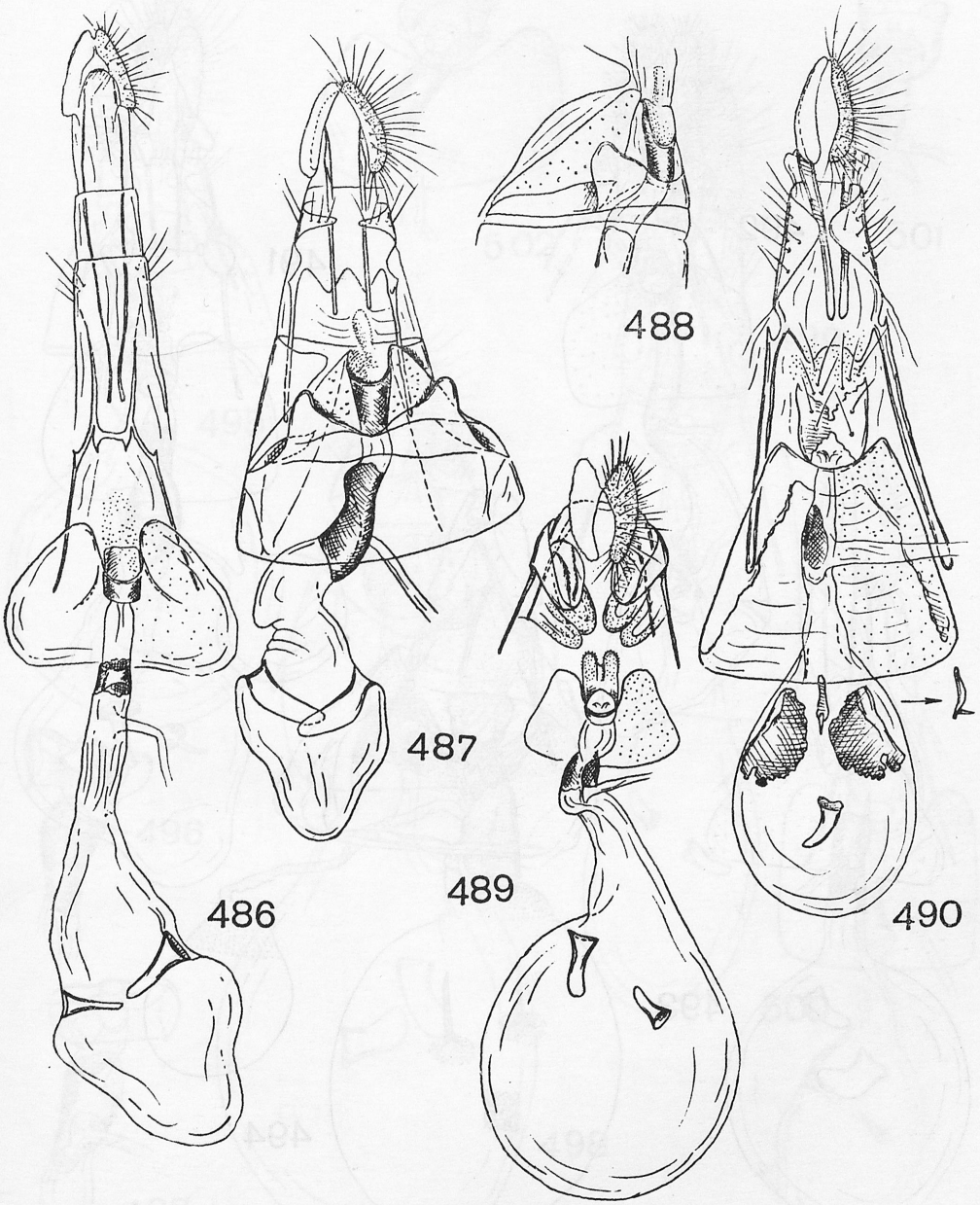

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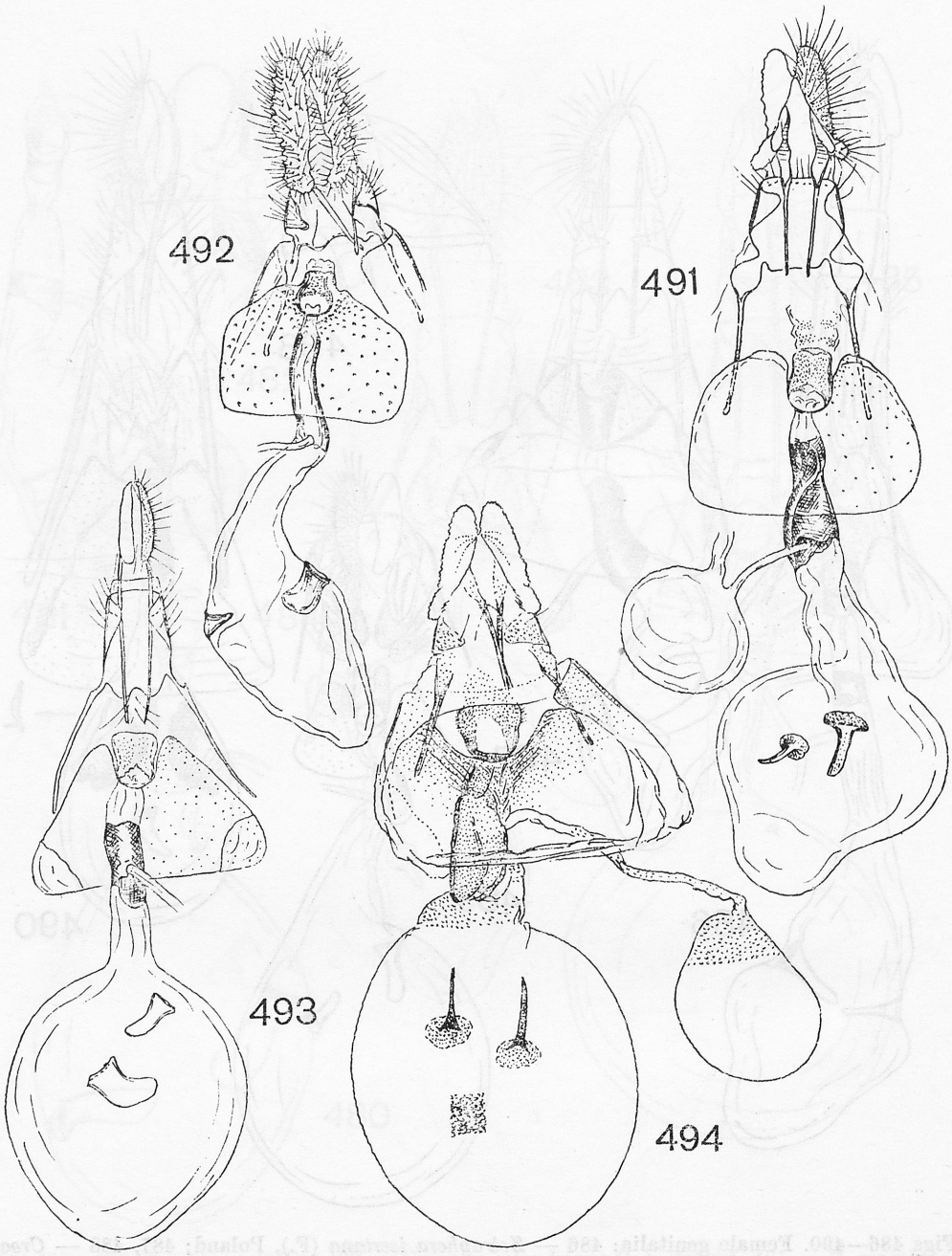

