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Revision of the Genus *Clepsis* GUENÉE (*Lepidoptera*, *Tortricidae*). Part I

[Pp. 101—198, 227 text-figs]

Rewizja rodzaju *Clepsis* GUENÉE (*Lepidoptera*, *Tortricidae*). Część I

**Abstract.** The present paper is the first part of the monograph of the genus *Clepsis* and consists of the general part and the characteristics of the majority of species. The subgenera into which the genus was divided to date are synonymised and a new division into seven groups is proposed. Two of them, viz., the group of *peritana* and the group of *staintoni* shall be discussed in a separate publication. Three species are described as new, one generic two sub-generic and 15 specific names are sunk as the synonyms.

GENERAL PART

Historical

The genus in question described as monotypical for *Tortrix rusticana* TREIT. (= *senecionana* HBN.) was treated, for over one hundred years as a synonym of *Tortrix* L. In 1954 OBRAZTSOV resurrected it and divided it into three subgenera. In his interpretation the genus contained 59 species (18 treated as the species incertae sedis). The subgenus *Clepsis* s. str. was monotypical, *Pseudamelia* OBR. contained 6 species and the majority of the species were included in *Siclobola* DIAK. OBRAZTSOV designated *Tortrix unicolorana* DUP. as the type species of his *Pseudamelia*, but based his description on *Clepsis rogana* (GUEN.). In this paper I am synonymising *Mochlopyga* DIAK., the monobasic genus erected for *M. humana* MEYR. The systematic position of *Clepsodes* DIAK. is uncertain. This genus was originally described as very close to *Clepsis*, and moreover, its type species was published under this generic name in the same

publication. It seems possible that some further genera shall be synonymised with *Clepsis*. Of the species included by OBRAZTSOV in this genus some are transferable to other genera. These are: *C. lirata* (CHR.), *C. congruentana* (KENN.), *C. laurana* (KENN.), *C. idana* (KENN.), *C. imitator* (WALSM.), *C. alexiana* (KENN.), *C. braccatana* (RBL.), *C. dryochyta* (MEYR.), *C. griseicoma* (MEYR.), *C. insincera* (MEYR.), *C. ishidai* (MATS.), *C. neurophaea* (MEYR.), *C. persimilana* (RBL.), *C. rhytmologa* (MEYR.), *C. semistructa* (MEYR.), *C. simonyi* (RBL.) and *C. striatulana* (WALSM.). The generic position of *C. antigona* (MEYR.), *C. substrigana* (CSTNI.) and *C. trivia* (MEYR.) is doubtful as these species have not been examined genitally and are known to me only from the original descriptions. I am treating them as the species incertae sedis (cf. p. 106).

### Morphology

Head. Labial palpus 1—3; the eye in females of some species smaller than in the males; antenna more or less distinctly dentate and bristled.

Wings fully developed, in the females of some species, however, forewing slender. Costa curved basally, then weakly so, less in female than in male, occasionally indistinctly concave subapically; apex short, rounded in male, in some females pointed, longer than in males. Termen straight, indistinctly convex, or sinuate beyond apex especially in females. Costal fold developed in males of many species, variable in size and form. In several species it is ill-defined or rudimentary. Venation typical of the tribe, with all veins separated, variable to some degree.

Coloration ochreous to brownish, in some species refractive scales present. Pattern, if present, typical of *Tortricinae*, but basal blotch showing a tendency to atrophy. Females of some species are very often monochrome. Variation concerns the shape of pattern and shade of the colour. In some species a variation of the shape of forewing noticed.

Abdomen. Subgenital segment with altered sclerites; distal part of sternite with variably broad areas covered with long hair like scales. These are elongate, transverse patches usually separated from one another medially.

Male genitalia. Tegumen very large to moderate; pedunculus in many species delicate, weakly sclerotized laterally. Uncus usually broad, strong, down-curved, characteristic specifically. Socius in comparison with other *Archipina* moderate or small, occasionally almost completely atrophied. Gnathos strong, armed with various dents, prominences or processes, or simple. Valva characteristic specifically (often characteristic of the groups of species) with more or less distinctly differentiated terminal part. Internal surface strongly sclerotized. The edges of sclerite up-turned to various degrees except for the distal edge. Proximal portion of the sclerite extending dorso-medially to form the labis distal portion of which sometimes called the head, is convex distally. The convexity of labis and (or) its upper edge armed with thorns, the distal portion more or less produced, usually not dentate. The terminal parts of labis

are connected by a membrane, but in a few species they almost touch one another. Sacculus simple or armed with dorsal thorn or process; postmedian part plate-shaped, arranged almost vertically to the valva surface; ventral edge often strongly convex near middle. Remaining area of valva weakly sclerotized connected membranously with tegumen. In some species subterminal part of labis overlapping dorsal portion of valva to connect its outer basal sclerite with a slender sclerite. Anellus membranous occasionally developing a pair of small hairy lobes situated at the tops of juxta. Aedeagus simple or armed with lateral, subterminal (rarely submedian) process. Coecum penis moderate, rarely developing two or three apodemes or the retractors. Cornuti spine shaped.

Female genitalia. Papilla analis typical of *Tortricinae*; ovipositor not telescopic; apophyses rather short, thin; apophyses posteriores occasionally form basal plates showing a tendency of fusion. Eighth tergite typical or large, invaginated dorsally. Sterigma plate-shaped usually with short, cup like proximal part and well developed lamella postvaginalis followed by variably convex, often minutely spined or sculptured membrane. In several species proximal part of sterigma producing fairly long prominences, plate-shaped parts rarely strongly reduced while the cup-shaped portion very strong. Antrum usually well differentiated, provided with internal sclerite, situated often dorsally. Cestum present in the majority of species; signum variable specifically, if developed.

Larva. SWATSCHEK (1958:45) provides the following diagnosis. „Stigmae of the abdominal segments 2—7 not larger than the bases of bristles III situated above them, if larger the group VII of the 9 segment represented only by one bristle or on 8 segment the distance to bristle II is smaller than to bristle I. The distances among bristles VIII of 9 abdominal segment are not larger than on segment 8. Double crowns of crochets of the abdominal legs present. Group VII of segments 1, 2 and 7 consists of 3 bristles”. This description is based on 7 Palaearctic species. MACKAY (1962:66) working on the Nearctic fauna examined also 7 species, three of which, however, belong in other genera. MACKAY divided *Clepsis* into three groups, group one consists of single species belonging in *Argyrotaenia* STEPH., group two of 3 species of *Clepsis* and two species of *Aphelia* HBN. and group three of single *Clepsis* species, viz., *clemensiana*.

### Bionomics

The bionomic data are rather scarce. The eggs are deposited in small groups on the upper surface of the leaves or on the bark. The larvae build the hibernacula and shelters or utilise the shelters of other leaf-deforming insects (cf. p. 153). The food-plants are various shrubs and trees incl. the conifers. The representatives of the genus are in general oligophagous and only a few species seem poliphagous. The hibernation takes place in the larval stage. One to several generations yearly.

## Distribution

The genus is widely distributed in the Palaearctic Region being also known from the Nearctic and Oriental Regions. Several species occur in the Neotropical Region (group of *peritana*), some are endemic in Madeira (group of *stantoni*). It is also possible that some species of *Clepsis* shall be found in Ethiopian and Australian Regions (the occurrence of *consimilana* in Madagascar is insufficiently explained). The Oriental fauna is represented by innumerable species of which at least two are common also to the Palaearctic Region. These two species (*melissa* and *humana*) have interesting vertical distribution and are adapted to the climatic conditions at sea level in Bengal and at high altitudes (ca 4000 m) in Nepal. There is only one species (*moeschleriana*) Holarctic in distribution. It belongs in the group of species (group of *rogana*) the representatives of which are in large percent the boreo-alpine elements.

## Systematics

**Position of the genus.** OBRAZTSOV (1955:193) placed *Clepsis* between *Aphelia* HBN. and *Adoxophyes* MEYR., the genera characterised with atrophied costa of valva. He correctly noted that the most important character of this genus is the presence of the „processus basalis of valva”, here called the labis. According to this character one can divide the genera of the *Archipina* into two groups. I am including *Clepsis* in the group characterised by transtilla lacking and labis specialised. It is regarded as one of the highly specialised genera.

**Infrageneric division.** As already mentioned the genus was divided by OBRAZTSOV into three subgenera although he realised that several morphological characters are variably distributed and all combinations may be found. This system was adopted by SWATSCHEK (1958:45) in his larval systematics. OBRAZTSOV gives the following characteristics of the subgenera. The subgenus *Clepsis* s. str. is distinct by bifurcate aedeagus, presence of the anellus lobes and simple gnathos; in *Pseudamelia* aedeagus is simple, anellus lobes are absent and gnathos develops lateral „corners”; *Siclobola* is characterised by simple tip of aedeagus, simple gnathos and absence of anellus lobes. The first of the characters recorded by OBRAZTSOV, i. e. bifurcation of the aedeagus does not exist. In *senecionana*, the type species of *Clepsis*, there is only a large dorso-lateral process without any terminal opening. Moreover, in many species a similar, however, smaller process occurs. It may be found in almost all the groups of species, mainly in his *Siclobola*. One can suppose that this character appeared independently in the subfamily *Tortricinae* and in this genus several times. The anellus lobes occurring also in various *Tortricinae* moths is characteristic of some *Clepsis* species, not necessarily closely related ones. The simple

gnathos is common for all three OBRAZTSOV's subgenera. The breadth of the gnathos arm varies specifically. The hooks or prominences may be present or absent in the species closely correlated to one the other.

The examination of a large number of species allowed me to conclude that there is no support of any subgeneric division. I am therefore dividing this genus into seven groups the differences among which are rather slight. There are also some species the systematic positions of which are not certain and which, of necessity, are included into the particular groups.

The group of *rogana*. In this group belong the species with large tegumen and uncus. The gnathos is often strong and may develop various prominences or dents. The valva is in almost all species similarly shaped, tapering terminally with rather weakly differentiated terminal, brachiola like portion. The labis, is strong, provided with broad terminal portion and rather slender head. In the female the antrum develops distinct proximal sack and the sterigma is sometimes highly specialised.

The group of *urina* includes the species with very strong tegumen. There is a distinct evolutionary trend expressed in diminution of the tegumen and uncus, parallel to that in the preceding group. The characters of the valva-complex are common to all the species of this group. The valva is slender, terminating in a very short, rounded apically terminal portion; the labis is strongly convex dorsally and produces rather slender terminal part, also the internal sclerite of the valva is proportionally slender. The characters of the female genitalia are important specifically.

The group of *unicolorana* characterise with more delicate tegumen, broad uncus, simple gnathos. The socius is strongly reduced; the sacculus dentate ventrally, broad, the labis broad with ill-defined distal part. The membrane beneath base of labis is marked by a small group of hair. The sterigma is rather short and shows a tendency to develop small proximal prominences; the signum is wanting. The differences among the species are very slight.

The group of *pallidana* consists of several small subgroups. Almost all parts of the genitalia are characteristic specifically. The tegumen is smaller than in the two first groups, the uncus usually broad, but much smaller than in the representatives of the *rogana* group. The valva rather resembles that in above mentioned group.

The group of *zeuglodon* is represented by single species and characterised by short gnathos, and narrow base of labis. The sclerite of the internal surface of valva is large and the aedeagus develops three large apodemes of the retracting muscles. This group has a separate position in the genus.

The group of *peritana* is characterised by more or less distinctly elongate distal portion of the valva, rather small labis terminating in small distal part. This group characteristic of the New World is probably closely related to the *pallidana* group and involved some interesting characters e. g. the spirally coiled ductus bursae or lateral position of the opening for the ductus ejaculatorius in some species.

The group of *staintoni* differs from the preceding group in having strongly broadened basal portion of the valva and long terminal parts of the labis head.

#### Species incertae sedis

*Tortrix antigona* MEYRICK, 1931, Exot. *Microlepid.*, 4: 150. Bulgaria.

*Tortrix substrigana* CONSTANTINI, 1923, Neue Beirt. Insektenkde., 2: 106. Italy.

*Tortrix trivia* MEYRICK, 1913, Ent. Mitt., 2: 297. S. E. Europe, N. W. Africa (after OBRATZSOV, 1955).

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#### Abbreviations

AMNH	— American Museum Natural History, New York
BM	— British Museum (Natural History), London
MGAB	— Museul de Istorie Naturală „Grigore Antipa”, Bucharest
NHMH	— Naturhistorisches Museum, Wien
MNHNP	— Muséum National d'Histoire Naturelle, Paris
MNMB	— Magyar Nemzeti Múzeum, Budapest
PhANS	— Philadelphia Academy of Natural Sciences
UCB	— University of California, Berkeley
UOP	— University of Osaka Prefecture, Osaka
USNM	— United States National Museum, Washington
ZFMK	— Zoologisches Forschungsinstitut und Museum „Alexander König”, Bonn
ZIANL	— Zoologicheskij Institut Akademii Nauk U.S.S.R., Leningrad
ZIKU	— Zoologicheskij Institut Kievskogo Universiteta, Kiev
ZMH	— Zoological Museum of the University, Helsinki
ZMB	— Institut für Spezielle Zoologie und Zoologisches Museum der Humboldt Universität, Berlin
ZSM	— Zoologische Sammlung des Bayerischen Staates, München

### SYSTEMATIC PART

#### *Clepsis* GUENÉE

*Clepsis* GUENÉE, 1845, Anns Soc. ent. Fr., (2) 3: 168. Type species: *Tortrix rusticana* TREITSCHKE, 1830 = [*Tortrix*] *senecionana* HÜBNER, [1818—1819], by original designation.

*Smicrotes* CLEMENS, 1860, Proc. Acad. nat. Sci. Philad., [12]: 355. Type species: *Smicrotes peritana* CLEMENS, 1860, by original designation.

*Mochlopyga* DIAKONOFF, 1955, Veröff. zool. StSamml. München, 8:44. Type species: *Tortrix humana* MEYRICK, 1912, by original designation — *synon. nov.*

*Siclobola* DIAKONOFF, 1947, Mem. Inst. scient. Madagascar, (A) 1 (1):25. Type species: *Tortrix unifasciana* DUPONCHEL, 1843 = [*Tortrix*] *consimilana* HÜBNER, [1814—1817], by original designation — *synon. nov.*

*Pseudamelia* OBRATZSOV, 1954, Tijdschr. Ent., 97 (3):196. Type species: *Tortrix unicolorana*: [non DUPONCHEL 1835] OBRATZSOV, 1954, by original designation, established as a subgenus of *Clepsis* GUENÉE — *synon. nov.*

## REVIEW OF SPECIES

The group of *rogana*

*Clepsis Clepsis* OBRAZTSOV, 1954, Tijdschr. Ent., 97 (3): 196.

*Clepsis Pseudamelia* OBRAZTSOV, 1954 *ibid.*: 196.

Labial palpus 1.5—2.5, usually 2. Costal fold in male absent. Sexual dimorphism in several species distinct; the females often narrow-winged with apex longer than in male and termen more oblique. In some males weak refractive pattern developed.

Male genitalia: in a number of species tegumen large, uncus strong, often tapering basally; socius fairly large; valva broad, tapering terminally with rather weakly differentiated distal part; sacculus convex ventrally, head of labis elongate with broad, usually short terminal portion. Aedeagus terminating in ventral denticle, rarely provided with lateral process; anellus lobes well developed only in one species; sacculus armed sometimes with dorsal denticle.

In female genitalia sterigma plate-shaped, concave in middle dorsally, with proximal funnel-shaped prominences or rounded proximally. Lateral arms of sterigma usually slender; various areas of minute sculpture present in sterigma or in membrane beyond it. Antrum curved, often swung, provided with more or less distinct internal sclerite and with well developed proximal sack; cestum occurring in almost all species; signum usually capitate.

Distribution. In this group belong the boreal and boreo-alpine species inhabiting the Palaearctic and Nearctic Regions. They do not enter either the Himalaya Mtns. nor Southern China; the areals of the Holarctic *moeschleriana* reaches North America as far as to the mountains of California.

Comparative remarks. Based on the male genitalia two subgroups may be differentiated, in one of them (subgroup of *rogana*) the arm of the gnathos is strongly broadened, dentate and in the second subgroup (subgroup of *senecionana*) the gnathos is simple, rather slender. The systematic position of some species is not clear. *C. altudinaria* shows some peculiar genital characters as very long, swung aedeagus and tube-shaped, coiled proximal part of sterigma. I am placing it at the end of the *rogana* subgroup. The position of *ketmenana* is also doubtful similarly as that of *hissarica*, *zelleriana*, *luctuosana* and *praeclarana*. The female genitalia of some species are highly specialised e. g. in the above mentioned *altudinaria* or in *senecionana* in which a large part of the sterigma is membranous. Those characters are rather of species importance only. The differences among the species are distinct except in a small number of species closely related to *rogana* (cf. p. 000).

*Clepsis moeschleriana* (WOCKE)

*Tortrix moeschleriana* WOCKE, 1862, Stettin. ent. Ztg., 23: 45. Type locality: Labrador.

*Tortrix algidana* MOESCHLER, 1862, Wien. ent. Mschr., 6: 138. Type locality: Labrador (from title of work).

*Tortrix gelidana* MOESCHLER, 1862, ibid.: 138, pl. 1, fig. 9. Type locality: Labrador (from title of work).

*Clepsis altaiensis* KOSTIUK, 1975, Vest. Zool., Kiev, 1975 (6):34, fig. 1 — *synon. nov.* Type locality: at Aktash, Kuraj Range. Holotype, male: „Gornyi Altai, Kuraiskij hrebet u Aktasha, 2600—2700 m, gornaia tundra, 15. VII. 1974, Iu. KOSTIUK”; coll. ZIKU.

FREEMAN, 1858:63 (*Clepsis*).

Head, labial palpus, scape of antenna and thorax ferruginous to rust brown occasionally scaled ochreous or brown, flagellum of antenna paler, brown scaled. Forewing in male 7—11 mm, subtriangular; costa usually weakly curved outwards; uncus broad, rounded; termen oblique, rather straight. Ground colour ochreous more or less distinctly strigulated ochreous brown or ferruginous, pattern rather concolorous with strigulation and suffusion of veins. It consists of basal blotch extending from 1/5 of costa to about middle of dorsum, parallel median fascia and subtriangular subapical blotch. Fringes rather concolorous with ground colour, suffused brownish or grey at apex and tornus, with weak basal line. Hindwing fuscous often with cream terminal strigulate part and white cream fringes.

Female somewhat smaller than male with much slenderer forewing. Costa indistinctly concave postmedially; apex pointed; termen strongly oblique, hardly sinuate beyond apex.

Variation. Shape of the forewing somewhat variable mainly in the males. Ground colour in some specimens pale, ochreous olive to ochreous cream suffused grey towards base and terminally. In some examined specimens ground colour is pale ferruginous. Pattern varies from ferruginous to dark brown; basal blotch shows a tendency to atrophy, median fascia to divide into two or three parts. Some almost unicolorous ferruginous specimens found. Females often with indistinct basal portion of the basal blotch or without any. Hindwing in the majority of the specimens brownish grey with cream distal third in which dark transverse strigulation occurs. Rarely almost whole wing (except for the anal part) is whitish cream.

Male genitalia (figs. 1—4). Uncus rather short, strongly broadening basally; arm of gnathos distinctly broadening before end. Valva broad; sacculus with strong, rounded ventral prominence situated postmedially; labis fairly short, strongly dentate. Aedeagus slender slightly curving to the right, pointed ventrolaterally at the end, often provided with small lateral denticle before end laterally. About 10 thin cornuti in vesica.

Female genitalia (fig. 179). Sterigma characterised by strong proximal prominences placed laterally; antrum well sclerotized, fairly long; ductus bursae membranous or with weak subterminal sclerite; signum typical, capitate.

Bionomics. Moth collected in June and July. One specimen taken in Colorado in August may belong to the second generation. Food plant is *Daphnium barbeyi* (data from the label of a specimen collected in Alaska).

Distribution. This species is known from Labrador to Alaska; Banff, Atlanta; Manitoba; Mt. Washington, New Hampshire and Colorado. Recently discovered by J. KOSTIUK in Altai Mtns. (Kuraiskij hrebet).

Comments. This boreo-alpine species was collected mainly on higher altitudes, e. g. of 2600 m in Altai and 4000 m in Colorado. It is probably widely distributed in the northern part of the Palaearctic Region. It may be also found on isolated stands southwards to its main area of distribution. Dr. KOSTIUK (pers. communic.) found that the holotype of his *altaiensis* does not differ from the specimens of *moeschleriana* and that the female genitalia illustrated by him (1975, fig. 2) belong to *crispinana*.

### *Clepsis balcanica* (REBEL)

*Tortrix balcanica* REBEL, 1917, Sber. Akad. Wiss. Wien. math.-nat. K., 126:801. Type locality: Zljeb. Lectotype (designated by RAZOWSKI, 1971: 475), ♂: "Neu Monteneg. [ro], Zljeb, Penth. [er], 21. VI. 1916", G. S. 2436 [NHMW]; coll. NHMW.

*Tortrix wassiana* SCHMIDT, 1930, Int. ent. Z., 24: 116, figs. 1, 2, 4. Type locality: Retyezat Mts., Roumania. Lectotype, ♂ (here designated): "Retyezat, 1900—2200 m, 926. VII. 28, DIÓSZEGHY", not dissected. Coll. MNMB.

Labial palpus ca 1.5, cream, often mixed ochreous; remaining parts of head and thorax concolorous, flagellum paler. In some specimens thorax yellow-brown dorsally. In male forewing 8—9 mm, expanding terminally; costa weakly curved outwards; termen strongly oblique, slightly concave medially. Ground colour pale or dark yellow often mixed ochreous, paler towards termen. Pattern dark ochreous red or brownish ochreous, often (especially the subapical blotch) tinged brown. Fringes concolorous with ground colour, ferruginous before apex and at dorsum. Hindwing pale brown-grey; fringes dirty cream with brownish basal line.

Forewing of female (8 mm) slenderer than in male with costa more distinctly curved outwards to 1/3, slightly sinuate subapically. Apex acute, longer than in male; termen strongly oblique. Ground colour darker, pattern rust brown; basal blotch indistinct.

Variation concerns the intensity of the coloration: the ground colour varies from pale yellow to dark brownish yellow, pattern from yellow-brown to red-brown. Dorso-terminal portion of median fascia sometimes strongly expanding or even connecting subapical blotch. Basal blotch shows a tendency to atrophy especially in the costal and median parts of wing.

Male genitalia (figs. 5—12). Uncus strong, rounded apically; arms of gnathos slender, terminal portion long. Valva with rather elongate distal part; sacculus broad in basal part, distinctly convex postbasally, thin terminally. Labis

long, provided with strong dents terminally. Aedeagus slender, with variably long ventral termination rounded apically. Three cornuti in vesica.

Female genitalia (fig. 180). Sterigma broad, rounded proximally followed by large areas of dense sculptures. Sclerite of ostium bursae deeply concave medially; antrum fairly long provided with indistinct sclerite terminally and small proximal sack. Ductus bursae short, cestum long; signum very small. Sculpture of corpus bursae very delicate.

Bionomics. Moth collected from late June to early August up to the altitude of 2100 m (in Piring Mtns., Roumania).

Distribution. Roumania: Butchegi and Piring Mtns.; Yugoslavia: Bosnia: Belashnica and Treskavica Mtns., Montenegro; Albania: Korab.

Comments. Externally this little known species resembles *C. steineriana* but is smaller and the forewing characterises with more oblique termen. The shapes of the uncus and terminal process of the aedeagus are variable. This mountainous species is endemic in the Balkan Peninsula.

### *Clepsis violacea* RAZOWSKI

*Clepsis violacea* RAZOWSKI, 1966, Annls zool. Warsz., 21: 492, figs. 6—9. Type locality: Somon Zinst. Holotype, ♂ „Mongolia: Bajanchongor aimak, 8 km. S von Somon Zinst, 1400 m., Exp. Dr. Z. KASZAB 1964, 25. VI. 1964”, coll. MNMB.

Labial palpus ca 1.5, ochreous brown to ochreous cream; remaining parts of head and thorax rather concolorous. Forewing 9—10 mm, uniformly broad throughout with costa hardly curved outwards, apex broad, termen oblique, tolerably straight. Unicolorous ochreous brownish with weak violet-pink hue; fringes ochreous, paler than wing. Hindwing brownish grey; fringes greyish white to white with grey-ochreous basal line. Female unknown.

Male genitalia (figs. 13—16). Uncus broad, ovate; tegumen broad; arm of gnathos fairly slender except for terminal portion, termination strong. Valva with rather short terminal portion; sacculus strongly sclerotized, provided with two ventral prominences one fairly long situated postbasally, the second smaller or ill-defined terminally. Labis with strong dentate part. Aedeagus broad, armed with large ventro-apical denticles accompanied by small more proximal and fairly large subdorsal thorns. Two very thin cornuti in vesica.

Bionomics unknown except for dates of collection of the moth: VI and VII (at the altitudes 1200—1500 m).

Distribution. This species is probably distributed widely in steppes of Mongolia. It has been collected in various parts of this country.

Comments. The male genitalia vary in shape of the uncus and the number of denticles of the distal part of the aedeagus. Also the form and magnitude of the prominences of the sacculus are variable. The systematic position is doubtful.

*Clepsis clemensiana* (FERNALD)

*Tortrix (Lozotaenia) clemensiana* FERNALD, 1879, Can. Ent., 11: 155. Type locality: „Maine, Mass., N. Y., Wis.” Lectotype (unknown to me) in USNM.

*Tortrix nervosana* KEARFOTT, 1907, Trans. am. ent. Soc., 33:71. Type locality: Winchendon, Mass. Lectotype, ♂ (unknown to me) dated VIII—7—02, in coll. AMNH.

FREEMAN, 1958: 62, POWELL, 1964: 238.

Labial palpus ochreous tan to cream ochreous concolorous with scape of antenna and scales of its flagellum; thorax pale tan, more cream basally with apex of tegula whitish. In male forewing ca 10—11 mm, slender; costa weakly curved outwards beyond basal third; apex pointed; termen fairly oblique, delicately sinuate. Costal fold present, broad proximally beyond slender basal portion, atrophying before 1/3 of costa, at times suffused red-brown basally. Wing unicolorous pale yellowish cream, darker along edges, venation often suffused pale ochreous yellow, glossy. Occasionally the colour of wing is intensely yellow to cream ochreous. Fringes paler than wing. Hindwing whitish, mixed grey-brown anally, at times pale grey; fringes white.

Female. Forewing 9.5—10.5 mm, slenderer than in the male, with costa straight or hardly concave postmedially. Apex pointed; termen strongly oblique. Wing yellow, more or less dark, at times reticulate or with red indistinct strigulae. Hindwing white or with somewhat infuscate anal area.

Variation. Form *nervosana* characterises with well developed reticulation and suffused venation of forewing.

Male genitalia (figs. 17, 18). Uncus broad, rounded distally; arm of gnathos strong, rather uniformly broad throughout. Valva somewhat tapering terminally; ventral edge of sacculus convex before middle; labis short with large minutely dentate apical part terminating in strong denticle. Aedeagus delicately curved, provided with strong ventro-apical process; 4 long cornuti in examined specimens.

Female genitalia (fig. 181). Sterigma plate-shaped, rounded proximally followed by distinctly prominent thick membrane and large densely sculptured area. Ostium situated medially; antrum asymmetrical, well sclerotized with long proximal sack; cestum almost as long as ductus bursae; capitulum of signum strong.

Bionomics. Moth flies in June, July and August. Food plants are after FREEMAN (1958:62) *Gramineae* and *Solidago* L. and after POWELL (1964:239) also *Aster* L., and *Phleum pratense*.

Distribution: northeastern United States and southern Canada, from Alberta and British Columbia through western Montana, Idaho and northern Utah into northern California (POWELL op. cit.).

*Clepsis danilevskyi* KOSTIUK

*Clepsis danilevskyi* KOSTIUK, 1973, Trudy vses. ènt. Obsheh., 56: 162, figs. 1, 2. Type locality: at Hindigtig-Hol Lake. Holotype, ♂: Tuva, gornyi massiv Mongun-Taiga, g. Munku-Hairhan-Ula, vost. bereg oz. Hindigtig-Hol, 3500 m, alpiiski lug, 13. VII. 1969 (KOSTIUK); coll. ZIKU.

Male. Labial palpus orange rust paler terminally; remaining parts of head ferruginous orange, flagellum more cream; thorax concolorous with head but often yellow medially or posteriorly; abdomen dark grey-brown with yellow-ochreous terminal tuft. Forewing 9—11 mm, weakly expanding terminally; costa rather straight beyond basal curvature; apex rounded; termen somewhat oblique, straight. Costal fold absent. Ground colour yellow or yellow-cream, at times with indistinct ochreous admixture especially along costa and termen. Pattern very distinct brownish red; basal blotch strongly expanding along dorsum, with irregular distal edge; median fascia parallel to the former with proximal edge extending from  $1/4$  of costa to before tornus with two or three convexities or almost straight, expanding in dorsal area and reaching termen to form a blotch occasionally fused with large subapical blotch. Fringes orange-yellow, often mixed grey at tornus. Hindwing dark grey-brown, more or less distinctly mixed ferruginous in apex area; fringes dirty ochreous, grey at anal part of wing.

Female. Head and thorax paler, more yellow than in male; median, yellow part of thorax large; abdomen brownish grey densely scaled ochreous-yellow especially along edges and distally. Forewing 9—10 mm, slender, not expanding terminally, with costa slightly concave before apex; apex pointed; termen strongly oblique. Pattern as in male but base of wing yellow or one or two yellowish spots in basal portion of the blotch present. Hindwing cream, often mixed pale ochreous distally, with anal area grey; fringes ochreous-cream to cream.

Variation. In the male the shape of the edges of pattern are inconstant; basal blotch at times provided with pair of small patches concolorous with the ground colour, rarely interrupted longitudinally. Basal blotch of female with tendency to an atrophy in its proximal portion especially near the wing edges; rarely costa suffused brown ferruginous to connect basal blotch and median fascia.

Male genitalia (figs. 19—21). Uncus weakly tapering postbasally and indistinctly concave apically; edges of lateral arms of gnathos irregular. Valva tapering terminally; sacculus strongly broadening in median portion with large, rounded prominence of ventral edge. Terminal, dentate portion of labis large. Aedeagus densely dentate from beyond middle, weakly sclerotized distally, provided with strong apical process situated latero-terminally; two thin cornuti in vesica.

Female genitalia (fig. 182). Sterigma plate-shaped with lateral prominences situated rather proximally; ventral surface provided with two crests forming beyond ostium distinct prominences; dorsal wall deeply incised in middle of distal edge; antrum broad with well developed sclerite forming small proximal pocket; ductus bursae fairly short with rather weak, short cestum; signum small.

Bionomics. Moth collected in July at the altitudes of 2500-3500 m.

Distribution. Besides the type-locality collected in Altai (Kuraj Mtn.).

### *Clepsis nybomi* HACKMAN

*Clepsis nybomi* HACKMAN, 1950, Notul. ent., 30: 128 — nom. nov. for *Tortrix fuliginosana*.

*Tortrix fuliginosana* HACKMAN, 1950, ibid.: 24, figs. 2, 3a — nom. praeocc. by *Cacoecia costana* var. *fuliginosana* SCHILLE, 1917 = *Clepsis spectrana*. Type locality: Vuoksenniska, Finland (after the original publication). Holotype, male: „Fennia, Ruokolahti, Sa., 1. VI. [19] 49, NYBOM”, G. S. 1162 [ZMH], coll. ZMH.

Head and thorax brownish, the latter darker proximally. Forewing 8 mm, weakly expanding terminally; costa delicately curved outwards; apex rounded; termen fairly oblique, rather straight. Ground colour brownish cream suffused brown, with dispersed groups of cream scales; pattern indistinct, diffuse, dark brown, in form of weak median fascia, two spots at costa before apex and two oblique delicate lines in distal portion of wing; a row of small spots along termen. Fringes brown-grey, paler towards tornus. Hindwing brownish with slightly paler fringes.

Male genitalia (figs. 22, 23). Uncus broad, short, rather rounded apically; socius vestigial; arm of gnathos simple, slender. Valva broad; sacculus slender; labis with broad, dentate head producing weak prominence towards middle of apparatus. Aedeagus fairly long, slender, with long, curved distal portion; four cornuti in vesica.

Comments. The female is unknown. The systematic position of this species is not certain. OBRAZTSOV (1955: 218) placed it at the end of the systematic list of species of this genus; judging on the male genitalia and the external characters I include *nybomi* in the group of *rogana*.

### *Clepsis aerosana* (LEDERER)

*Tortrix aerosana* LEDERER, 1853, Verh. zool.-bot. Ges. Wien, 3: 383, pl. 7 fig. 1. Type locality: Altai. Lectotype (designated by RAZOWSKI, 1971: 475), ♂ „Altai; *Aerosana* m. [ihi], Sib. [eria] or. [ientalis]; Origin”; G. S. 1882 [ZMB]; coll. ZMB.

Male. Labial palpus brownish ferruginous to cream rust, remaining parts of head rather concolorous; thorax darker, tegula more, rust. Forewing 10.5—13 mm, more expanding terminally than in preceding species; costa less curved outwards, termen less oblique, hardly concave before middle or straight; a trace of costal fold in some specimens. Ground colour yellowish cream somewhat tinged olive grey; pattern ferruginous or reddish brown; silver refractive spots or indistinct fascias both on the pattern and ground colour developed to various degrees, at times atrophied. Basal blotch indistinct or represented by distal fascia; median fascia strongly oblique with proximal edge extending from about middle of costa, atrophying dorsally; subapical blotch reaching wing apex. Fringes concolorous with ground colour, mixed grey at tornus. Hindwing pale brownish grey, paler apically; fringes usually whitish cream with brownish grey basal line.

Female essentially as the male but forewing slenderer, rather uniformly broad throughout and termen more strongly oblique.

Variation rather slight; some examined specimens characterise with ferruginous suffusion of the basal half of the forewing, one example unicolorous brownish. In some females the ground colour may be ochreous yellow marked with glossy grey fascias.

Male genitalia (figs. 24—29). Uncus slightly broadening postbasally or uniformly broad throughout, tolerably straight apically. Arm of gnathos somewhat expanding terminad. Valva broader than in preceding species, sacculus slenderer, less convex ventrally. Dentate portion of labis delicate. Aedeagus provided with ventro-lateral (left side) process; four cornuti in vesica.

Female genitalia (fig. 183). Proximal corners of sterigma forming broad pockets directed dorsad and connected by a narrow median fold; pair of subtriangular folds flanking ostium bursae, with small rib before bases; antrum membranous, provided with large proximal sack; cestum long; signum strongly developed.

Bionomics. The moth flies in June and July, however, one specimen has been taken in mid-May (Amur territory). In Mongolia it has been collected up to the altitude of 2400 m (cf. RAZOWSKI, 1972:149). Characteristic of the steppe regions.

Distribution. Known from Ural Mtns. (Guberli) to Iuzhnoe Primore.

Comments. Form *sajana* described by CARADJA (cf. RAZOWSKI, 1971:530) is transferable to *Pseudosciophila branderiana* (L.), *Olethreutini*.

### *Clepsis rolandiana* (LINNAEUS)

*Phalaena Tortrix rolandiana* LINNAEUS, 1758, Systema Naturae, ed. 10: 532. Type locality: Europe.

Labial palpus cream or yellowish mixed brownish, head browner, flagellum of antenna more cream than scape; thorax brownish ochreous. In some specimen head and thorax ochreous.

Male. Forewing 11—12 mm, subtriangular, similar in shape to that in preceding species but without a trace of costal fold. Ground colour dark yellow often with admixture of ochre. Pattern reddish to red-orange in form of several oblique strips well developed in costal portion of wing, atrophying at dorsum. The largest strip represents the median fascia; terminal strip is almost parallel to the edge. Fringes much paler than ground colour except at apex and basally. Hindwing grey-brown; fringes whitish, with basal line brownish grey.

Female. Forewing usually 11 mm, slender, with costa indistinctly concave subapically; apex pointed; termen strongly oblique, hardly concave before middle.

Variation concerns mainly the magnitude and shape of the fascias or spots of the forewing; at times median fascia and subapical blotch well differentiated. In some specimens ground colour golden yellow or olive yellow. The shape of the forewing of the male is also variable to some degree.

Male genitalia (figs. 30—36). Uncus strong and long; arm of gnathos provided with large lateral group of thorns situated at its termination. Valva tapering terminally; sacculus rather short with distinct, however, variable in shape ventral prominence; thorns of terminal part of labis delicate. Aedeagus terminating in strong, slightly curved ventral process; 4—5 cornuti in vesica of examined specimens.

Female genitalia (fig. 184). Sterigma short with delicate lamella antevaginalis; antrum flattened dorso-ventrally with small proximal sack. Cestum short, median; signum large, without capitulum.

Bionomics. Moth flies in June and July on the moorlands; larva in May on *Veratrum album* L. (cf. KENNEL, 1908:185).

Distribution: North Europa, Alps, mountains of Bosnia (Trebevic), Nanos Mt. (Slovenia); Wiener Schneeberg (Austria); Ural Mtns.

***Clepsis plumbeolana* (BREMER), comb. nov.**

*Tortrix plumbeolana* BREMER, 1864, Lepidopt. Ost-Sibiriens: 89, pl. 7, figs. 20, 21. Type locality: Bureja Mtns., lower Ussuri.

Labial palpus ochreous yellow; remaining parts of head a little darker; thorax more brown ochreous especially in middle. Forewing in male 11—12 mm, rather uniformly broad throughout; apex short, rounded; termen somewhat oblique, tolerably straight. Ground colour ochreous yellow slightly suffused with ferruginous dorsally; pattern rust brown diffuse, consisting of median fascia and terminal suffusion. The two elements fuse along tornus. Several silver-grey spots arranged in transverse oblique fascias or elongate markings both on the ground colour and pattern. Fringes paler than pattern. Hindwing dark brown; fringes pale brown with brown median line.

Forewing of female somewhat slenderer than in male, costa more strongly curved outwards in basal part, then almost straight; apex somewhat longer; termen more oblique.

Variation. Some specimens with bright ochreous yellow ground colour and brownish or brown pattern consisting of median fascia and subapical blotch. Fringes concolorous with ground colour, brown at tornus. In one specimen pattern almost atrophied but refractive markings distinct.

Male genitalia (figs. 37, 38). Uncus large, slightly variable in shape; arm of gnathos provided with subterminal process and densely dentate prominence. Valva elongate; sacculus slightly convex before middle ventrally; labis broad and densely spined terminally. Aedeagus delicately bent, minutely dentate terminally; 3 cornuti in vesica present.

Female genitalia (fig. 185). Sterigma broad, rounded proximally, somewhat prominent in middle of distal edge; ostium broad, situated beyond well sclerotized fold; antrum rather short provided with weak proximal sclerite and small distal sclerotization. Ductus bursae with long cestum; signum moderate.

Bionomics unknown except for dates of collection of the imago: VI, VII.

Distribution. Known only from Priamure and Primore and after KUZNETSOV (1973) also from China.

Comments. KENNEL (1910) illustrated male and female of the type series of this species and placed it in *Cacoecia* HBN. while OBRAZTSOV (1955) and all following authors treated it as the member of the genus *Ptycholoma* STEPH.

*Clepsis crispinana* (KENNEL)

*Tortrix crispinana* KENNEL, 1919, Mitt. münch. ent. Ges., 8: 62, pl. 2, fig. 14. Type locality: Sajon Mtns.

Labial palpus olive-grey mixed brown and cream; front and scape of antenna rust brown, flagellum cream; thorax grey-brown, tegula often mixed ferruginous, collar rust. In male forewing 11—12 mm, broad, slightly expanding terminally; apex very short; termen weakly oblique, indistinctly sinuate. Wing almost unicolorous dark olive-grey densely scaled dirty cream or cream ochreous. Fringes olive-grey mixed cream towards dorsum or suffused pale ochreous at tornus. In some specimens indistinct ferruginous suffusions representing median fascia and subapical blotch. Hindwing pale brownish or olive-grey; fringes whitish grey with dark grey basal line. In one specimen hindwing cream infuscated in anal area. Female forewing 8—10 mm, slenderer than in male, not expanding terminally; apex pointed; termen distinctly oblique, not sinuate. In one specimen distinct orange ferruginous suffusion and dark brown strigulation present; in second female ground colour is pale cream, base of wing brown-grey mixed ferruginous (representing blotch), median fascia and subapical blotch distinct, brown ferruginous; fringes paler than ground colour. Hindwing as in male.

Male genitalia (figs. 39, 40) as in preceding species but lateral processes of gnathos broader, and indentation of terminal portion of labis weaker.

Female genitalia (fig. 186) as in *plumbeolana* but distal edge of sterigma more distinctly produced medially.

Bionomics. Moth collected in June and August at the altitudes of 2400—2600 m in Altai Mtns.

Distribution. Known to date only from Altai and Sayan Mtns.

Comments. This species is genitally extremely close to *plumbeolana* and the two following species (cf. p. 117).

*Clepsis rogana* (GUENÉE)

*Tortrix rogana* GUENÉE, 1845, Anns Soc. ent. Fr., (2) 3: 140. Type locality: Alpes.

*Tortrix (Tortrix) lusana* HERRICH-SCHAEFFER, 1851, Syst. Bearb. Schmett. Eur., 4: 174. Type locality: Tirol.

*Tortrix (Lozotaenia) dohrniana* HERRICH-SCHAEFFER, 1856, ibid., 6: 156. Type localities: Altvater and Harz Mts.

Misidentifications:

*steineriana*: HERRICH-SCHAEFFER, 1852, ibid., pl. 59 fig. 419-non binom.; *unicolorana*: OBRAZTSOV, 1954: 195 [part.], figs. 114—116 (*Clepsis*, *Pseudamelia*).

Labial palpus, front and scape of antenna rust brown, remaining parts

of head more grey, flagellum pale scaled; thorax olive-brown, often mixed rust. Forewing 10—11 mm, resembling in male that of *phaeana*, slenderer than in *crispinana*, almost unicolorous olive-grey strongly suffused dirty ochreous yellow; fringes paler than the suffusion. Hindwing brownish grey; fringes usually pale cream with brownish basal line. Female slightly smaller than male with head thorax and ground colour of forewing paler, often mixed yellow, or ochreous yellow. Forewing not expanding terminally, broadest before middle; costa concave subapically; apex pointed; termen strongly oblique hardly sinuate towards middle. Pattern usually developed, reddish or ferruginous consisting of indistinct basal suffusion, median fascia and subapical blotch. Fringes paler than ground colour. Hindwing much paler than in male.

Variation. In male forewing varies from olive-grey to olive-ochreous with golden shine or pale brownish ochreous. Often ochreous or yellowish suffusion is reduced to narrow transverse fascias or stringulation distinctly visible on glossy grey ground. Occasionally leaden-grey refractive markings among ochreous pattern present and the hindwing is pale, whitish grey. Ground colour of the female forewing varies from olive-yellow to yellow-ochreous. The pattern is also variable, red-brown to ferruginous, more or less distinct. In some specimens basal suffusion extending along dorsum as far as to median fascia.

Male genitalia (figs. 41, 42) variable. Uncus more or less broad, somewhat tapering at the base, usually indistinctly concave apically. Gnathos with large lateral lobes and dentate areas. Valva rather slenderer than in *crispinana*; labis variably broad but usually slenderer than in mentioned species; aedeagus with variable number of terminal denticles; 2—5 cornuti found in examined specimens.

Female genitalia (fig. 187). Sterigma weakly convex distally, concave beyond ostium, convex before it laterally, with emarginate proximal edge. Antrum membranous except for distal portion and small sclerite at the bottom of proximal part. Capitulum of signum much longer than in two mentioned species.

Bionomics. Moth flies in May and June in the and higher mountains in July. Larva feeds on *Vaccinium* L. Biotops: moorlands and fairly humid meadows of the mountainous regions. In Alps up to the altitude of 2300 m.

Distribution. Known from various mountains of Europe except for British Isles and the south: Alps (in France, Switzerland, Germany, Austria, Yugoslavia), Bucegi Mtns. (Roumania), Harz, mountains of Silesia and in Tatra and, Ural Mtns. Known also from Estonia.

Comments. The problem of the variability of this species is not clear; the populations of some ranges are to some degree distinct by their coloration and partially shape of forewing but these may represent the ecological forms. On the other hand the male genitalia of the specimens from same localities show more or less distinct variation. Unfortunately the available material is insufficient to explain the problem. Also the differences among this species and *crispinana*, *phaeana* and *plumbeolana* are very slight.

*Clepsis phaeana* (REBEL), comb. nov.

*Tortrix phaeana* REBEL, 1916, Dt. ent. Z. Iris, 30: 189. Type locality: Schawyz. Holotype, male: „Ost Tannuola, Schawyz, 2500 m, BANG-HAAS, 1914”, coll. NHMW.

Labial palpus dark brown-grey; head brownish grey, thorax concolorous. Forewing 11—12 mm, more distinctly expanding terminally than in preceding species with termen somewhat oblique, almost straight to beyond middle, then curved. Unicolorous, pale leaden-grey sprinkled olive-grey among veins, fringes a little paler. Hindwing brown-grey, slightly paler than forewing, fringes concolorous.

Male genitalia (figs. 43—45). Uncus much slenderer than in all preceding species, somewhat variable in shape; gnathos slenderer, with large spined areas and atrophying lateral prominences. Dentation of labis ill-defined; dentation of distal part of aedeagus scarce, slightly variable.

Bionomics: no data.

Distribution: Altai Mtns. Mongolia and Tuva.

Comments. The holotype lacks abdomen. However, I have examined two further specimens (from Altai) externally identical with the holotype. OBRAZTSOV (1968) placed it in *Aphelia* HBN. basing on its external similarity to some forms of *A. paleana* (HBN.). Very close to *rogana* and *crispinana*. Female unknown.

*Clepsis altudinaria* (FILIPIEV), comb. nov.

*Tortrix altudinarius* FILIPIEV, 1962, Trudy zool. Inst. Leningr., 30: 369, fig. 1. Type locality: Abastumani (Zakawkazie). Holotype, ♂: „Abastuman. [i]”, G. S. 2833 [ZIANL]; coll. ZIANL.

Head brownish grey to whitish cream dark scaled; thorax brownish grey with weak olive hue; abdomen paler than thorax with whitish cream tuft. Forewing 6.5—8 mm, expanding terminally; apex rather short; termen oblique, indistinctly sinuate medially. Wing unicolorous brownish grey with olive hue; fringes cream, mixed cream near base, whitish towards tornus. Hindwing brown-grey; fringes whitish with brownish basal line.

Variation very slight: some specimens brown-grey, glossy, with somewhat infusate base of forewing; one example with greenish shine.

Male genitalia (figs. 46, 47). Tegumen large; uncus broad, short, incised apically; socius small; arm of gnathos long, slender except, for dentate terminal portion. Valva elongate; sacculus large, convex near middle and in terminal portion of ventral edge, provided with strong dorso-terminal denticle. Labis in examined slide insufficiently visible. Aedeagus very long, swung, terminating in a distinct ventro-apical denticle; no cornuti.

Female genitalia (fig. 188, 189). Sterigma very large, funnel-shaped, expanding terminally into strong lateral processes. Its ventro-distal wall with small median plate directed vertically; dorsal surface with concave, irregular edge.

Proximal part of sterigma tapering, swung; antrum membranous; ductus bursae fairly short; cestum absent; corpus bursae transparent; signum short with plate-shaped basal portion, without capitulum.

Bionomics: moth collected in July at the altitudes of 2100—2300 m.

Distribution: Caucasus (Abhasia: Awadhara; Zakawkazie: Abastumani).

Comments. Externally this species is very similar to *rogana* but has peculiar genitalia. Its systematic position is unclear.

### *Clepsis steineriana* (HÜBNER)

[*Tortrix*] *steineriana* HÜBNER, [1799], Sammlung eur. Schmett., Tortr., pl. 27, fig. 170.

Type locality: Europe (from title of work).

*Tortrix chrisitana* FRÖLICH, 1828, Enumeratio Tortricum Würtemb.: 38. Type locality: „Algovia”.

*Tortrix steineriana* var. *carpana* DELLA BEFFA, 1935, Memorie Soc. ent. Ital., 14: 27.

KENNEL, 1910: 184, pl. 9 figs. 41, 42.

Misidentifications:

? *gnomana*: LASPEYRES, 1805, ILLIGER'S Mag. Ins. Kunde, 4: 11 (*Tortrix*).

Labial palpus about 2, ochreous cream; remaining parts of head rather concolorous, proximal part of thorax and especially base of tegula mixed ferruginous. Forewing 10—12 mm, in male broader and more strongly expanding terminally than in *rogana*. Ground colour yellow delicately mixed ochreous in basal half or with indistinct olive hue basally; pattern ferruginous to brownish red consisting of diffuse basal blotch extending along dorsum to middle of wing, atrophying costally, median fascia strongly broadening in dorsal half of wing and small subapical blotch. Fringes concolorous with ground colour of distal part of wing or paler, usually mixed rust at tornus. Often weak admixture of same colour also at apex and paler basal line. Hindwing brownish grey often paler apically; fringes cream with weak basal line. Forewing of female somewhat broader than in *rogana* with less oblique termen. Coloration as in male.

Variation small. Some males with ill-defined pattern e. g. almost atrophied basal blotch and costal part of median fascia. Occasionally the pattern in female distinct rust-brown and dorsum almost completely suffused.

Male genitalia (figs. 48—53). Uncus broad, somewhat narrowing medially, convex apically; arm of gnathos broadening terminally. Valva subtriangular; sacculus well sclerotized with ventral edge angulate, densely indentate from tip of convexity, provided with irregularly dentate dorsal thorn. Labis with rather delicate dentate portion. Aedeagus slender, dentate laterally and ventrally, provided with right-turned terminal denticle; 1—2 cornuti in examined specimens.

Female genitalia (fig. 190). Sterigma rounded proximally, provided with wing-shaped prominences situated laterally to ostium; antrum long, well sclerotized distally with small sclerite in base of sack-shaped part; cestum absent; capitulum of signum and basal plate well developed.

Larva (SWATSCHKE, 1958:47, fig. 44) yellowish to grey-green; pinacula and stigmas black; head yellow black edged distally, black immaculate; thoracic and anal shields brownish, dark spotted.

Bionomics. Moth flies in July, August, exceptionally in late June in fairly humid biotops often in peat-bogs. In the mountains collected up to the altitude of 2300 m. Larva in May and June among spun leaves and in stems of *Veratrum album*, *Anemone hepatica*, *Dentaria bulbifera*, *Luzula albida*, *Sanicula*, *Vaccinium myrtillus*, and *V. uliginosum* (KENNEL, 1910:184).

Distribution. Alps (Switzerland, Germany, Austria) and other mountains of Central Europe in the above countries, France, Italy (Piedmont) and Yugoslavia (Coisova Kota). KENNEL mentions also Northern Spain.

Comments. This species, similarly as *rogana* shows some genital variation especially in the shapes of the sacculus and aedeagus.

### *Clepsis roganodes* HANNEMANN

*Clepsis roganodes* HANNEMANN, 1960, Mitt. dt. ent. Ges., 19: 8. Type locality: Pradziad Mt., Poland. Holotype, ♂: „Altwater-Gebirge”, G. S. 1867 [ZMB]; coll. ZMB.

Labial palpus about 2, ochreous brownish, concolorous with remaining parts of head and thorax. Forewing 10 mm, resembling that in *rogana*, unicolorous ochreous brownish with olive admixture, paler from beyond middle. Fringes concolorous with distal part of wing. Hindwing pale brownish mixed cream anteriorly; fringes paler than median part of wing.

Male genitalia (figs. 54, 55) very similar to those in preceding species but sacculus stronger, provided with large subtriangular dentate process of median part of the dorsal edge and aedeagus larger with stronger terminal denticle accompanied by some minute thorns. Three cornuti in vesica present.

Female and bionomics unknown.

Distribution: recorded from the type locality only.

### *Clepsis senecionana* (HÜBNER)

[*Tortrix*] *senecionana* HÜBNER, [1819], Sammlung eur. Schmett., Tortr., pl. 42, fig. 263. Type locality: Europe (from title of work).

! *Tortrix stagnana* CHARPENTIER, 1821, Zinsler...: 83. Type locality: not given.

*Tortrix helvolana* FRÖLICH, 1828, Enumeratio Tortricum Würtemb.: 30. Type locality: „Algovia”.

[*Tortrix*] *rusticana* Hübner, [1799], Sammlung eur. Schmett., Tortr., pl. 16, fig. 102. Type locality: Europe (from title of work) — nom. praeocc. by [*Tortrix*] *rusticana* HÜBNER, ibid., pl. 11, fig. 66.

*Tortrix stramineana* ZETTERSTEDT, 1840, Insecta Lapponica: 980. Type locality: „Lapponia borealis”.

*Tortrix porcana* ZETTERSTEDT, 1840, ibid.: 980. Type locality: Lapponia („Lycksele Lapponiae mer. et Bjoerkvik Nordlandiae”).

*Tortrix pulverana* EVERSMAAN, 1844, Fauna Lepidopt. Volgo-Ural.: 481. Type locality: Kasan Prov.

*Tortrix culmana* PEYERIMHOFF, 1864, Cat. Lép. Alsace, 2: 38 (cf. OBRAZTSOV, 1955: 213). KENNEL, 1910: 185, pl. 9, figs. 48, 49 (*Tortrix*).

BRADLEY, TREMEWAN & SMITH, 1973: 120, pl. 32, figs. 1—3 (*Olepsis*).

Labial palpus 2.5, ochreous cream; remaining parts of head rather concolorous, thorax browner. Forewing 6—8 mm; male forewing expanding terminally with termen fairly oblique, hardly concave medially or straight, pale ochreous or whitish ochreous with slight brownish admixture, provided with brownish strigulation or lines running obliquely from costa. Base of wing and especially dorsum to 1/3 suffused brown. Fringes paler than ground colour; median line concolorous with pattern. Hindwing pale brownish grey with dirty white or white-cream fringes marked by indistinct median line. Forewing of female much slenderer than in male, costa weakly concave subapically, termen more strongly oblique. Almost unicolorous, paler than male, more yellowish. Strigulation or irroration weak, pale ochreous, basal part of dorsum brownish ochreous if differentiated. Hindwing more cream than in male.

Variation rather slight. Occasionally occur the specimens almost whitish. Males are usually darker than females with forewing ochreous-grey to brownish.

Male genitalia (figs. 56—58). Uncus expanding terminally, almost straight apically; socius small; gnathos with slender arm, simple. Valva subtriangular with internal median sclerite provided with dentate distal crest; sacculus convex and dentate in middle of ventral edge, armed with slender dorsal denticle postmedially; labis variably dentate, short. Aedeagus provided with large lateral process (left side); anellus with large hairy lobes.

Female genitalia (fig. 191). Proximal portion of sterigma membranous, ostium area well sclerotized, ring-shaped, but its dorsal wall broadening and produced in form of two ventral prominences followed by a plate; lateral processes thin. Antrum bulbous, weakly sclerotized except of small median area; cestum absent; signum with well developed capitulum and basal plate.

Larva (SWATSCHEK, 1958:47) brownish yellow, pinacula concolorous; head pale brown marked with black eye and lateral spots; shields and thoracic legs yellowish green. BRADLEY, TREMEWAN & SMITH (1973:121) provide a somewhat different description and the list of plants recorded below.

Bionomics. Moth flies in May and June in damp areas, mainly in grassy biotops, marshes, moorlands etc. Larva lives from July to April rolling or spinning terminal leaves of *Myrica*, *Vaccinium myrtillus*, *Lotus*, *Gentianella amarella*, *Polygonatum*, *Lysimachia*, *Dorycnium*, *Onobrychis viciifolia*, *Convallaria* but in Scotland was also observed on *Picea*, *Pinus* and *Larix*.

Distribution: Palaearctic Region except for North Africa and Asia Minor.

Comments. The male genitalia show some variation especially in the shapes of the valva processes. The female genitalia are peculiar due to the mem-

branization of anterior portion of the sterigma. Previously the species was commonly known under the name *rusticana* and TREITSCHKE was treated as its author. TREITSCHKE, however, mentions himself HÜBNER as the author of this name, OBRAZTSOV (1955:213) used the name *helvolana* but then BRADLEY, TREMEWAN & SMITH (1973:120) correctly returned to the name *senecionana*.

*Clepsis ketmenana* (FALKOVITSH), comb. nov.