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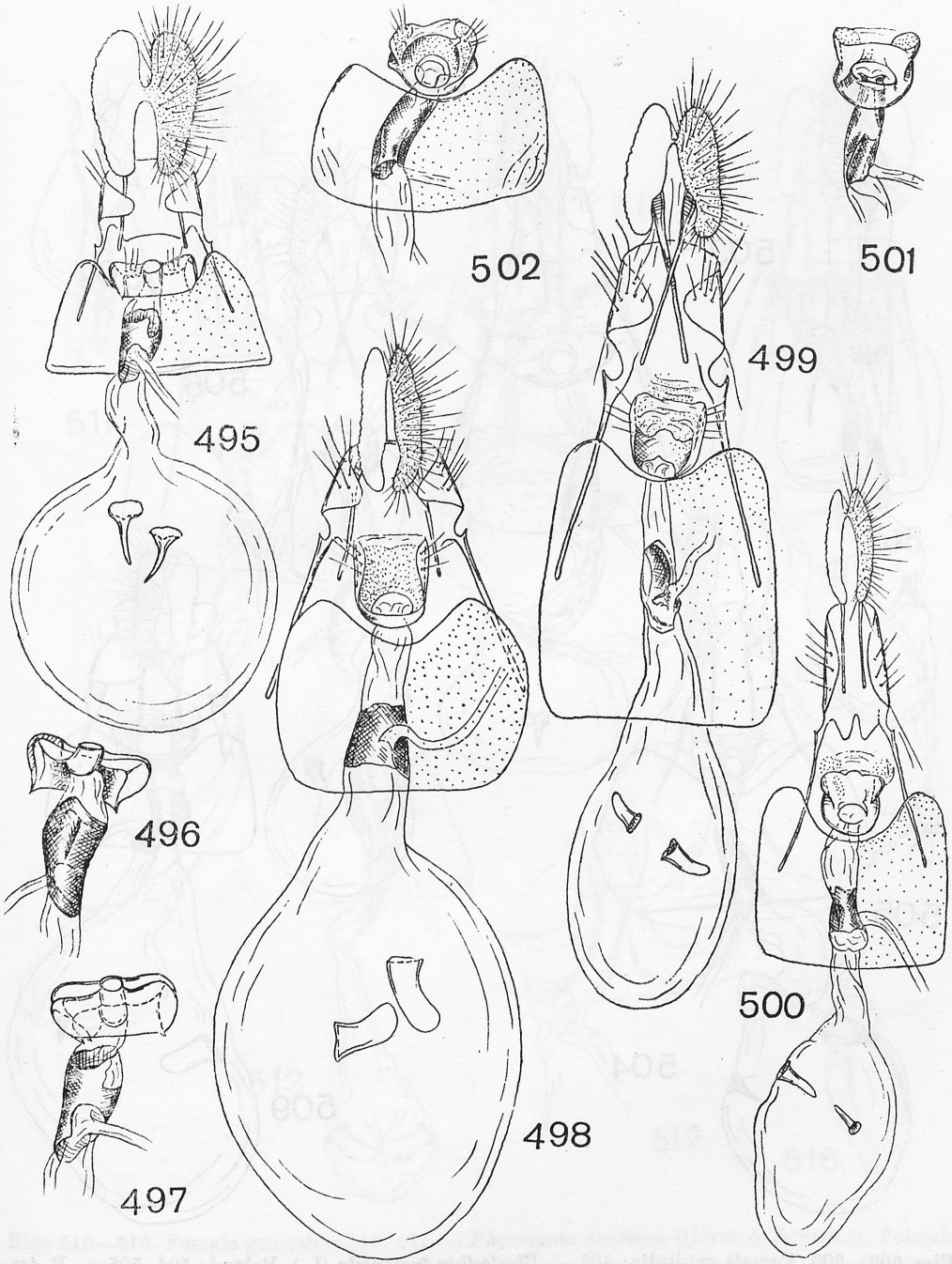

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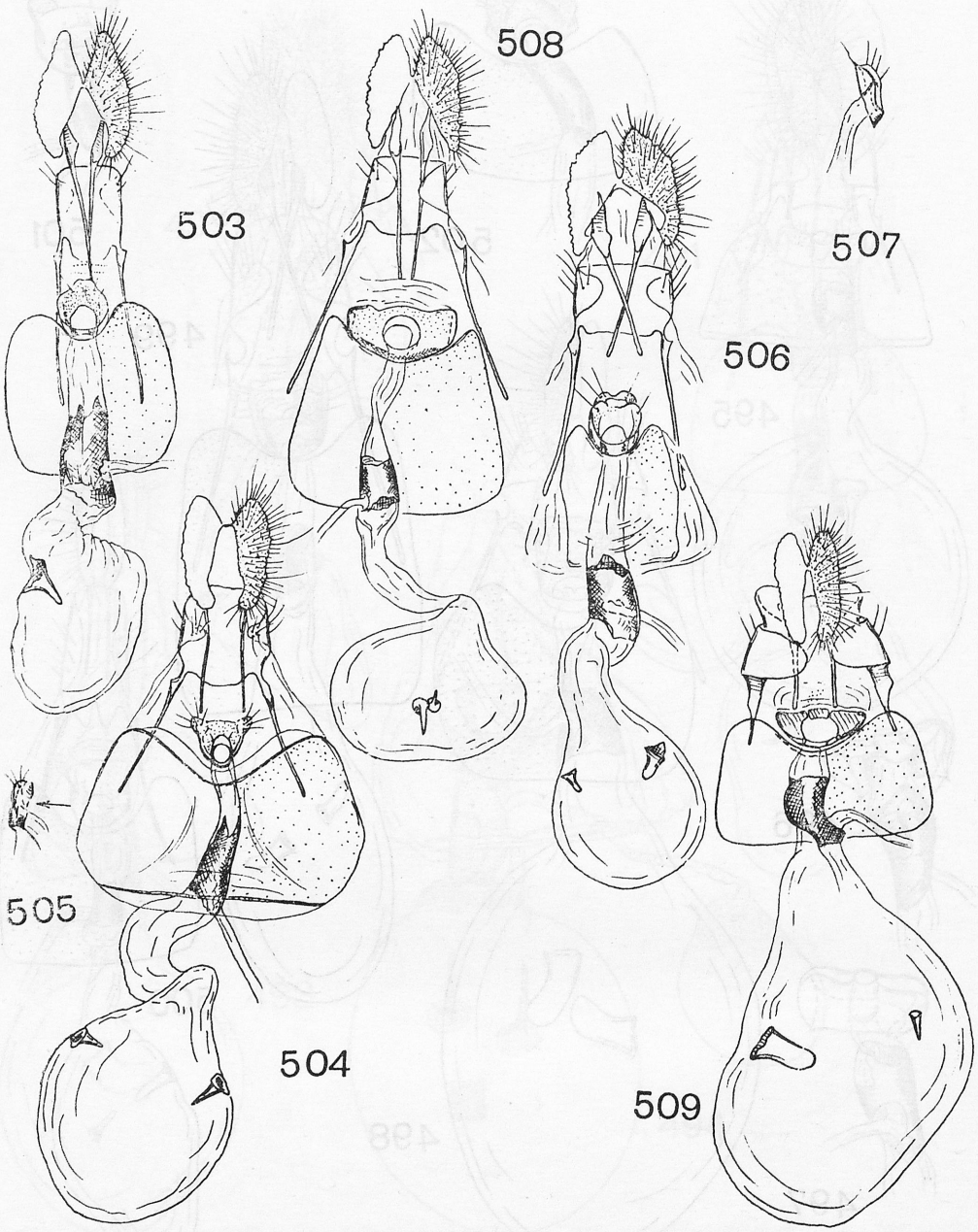