*Tortrix (Clepsis) ketmenana* FALKOVITSH, 1962, Trudy Inst. Zool., Alma-Ata 18: 95, figs. 1, 2. Type locality: Podgornoie (Kazakhstan). Holotype, ♂: „Hr. [ebet] Ketmen, Podgornoie, FALKOVITSCH, 9. VI. 1957”, not dissected; coll. ZIANL.

Labial palpus over 1, pale ochreous brownish, remaining parts of head rather concolorous, vertex more rust, flagellum more cream; thorax ferruginous, paler distally. Forewing 8—9 mm, somewhat expanding terminally; apex broad, rounded; termen fairly oblique, rather straight. Trace of costal fold at base of male forewing. Ground colour pale brownish ochreous more yellowish cream towards costa, delicately strigulated with brownish or greyish especially in basal half of wing; basal blotch atrophied or represented by indistinct dorsal suffusion; remaining pattern well developed consisting of median fascia and subapical blotch. Proximal edge of median fascia extending from 1/3 of costa to beyond middle of dorsum, costal part ferruginous brown, distal portion suffused black connecting ferruginous subapical blotch. Distal part of wing ferruginous; fringes ferruginous mixed grey or brown. Hindwing brownish grey, paler basally; fringes concolorous with basal area of wing with weak median line. Female with forewing 10 mm; sexual dimorphism slight.

Variation. Ground colour varies from cream-ochreous to brown-ochreous and is occasionally tinged grey. Pattern is dark red-brown to rust-brown. Occasionally all distal half of wing is infuscated. Reticulation may disappear.

Male genitalia (figs. 59, 60). Uncus very large, broad, delicately concave apically; socius large; gnathos arm broadening subterminally. Valva fairly short, rounded apically; sacculus convex in middle of ventral edge and in terminal portion; labis slender, terminating in a single denticle. Aedeagus slender, long, up-curved, armed with thin subterminal process situated laterally. No cornuti found in vesica.

Female genitalia (fig. 192). Cup-shaped part of sterigma short, dorsal portion membranous medially, long, lateral process slender; elongate, rounded apically sclerite beyond sterigma medially. Antrum with small proximal sack and delicate sclerite; cestum reaching to middle of ductus bursae; signum small.

Bionomics: moth collected in June.

Distribution: Ketmen Mtns. only.

Comments. The systematic position of this species is uncertain. Judging on the male genitalia it belongs in the *rogana*-group.

*Clepsis hissarica* DANILEVSKIJ

*Clepsis hissarica* DANILEVSKIJ, 1963, Ènt. Obozr., 42: 164, fig. 1. Type locality: Hissarskij Hrebet (Tadzhikistan). Holotype, ♂: „Gissarskij hr. [ebet], Anzovskij pierew. [al], 3400 m, 30. VI. 956, K. GRUNIN", G. S. 7625 [ZIANL]; coll. ZIANL.

Labial palpus 1.5, grey, concolorous with remaining parts of head, except for vertex which is much darker. Thorax brownish grey. Forewing ca 7 mm, distinctly expanding terminally with costa weakly convex at base; apex broad, rounded; termen oblique, straight. Ground colour pearl white with very weak pink shine, marked with ochreous yellow transverse lines or strigulae. Pattern dark ash-grey edged ochreous, consisting of short basal blotch, broad median fascia (anterior edge extending from 1/3 of costa to middle of dorsum) diffuse distally and subapical blotch fused with terminal suffusion; spot at disc well developed, some costal spots present. Fringes grey, whitish at tornus, dark grey at apex, with basal line dark grey. Hindwing pale grey delicately strigulated terminally; fringes whitish.

Variation. Paratype with more contrasting, dark grey pattern. No ochreous markings but the pattern edges dark, almost black.

Male genitalia (figs. 61, 62). Uncus broad, hardly concave apically; gnathos arm broadening gradually towards the end. Valva elongate, rounded terminally; sacculus slender, weakly expanding beyond middle of ventral edge and post-basally; labis slender, weakly broadening and minutely spined apically. Aedeagus small, tapering terminally, pointed apically, provided with small dorso-lateral denticle near middle. Peculiar group of three bulbous sclerites in dorsal surface of the base of uncus present. One thin cornutus in vesica.

Bionomics: moth collected in June and July.

Distribution: known from the type locality only.

Comments. This species and most probably two following ones constitute a separate subgroup characterised by elongate valva.

*Clepsis zelleriana* (ERSCHOFF), **comb. nov.**

*Penthina zelleriana* ERSCHOFF, 1874, Puteshestve v Turkestan, (2) 11 (5, 3): 94. Type locality: at Shurovsk glacier (Kokanda-Andishan distr.). Holotype in Moscow University collection.

Labial palpus ca 1.5, broad, whitish grey, whitish basally; remaining parts of head and thorax slightly darker. Forewing 9.5 mm, weakly expanding terminally; costa weakly curved outwards basally, then tolerably stright, termen less oblique than in preceding species. Ground colour whitish cream suffused grey especially along dorsum, more white costally. Pattern brownish grey spotted black along edges consisting of basal blotch the distal edge of which reaches middle of dorsum, median fascia with proximal edge extending from 1/3 of costa parallelly to basal blotch, and slender subapical blotch. Dorsal

part of median fascia much broader than costal portion fused with distal suffusion. Costal half of that suffusion fused with subapical blotch, almost concolorous with pattern, black spotted. Ochreous cream scales scattered all over distal half of wing forming larger markings subapically. Fringes ochreous grey with brownish grey basal line. Hindwing dark brown-grey; fringes brownish cream, brownish grey in anal area; basal line brown-grey.

Bionomics: moth collected in July.

Distribution: Fergana valley and Zailijskij Range.

Comments. The above description is based on a single specimen (with abdomen missing) labelled „Zaalaiski Hrbiet, Aralokungej, 3600 m, 24. VII. 1951”, coll. ZIANL, compared by the late Dr. A. S. DANILEWSKIJ with the type preserved in the collection of the Moscow University.

### *Clepsis luctuosana* (REBEL), **comb. nov.**

*Cnephasia luctuosana* REBEL, 1914, Dt. ent. Z. Iris, **28**: 272, pl. 4, fig. 8. Type locality: Kuldja (Thian-shan). Lectotype, ♂: „Kuldscha, Thian occ.”; coll. NHMW.

Labial palpus brownish grey, upper part of head and thorax somewhat darker. Forewing 9 mm, slender, not expanding terminally with costa almost straight from beyond base, apex rounded, termen indistinctly convex, oblique. Ground colour whitish suffused brownish grey except for costal area; pattern brownish grey, darker at costa, diffuse in median and dorsal parts of wing; proximal edge of median fascia from 1/3 of costa, subapical blotch from 2/3. Dorsal portions of pattern fused with suffusion, discal spot large if present, spots among the pattern delicate. Fringes concolorous with pattern in apical half, whitish towards tornus, basal line brown-grey. Hindwing slender, brownish grey; fringes whitish with brownish grey basal line.

Male genitalia (figs. 63, 64). Uncus broad, fairly long, more or less distinctly concave apically; socius large; arm of gnathos broadening postmedially. Valva elongate, rounded apically; sacculus slender, somewhat expanding in middle part of ventral edge; labis broad, short rounded apically and minutely spined lobe. Aedeagus rather short, thick; single small cornutus in vesica.

Bionomy: unknown.

Distribution: Thian-shan.

Comments. The female is unknown. The male genitalia need reexamination, especially the shape of the labis.

### *Clepsis praeclarana* (KENNEL)

*Tortrix (Heterognomon) praeclarana* KENNEL, 1899, Dt. ent. Z. Iris, **12**: 8, pl. 1, fig. 6. Type locality: Saisan. Holotype, ♂: „Saisan [18]17, H[A]B[ER]H[AUER]”, G. S. 4-FALK.[OVITSH]; coll. ZMB.

*Tortrix fucosana* KENNEL, 1901, *ibid.*, **13** (1900): 225. Type locality: Uliassutai (Mongolia). Holotype, ♂: „Uliassutai, Mongol.[ei], [18] 94”, G. S. 5-DANIL.[EVSKIJ]; coll. ZMB.

*Clepsis vittata* OBRAZTSOV, 1968, J. N. Y. ent. Soc., 76: 250, figs. 12, 13, 23, 24 — **synon. nov.** Type locality: Sarepta (= Krasnoarmiejsk). Holotype, ♂: „Sarepta, CHRISTOPH Coll.", G. S. 6812 [BM]; coll. BM.

KENNEL, 1910: 182, pl. 9, fig. 36 (*Tortrix*).

*fucosana* KENNEL, 1910: 182, pl. 9, fig. 37 (*Tortrix*).

Labial palpus ca 1.5 ochreous cream, ochreous terminally, rather concolorous with remaining parts of head; thorax ochreous to ferruginous; abdomen pale ochreous cream. Forewing 9—11 mm, usually slightly expanding terminally (less so in female than in male); costa weakly curved outwards at base, then rather straight; apex rounded; termen oblique, straight. Ground colour ochreous cream to yellowish cream, venation at least in distal part of wing ochreous or rust, strigulation concolorous, ill-defined. Patern ferruginous consisting of short basal blotch, distinct median fascia the proximal edge of which extends from beyond 1/3 of costa, and small subapical blotch. Fringes concolorous with ground colour, ochreous or pale ferruginous basally at least in apical half of wing. Hindwing cream with slight admixture of ochre, tinged pale brownish in anal portion; fringes paler than distal part of wing with weak median line.

Variation. In ab. *fucosana* median fascia and subapical blotch are much paler than the basal blotch; ab. *vittata* is similarly coloured but with almost completely reduced transverse strigulation. The species distinctly varies in the shape of the forewing and pattern. Median fascia may be more or less expanding dorsally or tapering at the wing edges; its proximal edge is convex submedially, concave near dorsum or straight. There is also a tendency to atrophy of the subapical blotch. The strigulation of the ground colour is often very distinct. The colour of pattern is variable, usually the costal portion of median fascia is much darker than its remaining parts. In some specimens dorsal portion of basal blotch extends to before middle of wing.

Male genitalia (figs. 65—72). Uncus broad, tapering from beyond middle, rounded apically; arm of gnathos weakly broadening towards the end. Valva broad; sacculus strongly broadening to before end, convex ventrally; labis with large, dentate terminal part. Aedeagus slender, long, provided with variably shaped latero-dorsal denticle situated subterminally, often accompanied by 1—3 minute teeth. Single small, thin cornutus in vesica.

Female genitalia (figs. 193, 194). Proximal portion of sterigma funnel-shaped, weakly sclerotized dorsally with distal part broad, membranous along middle dorsally, tapering towards apophyses. Antrum membranous, broad, rounded proximally with small group of minute denticles before antrum, or without any sculpture. Ductus bursae without cestum; signum moderate, capitulum large.

Bionomics. Moth collected in June (Ural Mtns.) and July (Mongolia) at the altitudes up to 1500 m.

Distribution. Krasnoarmiejsk at Volga R., Orenburg distr. Tchkalovsk, Uralsk, Guberli; Georgia: Atskhur; SW Siberia: Saisan; Mongolia.

Comments. The types and ca 70 further specimens examined. Judging from the structure of the genitalia this species has a separate position in the genus in question.

### The group of *rurinana*

*Mochlopyga* DIAKONOFF, 1955, Veröff. zool. StSamml. München, 8: 44.

Labial palpus usually 2; costal fold in male well developed. Sexual dimorphism expressed in the shape of the forewing being much slenderer in female than in male, with more elongate apex and more oblique termen.

Male genitalia characterised with very large, convex dorsally tegumen in the most advanced species being, however, moderate. Uncus very large armed with lateral plate-shaped prominences to slender, simple, rounded apically. Arm of gnathos broad, angulated medially, strong, occasionally dentate terminal plate. Socius moderate to small. Valva long, rather uniformly broad throughout, bristled postmedially, provided with short semiovate terminal part; sacculus broad in basal portion, indistinctly convex ventrally; labis slender with usually subsquare head developing strong, elongate terminal part. Aedeagus delicate, simple.

In the female genitalia eighth tergite normally developed or large, peculiar in shape, invaginate dorsally. Sterigma delicate, with short, rounded proximal edge, or provided with submedian prominences. Lateral arms of sterigma long, median concavity usually short; antrum small with minute proximal sack and weak sclerites. Cestum in the majority of species well developed; signum capitate.

Distribution: Palaearctic and Oriental Regions; two species common to both regions.

Comparative remarks. DIAKONOFF (1976:118) pointed out that the main differing character of *Mochlopyga* was large almost spherical tegumen. This character varies, however, throughout the group. Other characters, especially the shape of the valva-complex are common to all the species of this group and this supports my synonymisation of *Mochlopyga*.

### *Clepsis humana* (MEYRICK), comb. nov.

*Tortrix humana* MEYRICK, 1912, Exot. *Microlepid.*, 1: 6. Type locality: Darjiling (Sikkim). Holotype, male: „Darjiling, Bengal, D. VIII. 04”, G. S. 6846 [CLARKE]; coll. BM.

*Tortrix noseropis* MEYRICK, 1928, *ibid.*, 3: 458. Type locality: Calcutta (Bengal). Holotype, female: „Bengal, Calcutta (ATKINSON)”, G. S. 6844 [CLARKE]; coll. BM.

*Machlopyga* [sic!] *khola* YASUDA, 1969, Bull. Univ. Osaka Pref., (B) 21: 170, pl. 1, fig. H, pl. 3, figs. 10—12. Type locality: Yangma (Nepal). Holotype, male: „N. E. Nepal, Taplejung: Yangma, alt. 4200 m, 7. VII. 1962, T. YASUDA”, coll. UOP.

DIAKONOFF, 1976: 117.

Male. Labial palpus brownish to ochreous, darker terminally, remaining parts of head yellowish brown; thorax more grey-brown except for tegula which is concolorous with head. Forewing 7—9 mm, more or less distinctly expanding terminally with costa curved outwards throughout, apex acute; termen oblique, indistinctly concave; costal fold broad proximally. Ground colour greyish partially suffused brownish, scarcely spotted black-grey. Costal fold vivid brown, remainders of median fascia rust brown; subapical blotch slender, extending from  $3/4$  of costa to before apex, rust brown. Costa between the pattern elements suffused ochreous. Fringes paler than ground colour. Hindwing grey-cream, paler basally; fringes much paler than wing with indistinct basal line. Female forewing not expanding terminally with costa curved at base, hardly concave subapically, apex longer than in male, termen more oblique and sinuate.

Variation. Males: ground colour whitish cream to dark grey dotted black or brown, or strigulated to various degrees, rarely without irroration or spots. Usually one spot situated before middle length of vein  $m_2$  large. Remainders of pattern ferruginous to brownish cream; basal blotch atrophied or represented by a suffusion extending along dorsum; median fascia atrophying in costal third of wing or interrupted subcostally. Subapical blotch subtriangular or very narrow. In some specimens distal half of costa ferruginous; exceptionally rows of black spots among the veins on pattern present. Fringes often tinged ochreous at apex. Females are often unicolorous or with costal remainders of the subapical blotch. Dorsum may be suffused dark leaden-grey or ochreous remainders of median fascia are present.

Male genitalia (figs. 73—78). Uncus very broad tapering in distal half terminally, provided with postmedian lateral prominences; socius long, slender; gnathos strong with broad minutely spined lateral parts and long, curved terminal portion provided with ventral prominence and indentation. Saccus convex before middle of ventral edge; terminal part of labis produced dorsad, dentate. Aedeagus slender, provided with ventro-terminal denticle, occasionally accompanied by a minute additional thorn; 2—4 slender cornuti in vesica.

Female genitalia (fig. 195). Eighth tergite large, convex dorsally with large ventral lobes; apophyses delicate. Sterigma with short cup-shaped part concave medially and slender lateral arms followed by broad membran developing a pair of peculiar sclerites. Lateral parts of them are long, expanding ventrally, median portions flattened except for postmedian crests, delicately sculptured. Antrum weakly sclerotized, provided with small ventral prominence and weak proximal sack. Cestum long, weakly sclerotized, broadening terminally; signum very small, capitate.

Bionomics. The moth occurs probably in three generations yearly as the Nepal specimens have been collected from late April to early September at the altitudes of 2200—4000 m.

Distribution. Known from India (Sikkim and Bengal) and Nepal.

Comments. DIAKONOFF (1976) synonymised *T. noseropsis* and *M. khola*

with *humana*. I have had an occasion to examine the types of *khola* and found slight differences in the male genitalia (the uncus is in *khola* shorter, more abruptly tapering apically, provided with smaller lateral prominences than in typical *humana*). The shape of the aedeagus is probably variable and the cornuti in the type are much longer than in *khola*. I am following DIAKONOFF in the interpretation of the synonyms, and treat *khola* as an infrasubspecific form provisionally.

***Clepsis leptograpt* (MEYRICK), comb. nov.**

*Tortrix leptograpt* MEYRICK, 1924, Exot. *Microlepid.*, 3: 115; 1927, *ibid.*, 3: 369 — second description of same specimen. Type locality: Gulmarg (Kashmir). Holotype, male with abdomen missing: „Gulmarg, Kashmir, T. B. F.[LETCHER], 8500', VII. 23"; coll. BM.

DIAKONOFF, 1976: 113 (*Parasyndemis*).

Male. Labial palpus grey with pale and dark scales, whiter above; remaining parts of head ash-grey to whitish grey; thorax grey mixed brownish medially. Forewing 7—10 mm, subtriangular with costa convex basally, then weakly so; apex acute, termen somewhat more strongly oblique and sinuate than in *humana*. Ground colour greyish spotted and strigulated black-brown, suffused brownish grey along dorsum and in distal area of wing; pattern weak, black-brown at costa, indistinct, diffuse in remaining areas, represented mainly by median fascia. Fringes rather concolorous with ground colour or more cream, darker basally. Hindwing pale cream-grey with more brown transverse strigulation; fringes paler than wing, median line brownish, partially atrophied. Female somewhat larger than male with forewing hardly broadening terminally, costa rather straight beyond base, apex somewhat longer, termen more strongly concave. Hindwing darker.

Variation. The most common form is that with pale grey ground colour and weak brownish grey pattern. Basal blotch is constantly atrophied and only base of costal fold is brownish grey; median fascia is dark costally and its proximal portion extends from 1/4 of costa, then it is pale grey-brown, expanding towards dorsum. The subapical blotch subtriangular slender; a weak brownish grey suffusion before termen medially. The specimens collected in Thodung, Nepal at the altitude of 3100 m are well patterned. The females are characterised with well developed median fascia and weak basal suffusion. They are darker than males. In all specimens rather distinct irroration or black-brown spots all over the wing.

Male genitalia (figs. 79, 80). Uncus very large, broadening towards middle, rounded terminally; socius as in preceding species; arm of gnathos strong, broadened terminally, rounded ventrally; termination of gnathos broad basally, rather short, pointed apically, provided with numerous denticles mainly ventrally. Ventral edge of sacculus convex before middle; labis slender; aedeagus small, symmetric, pointed ventro-apically; two cornuti in examined specimens.

Female genitalia (fig. 196). Eight tergite large, strongly sclerotized, pro-

minent dorsally, on each side provided with 5 plate-shaped folds becoming gradually smaller towards ventral lobes which extends dorsad to form distal, invaginated surface of tergite. Large, bulbous membran (glandular area?) situated in distal concavity of eighth tergite. Sterigma with short, concave proximally cup-shaped part and slender lateral arms, characterised with distinct median prominence beyond which the ostium area is situated; weak sclerotization of median part of membrane beyond lamella postvaginalis developed. Cestum very small, subterminal; signum minute with very small capitulum.

Bionomy. Moth collected from early May to end of July at the altitudes of 3100—3800 m.

Distribution. Known from Kashmir (India) and various parts of Nepal.

*Clepsis ingenua* (MEYRICK), **comb. nov.**

*Epichorista ingenua* MEYRICK, 1912, Exot. *Microlepid.*, 1: 9. Type locality: Kangra Valley, Sikkim. Holotype, female; „Kangra Valley, 4500', G. C. D.[UGDEON], VII. 99", G. S. 6852 [CLARKE]; coll BM.

Labial palpus 1.5, pale cream, remaining parts of head and thorax more ochreous. Forewing 6 mm, rather uniformly broad throughout; costa curved basally then rather straight; apex short, pointed; termen oblique, indistinctly concave medially. Ground colour cream suffused ochreous in basal half of wing mainly dorsally where delicately strigulated. Median fascia ochreous brown, browner at dorsum, with proximal edge gently concave extending from before middle of costa to beyond middle of dorsum. Dorsal portion of fascia brownish proximally. Subapical blotch at 3/4 of costa, ill-defined, concolorous with median fascia, producing a weak line towards middle of termen. Fringes concolorous with ground colour. Hindwing pale brownish cream; fringes mixed brownish.

Female genitalia (fig. 197). Sterigma small, rather well sclerotized, rounded proximally except for middle where weak concavity develops; ventral wall (lamella antevaginalis) short, dorsal wall twice longer, concave in middle distally; antrum short weakly sclerotized; cestum as long as ductus bursae, somewhat broadening terminally, entering into corpus bursae. Signum a small blade with large capitulum and long basal sclerites.

Bionomics and distribution: as mentioned in the type label.

Comments. Externally this species resembles *rurinana*. In the genitalia it differs in the shapes of the cestum and the signum.

*Clepsis rurinana* (LINNAEUS)

*Phalaena Tortrix rurinana* LINNAEUS, 1758, Systema Naturae, ed. 10: 823. Type locality: Europe.

*Phalaena Tortrix modeeriana* LINNAEUS, 1761, Fauna Suecica, 2: 347. Type locality: Stockholm.

*Phalaena Tortrix angulana* VILLERS, 1789, Linn. Ent., 2: 417, 612. Type locality: Europe.

*Cacoecia idana* KENNEL, 1919, Mitt. münchn. Ent. Ges., 8: 51 pl. 2, fig. 1 — *synon. nov.* Type locality: Sajon Mtns. Holotype, male (abdomen missing): „Sajan”; coll. ZMB

*Tortrix liotoma* MEYRICK, 1936, Exot. *Microlepid.*, 5: 60. Type locality: Sunpanting (China). Lectotype (designated by RAZOWSKI, 1964: 472), male: „Szetschwan, Sunpanting, Exp. STÖTZNER”, G. S. 4301; coll. NHMW.

KENNEL, 1910: 142, pl. 7, fig. 45 (*Tortrix*); BRADLEY, TREMEWAN & SMITH, 1973: 121, pl. 32, figs. 1—3 (*Clepsis*).

Misidentifications:

*consimilana*: TREITSCHKE, 1830: 75 (*Tortrix*).

*croceana*: CURTIS, 1850: 110 (*Tortrix*).

Labial palpus ochreous cream to ochreous brownish concolorous with remaining parts of head, thorax somewhat darker. Forewing 8—9 mm in male, 8.5—10 mm in female, sexual dimorphism not pronounced except for the shape of the forewing which is in female slenderer and the apex is slightly longer. Costal fold in male short, usually reaching to beyond 1/3 of costa. Ground colour ochreous-cream to brownish yellow, dorsum suffused brownish to middle, base of costal fold also infuscated, brownish. Median fascia from end of fold, strongly broadening towards dorsum, often interrupted subcostally, brownish, darker proximally; subapical blotch concolorous; one or two oblique lines parallel to median fascia, the longest extending from proximal edge of subapical blotch. Delicate brownish transversae strigulation both on the pattern and ground colour. Fringes concolorous with ground colour, mixed brownish in costal half terminally, more cream at tornus. Hindwing pale ochreous-cream, brownish in anal half; fringes pale cream, basal line weak, brownish. Female usually with more suffused basal half of wing, weaker median line and infuscate terminal part.

Variation. The European population is slightly variable; often the strigulation of forewing is completely atrophied, median fascia variably developed, sometimes dark especially in males with gently concave or irregularly shaped proximal edge. The length of costal fold varies even in the specimens of same locality. The shape of the forewing is in European specimens constant, e. a. the termen is slightly oblique and tolerably straight in males and more oblique and weakly sinuate in female. The specimens from West Tien-mu-shan (China) have similar shape of forewing, those from Li-kiang characterise with more oblique termen and in the Tsinling population termen is more oblique especially in females. The specimens collected in N. Korea are very small (length of forewing 6—7 mm) but do not differ from the European ones in the forewing shape. The coloration of the mentioned specimens is very variable. The specimens from Li-kiang and Tsinling are often dark with forewing suffused grey-brown and pattern brownish ferruginous; proximal edge of median fascia is edged whitish.

Male genitalia (figs. 81, 82). Tegumen smaller than in the two preceding

species. Uncus fairly broad, tapering from before middle, rounded apically; socius small; arm of gnathos rather slender. Sacculus slightly convex post-basally; terminal part of labis elongate. Aedeagus slender, provided with small subterminal denticle laterally; 4 or 5 cornuti in examined specimens.

Female genitalia (fig. 198). Sterigma proportionally small, rounded proximally with very short lamella antevaginalis; antrum short provided with small dorsal sclerite and minute sclerotization of the top of proximal sack. Ductus bursae expanding towards corpus bursae; cestum long broadening basally and terminally; capitulum of signum elongate, basal sclerite rather delicate.

Larva (chaetotaxy described by SWATSCHEK, 1958:49) brown-green with brownish subdorsal lines, black-brown prothoracic plate paler proximally and brown-yellow head. BRADLEY & all. (1973:122) provide somewhat different diagnosis: head and prothoracic plate pale brown the latter with black markings, anal plate brown, body grey-green, pinacula pale.

Bionomics. Larva in April, May and June and then in September and October (Europe) in rolled leaves of *Chelidonium*, *Urtica*, *Convolvulus*, *Euphorbia*, *Pulicaria*, *Anthriscus cerefolium*, *Linum*, *Lonicera*, *Acer*, *Fagus*, *Quercus*, *Rosa* (KENNEL, 1910; BRADLEY & all., 1973). After KUZNETSOV (1967: 51) the food plant is *Adenophora latifolia* in East Asia and YASUDA (1975:126) records *Larix leptolepis* from Japan. The moth flies in Europe from early June to late August, often in two generations. In China (West Tien-mu-shan) it occurs from beginning of April to mid-October. Collected up to the altitude of 2500 m (Paghman Mtns., Afghanistan). Biotops: open woodlands mainly.

Distribution. Known from whole Europe, Siberia, Primorskij Kraj, Mongolia, China (Tapaishan, Mien-shan, West Tienmu-shan, Kwanhsien in Se-chwan, Manchuria and Shanghai), Japan, Afghanistan (Paghman and Nuristan). DIAKONOFF (1977:145) records it from Bhutan. The data from India need confirmation.

Comments. The above described external variation of this species is not correlated with the variation in the genitalia. The female genitalia show indistinct variation. In the male genitalia the shapes of the uncus and the labis are variable.

### *Clepsis melissa* (MEYRICK)

*Capua melissa* MEYRICK, 1908, J. Bombay nat. Hist. Soc., 18: 613. Type locality: Khasi Hills (India). Lectotype, male (designated by CLARKE, 1958: 72): „Khasi Hills, Assam, III. 1906”, G. S. 6774 [CLARKE]; coll. BM.

*Capua epiclintes* MEYRICK, 1928, Exot. *Microlepid.*, 1: 1. Type locality: Calcutta (India). Holotype, female: „Calcutta, Bengal, A. [TKINSON], 15”, G. S. 6772 [CLARKE]; coll. BM. Synon. by DIAKONOFF, 1976: 98.

Labial palpus pale ochreous cream darker terminally, remaining parts

of head and thorax darker, mixed ochreous-brown. Forewing ca 8—10 mm; expanding terminally in male, with costa curved outwards to middle, slightly concave subapically, apex pointed, termen oblique, delicately concave before middle. Ground colour pale cream with delicate gloss, slightly suffused pale ochreous brownish in distal and dorsal parts of wing, strigulated with brownish; venation in distal third of wing brownish; pattern brownish with slight admixture of ochre or olive-grey. Basal blotch small, diffuse, atrophying in costal area, basal part of costal fold more grey; proximal edge of median fascia from  $1/3$  of costa to beyond middle of dorsum, gently concave; costal part of fascia 3 times slenderer than the dorsal diffuse part; subapical blotch triangular, reaching to apex with proximal edge extending in a straight line and terminating near tornus. Proximal parts of pattern darkened. Fringes white cream, terminations between apex and middle of termen brownish. Hindwing cream, mixed brownish on peripheries, venation brownish; fringes whitish cream, basal line weak, brownish. Occasionally cream-brown transverse strigulation in distal part of wing present. Female forewing more slender than that in the male, apex slightly longer, termen more oblique.

Variation. In males ground colour usually pale, more or less infuscated along edges and terminally, at times with distinct transverse strigulation; basal blotch showing a tendency to atrophy. Females are often darker than males and the suffusions may be more grey than in males. Basal blotch often replaced by large suffusion, remaining pattern brownish to greyish brown. Anal part of hindwing brownish, distal part cream slightly mixed ochreous, with more or less distinct transverse strigulation. One specimen from Darjeeling characterises with pearl grey ground colour of forewing and weak brownish mixed ochreous pattern.

Male genitalia (figs. 83—87). Tegumen stronger than in *rurinana*; uncus broad basally, slender in distal half; arm of gnathos fairly slender; sacculus as in preceding species but with variably dentate ventral prominence. Aedeagus slender, provided with minute ventro-lateral denticle situated more proximally than in *rurinana*; 4—7 slender cornuti in examined specimens.

Female genitalia (figs. 199, 200). Sterigma similar to that in *rurinana* but proximal part more convex; small prominence of median area just before ostium bursae; cestum indistinctly broadening terminally; signum larger than in preceding species.

Bionomics. Moth collected from early April to late September (China, Nepal) entering in the mountains up to the altitude of 2700 m.

Distribution. Described from Khasis but discovered also in Calcutta and Darjeeling in India. Known also from Nepal and China (Li-kiang).

Comments. Very similar to *rurinana* but easily distinguished by shape of the forewing, brown suffusion of the venation and the male genitalia. The above mentioned specimen from Darjeeling differs also slightly from the other specimens in the male genitalia (fig. 86, 87) and may represent a distinct subspecies.

*Clepsis insulata* (MEYRICK)

*Tortrix insulata* MEYRICK, 1908, J. Bombay nat. Hist. Soc., 18: 619. Type locality: Simla, India. Lectotype, male (designated by CLARKE, 1958: 243): „Simla, India, R. VII. 89”, G. S. 6835 [CLARKE]; coll. BM.

Labial palpus yellow-brown, remaining parts of head and thorax more ochreous, front paler. Forewing 7—9 mm; in male broad, expanding terminally with apex short, pointed, termen weakly oblique indistinctly concave; in female slender, uniformly broad throughout with apex somewhat longer, acute and termen shorter, more oblique. Ground colour cream-ochreous, mixed orange at wing base; median fascia represented by blackish costal marking and concolorous dorsal blotch connected by ochreous tranverse suffusion followed by more yellow shade extending from disc to tornus; subapical blotch black, accompanied by ochreous line extending from its base towards 2/3 of termen and two smaller markings situated more distally. Fringes ochreous-cream, mixed grey at tornus. Hindwing brownish cream, brownish grey in anal area; fringes pale cream; basal line indistinct.

Variation. Some males with intense ochreous-yellow ground colour and dark brown remainders of pattern. Basal blotch atrophied or wing base marked by one or two brown spots; basal part of costal fold brownish; median fascia atrophying in various parts, mainly medially and costally; subapical blotch often represented by a small spot; in some specimens row of spots among veins in distal third of wing. In the females the pattern is weak, often represented only by brown subternal spot, or the specimens are unicolorous.

Male genitalia (figs. 88—91). Tegumen fairly large; uncus slenderer than in preceding species, tapering terminally, rounded apically; arm of gnathos broadening terminally; terminal part fairly small. Ventral angulation of sacculus delicate; labis with small terminal part and well developed, however, slender dentate portion. Aedeagus slender, smooth; 4 cornuti in vesica.

Female genitalia (fig. 201). Eighth tergite more delicate than in *melissa*; sterigma short, provided with distinct, acute, ventral prominences laterally, concave medially. Antrum with short, dorsal sclerite; cestum long, reaching 3/4 of ductus bursae; signum fairly large.

Bionomics. Moth collected in April, May and August at the altitudes of 2000—2700 m in Nepal and in July in the type locality.

Distribution: India (Simla) and Nepal.

Comments. DIAKONOFF (1976:98) was first to include this species in the genus *Clepsis*. It is very close to *rurinana*, however, the sterigma in the female genitalia is highly specialised.

*Clepsis gemina* sp. nov.

Holotype, male: „Darjeel.[ing], MÖLL.”, G. S. 10320; coll. MGAB. Paratype, female identically labelled, same collection.

Labial palpus 1.5, brownish (in holotype missing), remaining parts of head

brownish yellow; thorax more brown especially medially. Forewing 6—6.5 mm, weakly expanding terminally with costa slightly curved outwards; termen weakly oblique, tolerably straight beyond apex; costal fold very slender, reaching  $1/3$  of costa. Ground colour pale brownish cream with yellow shade, weakly suffused brown at dorsum; costa so strigulated; pattern yellowish brown represented by diffuse spot at base subdorsally, weakly oblique median fascia characterised by dark, delicately concave proximal edge and diffuse posterior edge. Subapical blotch large, reaching apex, provided with some darker costal spots, proximal edge followed by a straight line reaching end of termen. Delicate transverse strigulation near termen medially. Fringes paler than ground colour, infusate at tornus, with indistinct median line. Hindwing pale brownish, venation suffused brown; fringes brownish cream; median line brownish. Female forewing somewhat slenderer with more oblique termen, pale brownish, with indistinct brown pattern represented by lines (distal edge of basal blotch, proximal edge of median fascia followed by dorsal suffusion, marked by spot at costa, and two parallel lines in apical area of wing). Fringes pale brownish.

Male genitalia (figs. 92, 93). Uncus slender, uniformly broad throughout, rounded apically; arm of gnathos broad, angulated medially; basal third of sacculus broad, labis small. Aedeagus short, slender, pointed ventro-terminally; 4 sites of the cornuti realised in vesica.

#### The group of *unicolorana*

*Pseudamelia* OBRATSOV, 1955, Tijdschr. Ent., 98 (3): 213 [part.]; 1954, *ibid.*, 97 (3); fig 117 [♀ genitalia].

Labial palpus 1.1—1.5; costal fold in male absent; sexual dimorphism rather slight: forewing in female slenderer than in male with shorter, more oblique termen.

Male genitalia: uncus broadening medially; socius vestigial or absent; gnathos simple, with slender arm; distal part of valva short, sacculus broad, more or less distinctly dentate ventrally, weakly tapering terminally; head of labis rounded dorsally, producing indistinct terminal process. Aedeagus slender, provided with small subterminal group of teeth.

Female genitalia: sterigma moderate with deeply concave median part and slender, characteristic specifically lateral parts and small cup-shaped portion. Antrum large, provided with weak sclerites; cestum wanting; no signum (one exception: *illustrana*).

Distribution: Palaearctic and Nearctic Regions.

Comparative remarks. In this group belong 9 species hardly differing in the male genitalia from one another; the differences in the female genitalia and in the external habits are more significant. A conspicuous variation in

the coloration and the shapes of the forewing noticed in some species. The Nearctic *fucana* shows some variation in the coloration and genitalia and one of those forms was described by OBRAZTSOV as a distinct species, viz., *kearfotti*. However, the examination of the larger series did not confirm the correlation between the shape of the forewing and the aedeagus. Basing on this variation POWELL (1964:234) synonymised all American forms with *fucana* and stated (personal communication) that *kearfotti* is also an infrasubspecific variation of it. The problem needs further study. The status of *kearfotti* and of some Palaearctic species cannot be treated as definitely fixed. Provisionally I have included in this group *C. illustrana* known to date from the single female only. It differs from all remaining species of this group in having well developed signum.

### *Clepsis tannuolana* KOSTIUK

*Clepsis tannuolana* KOSTIUK, 1973, Trudy vses. ènt. Obsch., 56: 164, figs. 4—6. Type locality: Munku-Hairhan-Ula. Holotype, male: „Tuva, Gornyi massiv Mongun-Taiga, g. Munku-Hairhan-Ula, 3000 m, gornaia tundra, 18. VI. 1968, KOSTIUK”; coll. ZIKU.

Head and thorax dark rust brown. Forewing 8—9 mm, with costa delicately curved outwards (less so in female than in male) beyond basal third; apex very short; termen fairly oblique, indistinctly concave postapically or straight. Ground colour pale ochreous yellow to olive-yellow, mixed grey along dorsum and in tornus area, pale and clear along costa. Pattern rust brown, darker brown in basal part of wing usually concave in middle of distal edge. Median fascia connecting proximal part of subapical blotch and the markings of tornal area. Several spots in terminal third of wing forming irregular marking; spot at apex. Subapical blotch with two or three paler places along costa. Fringes darker than ground colour, mixed grey to median line especially from beyond one-third of termen. Hindwing brownish grey with paler fringes. Female with more delicate pattern. Basal blotch and terminal pattern with a tendency to atrophy.

Variation. The males often with greyish ground colour and brown-grey suffusion in postmedian portion of median fascia. Some females with pale yellowish ground colour and ochreous brown pattern. Basal blotch and terminal pattern sometimes ill-defined.

Male genitalia (figs. 94, 95). Uncus broad, narrowing basally; socius vestigial. Transtilla broad. Aedeagus strong, provided with a group of subterminal teeth laterally; four thin cornuti in examined specimens.

Female genitalia (fig. 202). Sterigma short with small proximal prominences. Antrum provided with short internal sclerite distally, membranous proximally. Ductus bursae fairly long.

Bionomics. Moth flies in June and July at the altitudes of 1900—3500 m.

Distribution. Known only from the mountains of western Tannu-Ola, Tuva (U.S.S.R.).

*Clepsis insignata* OKU

In the species in question two subspecies are distinguished. The nominate subspecies comes from Japan, the other from the mountains of Norway. The latter was described as a distinct species under the name *Epagoge mehli*. For the comments see p. 137.

*Clepsis insignata insignata* OKU

*Clepsis insignata* OKU, 1963, Ins. Matsumurana, 25 (2): 95, figs. 1D-F. Holotype, male, „Mt. Daisetsu, Hokkaido, 10. VII. 1962, T. KUMATA leg.”; Coll. EIHU.

Head brownish grey, thorax usually darker. Forewing 6.5—7.5 mm, slender, hardly expanding terminally with costa indistinctly arched outwards beyond basal third in male, rather straight in female. Termen shorter and rather more oblique than in preceding species, hardly concave postapically. Ground colour whitish grey, sprinkled and strigulated brown-grey along dorsum and terminally where delicate reticulation or brownish suffusion occur. Pattern greyish brown to brown; distal edge of basal blotch (produced near middle) and proximal part of median fascia dark brown, some brown strigulae or dots on costal border of subapical blotch and terminally. Fringes rather concolorous with ground colour but with indistinct admixture of brown and without trace of shine. Hindwing pale brownish grey with somewhat paler fringes.

Variation. Some specimens examined with pale grey distinctly shining ground colour of forewing. Distal portion of median fascia pale or ill-defined especially in dorsal half of wing. Terminal third of wing occasionally pale with strong brown strigulation. Some specimens greyish brown in shade, with indistinct pattern.

Male genitalia (figs. 96, 97). Uncus slightly shorter than in preceding species, transtilla more delicate, aedeagus slenderer.

Female genitalia (fig. 203). Sterigma larger than in *tannuolana* with similar proximal prominences laterally. Sclerite of antrum shorter; ductus bursae longer.

Bionomics. The moth flies from second decade of July till mid-August in rocky terrains at high altitudes.

Distribution. Known to date only from the type locality (Kurodake and Nagayamadake — peaks of Daisetsu Mt.), Hokkaido, Japan.

Comments. This species is very similar to the preceding one and is also characteristic of high altitudes. It differs from it mainly in the female genitalia and coloration which is more dull.

*Clepsis insignata mehli* (OPHEIM), comb. nov., stat. nov.

*Epagoge mehli* OPHEIM, 1964, Norsk ent. Tidsskr., 12 (5—6): 174. Type locality: Vardø (Finnmark, Norway). Holotype, male, „Var dö, 20. VII. 1962; R. MEHL leg.”, G. S. 1339 [ZMO]; Coll. ZMO.

There is no external difference between this form and the nominate subspecies. The holotype is characterised by pale grey ground colour of the forewing and rust-brown pattern. The median fascia is broad, diffuse distally, connected with subapical blotch and tornal suffusion. Terminal portion of wing reticulate, basal blotch vestigial.

Male genitalia (figs. 98, 99) very similar to those in the nominate subspecies. Slight differences are to be found in the shapes of the uncus (more tapering terminally) and sacculus.

Bionomics. No data.

Distribution. Known only from the type locality.

Comments. The female unknown. The male genitalia rather damaged. I have not found any important difference in the external habits and the male genitalia between *mehli* and *insignata*. However, in this group of species the males show very slight differences and therefore the problem of *mehli* may only be solved on basis of examination of the female. For the time being I am treating *mehli* as a subspecies of *insignata*.

### *Clepsis lindebergi* (KROGERUS)

*Tortrix lindebergi* KROGERUS, 1952, Notul. ent., 32: 156, figs. 1—3. Type locality: Punkasalmi (Finland). Holotype, ♂, coll. ZNH.

TOLL, 1957: 349 (*Tortrix*).

Head yellowish with slight admixture of ochre on vertex; thorax more ochreous; abdomen brownish grey with yellowish terminal tuft. Forewing 9—10 mm, broader in male than in female, delicately curved outwards throughout; termen delicately sinuate beyond apex, more oblique in female than in male. Ground colour pale yellowish cream, glossy. Dense, transverse ochreous-yellow strigulation all over the wing. Fringes rather concolorous with pattern, much paler at tornus. Hindwing pale brownish grey, more cream basally; fringes greyish cream to whitish with brownish basal line.

Variation slight. Some specimens with broad, diffuse, transverse strigulation of the forewing. In other examples the strigulation is delicate except for that in middle of wing where indistinct median fascia is developed. Slight variation of the breadth of the forewing noticed.

Male genitalia (figs. 100, 101). Uncus slenderer and somewhat longer than in preceding species; socius absent. Aedeagus stronger; ten slender, fairly long cornuti in vesica.

Female genitalia (fig. 204) very similar to those in *insignata* differing in the shape of the sterigma and weak sclerite of antrum.

Bionomy. The moth flies from first decade of June to mid-July and in Bieszczady Mtns. till mid-August in various types of meadows incl. humid biotopes.

Distribution. Besides the type locality recorded from Pieniny and Bieszczady Mtns., Poland.

Comments. This species is distinct by the female genitalia and coloration being similar rather to *Aphelia paleana* (HÜBNER) than to remaining representatives of this genus.

*Clepsis unicolorana* (DUPONCHEL)

*Tortrix unicolorana* DUPONCHEL, 1835. Hist. nat. Lepidopt. Papillons Fr., 9: 103, pl. 240 fig. 6. Type locality: Avesnes, N. E. France.

*Tortrix asphodilana* HERRICH-SCHÄFFER, 1851, Syst. Bearb. Schmett. Eur., 4: 173. Type locality: Europe. *Tortrix aspodilana* [sic!] STEPHENS, 1852, List Specimens Br. Animals Colln Br. Mus., 10: 3.

*Tortrix labatiana* BREIGNET, 1890, Bull. Soc. ent. Fr.: CXLII. Type locality: Pessac, Gironde (France).

*Tortrix uhagonana* CONSTANT, 1890, ibid.: CLV. Type locality: no data.

*Tortrix unicolorana* var. *uhagoni* SEEBOLD, 1898, Annls Soc. Espan. Hist. nat., 27: 154.

*Tortrix unicolorana* var. *iberica* KENNEL, 1910. Zoologica 21 (54), pl. 9 fig. 24.

KENNEL, 1910: 179 (*Tortrix*). OBRAZTSOV, 1955: 213 (*Clepsis Pseudamelia*); 1954, figs. 114—116 = *rogana*.

Head brown, thorax slightly mixed ochreous. Forewing slender, somewhat broader in male than in female. Costa in males convex except for subapical third, in female almost straight except for basal portion, delicately concave subapically. Termen fairly oblique, indistinctly sinuate postapically, shorter in female than in male. Wing almost unicolorous brown with weak ochreous admixture especially in basal area. Fringes much paler than the wing, often slightly mixed yellowish or ochreous. Hindwing brownish to brown with distinctly paler fringes.

Variation slight. Some specimens with rust admixture, in other ones olive shine developed. Fringes and subapical portion of costa often paler than described above.

Male genitalia (figs. 102—105). Uncus much longer and slenderer than in all preceding species. Dentation of ventral edge of sacculus weak or atrophied. Aedeagus shorter, cornuti (ca 10) thin, longer than in other species of this group.

Female genitalia (fig. 205). Sterigma delicate, resembling that in *tannuolana* but without proximal prominences. Antrum provided with elongate internal sclerite.

Larva grey-brown with dark brown pinacula and shields. SWATSCHEK (1958:46) provides accurate description incl. chaetotaxy.

Bionomics. The larva were collected in March (KENNEL, 1910:179) and early April (SWATSCHEK, op. cit.). Hibernation probably in larval stage. Flight in April.

Distribution. Known from France and Spain. The specimens from North Africa (males from Morocco examined) somewhat differ from the European population. Until the females are examined I cannot decide about their conspecificity.

*Clepsis monticolana* KAWABE

*Clepsis monticolana* KAWABE, 1964, Trans. lepid. Soc. Jap., **15** (1): 1. Type locality: Mt. Tateyama, Toyama Pref., Honshyu (Japan). Holotype, male: „Mt. Tateyama (1900 m), Toyama Pref., Japan, August 29, 1962, A. KAWABE, leg.” Coll. Dr. A. KAWABE, Tokyo.

Labial palpus brownish laterally, whitish above. Remaining parts of head ochreous cream; thorax concolorous with vertex, browner proximally, whitish distally. Forewing 8—11 mm, fairly broad in male, slender in female. Costal edge gently curved outwards; apex rounded, very short; termen more strongly oblique and much shorter in female than in male, hardly concave postapically. In female fringes before apex produced, extending outwards. Ground colour whitish grey, delicately springled dark grey, suffused ochreous-cream basally. Brown stringulation along proximal half of costa, similar reticulation in terminal part of wing. Pattern indistinct, ochreous; basal blotch ill-defined, more distinct near dorsum distally; median fascia with distinct proximal edge, atrophied distally, marked with a row of darker spots proximally; subapical blotch absent. Fringes cream, median line diffuse, more ochreous. Hindwing pale grey-cream, occasionally mixed brownish or ochreous often delicately strigulated distally; fringes cream to ochreous cream.

Variation. The males show a tendency to atrophy of pattern. The median fascia often completely diffuse or absent the proximal edge being marked by a row of brownish spots. Rarely subapical blotch fully developed. Ground colour varies from whitish or grey to cream, yellow-grey, golden yellow or ochreous-yellow. The pattern, if present, is brownish, yellow-brown, rust, rarely grey-brown. Often unicolorous, mainly yellowish-ochreous-grey specimens occur. The females are usually monochrome, yellowish, ochreous-yellow, ochreous-brown or brownish grey. Hindwing in darker specimens brownish.

Male genitalia (figs. 106, 107). Uncus strong, broadest submedially, tapering terminally. Transtilla broad; aedeagus slender provided with a group of unequally sized denticles.

Female genitalia (fig. 206). Sterigma broad with well developed proximal prominences, rounded distally; antrum large with well developed median sclerite; ductus bursae proportionally short.

Bionomics. Moth flies in July and August at the altitudes of ca 1900 m. Biotope: grassy and rocky terrains among the dwarf mountain pines (*Pinus pentaphylla* MAYR, and *P. pumila* REGEL).

Distribution. Mountains of central Honshyu, Japan (Nagano Prefecture).

*Clepsis chishimana* OKU

*Clepsis chishimana* OKU, 1965, Kontyû, **33** (4): 452, figs. 1, 2. Type locality: Arakawa, Horomushiri Isl. Holotype, male: „Chisima, K. Doi; Arakawa, Horomushiro Isl., Kuriles, VIII, 26, 1926 [in Japanese]”, G. S.: 10018 [OKU]; coll. Dr. T. OKU.

*Clepsis jinboi* KAWABE, 1965, Kontyu, **34**, (4): 458, figs. 5—7, 19, 31 — syn. nov. Type locality: Sanpuku-goya, Honshyu, Japan. Holotype, male: „Sanpuku-goya, S. Alps Jap., Honshyu, 1. VIII. 1964, K. JIMBO”; coll. Dr. A. KAWABE, Tokyo.

Labial palpus brown, remaining parts of head paler; thorax brown to rust-brown. Forewing 9—11 mm, broad in male, much slenderer in female in which costa is less curved outwards in terminal part. Termen hardly concave post-apically, longer and less oblique in male than in female. Ground colour pale ochreous-cream, mixed rust in basal half of wing, suffused brownish in terminal area. Delicate, brown costal strigulation developed. Pattern rust-brown; basal blotch atrophied or represented by a suffusion; median fascia distinct, usually with straight proximal edge, diffuse in dorsal half of wing distally; subapical blotch subsquare. Fringes rather concolorous with ground colour. Hindwing whitish cream distally, pale brownish grey basally and in anal area; fringes paler.

Variation. In the males the ground colour is yellow-cream to ochreous, the pattern rust-brown to dark brown. Basal blotch rarely in form of distinct basal suffusion. In some specimens terminal marking is developed and often connected with a reticulation or suffusion of distal part of wing. Some specimens characterise with pale basal half of wing, some other ones with distal area suffused rust. In one female venation of distal area of wing suffused rust-brown. Hindwing occasionally brownish grey.

Male genitalia (figs. 108—111). Uncus broad except for basal part, more or less distinctly tapering terminally. The shapes of sacculus, aedeagus and transtilla rather variable.

Female genitalia (fig. 207). Sterigma delicate with small or atrophied proximal prominences; antrum long, with weak internal sclerite.

Bionomics. The moth is on wing in July to early October and occurs in the alpine zone up to the altitude of 3080 m in Mt. Arakawa.

Distribution. The mountains of Honsyu (South and North Japanese Alps) and (new data) Nagayama, Hokkaido.

Comments. This species shows both external and genital variation as mentioned above. The original drawing of the type of *chishimana* is inaccurate what probably caused misidentification of the KAWABE's material. I have found no sufficient differences between the holotype of the mentioned species and the representatives of the Honsyu population.

### *Clepsis aliana* KAWABE

*Clepsis aliana* KAWABE, 1965, Kontyû, 33 (4): 460, figs. 8, 20, 21, 32. Type locality: Mt. Daisetsu, Hokkaido, Japan. Holotype, male, „Mt. Daisetsu, Hokkaido, 22. VII. 1952, A. MURTUURA”; coll. Dr. A. KAWABE, Tokyo.

Externally the males of this species fit the specimens of *chishimana*. The females with brown median fascia of yellowish brown colour. Length of forewing 9 mm in male, 10 mm in female.

Male genitalia (fig. 112, 113) as in the preceding species but uncus seemingly shorter, rounded apically and cornuti longer.

Female genitalia (fig. 208). Sterigma with well developed proximal prominences and rather weak, short internal sclerite of antrum.

Bionomics. Moth collected 22. VII.—3. VIII. at the altitude of 2500 m.

Distribution. Known from Hokkaido and Honsyu.

Comments. The examined material is insufficient to decide about the status of *aliana*. The uncus, the only character differing the males is damaged. There is also no external difference between *chishimana* and *aliana* specimens. I follow the opinion of KAWABE about the conspecificity of the male and female of the species described by him.

### *Clepsis fucana* (WALSINGHAM)

*Lozotaenia fucana* WALSINGHAM, 1879, Ill. *Lepid. Heterocera* Brit. Mus., 4: 12, pl. 63 fig. 2. Type locality: Rouge River, Josephine Co. (S. Oregon, U.S.A.). Type, „Southern Oregon, middle of May 1872; Rouge River, Josephine Co., May 8, 1872”, Coll. BM.

*Cacoecia victoriana* BUSCK, 1921, Can. Ent., 53: 278. Type locality: Victoria, British Columbia (Canada). Coll. USNM.

*Clepsis busckana* KEIFER, 1933, Calif. Dept. Agric. Mo. Bull., 22: 351, pl. 1 fig. 1, 2. Type locality: San Francisco. Holotype (after POWELL, 1964: 235) „San Francisco, II-8-33, r. f. *Serophularia californica*, emgd III-6-33”, coll. USNM.

Misidentification:

? *Argyrotaenia citrana*: LANGE, 1941, Bull. Univ. Agric. Exp. Sta., Nr. 653: 55, fig. 21.

Head tan, labial palpus ca 1.2; thorax pale ochreous-brown; forewing 6.5—10.5 mm in male, usually broad with fairly straight termen. In female forewing 7.5—10 mm, slenderer than in male, with costa slightly concave subapically, apex somewhat longer, termen much shorter and more oblique. Ground colour pale tan to pale ochreous with darker strigulation along wing edges; pattern brownish to rust-brown consisting of median fascia, subapical blotch and occasionally diffuse basal blotch. Median fascia often atrophying towards costa. Brownish strigulation of distal part of wing often present. Fringes rather concolorous with ground colour. Hindwing cream sometimes suffused with pale brown-grey anally or on peripheries where delicate transverse strigulation may occur.

Variation. The males are more variable than females. Ground colour varies from whitish or yellowish cream to ochreous or rust-brown. The pattern is much darker, in pale specimens yellowish brown to rust-brown usually represented by remainder of the median fascia, in dark specimens ochreous-brown to dark brown. The pattern in those specimens is often complete, however, the basal blotch characterises with diffuse distal edge. Terminal pattern only exceptionally present, mainly in the examples with distinct transverse strigulation. Pale specimens are often dark immaculate. *Ab. busckana* is a reddish ochreous form. Its females similarly as some dark coloured males are often monochrome. A variation of the shape of the forewing is noticed.

Male genitalia (figs. 114—117). Uncus broadening medially, variable in length and shape; magnitude of valva and shape of sacculus also vary to some degree.

Female genitalia (fig. 209). Sterigma rather short with rounded proximal edge and well developed prominences. Sclerite of antrum distinct produced proximally along left side.

Larva described by MACKAY (1962:69).

Bionomics. The biological data are gathered by POWELL (1964:237). Moth occurs in two generations from April to June and in September and October, however, in some localities additive generations appear as the specimens were collected from March to December. The primary host is *Scrophularia californica* CHAM. but the larvae were found also on *Stachys* sp. and *Cynara scolymus*. MACKAY (op. cit.) records also *Cyclamen*. They construct vertical shelters tying the adjoining leaves into the shelter.

Distribution. After POWELL (1964:237) this species inhabits coastal areas from Victoria (British Columbia) to Monterey County (California).

Comments. The colour forms are only partially related geographically. The variation in the breadth of the forewing in male cannot be sufficiently explained, but seems to be of infrasubspecific value. The genitalia of the broad- and narrow-winged females are almost identical.

### *Clepsis kearfotti* OBRAZTSOV

*Clepsis kearfotti* OBRAZTSOV, 1962, Am. Mus. Novit., Nr. 2101, figs. 38—40. Type locality: Mt. Piran, Alberta. Holotype, male labelled (after original paper) „Mt. Piran, Alberta, August 17”, G. S.: 299 OBR.-[AZTSOV] Coll. AMNH.

Head, thorax and abdomen smoky grey. Forewing 8 mm, slender with termen oblique, short. Ground colour grey, pattern concolorous but darker, obliterate. Hindwing pale grey; fringes rather concolorous.

Male genitalia as in the preceding species. OBRAZTSOV points out that the aedeagus is distinctly gibbous. This shape of aedeagus was, however, found also in a specimen of *fucana*. The problem cannot be solved on the basis of available material. It seems *kearfotti* may appear only a colour form of the preceding species.

### *Clepsis illustrana* (KROGERUS)

*Tortrix illustrana* KROGERUS, 1936, Notul. ent., 16: 24. Type locality: Liikasenvaara, Kuusamo (55°15'N, Finland). Holotype, male: „Kuusamo, Liikasenvaara, 1. VII. 1935, H. KROGERUS”, G. S. 7606 [ZMH], coll. ZMH.