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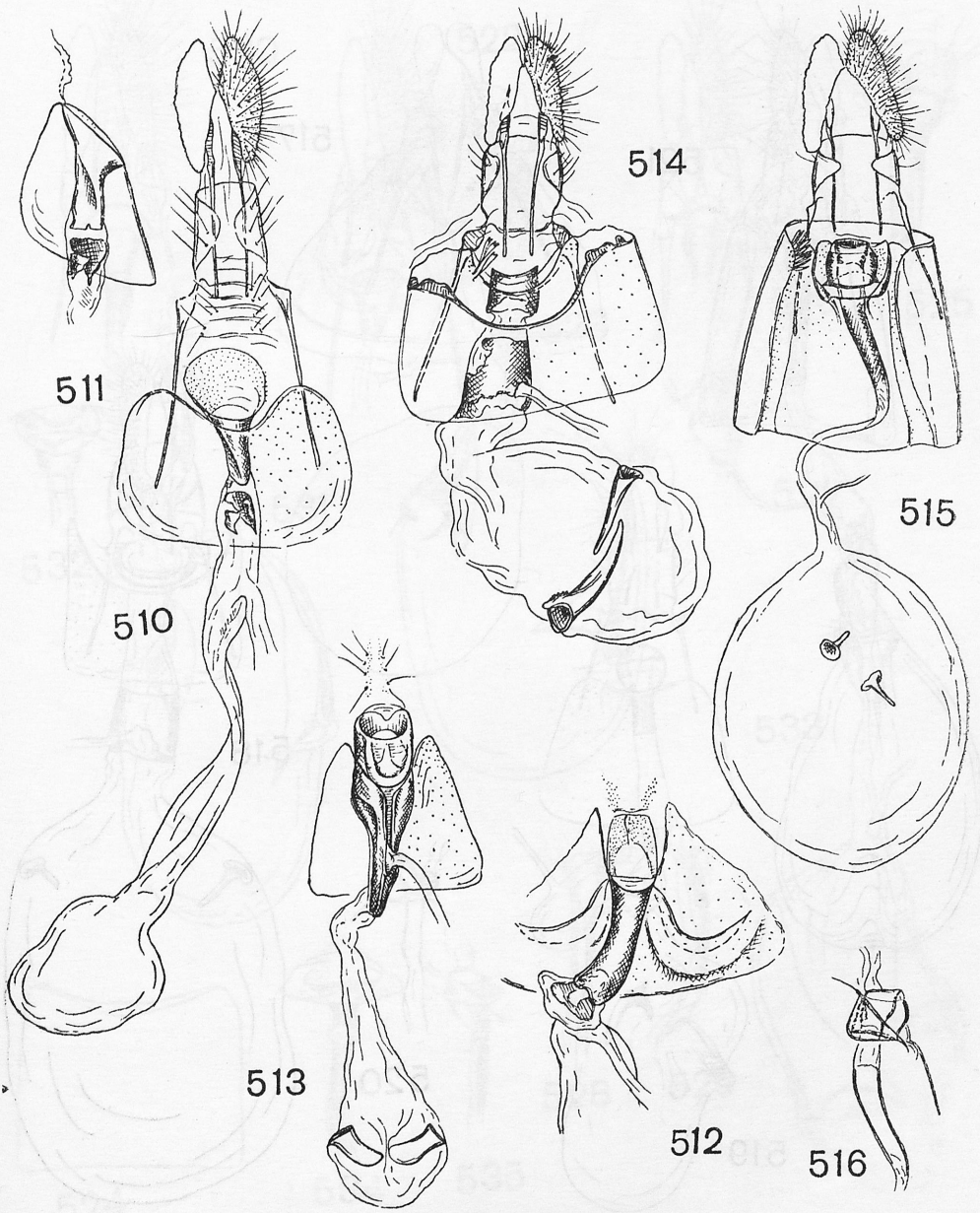

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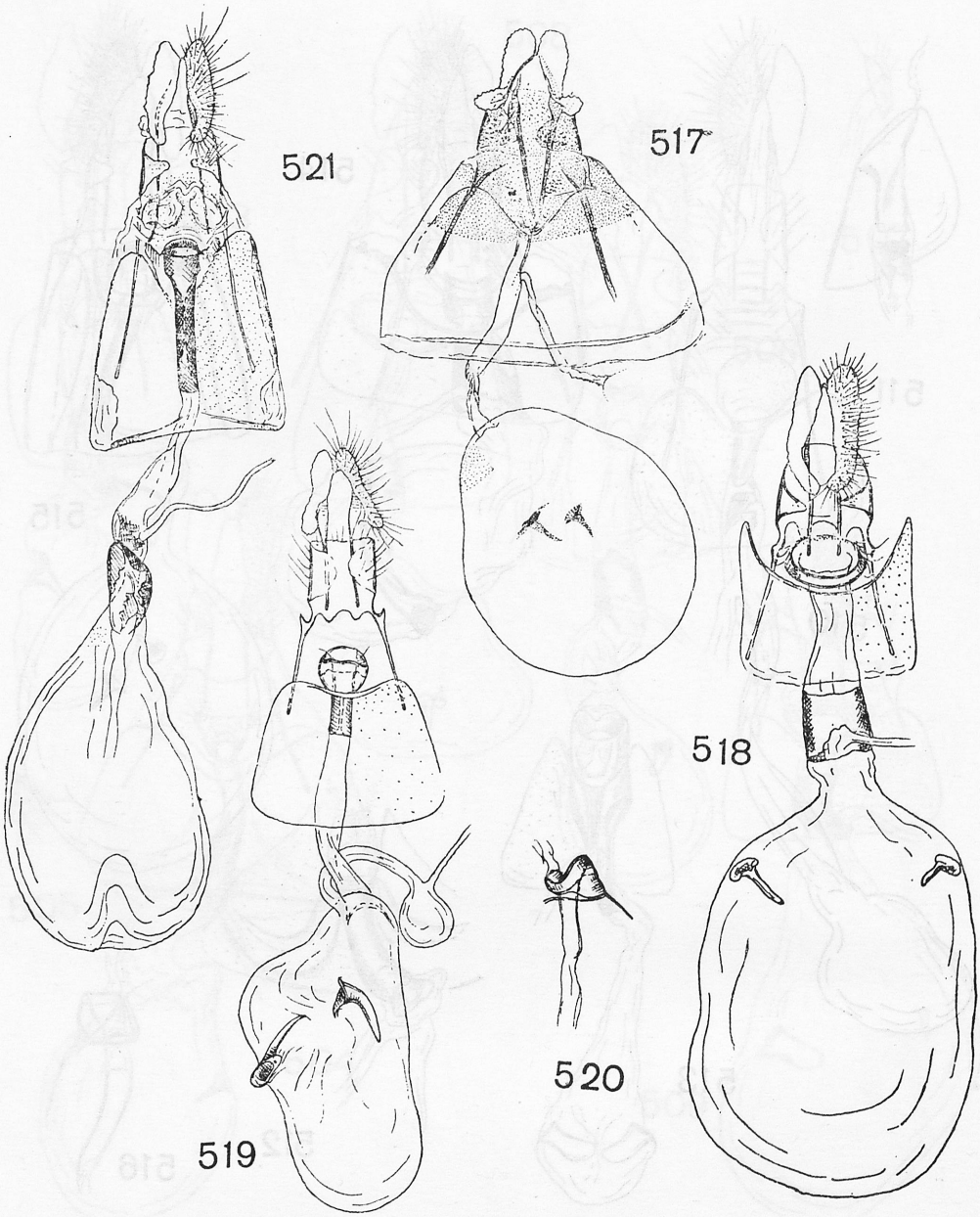