Head cream, labial palpus ca 1, somewhat greyer proximally; thorax brownish, collar with cream scales. Forewing 7.5 mm, hardly expanding terminally; apex rounded, very short; termen weakly oblique, indistinctly convex. Ground colour cream weakly mixed ochreous especially in distal and dorsal parts of wing. Basal area marked with some interrupted brown transverse lines; median fascia broad, brown, edged dark brown with proximal edge extending from beyond 1/3 of costa, gently concave; subapical blotch concolorous, subtri-

angular, connected with median fascia by a brownish suffusion reaching disc; a row of dark brown spots along termen and a stria subapically; fringes dark brown, paler basally. Hindwing pale brown with paler fringes.

Female genitalia (fig. 210). Sterigma fairly broad, provided with long proximal processes situated laterally; anterior portion of sterigma cup-shaped, short, fairly broad; antrum long; ductus bursae short; signum well developed, typical of the genus.

Comments. The male is unknown. The systematic position of this species is doubtful. It has been included (OBRAZTSOV, 1955:202) in the genus *Argyrotaenia* STEPH.

### The group of *pallidana*

*Siclobola* DIAKONOFF, 1947, Mem. Inst. scien. Madagascar, (A) 1 (1): 25.

*Clepsis Siclobola*: OBRAZTSOV, 1954, Tijdschr. Ent., 97 (3): 198.

Labial palpus usually about 2, in some species over 3. Costal fold present in males of numerous species; sexual dimorphism occasionally distinct.

Male genitalia: tegumen moderate to small; uncus rather broad; socius moderate to small; gnathos usually simple; aedeagus simple or provided with subterminal process.

Female genitalia: cup-shaped portion of sterigma reduced to various degrees, median portion concave.

This large group consists of the following, indistinctly separated subgroups, distributed in the Palaearctic Region except for the subgroup of *trileucana*.

In the *gerasimovi* subgroup arm of gnathos is strong, extending ventrally. Antrum with well developed, sack-shaped part.

The subgroup of *pallidana* characterises with broad uncus, slender, simple gnathos and fairly broad head of labis.

The subgroup of *trileucana* is characterised with large uncus, simple gnathos and elongate head of labis. Most probably *melaleucana* belongs in this subgroup. All species are Nearctic in distribution.

In the *oblimatana* subgroup belong the species with rather broad uncus and subtriangular valva. In *oblimatana*, *burgasiensis* and *soriana* labis shows distinct fusion with top of the basal sclerite of outer part of valva.

In the subgroup of *neglectana* valva is elongate, labis long, uncus broad, socius variable specifically, usually small. There is no distinct difference between this subgroup and the subgroup of *oblimatana*.

### *Clepsis gerasimovi* DANILEVSKY

*Clepsis gerasimovi* DANILEVSKY, 1962, Ent. Obozr., 42: 164, figs. 2, 3. Type locality: Bukhara, Uzbekistan. Holotype, male „Bukhara, 22. IV. 1928, R. GERASIMOV”, G. S. 4491 [ZIANL]; coll. ZIANL.

Head cream indistinctly suffused brownish grey, labial palpus 1.5, darkening terminally; thorax brownish cream. Forewing in male 6—7 mm, not expanding terminally; costa distinctly curved outwards to middle, then weakly so; apex broad; termen weakly oblique, slightly convex; costal fold ill-defined (part of up-turned edge with longer scales medially) reaching to 1/4 of the wing edge. Ground colour pale cream suffused yellowish brown, indistinctly strigulated brownish especially along dorsum and occasionally in terminal half of wing. Base of wing somewhat infuscated, without markings. Pattern brownish; median fascia extending from beyond 1/3 of costa to before tornus with proximal edge convex, strongly broadening from beyond costal third; subapical blotch at 3/4 of costa; fringes paler than pattern to vein  $m_2$ , then concolorous with ground colour. Hindwing slender, producing distally, pale brownish cream, marked by weak brownish transverse strigulation; fringes dirty cream. In female forewing 7—8 mm with costa indistinctly concave subapically, apex somewhat longer than in male, termen hardly concave post-apically; fringes with median line.

Variation. Ground colour varies from cream to pale brownish; transverse strigulation or reticulation in distal part of wing occasionally well developed. Pattern dark brown to brown-grey; anterior border of median fascia often pale edged, dorsal portion sometimes completely atrophied, distal edge showing a tendency to atrophy. In one specimen distal half of median fascia and subapical blotch brownish grey while proximal part of the fascia vivid brown. Hindwing in some examples pale brownish.

Male genitalia (figs. 118—119). Uncus long, slender, slightly expanding terminally, rounded apically; arm of gnathos broad, provided with small lateral prominence situated subbasally and long ventral part. Valva strongly tapering terminally; sacculus slender, convex in middle of ventral edge; labis broad, tapering terminally. Aedeagus with short, tapering terminally distal part, provided with ventro-apical denticle and pair of smaller dorsal thorns; group of short, strong cornuti in vesica.

Female genitalia (fig. 211). Sterigma rather short forming small ventral prominences situated near antrum; ostium broad; antrum weakly sclerotized with well developed sack-shaped portion which is somewhat more strongly chitinated. Ductus bursae long; cestum very short, proximal; signum provided with large capitulum and very short internal, blade-shaped part.

Bionomics. Moth is on wing from mid-April to early May, then it has been collected in July. Food plant: *Apocynum scabrum*.

Distribution. Known only from Bukhara and Chiva.

Comments. Originally this species was compared with the two following species. Its systematic position is, however, doubtful. It differs from all species of this group in having very strong gnathos.

*Clepsis sarthana* (RAGONOT)

*Tortrix sarthana* RAGONOT, 1894, Annls Soc. ent. Fr., 63: 180. Type locality: Tura. Lecto-type, male: „Tura”, G. S. 3695 [MNHN]; coll. MNHN.

KENNEL, 1910: 140, pl. 7, fig. 40 (*Cacoecia*).

Misidentification:

*celsana*: OBRAZTSOV, 1955: 216 (*Clepsis*).

Head brownish yellow to brownish cream, thorax rather concolorous or more brown. Forewing in male 11 mm, broad, expanding terminally; apex very short, rather pointed; termen weakly oblique, straight. Costal fold slender, reaching to middle of costa. Ground colour cream slightly mixed yellow-brown, somewhat infuscated in basal area of wing and along dorsum, marked with yellowish brown transverse strigulation or lines. Basal blotch developed in form of costal yellow-brown suffusion atrophying towards dorsum; proximal edge of median fascia rather straight, extending from third of costa to before tornus, yellow-brown, browner at costa, atrophied at dorsum, distinctly edged yellow-brown except for dorsal half of distal edge where diffuse and followed by a weak brownish shade. Subapical blotch convex ventrally edged brown, reaching apex. Fringes yellow-cream, more brown basally except for tornus where cream. Hindwing brownish cream; fringes paler than wing. Female forewing uniformly brown throughout, with costa indistinctly concave before apex, termen more oblique than in male, hardly concave post-apically. Ground colour with slight yellow-olive admixture, pattern often paler than in male.

Variation. Ground colour more or less distinctly suffused with brownish, greyish or olive; dorsum often infuscate, brownish; transverse strigulation usually well developed. Pattern brownish to olive-brown, at times pale. Basal blotch often atrophied or absent, median fascia in some examples much paler than subapical blotch, variable in shape. In some specimens costal portions of pattern much darker than the remaining parts.

Male genitalia (figs. 120—124). Uncus broad, tapering in distal part, rounded apically, rather variable in shape and length. Socius larger than in preceding species; gnathos arm slender, terminal plate large. Valva elongate; sacculus provided with submedian (variable in shape and size) ventral denticle; labis with short, densely dentate distal portion. Aedeagus provided with strong terminal denticle situated ventro-laterally (left side); cornuti about 30 thin spines.

Female genitalia (fig. 212). Sterigma developed in form of a ring surrounding the ostium, opened distally, producing lateral slender arms; distal part of sterigma membranous. Antrum long, fairly well sclerotized, concave in middle ventrally, provided with small sclerotized sack at the right side. Ductus bursae without cestum. Signum well developed but with very small basal sclerite; two elongate areas of strong sclerotization in distal part of corpus bursae.

**Bionomics.** The moth has been collected in May and June. One specimen collected in West Pamir (Afghanistan) in mid-July at the altitude of about 4000 m slightly differs genitally from the remaining specimens and is not included in the above description.

**Distribution.** Probably widely distributed in Central Asia. Apart from the type locality known also from Namangan, Lepsa, Samarkand and Alai Mtns.

***Clepsis celsana* (KENNEL)**

*Cacoecia celsana* KENNEL, 1919, Mitt. münch. ent. Ges., 8 (1917/18): 52, pl. 2, figs. 2, 3. Type locality: vicinity of Panfilov (Dshungarskij Ala Tau). Lectotype, male (here designated): „Umg.[ebung von] Dscharkent, Ili Geb., K. RÜCKBEIL, 1913; *Cacoecia celsana* n. sp.”, G. S 8946; coll. ZSM.

*celsana* [sic!] KENNEL, 1919: 95 (*Cacoecia*).

Misidentification:

*sarthana* [part.]: OBRATSOV, 1955: 216 (*Clepsis*).

Head pale brownish cream, labial palpus paler laterally, flagellum slightly browner; thorax pale brownish. Male: forewing 10—11 mm, similar in shape to that in *sarthana* but costa slightly concave or straight before apex; apex somewhat longer; termen more oblique, delicately sinuate. Costal fold very slender, reaching to one-fourth of costa. Colouration as in preceding species, in the lectotype, however, paler, more whitish cream. Dorsum and base of wing suffused yellow-brown, transverse strigulation developed mainly at the wing edges and in its distal third. Median fascia atrophying towards dorsum; subapical blotch rather slender, terminating at apex. Fringes darker than ground colour. Hindwing paler than in the lectotype of *sarthana*. Female forewing much slenderer than in *sarthana* with costa more concave subapically, apex longer, termen more oblique and sinuate.

Variation slight. Ground colour often pale yellowish cream, pattern brownish mixed ochreous or olive, basal and dorsal suffusions atrophying.

Male genitalia (figs. 125—128) similar to those in *sarthana* but uncus slenderer, sacculus stronger provided with variably shaped dentation of antemedian part of ventral edge of sacculus. Aedeagus longer, armed with two denticles, the larger, ventro-terminal curving to the right, the smaller situated more dorsally also at the left side. Cornuti 18—23 slender spines found in the examined specimens.

Female genitalia (fig. 213). Sterigma broader than in the preceding species, with slender lateral arm; antrum shorter with similar internal sclerite. Distal, band-shaped sclerite of corpus bursae stronger; basal sclerite of signum large.

**Bionomics.** Moth collected in June.

**Distribution.** Known only from Central Asia: Dshungarskij Ala Tau (vicinity of Panfilov and Topolevka near Samarkanda).

**Comments.** Very close to *sarthana* from which differs mainly in the shape of the forewing, sacculus and aedeagus in male and sterigma in the female. Similarly as in the preceding species the shapes of the uncus and sacculus are variable.

*Clepsis aba* sp. nov.

Holotype, male: "Tapaishan im Tsinling, Sued Shensi (China), 26. VI. 1935, H. HÖNE", G. S. 20683; coll. ZFMK. Paratypes, two males identically labelled but dated 24. VI. and 13. VII.

Head and anterior portion of thorax yellowish ochreous, distal portion of thorax brown. Forewing ca 10 mm, hardly expanding terminally; apex broad; termen fairly oblique, gently curved outwards, especially from beyond vein  $cu_1$ ; costal fold reaching to 2/3 of the wing edge, broadest in basal fourth. Ground colour ochreous-cream to pale brownish yellow delicately strigulated in distal half of wing. Basal portion of costal fold brownish; basal blotch rust-brown, atrophied in costal part; median fascia strongly broadening medially and somewhat less so dorsally, ochreous or pale rust-brown in costal third, dark brown with ferruginous shade in dorsal half proximally; subapical blotch elongate, pale rust-brown, delicately darker strigulated. Ground colour between basal blotch and median fascia suffused pale ferruginous in middle breadth of wing, dark brown, densely yellow scaled towards the pattern in dorsal area. Fringes concolorous with ground colour of distal part of wing, mixed ferruginous at apex. Hindwing pale grey-brown; fringes dirty whitish cream.

Male genitalia (figs. 129, 130). Uncus slenderer than in two preceding species, broadest medially; sacculus broadest beyond middle, convex before the end ventrally, without sharp prominences. Aedeagus large provided with long subterminal process situated on the right side; two long cornuti in vesica.

Female unknown.

*Clepsis spectrana* (TREITSCHKE)

*Tortrix spectrana* TREITSCHKE, 1830, Schmett. Eur., 8: 77. Type locality: Europe (after title of work).

? *Tortrix vinculana* TREITSCHKE, 1830, ibid.: 74. Type locality: Frankfurt/Oder.

*Tortrix latorana* STAINTON 1857, Entomologist's Annu.: 100. Type locality: Southend, England.

*Cacoecia costana* ab. *larseni* STRAND, 1927, Arch. Naturgesch., 91 (A12): 282.

*Cacoecia costana* ab. *fuliginosana* SCHILLE, 1917, Ent. Z., Frankf. a. M., 31: 57.

KENNEL, 1910: 143, pl. 8, figs. 1, 2. (*Cacoecia costana*); BRADLEY, TREMEWAN & SMITH 1973: 122 (*Clepsis*).

Misidentifications:

*costana* [non DENIS & SCHIFFERMÜLLER, 1775]: FABRICIUS, 1787, Mant. Insect, 2: 227 (*Pyalis*).

*gnomana* [non CLARKE, 1759]: HÜBNER, [1799], Sammlung eur. Schmett., pl. 21, fig. 131 ([*Tortrix*]).

*posticana* [non FABRICIUS, 1794]: WERNEBURG, 1864, Beitr. Schmett.Kunde, 1: 457, 558 (*Tortrix*).

*obliquana* [non HAWORTH, 1811]: WESTWOOD & HUMPHREYS, 1845, Brit. Moths, 2: 113, pl. 80, fig. 8 (*Lozotaenia*), cf. OBRAZTSOV, 1955: 215.

Head cream, lateral part of labial palpus scaled ochreous or brownish,

flagellum browner; thorax brownish yellow. Male: forewing 7—11 mm, weakly expanding terminally; costa distinctly arched outwards to middle; apex broad, rounded; termen slightly oblique, tolerably straight beyond apex: costal fold fairly broad reaching to  $1/3$ — $1/2$ . Ground colour cream to whitish yellow, costa spotted brownish. Median fascia ferruginous extending from one-third of costa, atrophying in median and dorsal parts of wing; subapical blotch reaching apex, rather concolorous with median pattern, also dark dotted costally. Fringes concolorous with ground colour. Hindwing whitish grey paler terminally; fringes pale. Female: forewing 8—12 mm, uniformly broad throughout, slender; costa delicately sinuate subapically; apex longer than in male; termen more oblique, delicately concave beyond vein  $m_1$ . Hindwing usually paler than in male, darker strigulated transversely.

Variation very distinct. Ground colour often very pale almost whitish, more or less densely irrorate brown or dark grey, costa brown or black spotted, similar spots on brown or grey pattern, especially along the edges of wing. Costal part of median fascia dark, slender, median and dorsal portions very broad, diffuse, pale. In dark specimens ground colour brownish yellow or ochreous, often without irroration; pattern dark brown to black-brown occasionally reaching tornus; subterminal suffusion in middle part of median veins developed; basal suffusion in several specimens forming an ill-defined basal blotch. Monochrome specimens are brownish cream to ochreous-cream. *Ab. liverana* is a melanic form noticed in England.

Male genitalia (figs. 131, 132). Tegumen slender; uncus fairly long, slender, not expanding terminally; socius small; arm of gnathos simple. Valva rather broad, tapering terminally; sacculus broad, indistinctly convex medially; terminal part of labis broad, strongly dentate; aedeagus strong, tapering terminally, simple; over 20 fairly long, spine like cornuti in vesica.

Female genitalia (fig. 214). Sterigma small with very short cup-shaped part and elongate-subtriangular lateral portions, deeply concave medially; antrum short with median sclerite situated dorsally, tapering towards long ductus bursae; cestum absent; signum strong.

Larva varying in colour; after KENNEL (1910:144) brown-green with whitish pinacula and black head and plates. After BRADLEY & all. (1973:123) greyish olive-green varying to brown, paler dorsally, with whitish subspiracular line, cream-white pinacula and concolorous black irrorated anal plate. Head and prothoracic plate black to blackish brown. After SWATSCHEK (1958:49) who provides also the chaetotaxy it is brown with black-brown plates and head.

Bionomics. Larva usually in May and June, but often found also in April then in summer and autumn. It lives in spun leaves, flowers, fruit and seeds of various herbaceous plants as *Cicuta*, *Comarum palustre*, *Cyclamen*, *Epilobium hirsutum*, *Glyceria spectabilis*, *Euphorbia palustris*, *Nasturtium palustre*, *Phragmites*, *Spirea ulmaria*, *Symphytum*, *Scirpus lacustris*, *Urtica* and after SWATSCHEK most frequently on *Iris pseudacorus*. After KENNEL the moth flies from May to July and then in August and September in three generations,

SWATSCHEK supposes that several generations appear but BRADLEY & all. record from England only two generations. Biotopes: mainly fens and marshes.

Distribution: Central, Northern and East Europe. KENNEL records it from Switzerland where it has been collected up to the altitude of ca 2000 m.

### *Clepsis pallidana* (FABRICIUS)

*Pyralis pallidana* FABRICIUS, 1776, Genera Insect., 2: 292. Type locality: Hamburg.

[*Tortrix*] *strigana* HÜBNER, [1799], Sammlung eur. Schmett., pl. 22, fig. 141. Type locality: Europe (after title of work).

*Tortrix Lozotaenia stramineana* HERRICH-SCHAEFFER, 1851, Syst. Bearb. Schmett. Eur., 4: 163. Type locality: Hungary and Rijeka (Yugoslavia).

*Tortrix quinquemaculana* BREMER, 1864, Lepidopt. Ost Sibir: 90, pl. 7, fig. 23. Type locality: Dahuria.

*Tortrix cesareana* JOANNIS, 1891, Bull. Soc. ent. Fr., 1891: LXXXIII — *synon. nov.* Type locality: Cesarea (Asia Minor). Lectotype, here designated, male: „Césarée, Type”, G. S. 3680 [MNHN]; coll. MNHN.

*Tortrix districta* MEYRICK, 1920, Exot. *Microlepid.*, 2: 342. Type locality: Tokyo. Holotype, male: „Tokio Japan, N. VII. 19”, G. S. 6847 [CLARKE]; coll. BM.

*strigana* KENNEL, 1910: 141, pl. 7, fig. 42 (*Cacoecia*); *caesareana* [sic!] REBEL, 1901: 87 (*Cacoecia*), *cesareana* KENNEL, 1910: 141 (*Cacoecia*).

Misidentifications:

*gnomana* [non CLARKE, 1759]: [DENIS & SCHIFFERMÜLLER], 1775, Wien. Verz.: 127 (*Phalaena Tortrix*).

*rhombicana* [part.] HERRICH-SCHAEFFER, 1851, Syst. Bearb. Schmett. Eur., 4: 160 (*Tortrix*).

*rhombana* [non DENIS & SCHIFFERMÜLLER, 1775]: Lederer, 1863, Wien. Ent. Mschr., 7: 47 (*Tortrix*).

Head yellow mixed ochreous or brownish; thorax somewhat darker. Male: forewing 8—11 mm, slightly expanding terminally; apex rounded; termen fairly oblique, not sinuate; costal fold slender, reaching to beyond 1/3. Ground colour yellowish; pattern ill-defined, reddish to ferruginous. Fringes slightly paler than ground colour. Hindwing pale grey with somewhat paler fringes. In female forewing 7—9 mm, uniformly broad throughout, slender with costa concave before apex; termen distinctly oblique, straight. Distal portion of hindwing usually whitish.

Variation. The most common form is ab. *strigana* characterised by distinct reddish pattern of the forewing varying to some degree. It consists of weak basal suffusion; two oblique, parallel fascias (first from 1/3 of costa to middle of dorsum, second from before middle of costa to tornus) and subapical blotch often accompanied by small subterminal marking. The fascias show a tendency to interrupte and reduction; in ab. *quinquemaculana* only some reddish sports are preserved, in ab. *stramineana* the pattern is completely atrophied and in ab. *cesareana* the forewing is distinctly suffused, basal blotch almost complete, distal part of wing covered by enlarged terminal pattern.

Male genitalia (figs. 133—135). Uncus broad, rounded apically; valva

broad, tapering in distal half terminally; ventral edge of sacculus more or less convex medially, rounded; labis with broad, dentate terminal portion. Aedeagus fairly long, provided with subterminal denticle situated on the left side, and several minute thorns. Three strong cornuti in vesica.

Female genitalia (fig. 215). Cup-shaped part of sterigma slender, somewhat concave proximally, weakly broadening distally, expanding dorsally; plate shaped part of sterigma consists of broad, rounded proximally antevaginal plate and much smaller, concave medially postvaginal wall, the former being distinctly incised medially. Antrum weakly sclerotized, delicately swung, broader than distal part of fairly long ductus bursae; cestum long; signum well developed.

Larva (after SWATSCHEK, 1958:48) yellow-green, indistinctly sculptured, head concolorous, marked with dark pattern, plates greenish. SWATSCHEK provides also the chaetotaxy. KENNEL (1910:142) mentions that the larva may also be brownish green.

Bionomics. Most frequently the larva is found in May and June in spun leaves and shoots of *Artemisia campestris*, *Euphorbia*, *Gnaphalium*, *Jurinea*, *Lactuca scariola*, *Sedum*, *Senecio*, *Spirea ulmaria* (after KENNEL) and in the Far East of *Astragalus membranaceus* (KUZNETSOV, 1967:51), *Artemisia montana*, *Demicago sativa*, *Malus pumila* and *Trifolium repens* (YASUDA, 1975:125). The moth occurs in two generations yearly (May to September). Biotopes: open arid terrains.

Distribution. Known from Europe, Asia Minor and Iran (KENNEL), West Sajan, East Tannu-ola, Tuva, Iuzhnoe Primore (U.S.S.R.), Mongolia, China (Tai-shan, Tapaishan, Chekiang, Nord Yunnan, Manchuria), Korea and Japan.

### *Clepsis melaleucana* (WALKER)

*Lophoderus melaleucanus* WALKER, 1863, List specimens lepid. Insects Colln Br. Mus., 28: 335. Type locality: North America.

*Lozotaenia biustulana* STEPHENS, 1834, Ill. Br. Ent., *Haustellata*, 4: 78. Type locality: west of England (given mistakenly, as the specimens originated from North America — cf. BRADLEY & all., 1973: 125) — nom. oblitum.

*Conchylis invexana* WALKER, 1863, List specimens lepid. Insects Colln Br. Mus., 28: 335. Type locality: Nova Scotia.

*Ptycholoma isemifuscana* CLEMENS, 1864, Proc. ent. Soc. Philad., 3: 519. Type locality: Virginia.

FREEMAN, 1958: 63, figs. 51, 91, 186, 187 (*Clepsis*).

Head cream-ochreous to tawny, front paler, labial palpus ca 1.5, dirty cream; thorax concolorous with upper side of head, end of tegula cream. Male: forewing 9—11 mm, slightly expanding terminally; costa curved outwards throughout; apex broad, rounded; termen slightly oblique, indistinctly convex; costal fold strong, gradually tapering towards the end, reaching to beyond middle of costa. Ground colour white-cream to cream. Basal blotch brown to brown-grey scarcely scaled with ochre, diffuse distally, costal fold dark brown to end of the blotch. Costal part of median fascia ochreous grey to brown-

ish, or absent; median part brown, densely sprinkled pale ochreous, dorsal portion dark brown marked with several greyish, often refractive spots. Subapical blotch concolorous with median portion of median fascia, usually dark dotted; two ochreous-grey, variably developed oblique lines linking subapical blotch and termen. Dorsum suffused brown. Costal portions of ground colour with white refractive scales, similar but much darker leaden-grey or even silver-grey scales on the pattern. Fringes concolorous with ground colour. Hindwing brownish grey; fringes whitish with pale brownish grey basal line. Female forewing 11—12 mm, less expanding terminally than in male. Ground colour usually paler; pattern atrophied in costal area except for the subapical blotch; dorsum completely suffused.

Male genitalia (figs. 136—137). Uncus fairly short, broader in basal part than terminally; arm of gnathos broad; valva broad, rounded terminally; sacculus strong, convex postbasally and near middle; distal part of labis slender, provided with long spines dorsally. Aedeagus long, delicately curved, terminating in ventral denticle, provided with postbasal flattened process situated on the left side rather laterally; large group of strong spine like cornuti in vesica.

Female genitalia (fig. 217). Sterigma cup-shaped, slightly tapering proximally, distinctly concave in anterior half ventrally; lateral arm of sterigma slender; antrum broad, provided with short subdorsal sclerite; ductus bursae and cestum long; signum present.

Larva (after MACKAY, 1962:68, fig. 62) yellowish, head and prothoracic plate brownish yellow, pinacula somewhat darker than the body. MACKAY gives also the description of chaetotaxy.

Bionomics. Larvae were collected in early May, June and July. They tie together the leaves of *Caulophyllum*, *Polygonatum* and *Trillium*. Moth found already in June; rather common.

Distribution: Southern Quebec and Ontario, Maine to New Jersey, Pennsylvania (FREEMAN, 1958).

Comments. The female genitalia highly specialised; the position of the species is incertain.

### *Clepsis trileucana* (DOUBLEDAY)

*Sericoris trileucana* DEUBLEDAY, 1847, Zoologist, 5: 1729. Type locality: Cornwall (probably mistakenly labelled specimens from North America).

*Craesia persicana* FITCH, 1856, Trans. N. Y. State agric. Soc., 16: 357. Type locality: ?New York.

*Ditula ? blandana* CLEMENS, 1864, Proc. ent. Soc. Philad., 3: 515. Type locality: Brunswick, Maine.

*Lozotaenia fragariana* PACKARD, 1869, Guide Stud. Insects: 335. Type locality: Maine.

*Tortrix Argyrotaenia conigerana* ZELLER, 1875, Verh. zool.-bot. Ges. Wien., 25: 227. Type locality: Maine, Massachusetts and New York.

FREEMAN, 1958: 60, [part.], figs., 89, 182; figs. 49, 183 = *forbesi*.

Head pale orange-ferruginous, front paler, labial palpus ca 1.5, cream to cream-orange, upper side of antenna cream, brownish annulated; tegula ferruginous. Forewing 9—11 mm, in male expanding terminally with costa distinctly curved outwards, apex rounded, termen fairly oblique, slightly convex; costal fold strong reaching to beyond middle, slender terminally. Ground colour orange-yellow to ochreous in basal half of wing, base suffused ferruginous especially at costa. Proximal edge of median fascia from 1/3 of costa to 2/3 of dorsum, concave except for median part, often diffuse. Fascia ferruginous, gradually darkening distally, mixed brown in median part, suffused or sprinkled black-brown towards dorsum. Subapical blotch rust fusing with submedian part of median fascia leaving glossy white triangle of the ground at costa. Terminal part of wing cream or slightly mixed ferruginous, sinuate proximally, delicately strigulated ochreous or provided with a row of subterminal brown spots. Remaining part of wing as far as to the median fascia ferruginous or rust-brown, somewhat paler, more ochreous in middle. Fringes concolorous with distal part of wing, or ferruginous in costal half. Hindwing brownish grey; fringes greyish white, median line grey. Female characterised with uniformly broad forewing and somewhat more oblique termen.

Variation. Base of wing more or less infuscated; distal part of median fascia occasionally distinctly suffused brown or black-brown medially and dorsally followed by brownish pink suffusion extending towards costa beyond very short subapical blotch. Magnitude, shape and shade of this suffusion are variable; often it is distinctly strigulated or spotted brown. Distal part of dark marking distinct; terminal area of wing at times whitish, spotted or without any marking. Costal triangle white to silver-white.

Male genitalia (figs. 138, 139). Tegumen very broad; uncus very strong, rounded, long bristled. Socius large; gnathos simple with strong terminal plate. Valva elongate; sacculus weakly convex near middle with well developed post-median fold; labis slender, long. Aedeagus slender with dorso-lateral slender process on the left side. Four cornuti in examined specimens.

Female genitalia (fig. 217). Sterigma with very short cup-shaped part fused with the antrum sclerite, provided with fairly broad lateral parts; cestum short, proximal.