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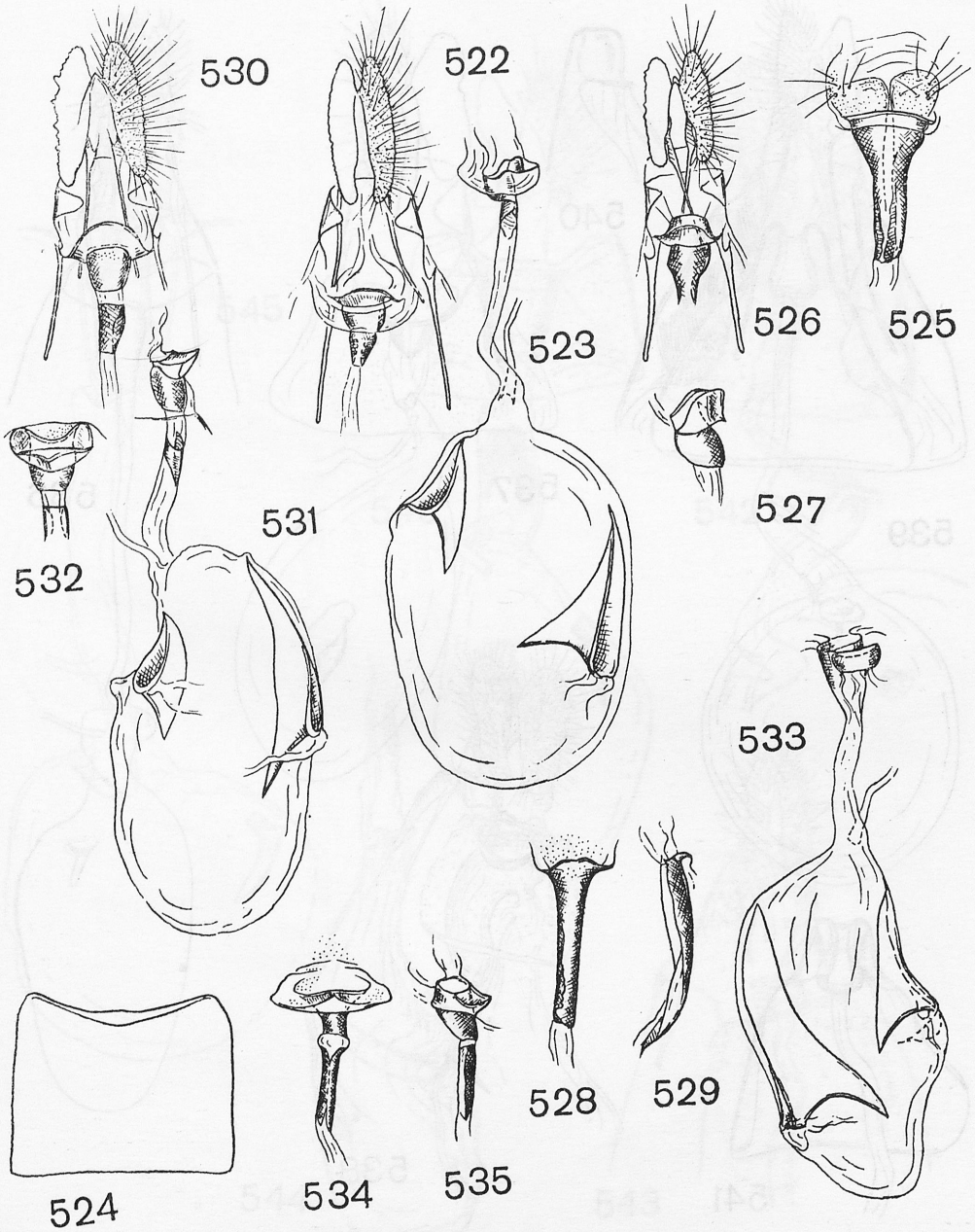

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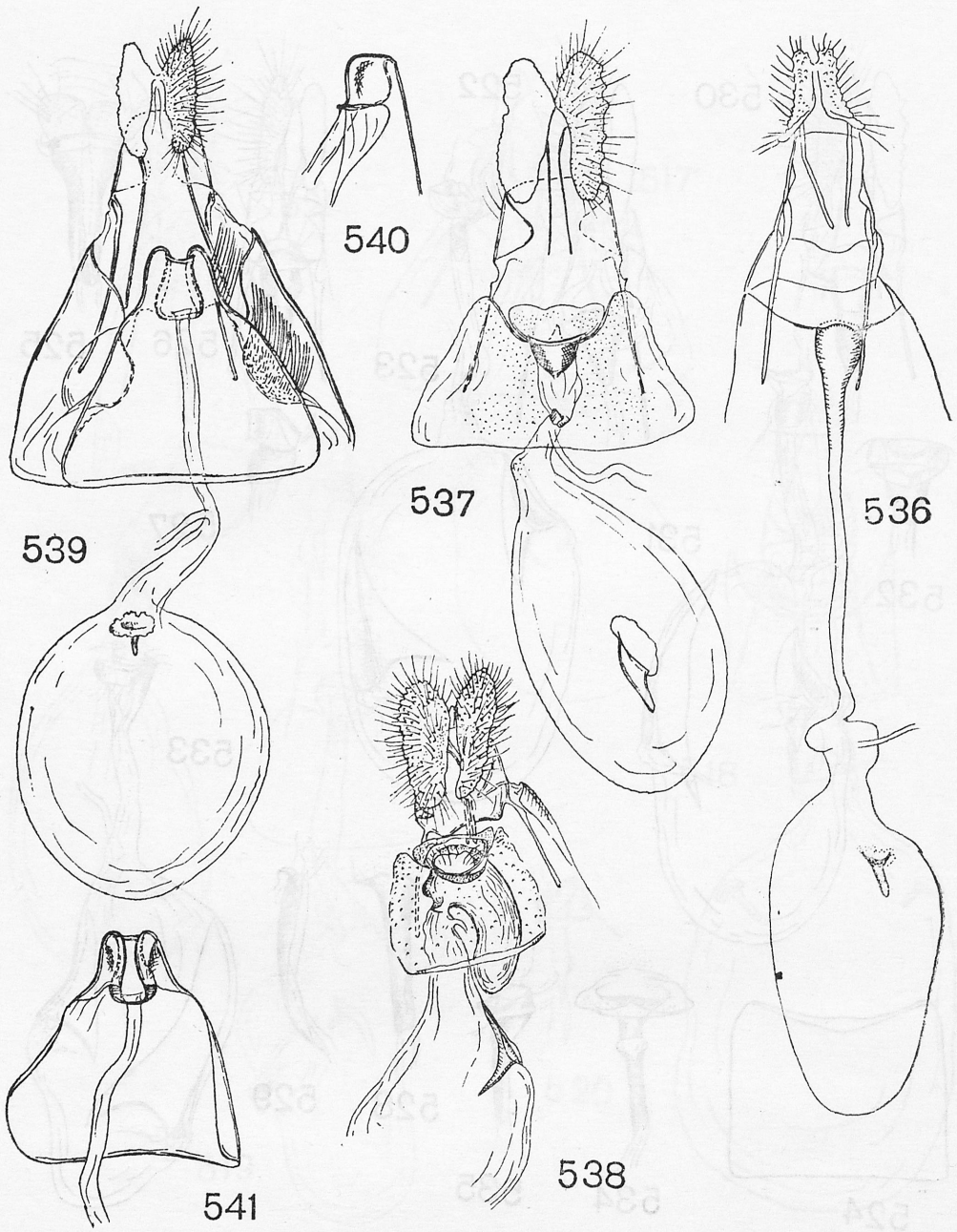

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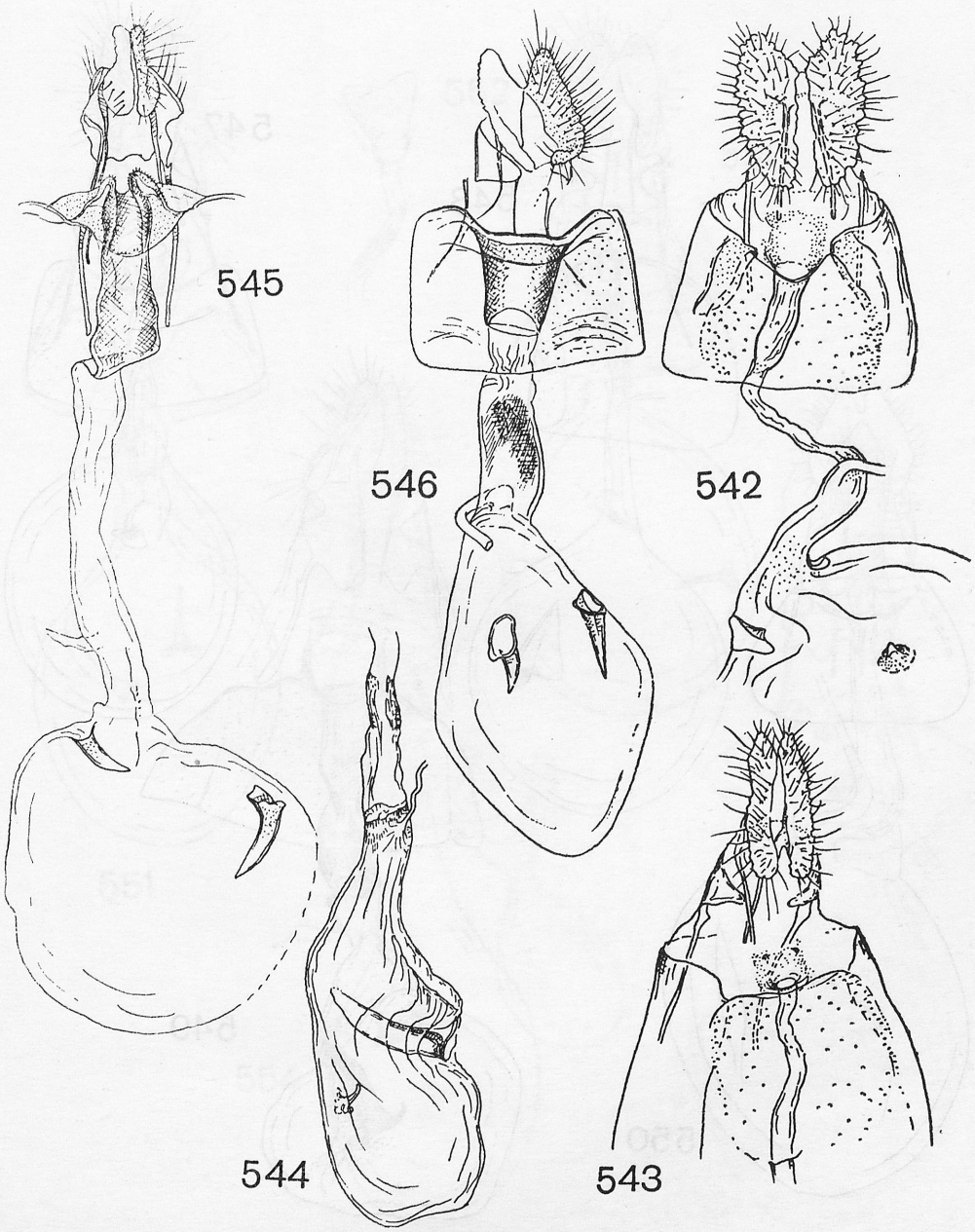

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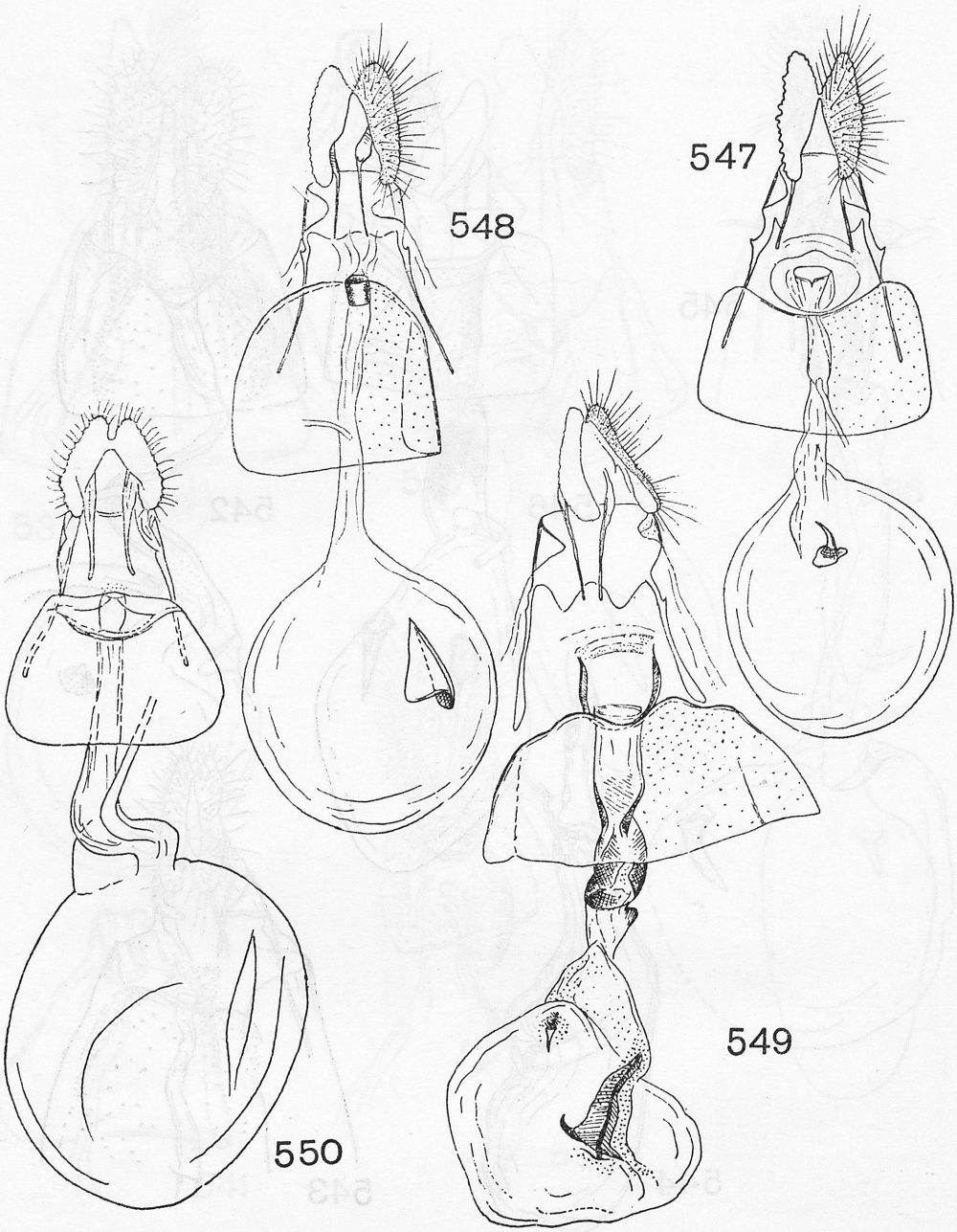