Larva (after MAC KAY, 1962:69) pale with brownish yellow prothoracic plate and head, the latter delicately dark patterned; pinacula moderate in size, concolorous with body. Chaetotaxy described and figured. Very close to *melaleucana*.

Bionomics. After FREEMAN (1958:61) the larva lives on various conifers and deciduous plants. MAC KAY mentions poplar, maple, rose, blueberry and *Ceanothus* as the food plants. GILLIATT (1930) provides detailed bionomic data and the list of the host plants. After that author the eggs are laid in the masses on upper surfaces of the apple leaves and on smooth bark in late June and beginning of July. Incubation durates 10—12 days; newly hatched larvae disperse on silken threads. They are unable to provide the shelters themselves

and utilise those of other insects and especially of *Spilonota ocellana* (F.). If no shelters are found the larvae dropped to the ground feed on various plants. Before the third instar they skeletonize the leaves and then crawl up to the apples between which they feed. Medium instar larvae drop to the ground in September and, build the hibernacula in the fallen leaves. After hibernation they skeletonize their hibernacula, then complete growth on various small plants or return to the feeding on the apple trees. For the pupation the larvae crawl down to find suitable spots under the bark or in the fallen leaves. Pupal stage durates 15—19 days. The moths fly from mid-June to mid-July.

Distribution. FREEMAN records this species from Goose Bay, Labrador, Nova Scotia to British Columbia, Alaska to California, Maine to Virginia and Minnesota. OBRAZTSOV (1962: 26) mentions it from Wyoming and Utah.

Comments. POWELL (1964: 241) treats it as a nominate subspecies bound to the eastern part of the North America and *forbesi* as the western subspecies. That author cited the bionomics concerning *trileucana* under *forbesi*, however.

### *Clepsis forbesi* OBRAZTSOV

*Clepsis forbesi* OBRAZTSOV, 1962, Am. Mus. Novit., nr. 2101: 22, figs. 41, 42, 46, 47, 49.

Type locality: Wellington, British Columbia. Coll. AMNH.

*Clepsis persicana forbesi* POWELL, 1964, Univ. California Publ. Ent., 32: 239, pl. 5, fig. 13, map 14, figs. 58, 108.

Misidentification:

*persicana* FREEMAN, 1958: 60 [part.], figs. 49, 183.

Coloration and wing shape as in preceding species but ground colour in proximal half of forewing more ochreous-orange, median fascia more orange-rust without brown or black-brown suffusions. Costal blotch of the ground colour small, elongate, rather parallel to median fascia, pale ochreous cream. Sub-apical blotch longer with proximal edge parallel to the distal edge of median fascia.

Variation. Costal patch of the ground colour showing a tendency to atrophy, occasionally it is completely suffused ferruginous, or absent. Dorsal half of median fascia much darker than the costal portion, often the two parts separated from one another.

Male genitalia (figs. 140, 141) as in preceding species but the uncus is more elongate and has somewhat longer base; the labis is slenderer and the aedeagus slightly shorter.

Female genitalia (fig. 218). Sterigma somewhat broader than in *trileucana*, sclerotized part of antrum longer, bulbous, weakly sclerotized portion of antrum longer, delicately sculptured; ductus bursae and cestum longer; signum larger.

Bionomics. The moth is on wing from June to early August; in the mountains of Utah collected up to the altitude of over 3000 m. The larva is probably a general feeder but no certain data (except for raspberry) is available. POWELL

(1964: 241) records after GILLIATT (1930) several plants and bionomics but that concerns the preceding species.

Distribution. This species is known to date from British Columbia, Wyoming, Utah, Nevada and California. It is apparently widely distributed in the western part of the North America.

Comments. POWELL (1964: 239) treats *forbesi* as the subspecies of the preceding species. I think, however, that the external and genital differences are sufficiently large to preserve it as a distinct species.

### *Clepsis dumicolana* (ZELLER)

*Tortrix dumicolana* ZELLER, 1847, Isis: 660. Type locality: vicinity of Syracuse (Sicily). Holotype, male: „*Dumicolana*, Syrac., 11. Mai”, coll. BM.

*Cacoecia dumicolana austriaca* AMSEL, 1951 [in:] HARTIG & AMSEL, Fragm. entom., 1 (1): 106 — *synon. nov.* Type locality: Sardinia.

KENNEL, 1910: 138 [part.], pl. 7, fig. 30 (*Cacoecia*; fig. 31 = *micromys*).

Head and thorax ochreous brownish, labial palpus pale ochreous. Forewing 8—9 mm, rather uniformly broad in distal half; costa distinctly curved outwards; apex rounded; termen fairly oblique, weakly convex; costal fold in male reaching to 1/3 of costa, broadest medially. Ground colour brownish grey with indistinct violet hue; pattern brown with similar violet admixture. Basal blotch represented by two spots or elongate median transverse marking being the remainder of the distal edge of the blotch. Median fascia very broad, with proximal edge extending from end of costal fold to before tornus, convex subdorsally. Distal edge of fascia arched outwards towards tornus; subapical blotch short, usually fused with median portion of median fascia; weak apical suffusion present. Fringes dirty cream, brownish basally. Hindwing brownish; fringes paler than wing with dark median line.

Variation slight; subapical blotch occasionally produced towards tornus being not fused with median fascia. Basal blotch weak or only its distal edge preserved, atrophying costally.

Male genitalia (figs. 142, 143). Tegumen rather small; uncus strong, distinctly broadening terminally; socius delicate; arm of gnathos simple, slender, terminal plate small. Valva short, rounded terminally; sacculus broad from beyond middle, slightly convex ventrally; labis short with broad, dentate head producing slender terminal process. Aedeagus fairly large provided with subterminal dorso-lateral denticle (left side); coecum penis short with short apodemes; cornuti: three fairly long spines.

Female genitalia (fig. 219). Cup-shaped part of sterigma rather short; tapering proximally, median portion deeply concave, lateral parts strongly tapering terminally. Antrum short with fairly weak median sclerite; ductus bursae short, broadening towards corpus bursae where short cestum occurs. Signum large without capitulum but with small basal sclerite.

Bionomics. The larva lives in April and May on *Hedera helix* and pupates in the spun leaves of that plant. The moth from mid-May to mid-July.

Distribution: Southern Europe except for Greece and East Spain.

### *Clepsis agenjo* OBRAZTSOV

*Clepsis agenjo* OBRAZTSOV, 1950, Revta Espan. Ent. Eos, 26: 302, fig. 2b. Type locality: Teruel (East Spain). Holotype, male: „Teruel, 935 m. S. Muñoz, VI. 1935”; coll. Dr. R. AGENJO, Madrid.

Head ochreous, vertex more ferruginous, thorax rust-brown. Forewing 6.5 mm, similar in shape to that in *dumicolana*; costal fold much slenderer, reaching to beyond 1/3 of costa. Ground colour darker than in preceding species; basal area infusate; median fascia with straight or weakly concave proximal edge, gradually broadening towards dorsum; subapical blotch short followed by two brown dashes; pattern edged ochreous-cream, especially the proximal edge of median fascia. Fringes and hindwing as in *dumicolana*.

Male genitalia (figs. 144, 145) as in the preceding species but uncus broader basally, weakly expanding towards the end, somewhat rounded distally. Aedeagus slenderer; coecum penis somewhat shorter, weakly curved; cornuti shorter, two in number.

Comments. There is no bionomic data except that of the labels of the type specimens. The differences to the *dumicolana* are very slight. In the genitalia species differ mainly in the shape of the uncus. The length of the coecum penis the two is in the two species rather similar, however, OBRAZTSOV supposed it to be an important character. That author also supposed that *agenjo* lack the costal fold which is, however, developed.

### *Clepsis micromys* (STRINGER)

*Tortrix micromys* STRINGER, 1929, Ann. Mag. nat. Hist., (10) 3: 26. Type locality: Ghazir. Holotype, male: „Ghazir, Syria, 1904, JOANNIS [Nr.] 1336”, G. S. 5323 [BM]; coll. BM.

Misidentification:

*dumicolana*: KENNEL, 1910: 138 [part.], pl. 7, fig. 31 (*Cacoecia*).

Head brownish cream; thorax brownish. Forewing as in *dumicolana*, 6 (in male) — 10 mm; costal fold in male absent. Ground colour much paler than in mentioned species, with slight admixture of cream colour; pattern brownish, dark brown at the edges, pale bordered. Basal blotch rudimentary; median fascia interrupted subcostally, with costal part small, slender and very broad dorsal portion; subapical blotch almost straight distally, producing towards termen. Fringes cream, somewhat infuscated at tornus. Hindwing broader than in *dumicolana*. Female darker, more brown than the male. Pattern without pale edges.

Male genitalia (fig. 146) very similar to those in the two preceding species but the subterminal denticle of aedeagus longer. Uncus (insufficiently seen in the genital slide) tapering basally, resembling that in *dumicolana*.

Female genitalia as in *dumicolana* but cup-shaped part of sterigma seemingly longer and antrum sclerite indistinct.

Bionomics: no data.

Distribution: Syria and Lebanon (Beirut).

Comments. The differences between this and the two preceding species are slight and should be confirmed on larger material.

### *Clepsis oblimatana* (KENNEL)

*Tortrix oblimatana* KENNEL, 1901, Dt. ent. Z. Iris, **13**: 228. Type locality: Palestine. Holotype, male: „Palaestina, 15. XII; Origin”, G. S. 11600; coll. ZMB.

*Tortrix palaestinensis* REBEL, 1911, Verh. zool.-bot. Ges. Wien, **61**: (150). Type locality: Jordan Valley. Holotype, male: „Jordantal, Wutadorf”, G. S. 7998; coll. NHMW.

*Cnephasia callimachana* TURATI, 1924, Atti Soc. Ital. Sci. nat., **63**: 153, pl. 5, figs. 47—49 — **synon. nov.** Type locality: Benghazi (Libya: Cyrenaica).

*oblimatana* KENNEL, 1910: 194, pl. 10, fig. 13 (*Tortrix*).

Head cream grey, vertex somewhat browner, concolorous with thorax. Forewing in male 8—10 mm, slender, usually weakly expanding terminally; costa almost straight; termen weakly oblique, tolerably straight beyond apex costal fold absent. Ground colour whitish cream with weak brown-grey admixture; costa spotted brown-grey, dorsum indistinctly so; termen dark edged. Pattern pale brown-grey spotted dark brown to brown-grey especially along the edges; basal blotch broad, dark basally and terminally; median fascia diffuse in median and dorsal parts of wing; subapical blotch divided in several parts followed by apical suffusion. Fringes much paler than ground colour. Hindwing pale grey-cream diffusely darker strigulated; fringes paler than wing with pale brownish grey basal line.

Variation. Ground colour varies from pale whitish grey to ochreous cream with brownish admixture and is occasionally sprinkled brown. Pattern in ochreous-cream specimens similar in shade, often ochreous-brown, costal spots dark brown, edges of pattern similarly coloured or marked by brownish spots. Proximal edge of median fascia almost straight extending from 1/3 of costa to 2/3 of dorsum. Terminal fourth of wing often paler than the median area, densely strigulated or reticulated brown. Distal portion of median fascia often diffuse or whole of dorsal half atrophied. Fringes occasionally marked with some transverse brownish bars.

Male genitalia (figs. 147—149). Uncus weakly expanding terminally, sometimes delicately concave apically; arm of gnathos fairly broad, terminal part spinulate ventrally. Valva rather broad; sacculus slender, weakly convex ventrally; labis with subtriangular head, weak dentate portion and long terminal prominence. Aedeagus thick, provided with long subterminal process situated on the left side submedially; 6 slender cornuti in vesica.

Bionomics. Moth collected in September, November and December.

Distribution: Palestine, Libya (Cyrenaica, Tripolitania) and Tunisia.

Comments. This species was placed by OBRAZTSOV (1956: 111) in the genus *Cnephasia* CURT. The structure of labis is very characteristic as its dorsal portion overlaps the valva and connects its outer sclerite. So developed structure occurs also in *soriana* and *burgasiensis*.

*Clepsis soriana* (KENNEL)

*Tortrix Heterognomon soriana* KENNEL, 1899, Dt. ent. Z. Iris, 12: 7, pl. 1, fig. 4. Type locality: Beirut. Holotype, male: „Beirut, Syr.[ia] c.[entralis]; Origin.[al]”, G. S. 4780; coll. ZMB.

*Tortrix seclusa* MEYRICK, 1926, Exot. Microlepid., 3: 247 — *synon. nov.* Type locality: Mt. Carmel, Palestine. Holotype, male: „Palestine, Mt. Carmel, 1925, At light, G. E. BODKIN”, G. S. 9357 [Clarke]; coll. BM.

KENNEL, 1910: 187, pl. 9, fig. 53 (*Tortrix*).

Head pale ochreous-brown, labial palpus over 2; thorax browner than head. Forewing in male 7—8 mm, weakly expanding terminally; termen somewhat oblique, delicately sinuate medially. Ground colour yellowish cream slightly mixed with brownish, indistinctly strigulated transversely; pattern and reticulation in distal portion of wing darker, rather brownish grey. Basal blotch short, convex; median fascia convex in middle of proximal edge, diffuse towards tornus; subapical blotch elongate, more brown than median fascia, reaching to apex. Fringes concolorous with ground colour with pale brown median line. Hindwing cream grey delicately strigulated brownish grey in distal half; fringes whitish, median line indistinct. Female: forewing ca 9 mm, uniformly broad throughout with costa weakly convex to middle, hardly sinuate before apex; termen oblique, slightly concave postapically. Ground colour in examined specimen (holotype of *seclusa*) pale ochreous-yellow, mixed ochreous-brown along costa especially at base, strigulated and sprinkled with same colour. Median fascia dark ochreous-brown, diffuse in dorsal half distally; subapical blotch represented by costal spot and suffusion; some spots in subterminal area of wing among the veins. Fringes more cream than ground colour.

Variation. Some males similarly coloured as the female. Dorsal portion of median fascia showing a tendency to atrophy, basal blotch in some specimens absent.

Male genitalia (figs. 150—152). Uncus weakly expanding terminally; terminal plate of gnathos without spinulae. Valva more elongate than in preceding species; head of labis broad with short terminal process. Aedeagus short, broad, minutely spined from beyond middle, provided with long dorso-lateral process on the left side; no cornuti in examined specimens.

Female genitalia (fig. 230). Sterigma fairly short with small cup-shaped portion and distinct proximal corners; median part of sterigma deeply concave, lateral portions tapering terminally; antrum provided with rather weak median sclerite; ductus bursae broad; signum minute, without capitulum, delicately serrulate towards the end.

Bionomics. Moth collected in March, April and May.

Distribution. Known from Syria (Aleppo, Ehazir), Lebanon (Beirut, vicinity of Saida), Israel (Tel Aviv), Palestine (Jerusalem), Algeria (Algiers) and Morocco (Mazagan).

Comments. KENNEL (1910: 187) mistakenly recorded Siberia as the type locality of this species. In the original description the same author gives, however, Syria.

*Clepsis burgasiensis* (REBEL)

*Tortrix burgasiensis* REBEL, 1916, Verh. zool.-bot. Ges. Wien, 66: (42). Type locality: Burgas (Bulgaria). Lectotype (designated by RAZOWSKI, 1971: 479), male: „Nr. 47, Burgas, I. X. 1910, P. TSCHORR”, G. S. 2335 [NHMW]; coll. NHMW.

*burgasensis* [sic!] DRENOVSKI, 1924, Z. wiss. Ins. Biol., 19: 233 (*Tortrix*); *burgisana* [sic!] THURNER, 1941, Mitt. K. Naturwiss. Inst. Sofia, 14: 22 (*Tortrix*).

Head brownish cream, front paler, antenna and thorax browner. In male forewing 7.5–10 mm, slender, weakly expanding terminally; costa weakly curved outwards in basal part, rather straight towards apex; termen oblique, delicately sinuate before middle; costal fold absent. Ground colour yellowish cream mixed ochreous in posterior half of wing. Basal area suffused brownish to form an ill-defined blotch; median fascia yellowish brown with edges parallel in costal area of wing; dorsal part of posterior edge strongly convex. Weak ochreous suffusion medially. Subapical blotch brownish followed by small spical marking; a row of spots subterminally. Fringes paler than ground colour, more cream. Hindwing brownish, mixed yellowish apically, marked with weak transverse strigulae; fringes grey-cream with grey median line. Forewing of female 8 mm, slender with costa delicately sinuate subapically; apex longer than in male, termen more strongly oblique, sinuate. Ground colour pale ochreous-yellow densely strigulated brown except for subterminal area of wing. Pattern brownish median fascia partially diffuse, basal blotch atrophied; subapical blotch long; termen brown edged.

Variation. In male ground colour varies from pale ochreous-cream to yellow-brown; basal half of wing paler than distal half; base of wing suffused especially at costa; costa often brown spotted, similar spots on pattern. Median fascia monochrome, more or less dark or with ferruginous inclusion medially; subapical blotch occasionally connecting distal prominence of median fascia. Strigulation ochreous brown to brown, usually weak.

Male genitalia (figs. 153–156). Uncus weakly expanding terminally; gnathos simple; basal part of valva broad; head of labis large, densely spined, tapering towards the end. Aedeagus provided with well developed dorso-lateral denticle; no cornuti in examined specimens.

Female genitalia (figs. 221, 222). Sterigma rather broad with weakly sclerotized ventral portion of the cup-shaped part; antrum broad distally, tapering towards ductus bursae, fairly well sclerotized; signum small without basal sclerite and capitulum.

Bionomics. Moth collected in August, September and October.

Distribution. Apart from the type locality (Burgas, Bulgaria) known also from Macedonia, Yugoslavia (Veles, vicinity of Ochrid Lake, Petrina).

Comments. This species differs from the preceding one in having longer and slenderer aedeagus. External differences are mainly in the shape of the forewing.

### *Clepsis coriacana* (REBEL)

*Heterognomon coriacana* REBEL [in:] REBEL & ROGENHOFER, 1894, Annln k. k. naturh. Hofmus. 9: 84. Type locality: Tenerife (Canary Is.). Lectotype (here designated), female: „Tenerife, Canary, IV. 1884, LEECH”, G. S. 5329 [BM]; coll. BM.

KENNEL, 1910: 186. pl. 9. figs. 51, 52.

Head pale brownish yellow, labial palpus 3, cream, tinged ochreous; thorax rather concolorous with head. Forewing in male 6—8 mm, slender, with costa indistinctly convex beyond basal third; termen oblique, not sinuate; no costal fold. Ground colour pale ochreous-cream with more or less distinct brownish admixture; transverse strigulation usually weak, brownish; pattern yellowish brown consisting of weak basal blotch preserved mainly at dorsum, median fascia usually interrupted subcostally and fused with subapical blotch; termen marked by a row of spots or suffusion. Fringes rather concolorous with ground colour, with brownish median line. Hindwing cream-grey, more cream and paler apically with indistinct transverse strigulation in terminal area; fringes dirty cream to white with weak median line. In female forewing 6.5—8 mm, somewhat slenderer than in male, with costa more straight beyond basal curvature; termen more oblique, delicately sinuate. In the lectotype ground colour pale cream with weak admixture of ochre and ochreous brownish remainders of pattern in form of diffuse spot before middle of dorsum and vertical marking above base of vein  $cu_2$  being a part of median fascia.

Variation. In males ground colour varies from cream to ochreous, with additions of grey or brown. Pattern variably developed, often marked with darker spots, smaller brownish dots or strigulae may occur on the ground colour. Basal blotch absent or represented by several small suffusions or spots; median fascia usually interrupted near middle or subcostally; subapical blotch in form of elongate streak directed towards middle of median fascia. In many specimens an irregular, partially diffuse subterminal marking present. Unicolorous males rather rare whilst the females are often monochrome, usually brownish ochreous. In some females dorsal part of median fascia and dorsal remainder of basal blotch noticed. Transverse strigulation of hindwing weak or absent.

Male genitalia (figs. 157, 158). Tegumen proportionally large, uncus strongly expanding in terminal third, rather uniformly broad in basal part, occasionally indistinctly concave apically; arm of gnathos broadening towards very broad (when seen laterally) terminal part. Valva slender; sacculus with sharp, rather

short postmedian prominence of ventral edge; head of labis rather slender. Aedeagus fairly long, tapering terminally, provided with short subterminal process; 3 long, spine like cornuti in vesica.

Female genitalia (fig. 223). Sterigma delicate with rounded proximal corners, deeply concave dorso-medially, convex distally. Antrum long, delicately sclerotized, tapering proximally; cestum long, strongly broadening at corpus bursae; signum provided with large capitulum but with indistinct basal sclerite.

Bionomics. Moth collected from beginning of January to end of June and in November and December. It occurs in several generations yearly. The larva feeds on *Astydamia canariensis*, *Artemisia argentea*, *Cistus monspeliensis*, *Fagoma cretica*, *Lotus* sp., *Phelipaea* sp., *Psoralea bituminosa*, *Plocama pendula*, *Rhamnus coriaria*, *Rubus fruticosus* and *Rumex lunarius* (the data from the labels of the specimens in the BM).

Distribution. Canary Is.: Tenerife; Morokko: Mazagan.

### *Clepsis canariensis* (REBEL)

*Tortrix subcostana* var. *canariensis* REBEL, 1896, Annln k. k. naturh. Hofmus., 11: 116. Type locality: Tenerife (Canary Is.).

KENNEL, 1910: 191, pl. 10, figs. 5, 6 (*Tortrix subcostana* var.).

Labial palpus somewhat longer than in preceding species; head and thorax brownish yellow to brownish ochreous; forewing as in preceding species but termen less oblique; coloration and variation also similar. Ground colour varies from whitish cream to brownish with additions of grey, brown or ochre; the pattern is much darker, usually more brown. Basal blotch in several specimens fairly well developed especially in dorsal part of wing but always atrophying towards costa basally. In some specimens distinct transverse strigulation developed in distal third of wing. In females the pattern weaker than in males, or atrophied. Hindwing brownish grey to grey except for distal half where cream to whitish, densely strigulated with brownish grey or grey.

Male genitalia (figs. 159—161) very similar to those in *coriacana* but uncus stronger, almost uniformly broad throughout; socius much larger; denticle of ventral edge of sacculus much longer, acute; labis broader with thicker spines; aedeagus somewhat longer, slenderer, up-curved, provided with submedian process situated before the end of left side.

Female genitalia (fig. 224) as in *coriacana* but sterigma shorter, less convex distally and antrum longer, rather uniformly broad throughout, indistinctly sclerotized.

Bionomics. Moth collected in January, April and May.

Distribution. Known from the Canary Islands (Tenerife and La Gomera) only.

*Clepsis neglectana* (HERRICH-SCHAEFFER)

*Tortrix Lozotaenia neglectana* HERRICH-SCHAEFFER, 1851, Syst. Bearb. Schmett. Eur., 4: 167 (1847, *ibid*, Tortr., pl. 9, fig. 59—non. binom.). Type localities: vicinity of Dresden, Frankfurt/Oder, Mark, and Silesia.

*Tortrix flavana* DUPONCHEL, 1834, Hist. nat. Papillons Lepidopt. Fr., 7: 87, pl. 239, fig. 6. — nom. praeocc. by HÜBNER, [1796—1799]. Type locality: France (after title of work).

*Heterognomon betulifolia* LEDERER, 1859, Wien. Ent. Mschr., 3: 248. Type localities: Silesia and Saxonia.

*Tortrix striolana* RAGONOT, 1879, Bull. Soc. ent. Fr.; 1879: CXXXII — *synon. nov.* Type locality: Switzerland. Lectotype, male (here designated): „Helv[etia]”; Type”, G. S. 287 [MNHNP]; coll. MNHNP.

*Tortrix xylotoma* MEYRICK, 1891, Ent. Mo. Mag., 27: 13 — *synon. nov.* Type locality: Algiers. Holotype, male: „Baugre, Algiers, 25. IV. 90”, G. S. 9364 [CLARKE]; coll. BM.

*Tortrix severana* KENNEL, 1901, Dt. ent. Z. Iris, 13 (1900): 227 — *synon. nov.* Type locality: Philippeville (Algeria). Holotype, female: „Philippeville; Origin. [al]”, G. S. 11583; coll. ZMB.

*Cacoecia delibatana* ROTSCHILD, 1912, Rovart. Lap., 19: 27, 49. Type locality: Flamuda (Hungary).

*Tortrix dorana* KENNEL, 1919, Mitt. Münch. ent. Ges., 8 (1917—1918): 60, pl. 2, fig. 12, pl. 4, fig. 1b. Type locality: Dsharkent = Panfilov (U.S.S.R.). Lectotype (here designated) male: „Umg[ebung] Dscharkent, Ili Geb.[iet], RÜCKBEIL, 1913”, G. S. 8952; coll. ZSM.

*Cacoecia acclivana* ZERNY, 1933, Dt. ent. Z. Iris, 47: 108, pl. 1, fig. 11 — *synon. nov.* Type locality: Becharré, Lebanon. Lectotype (designated by RAZOWSKI, 1971: 481): „Nord Libanon, Becharré, 1400 m, 12—28. VI. 1931, ZERNY”, G. S. 2533 [NHMW]; coll. NHMW.

KENNEL, 1910: 189, pl. 10, fig. 1 (*Tortrix*).

Head ochreous cream, thorax more ferruginous, flagellum of antenna mixed brown. Forewing in male 6—8 mm, weakly expanding terminally with costa distinctly curved outwards to middle, rather straight towards apex; termen weakly oblique, not sinuate; costal fold rudimentary. Ground colour cream-ochreous to pale brownish ochreous more or less distinctly strigulated transversely with brownish especially along dorsum and in terminal part of wing, often sprinkled brownish towards termen. Base marked with traces of basal blotch at dorsum or with indistinct suffusion. Remaining pattern brown with indistinct admixtures of yellow or grey, darker spotted or strigulated. Median fascia strongly broadening medially, diffuse beyond costal part posteriorly with proximal edge convex near middle, concave subdorsally; subapical blotch small accompanied often by two or three irregular lines formed by intervenular strigulae. Fringes more cream than ground colour, somewhat darker basally. Hindwing pale brownish grey, more white towards apex; fringes whitish, median line weak. Female forewing somewhat slenderer than that in the male; coloration paler, pattern weaker.

Variation. Costal fold in male often completely atrophied or very slender, usually brownish proximally. In many specimens basal blotch absent in others well developed dorsally. In dark coloured specimens subapical blotch showing a tendency to fuse with the median fascia, in pale ones dorsal part of the fascia is more or less atrophied. Ab. *severana* is almost unicolorous yellowish brown

and characterises with brownish costal remainder of median fascia. *Ab. striolana* has pale cream forewing slightly suffused with brown marked with numerous brownish strigulae.

Male genitalia (figs. 162—168). Tegumen elongate; uncus broad, rounded apically, tapering towards base; socius small; arm of gnathos slender, terminal plate elongate. Valva long, broadening postmedially where group of long, slightly thickened terminally bristles occur; sacculus provided with sharp subterminal prominence situated submedially; labis elongate with rather small dentate portion. Aedeagus slender with slender subterminal process; 2—6 cornuti in vesica.

Female genitalia (fig. 225). Sterigma short, deeply concave in middle of dorsal wall with slightly convex, rounded proximal corners (easily deformed). Antrum fairly large, partially well sclerotized, provided with small proximal, membranous sack; cestum long; signum capitate.

Bionomics. Moth flies in April and then in June and July. Food plant: *Fragaria*.

Distribution. The species is probably widely distributed in the forest-steppe zones of Eurasia as it has been collected in Europe incl. Ural Mtns., Cyprus, North Africa (Tunisia, Algeria), Near East (Lebanon) and Central Asia (Kirgisia, Tuva).

Comments. Apart from the external variation the species in question shows also the genital variation demonstrated in the length of the aedeagus and its subterminal process and in the shape and magnitude of the uncus. I have mistakenly (RAZOWSKI, 1971: 481) synonymised *acclivana* with *unifasciana* = *consimilana*.

### *Clepsis consimilana* (HÜBNER)

Two subspecies of *consimilana* are known to date, one occurring in the Palearctic Region, the other recorded from Madagascar.

### *Clepsis consimilana consimilana* (HÜBNER)

[*Tortrix*] *consimilana* HÜBNER, [1817], Samml. eur. Schmett., pl. 38, fig. 239. Type locality: Europe (after title of work).

*Tortrix productana* ZELLER, 1847, Isis: 660. Type locality: vicinities of Messina and Syracuse (Sicily).