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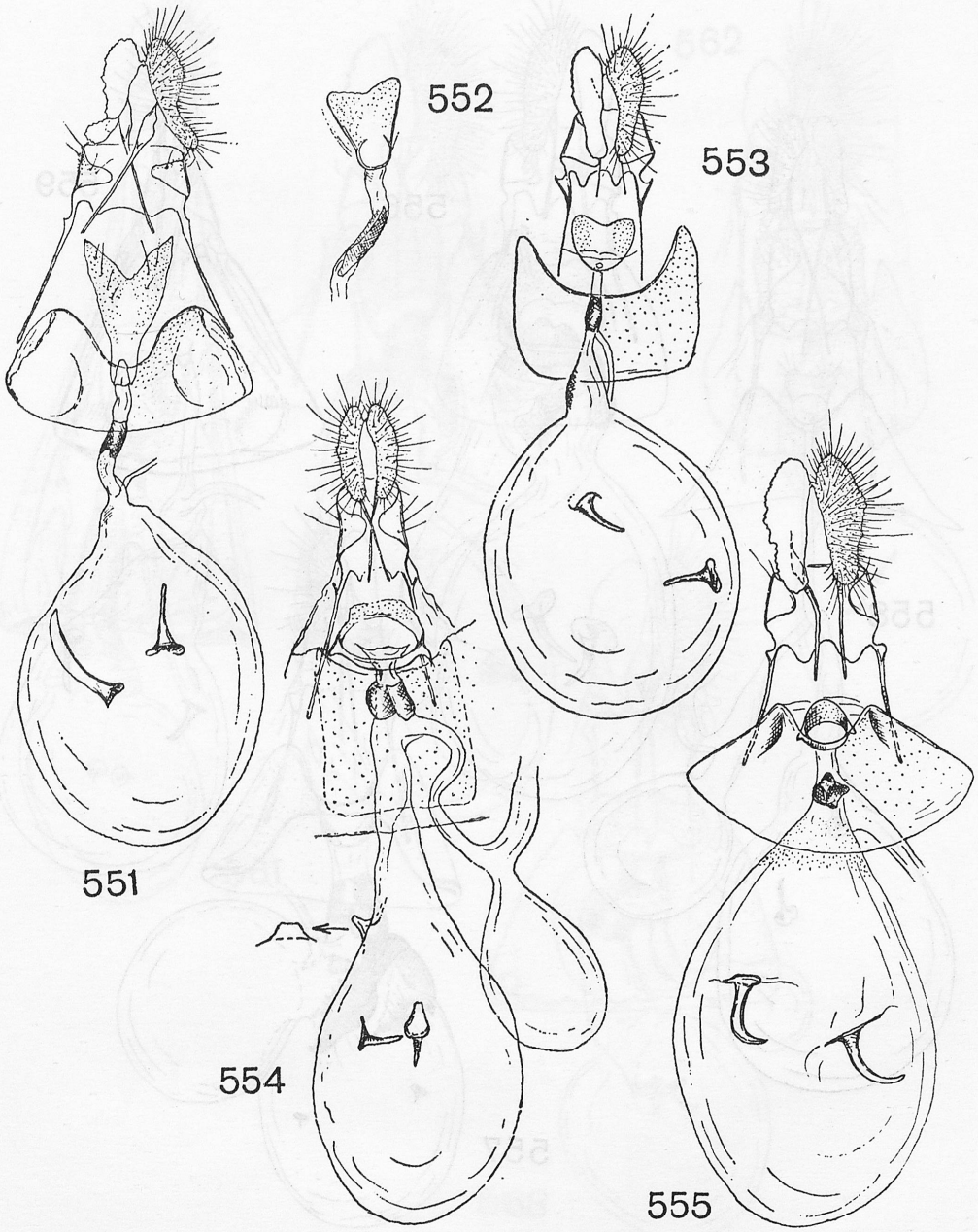

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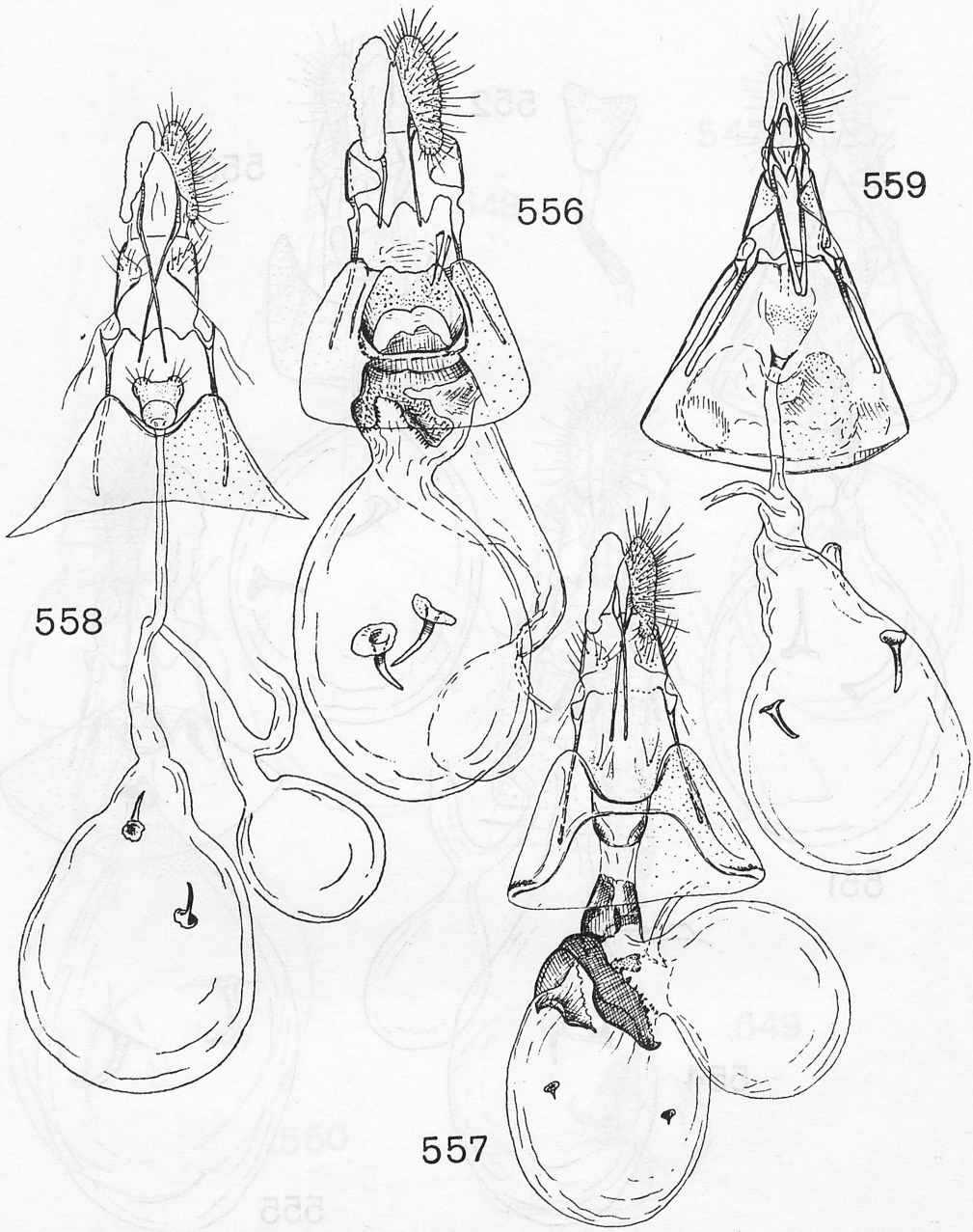

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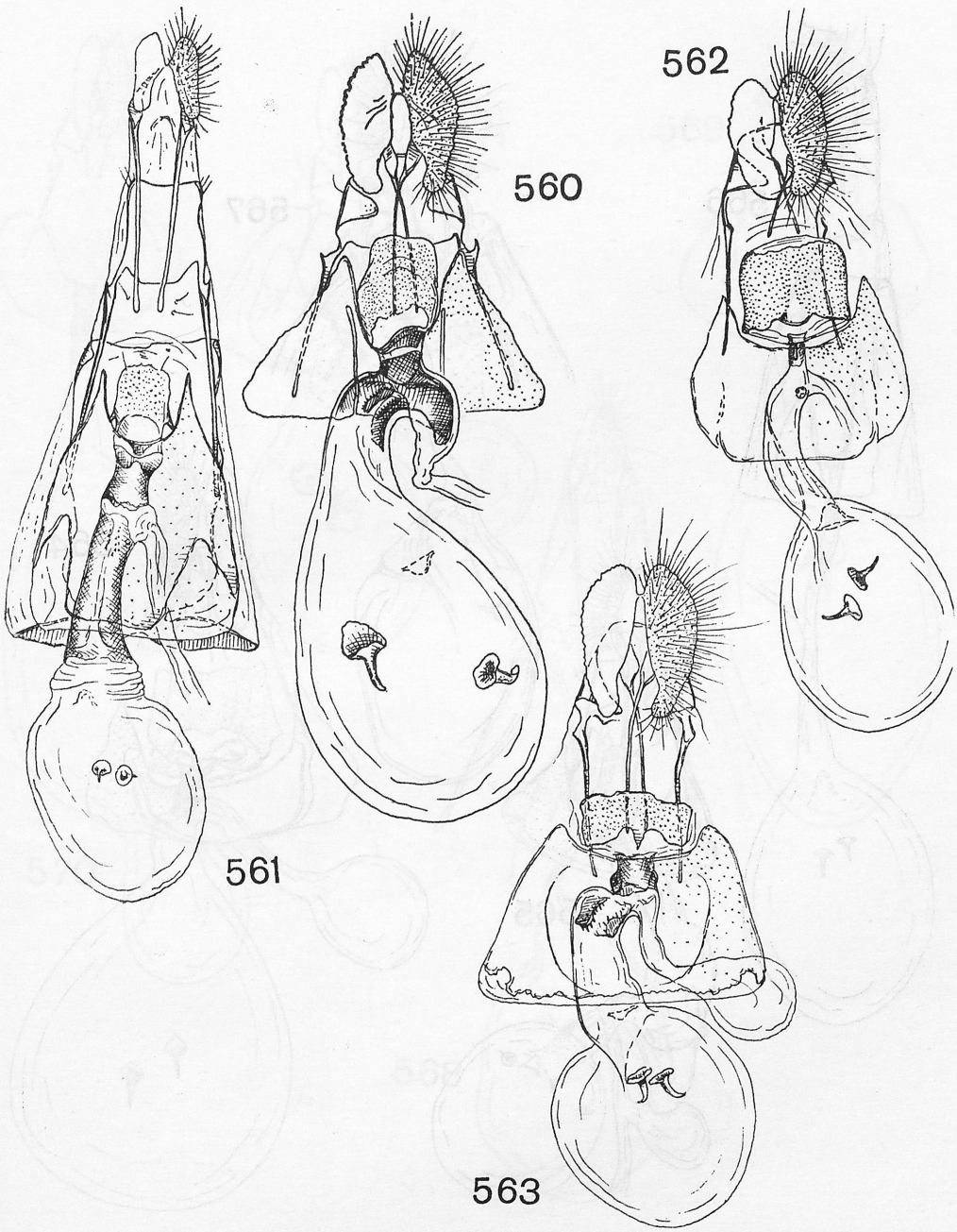

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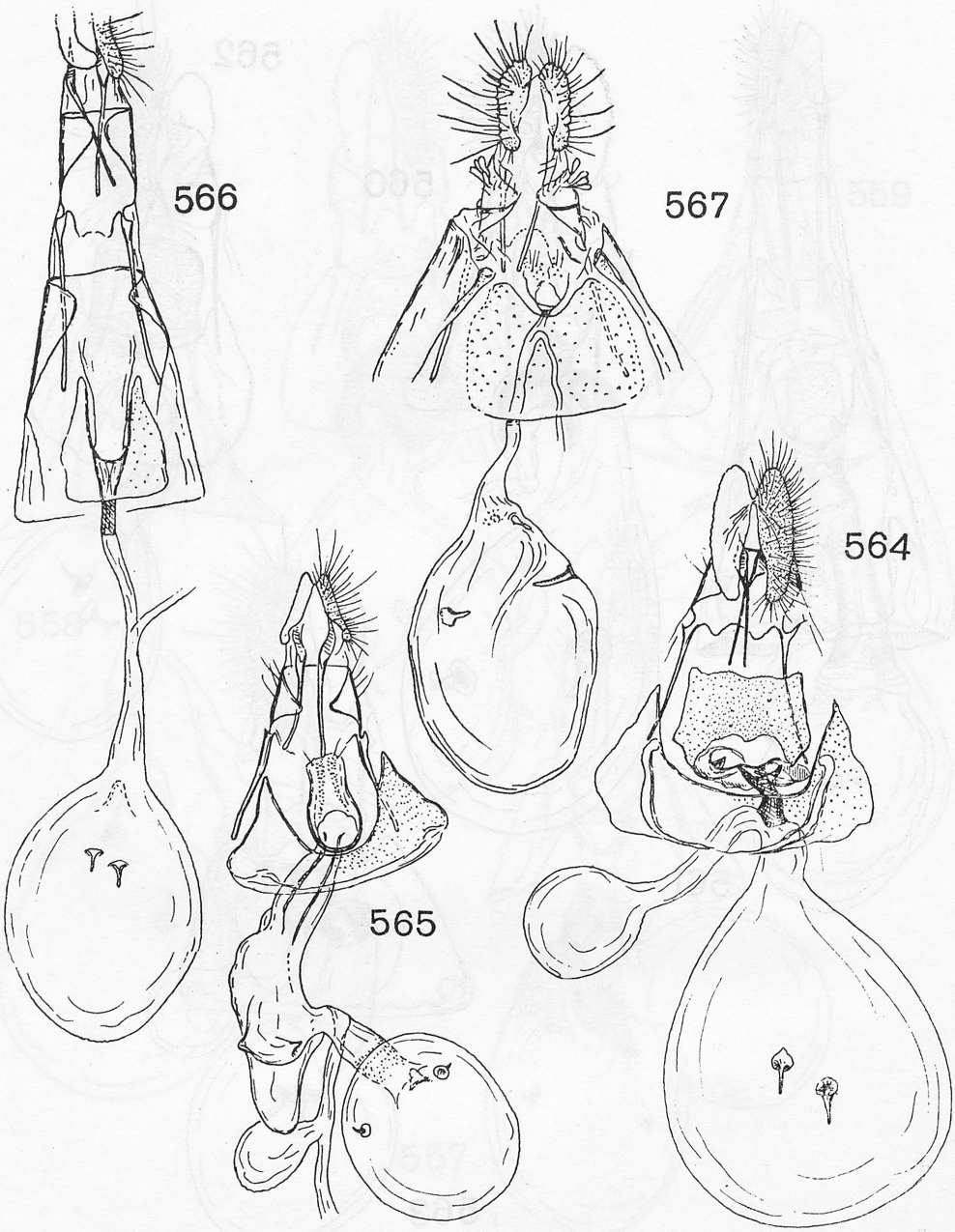