*Tortrix Lozotaenia obliterana* HERRICH-SCHAEFFER, 1851, Syst. Bearb. Schmett., Eur., 4: 164. Type locality: Italy.

*Tortrix unifasciana* DUPONCHEL, 1843, Hist. nat. Papillons Lepidopt. Fr., Suppl., 4: 135, pl. 61, fig. 6. Type locality: France (after title of work).

*Tortrix eatoniana* RAGONOT, 1881, Ent. Mo. Mag., 17: 231 — *synon. nov.* Type locality: vicinity of Lisbon, Portugal. Lectotype (here designated), male: „*Eatoniana* RAG. n. sp., Portugal, Type”, G. S. 3699 [MNHN]; coll. MNHN.

*Tortrix fallaciana* FUCHS, 1903, Stettin. ent. Ztg., 64: 3 — *synon. nov.* Type locality: Castelbuono (Sicily).

*Cacoecia unifasciana* var. *semiana* CHRÉTIEN, 1915, Anns Soc. ent. Fr., 84: 294.

KENNEL, 1910: 138, pl. 7, figs. 32—35 (*Cacoecia*); p. 140, pl. 7, fig. 38 (as *eatoniana*).

Misidentifications:

*flavana*: OBRAZTSOV, 1955: 215 (*Clepsis*, *Siclobola*).

*externana* [non EVERSMAAN, 1844] OBRAZTSOV, 1955: 215 (*Clepsis*, *Siclobola*).

Head cream-ochreous to ochreous-rust, thorax often mixed brownish. In male forewing 6—8 mm, not expanding terminally, broadest near middle; costa curved to middle, then straight, or hardly concave subapically; termen weakly oblique, straight or indistinctly convex; costal fold slender, broadest postbasally, reaching to mid-costa. Ground colour yellow-brown to ochreous-cream with weak ferruginous shade, often delicately strigulated brownish; pattern much browner. Basal blotch absent or represented by a dorsal spot; median fascia slender in costal area, broad dorsally, usually diffuse in dorsal half; subapical blotch weak. Fringes more cream than ground colour, more ochreous basally and sometimes infuscated at apex. Hindwing brownish grey; fringes much paler, often mixed cream, with darker median line. In female forewing 7—9 mm, slenderer than in male, with costa less convex, apex more pointed, termen more oblique. Head, thorax and forewing usually ferruginous-brown or ochreous-brown with indistinct pattern, or unicolorous.

Variation. In males forewing sometimes very pale, yellowish cream with delicate, brownish pattern and base of costal fold, without or with transverse strigulation. Dark specimens are often monochrome or with brown-grey or traces of blackish pattern at dorsum. Occasionally the transverse strigulation is very strong and occurs all over the wing. In females distal portion of forewing is sometimes suffused dark brown or black-brown; pale coloured females are uncommon.

Male genitalia (figs. 169, 170) as in the preceding species but ventral prominence of sacculus longer and valva provided with a row of thick, curved transformed bristles situated medially. Shape of uncus changes to various degrees.

Female genitalia (fig. 226) as in *neglectana* but antrum somewhat shorter, cestum provided with broad, minutely dentate plate-shaped part entering corpus bursae and signum much stronger.

Larva (after SWATSCHEK, 1958:48) violet-green distinctly sculptured, with pale brown, brown marked head and brown plates, thoracic legs and pinacula. SWATSCHEK provides also the chaetotaxy. KENNEL (1910:139) writes that proximal edge of prothoracic plate and the pinacula are black.

Bionomics. Eggs (BRADLEY & all., 1973: 124) deposited in small groups (6—12 eggs in group) on the upper surface of the leaves along the midrib. Incubation durates ca 12 days. Larva lives from August to May hibernating in the third instar in hibernaculum made in dead leaves of the foodplant, e. g. *Ligustrum*, *Syringa*, *Hedera* as well as *Carpinus*, *Crataegus*, *Lonicera*, *Malus* and *Polygonum*. In Europe the moth flies from June to August and in September,

in North Africa some specimens have been collected in March and November, so one can judge there are at least three generations yearly.

Distribution. Known from Europe, Asia Minor, Lebanon (near Beirut), North Africa: Tunisia (Ain Draham), Algeria (El Biar) and Morocco (Tanger). KLOTS (1941: 126) recorded it from eastern U.S.A. The data on Siberia (BRADLEY & all.) seem doubtful.

Comments. This species is externally very similar to *neglectana* but may be easily distinguished by presence of large costal fold in the male and the shape of the forewing in the female. The genitalia of the two species are also very close. DIAKONOFF (1960: 124) incorrectly synonymised *xylotoma* with the species in question. The latter is, however, conspecific with *neglectana*. For comments on *acclivana* see p. 162.

### *Clepsis consimilana placida* (DIAKONOFF)

*Siclobola placida* DIAKONOFF, 1947, Mem. Inst. Sci. Madag., (A) 1: 135, pl. 61, fig. 6. Type locality: Tananarive (Madagascar).

The type of *placida* is unknown to me. OBRAZTSOV (1955: 216) treated it as a subspecies of *consimilana* and DIAKONOFF (1960:124) followed him recording the following differences to the nominate subspecies: „the sacculus is shorter in *placida*, with a subtriangular rising apical prominence, while it is distinctly longer, with a slender and more appressed apical tooth, in *unifasciana* [= *consimilana*]”. DIAKONOFF supposed that the shape of the sacculus is in this species constant, I have, however, found slight variation in its length in the specimens collected in various parts of Europe. BRADLEY & all. (1973:125) formally have not synonymised *placida* but in the distribution mentioned Madagascar under the European i.e. nominate form.

### *Clepsis siciliana* (RAGONOT)

*Tortrix siciliana* RAGONOT, 1894, Anns Soc. ent. Fr., 63: 182, pl. 1, fig. 2. Type locality: Sicily. Lectotype, here designated, male: „Sicile; *Lophoderus siciliana* RAG., Type, Orig.[inal]”, G. S. 749 [RÉAL]; coll. MNHNP.

*Cacoecia fluxana* KENNEL, 1901, Dt. ent. Z. Iris, 13 (1900): 227 — *synon. nov.* Type locality: St. Ildefonso, Spain.

*Archips granadanus* WALSINGHAM, 1903, Ent. Mo. Mag., 39: 183 — *synon. nov.* Type locality: Granada, Spain. Lectotype (here designated), male: „Granada, Granada, Spain, 17. VI. 1901, WLSM., 86119”, G. S. 5315 [BM]; coll. BM.

KENNEL, 1910: 140, pl. 7, fig. 39; pl. 7, fig. 36, 37 (as *fluxana*) (*Cacoecia*).

Misidentification:

*fluxana* [part.]: Obraztsov, 1955: 216 [*Clepsis*, *Siclobola*].

Head and thorax brownish yellow with ochreous admixture. In male forewing 7—8 mm, similar in shape to that in the preceding species, without costal fold or with its remainders reaching to before middle of costa. Ground colour brownish yellow, base strigulated with brownish; pattern yellowish brown con-

sisting of median fascia and small subapical blotch. Fringes paler than ground colour, concolorous with pattern proximally and somewhat paler at apex. Hindwing brownish; fringes brownish cream. Female forewing more slender, costa less convex than in male; termen more oblique. Pattern atrophied.

Variation. In males ground colour usually more cream and much paler than in nominate form, transverse strigulation often atrophying; pattern preserved only in costal portion of wing. Fringes cream to whitish, brownish to median line except for tornus where whitish and apex where brownish. Hindwing brownish grey; fringes cream-grey to whitish. Dorsal part of wing sometimes suffused ferruginous or orange; remainders of basal blotch exceptionally preserved. In *ab. granadana* ground colour cream-orange, pattern brownish rust in form of three spots situated at the wing edges (remainders of median fascia and subapical blotch). Females rather unicolorous varying in shade from brownish yellow to ochreous or orange.

Male genitalia (figs. 171—175). Uncus slender basally, very strongly expanding terminally, long bristled; socius very large; arm of gnathos slender, terminal plate small. Valva shorter than in two preceding species; sacculus slender; labis shorter than in *consimilana*, with much broader head. Aedeagus short, without process; single, exceptionally two very slender, variable in length cornuti in vesica.

Female genitalia (fig. 227). Sterigma delicate with very short ventral wall and weakly (except for the middle) sclerotized median concave portion of dorsal surface; antrum very short with weak internal sclerite; cestum and signum absent.

Bionomics. Moth collected in June and July; one specimen taken in August. Probably two generations yearly.

Distribution. This species is recorded from Sicily, Iberian peninsula (in Portugal from Soalhiera), Algeria: Oran and Mauretania: High Atlas.

### Group of *zeuglodon*

Labial palpus ca 1.5, up-turned. Costal fold in male distinct. Gnathos short; sacculus very strong, median sclerite of inner surface of valva very large, base of labis thin; membranous part of valva small, slender dorsally. Coecum penis provided with three strong apodemes.

### *Clepsis zeuglodon* sp. nov.

Holotype, male: „West Tien-mu-shan, Prov. Chekiang, 25. IV. 1932, H. HÖNE", G. S. 20697; coll. ZFMK. Paratypes, 2 males identically labelled, one of them dated 29. IV. 1932.

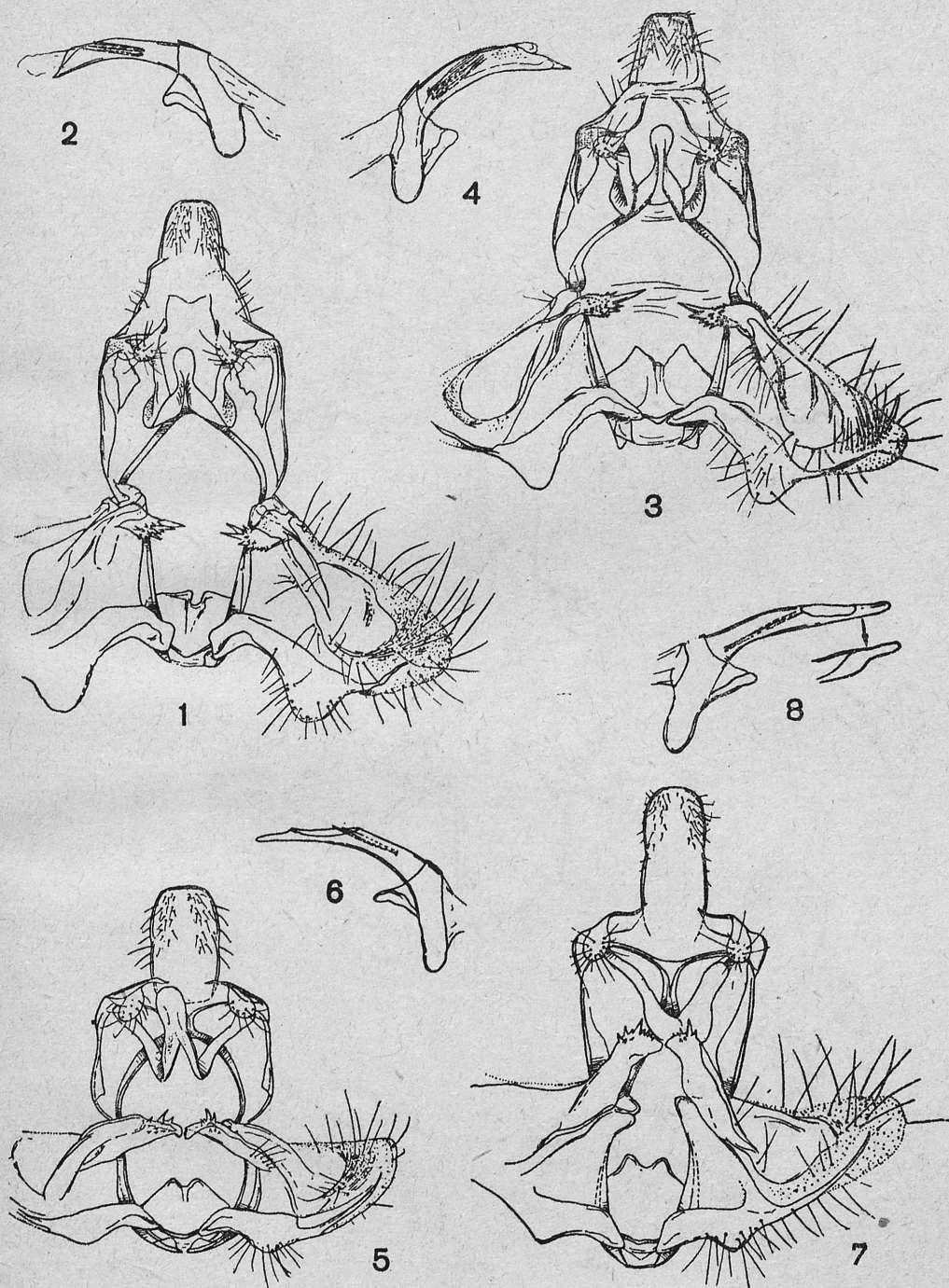
Labial palpus whitish, head more grey, front almost white; thorax mixed grey and ochreous-brown. Forewing 7—8 mm, rather slender, not expanding terminally, broadest near middle; costa curved outwards throughout, mainly

in basal third; apex short, pointed; termen oblique, not sinuate; costal fold reaching to about middle of costa. Ground colour cream-white delicately suffused and sprinkled grey-cream especially along dorsum; costal fold brown-grey. Pattern brown-grey consisting of ill-defined basal blotch, oblique median fascia strongly expanding in dorsal third, with straight proximal edge and ill-defined subapical blotch accompanied by some three smaller spots extending towards middle of termen. Fringes whitish. Hindwing pale brownish; fringes white cream with brown-grey median line.

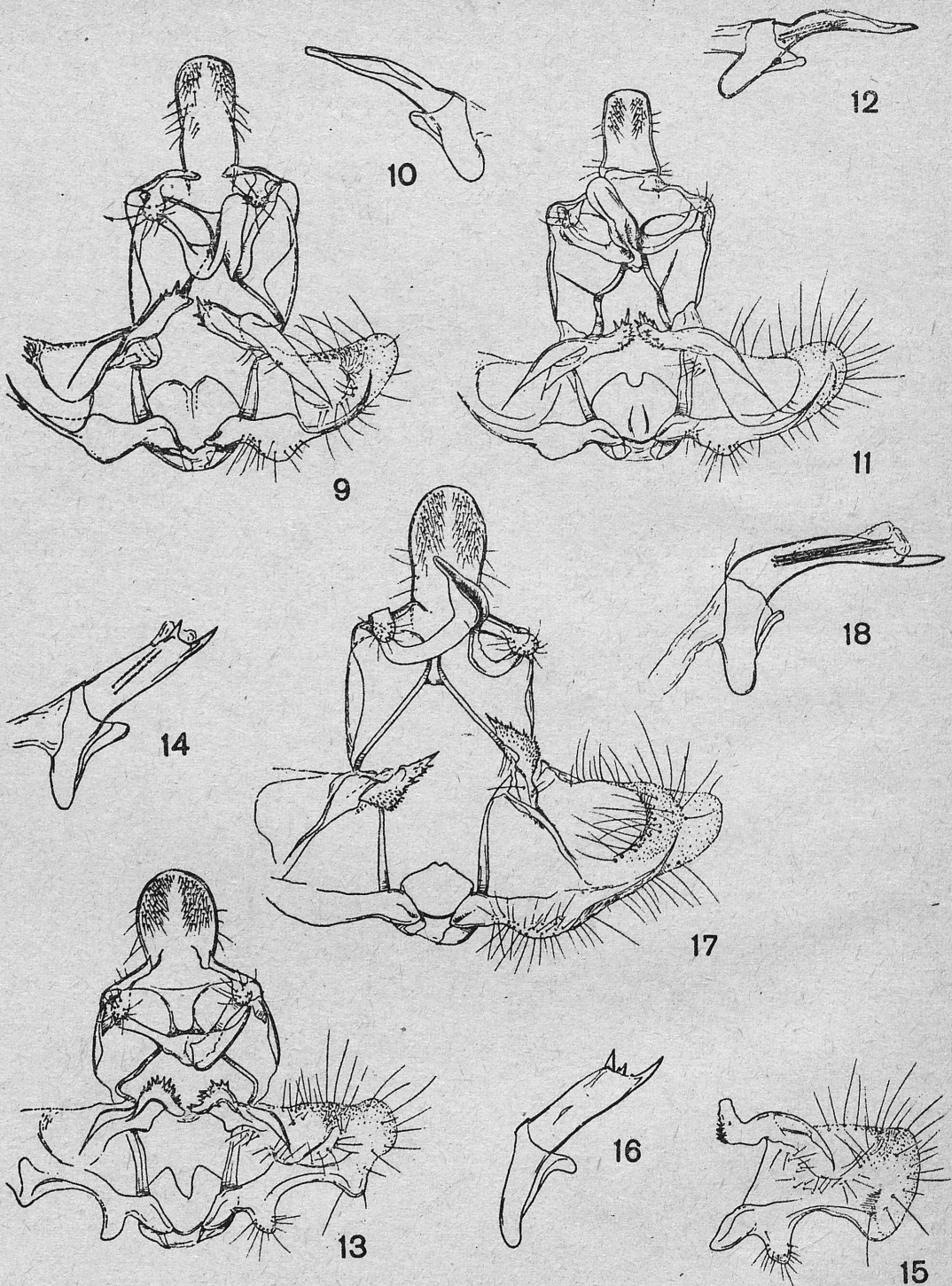
Male genitalia (figs. 176—178). Uncus slender, rounded apically, narrowing medially; socius fairly large; arm of gnathos with small subterminal prominence directed distally and large ventral process fused with base of terminal plate. Valva large, semiovate; sacculus with several small prominences of ventral edge and terminal convexity; head of labis elongate, curved. Aedeagus long, bent, armed with one lateral and one ventral thorn situated subterminally; two sites of cornuti in vesica.

Female unknown.

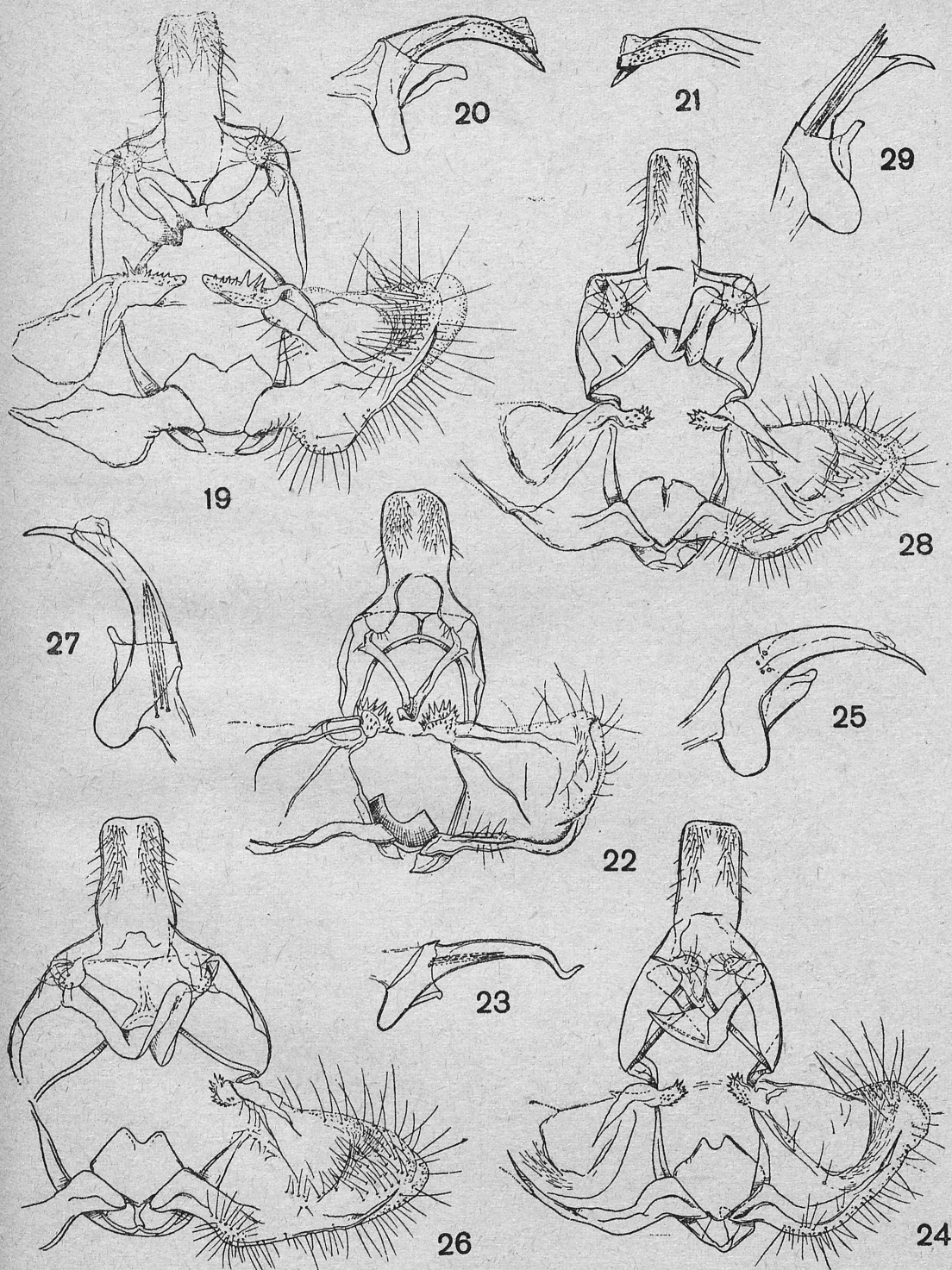
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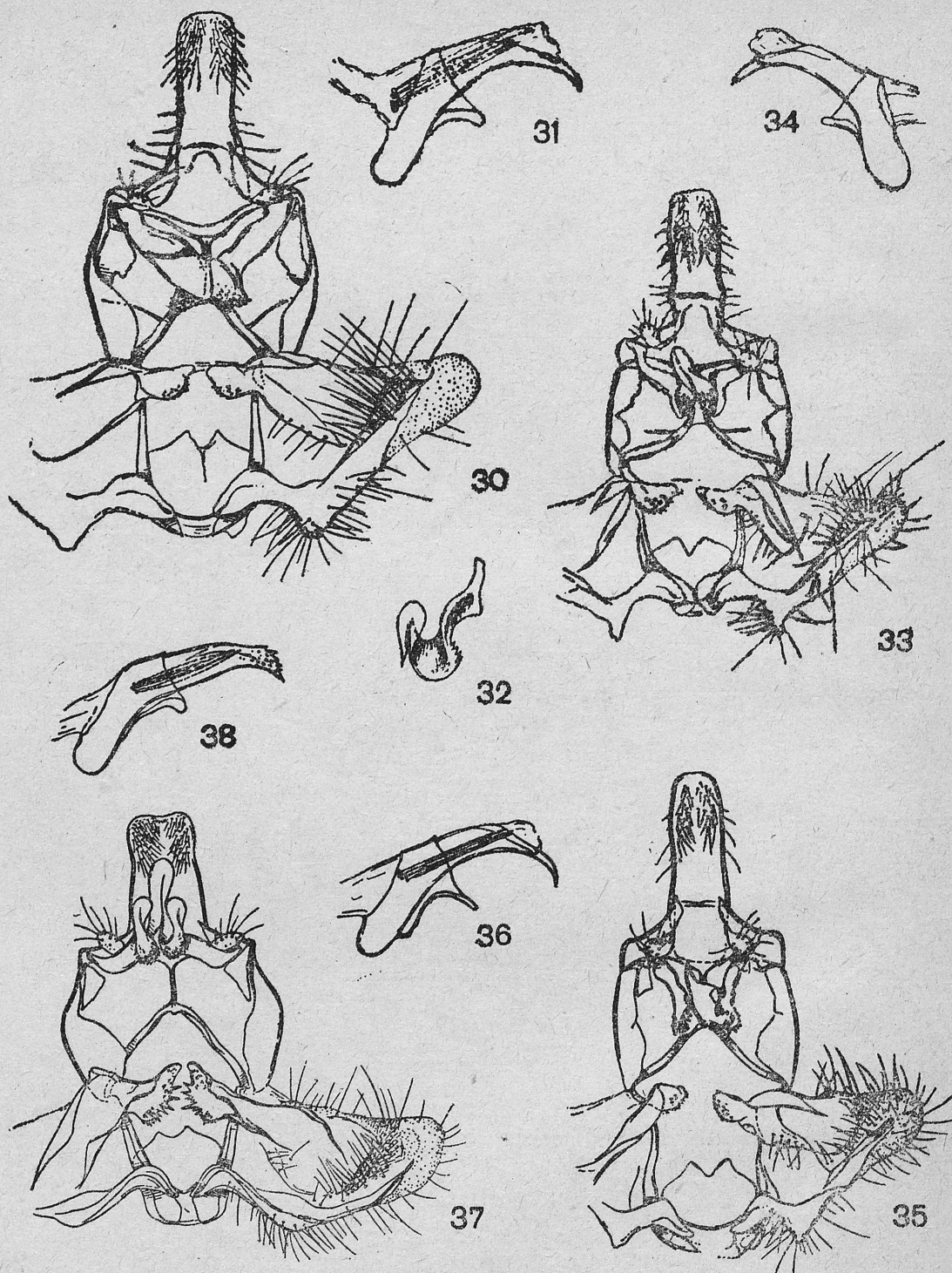
Figs. 1—8. Male genitalia of *Clepsis*: 1 — *C. moeschleriana* (Wck.), Gothic, Gunnison Co., U.S.A., G. S. 6015, 2 — aedeagus of same specimen, 3 — same species, paratype of *C. altaicensis* Kost., Upper Altai, G. S. 12795, 4 — aedeagus of same specimen, 5 — *C. balcanica* (RBL.), lectotype, 6 — aedeagus of same specimen, 7 — same species, Transylvanian Alps, G. S. 8947, 8 — aedeagus of same specimen



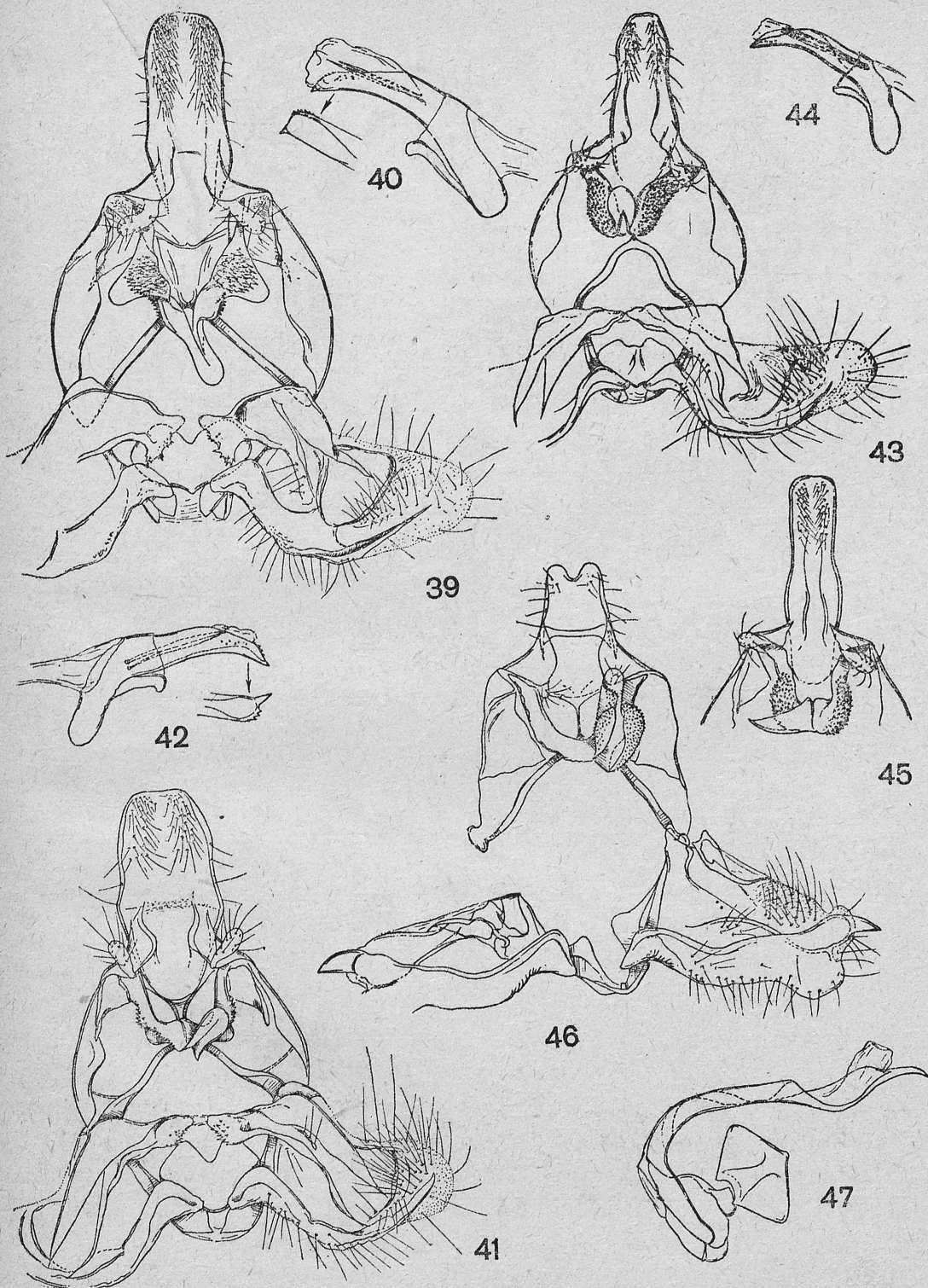
Figs. 9—18. Male genitalia of *Clepsia*: 9 — *C. balcanica* (RBL.), Pirang Mtns., Roumania, G. S. 7534, 10 — aedeagus of same specimen, 11 — same species, Bucsegi Mtns., Roumania, G. S. 10094, 12 — aedeagus of same specimen, 13 — *C. violacea* Raz., Mongolia, G. S. 8592, 14 — aedeagus of same specimen, 15 — valva of same species, Mongolia, G. S. 8528, 16 — aedeagus of same specimen, 17 — *C. clemensiana* (FERN.), Oneida Co., Wis., U.S.A., G. S. 12759, 18 — aedeagus of same specimen