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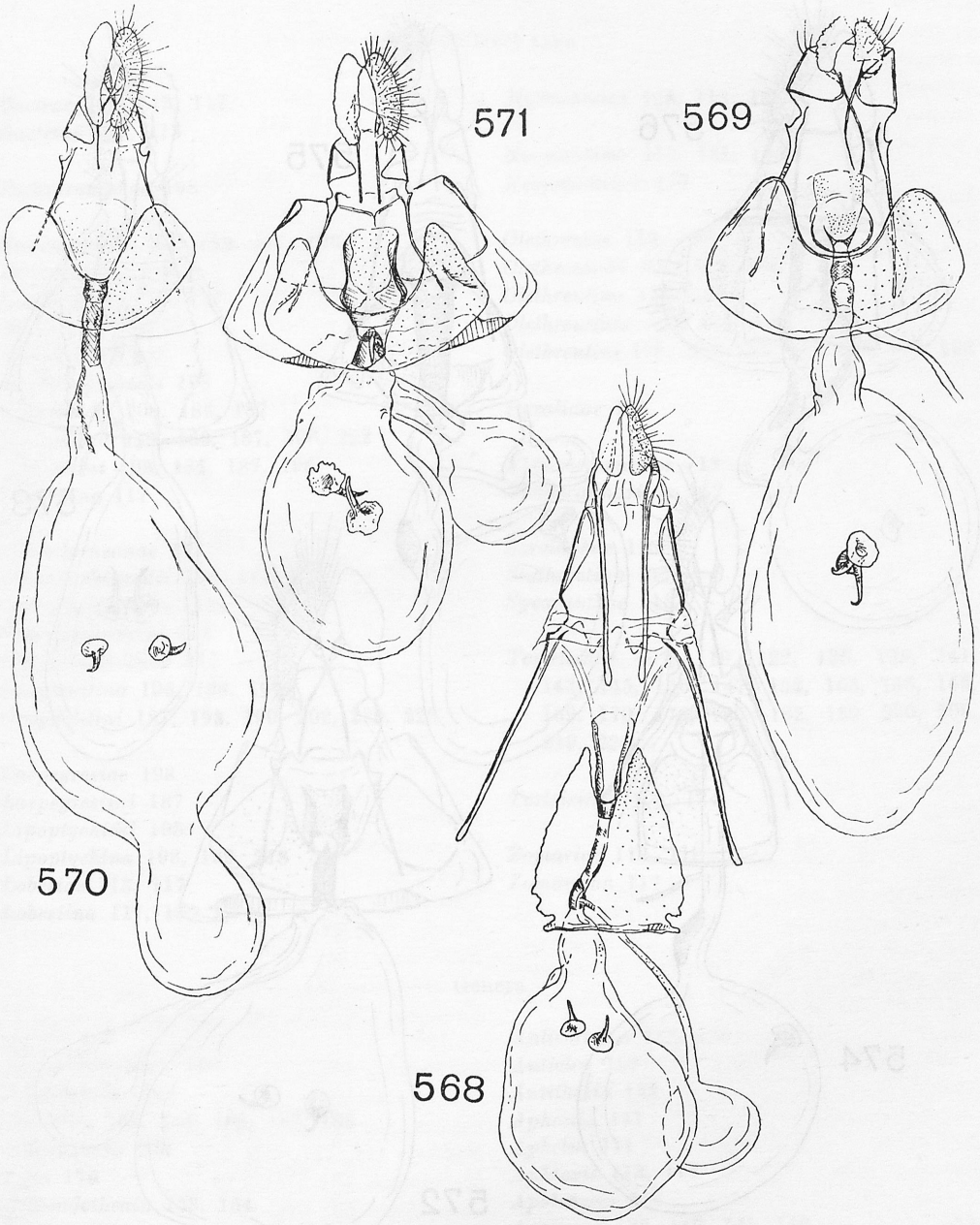

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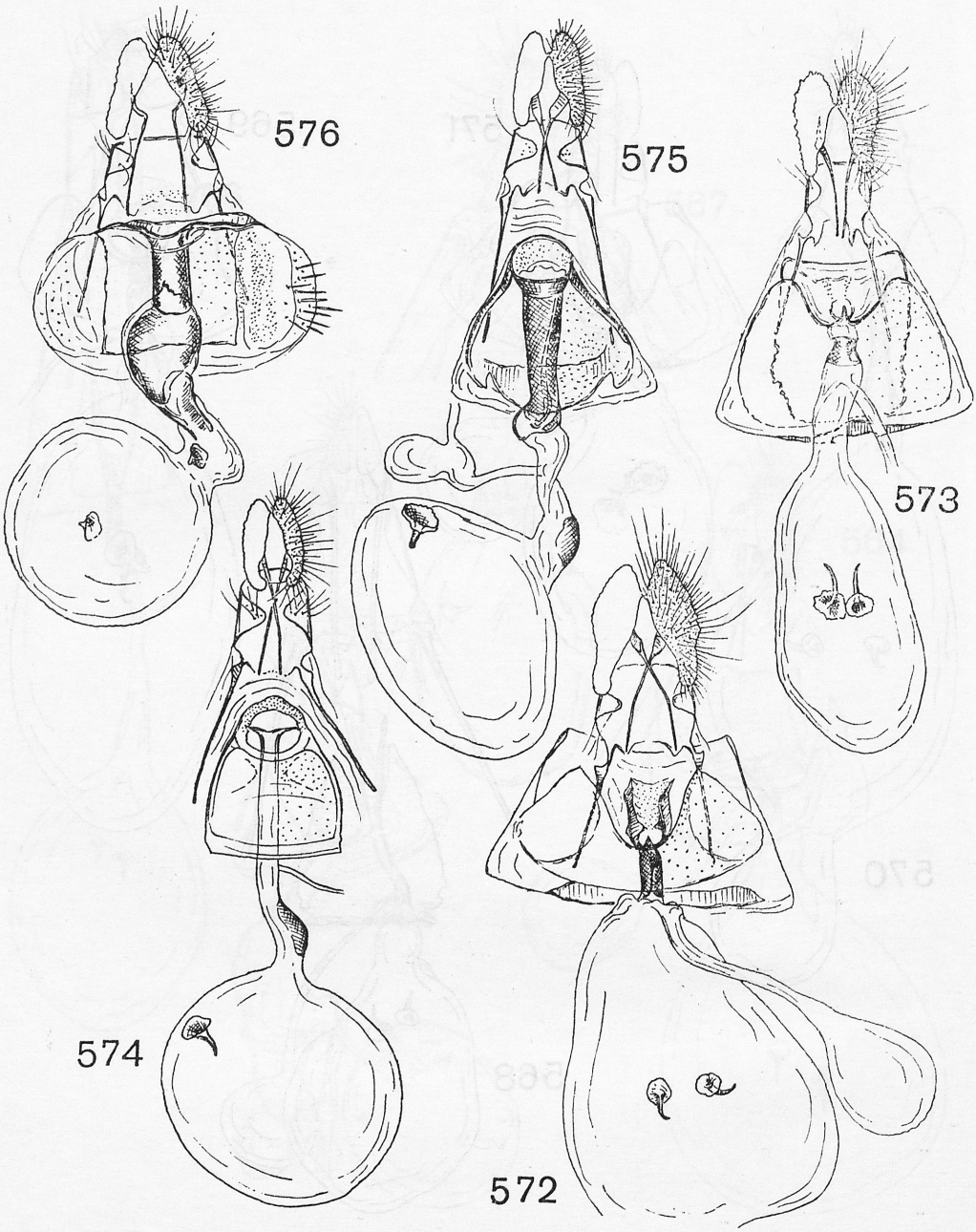

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