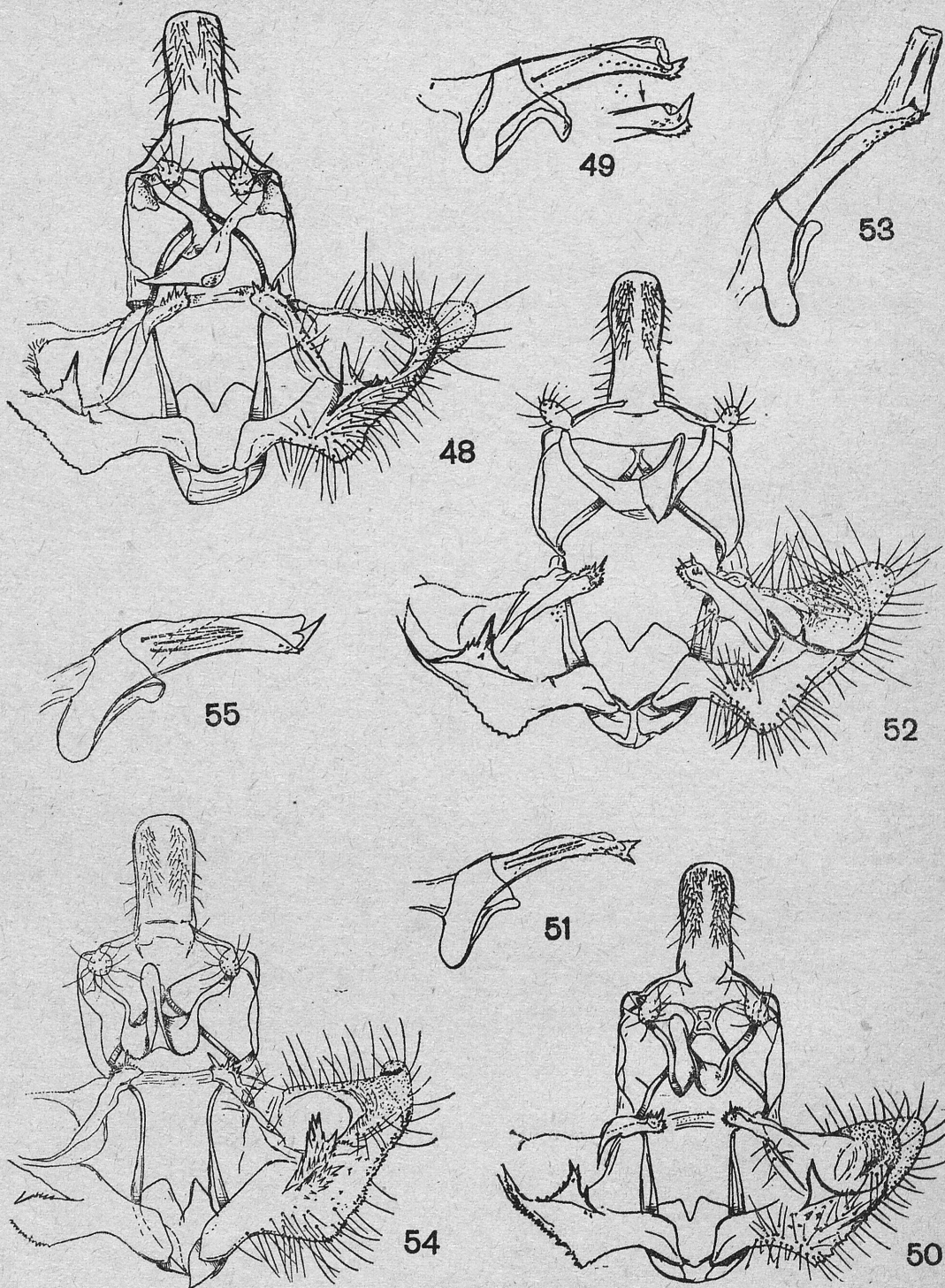
Figs. 19—29. Male genitalia of *Clepsis*: 19 — *C. danilevskyi* Kost., Altai Mtns. Kuraj Range, G. S. 12790, 20 — aedeagus of same species, 21 — same specimen, right side of end of aedeagus, 22 — *C. nybomi* HACKM., holotype, 23 — aedeagus of same specimen, 24 — *C. aerosana* (LED.), lectotype, 25 — aedeagus of same specimen, 26 — same species, Amur distr., G. S.B-39 [OBRAZTSOV], 27 — aedeagus of same specimen, 28 — same species, Amur distr., G. S. 10813, 29 — aedeagus of same specimen



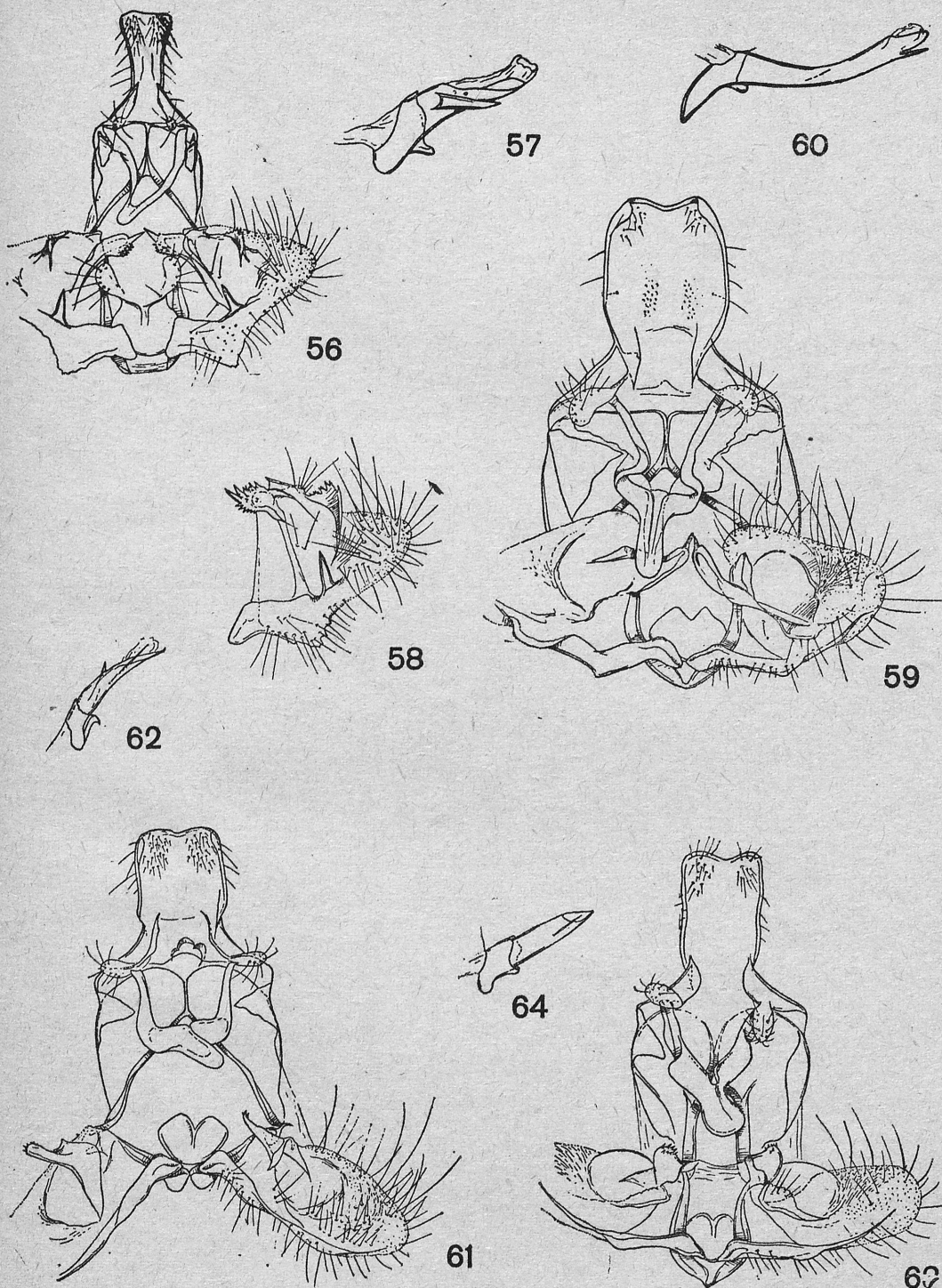
Figs. 30—38. Male genitalia of *Clepsid*: 30 — *C. rolandriana* (L.), Wiener Schneeberg, Austria G. S. 12781, 31 — aedeagus of same specimen, 32 — same specimen, part of gnathos not pressed by covering glass, 33 — same species, Nanos, G. S. 10102, 34 — aedeagus of same specimen, 35 — same species, Trebević, Bosna, Yugoslavia, G. S. 10100, 36 — aedeagus of same specimen, 37 — *C. plumbeolana* (BREM.), Raddefka (Amur distr.), G. S. 11587, 38 — aedeagus of same specimen



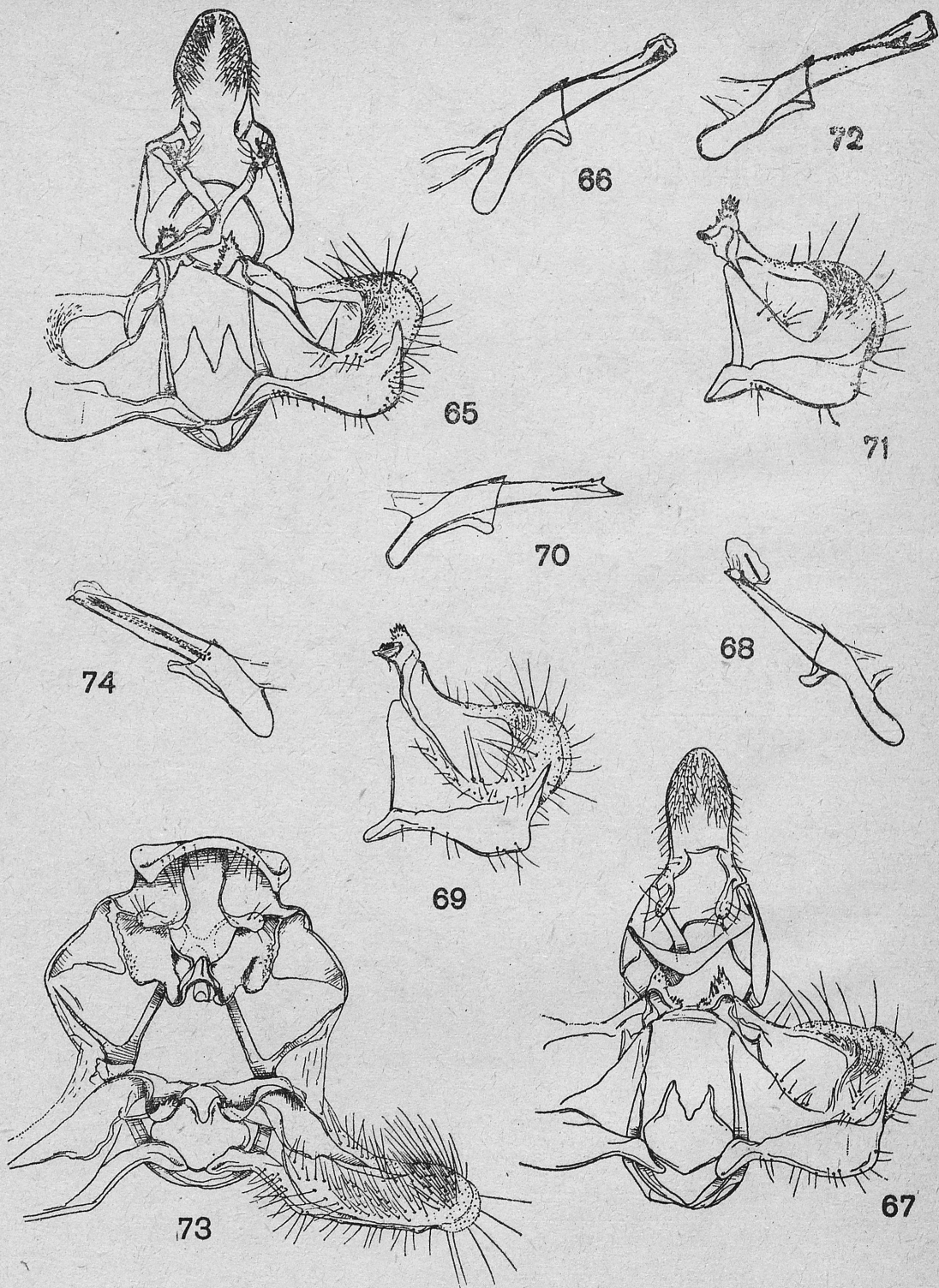
Figs. 39—47. Male genitalia of *Clepsis*: 39 — *C. crispinana* (KENN.), Altai Mtns., Kuraj Range, G. S. 12854, 40 — aedeagus of same specimen, 41 — *C. rogana* (GUEN.), Koscielec, Tatra Mtns., Poland, G. S. 12774, 42 — aedeagus of same specimen, 43 — *C. phaeana* (RBL.), Altai Mtns., G. S. 11605, 44 — aedeagus of same specimen, 45 — same species, part of tegumen with uncus, Altai, G. S. 11606, 46 — *C. altudinaria* (FIL.), holotype, 47 — aedeagus of same specimen



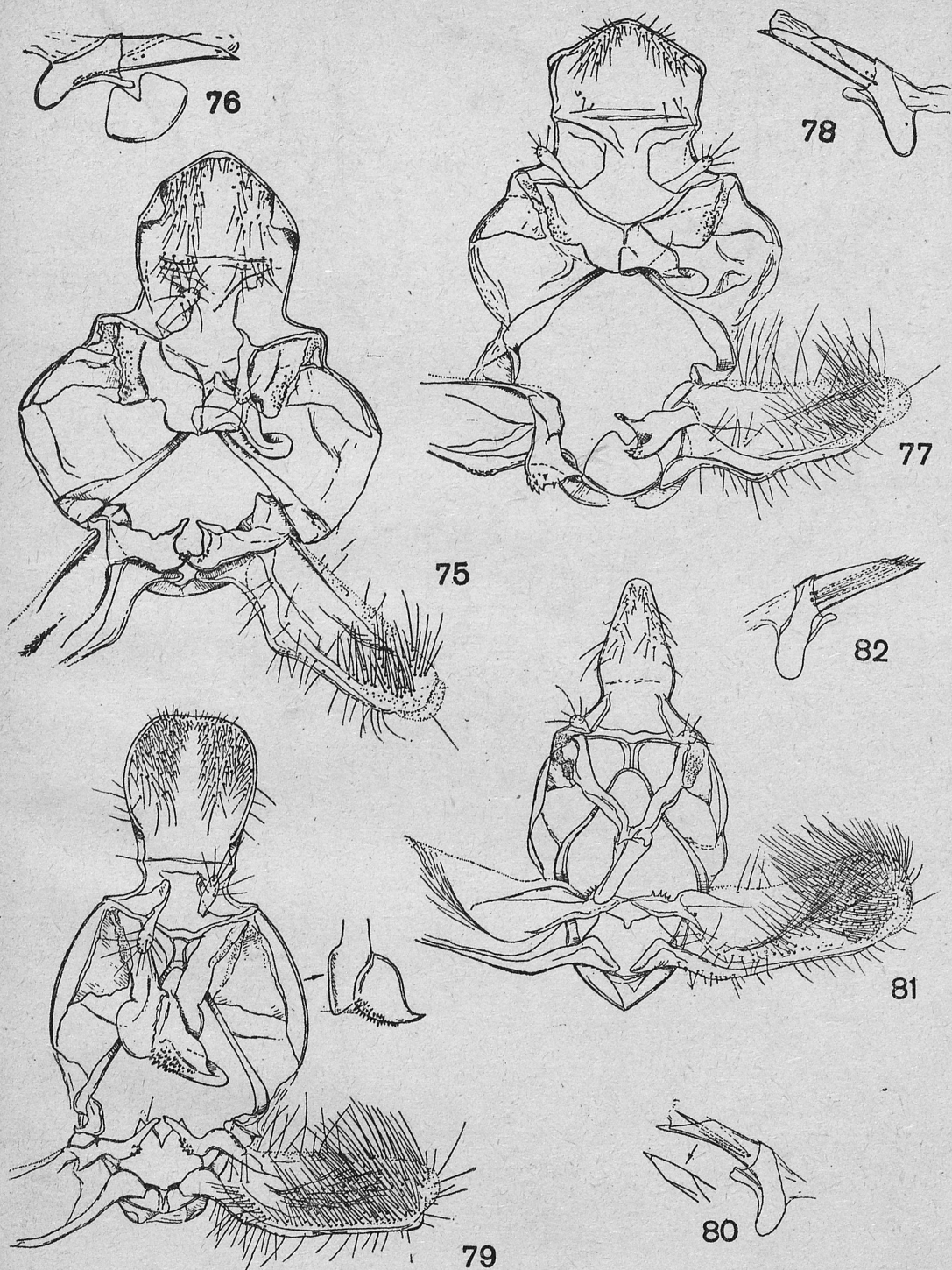
Figs. 48—55. Male genitalia of *Clepsis*: 48 — *C. steineriana* (HBN.), Engadin Mt., Switzerland, G. S. 12779, 49 — aedeagus of same specimen, 50 — same species, „Roxalne”, G. S. 10092, 51 — aedeagus of same specimen, 52 — same species, Coisova Kota, Yugoslavia, G. S. 10335, 53 — aedeagus of same specimen, 54 — *C. roganodes*, HANNEM., holotype, 55 — aedeagus of same specimen



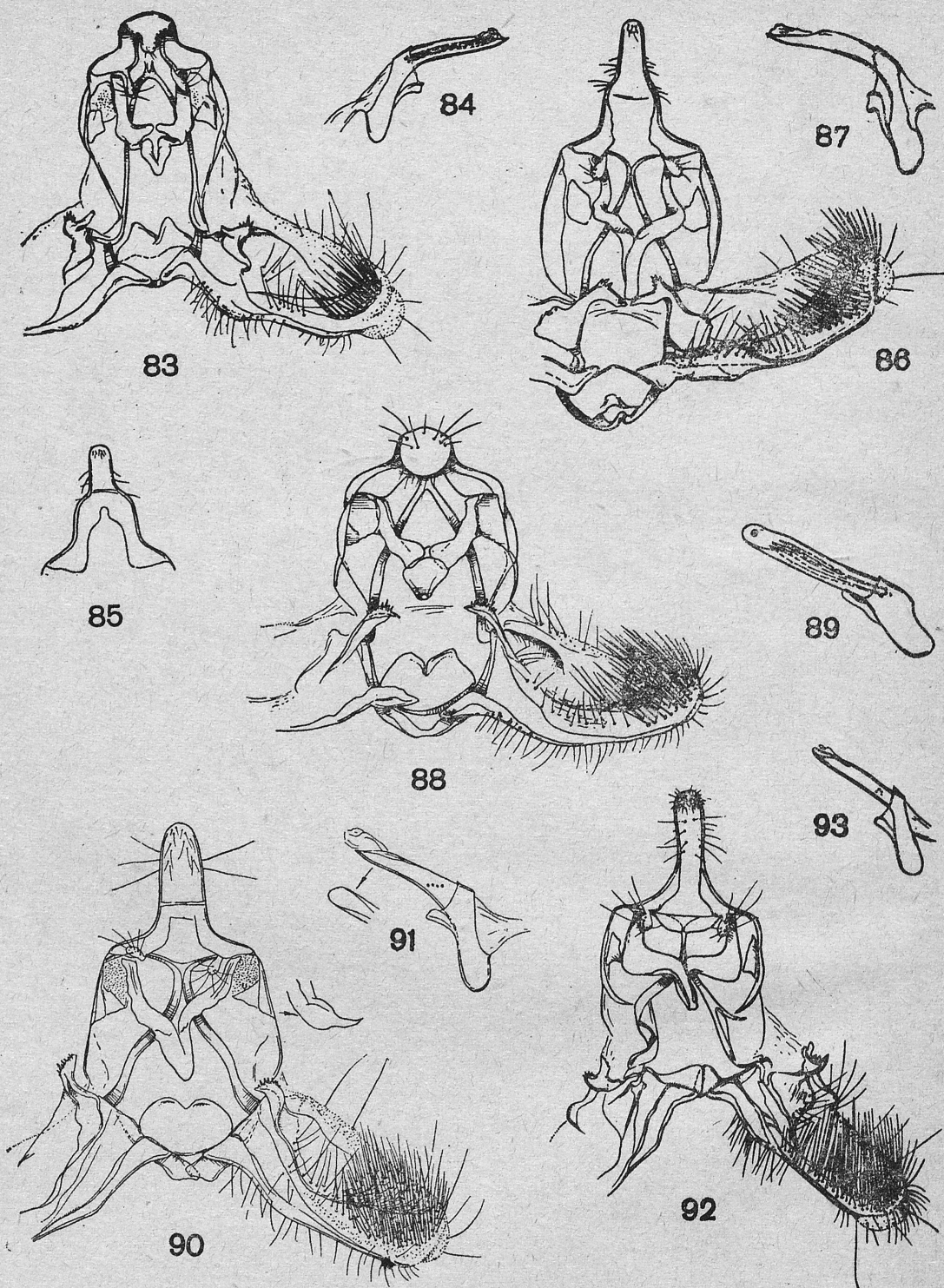
Figs. 56—64. Male genitalia of *Clepsis*: 56 — *C. senecionana* (HBN.), Bydgoszcz, Poland, G. S. 12775, 57 — aedeagus of same specimen, 58 — valva of same species, Mongolia, G. S. 8608, 59 — *C. ketmenana* (FALK.), holotype, 60 — aedeagus of same specimen, 61 — *C. hissarica* DANIL., holotype, 62 — aedeagus of same specimen, 63 — *C. luctuosana* (RBL.), paralectotype, Kuldja, Thian shan, G. S. 10227, 64 — aedeagus of same specimen



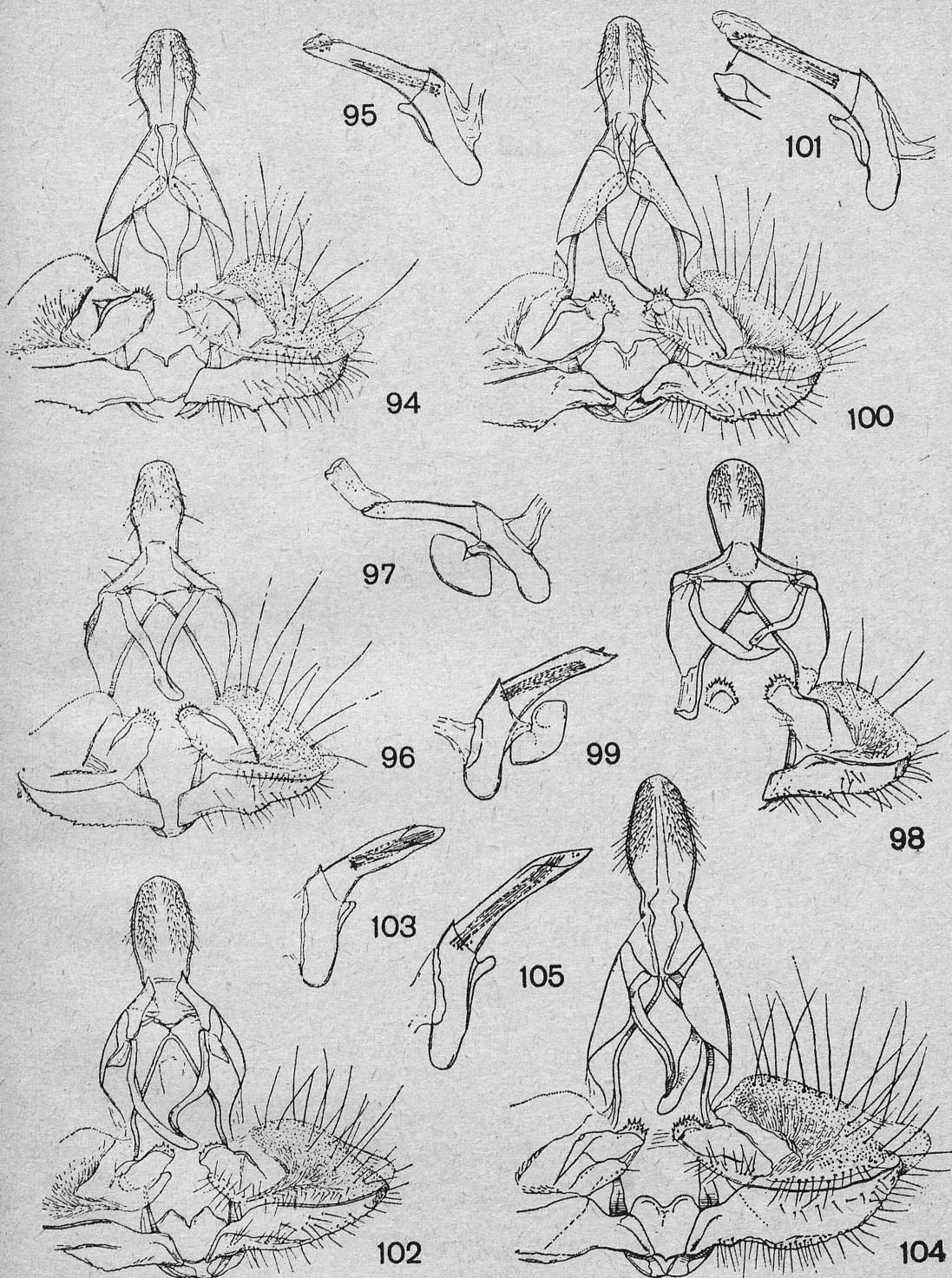
Figs. 65—74. Male genitalia of *Clepsis*: 65 — *C. praeclarana* (KENN.), Mongolia, G. S. 8518, 66 — aedeagus of same specimen, 67 — same species, holotype of *C. vittata* OBR., 68 — aedeagus of same specimen, 69 — valva of same species, holotype of *Tortrix fucosana* KENN., 70 — aedeagus of same specimen, 71 — valva of same species, holotype of *T. praeclarana* KENN., 72 — aedeagus of same specimen, 73 — *C. humana* (MEYR.), holotype, 74 — aedeagus of same specimen



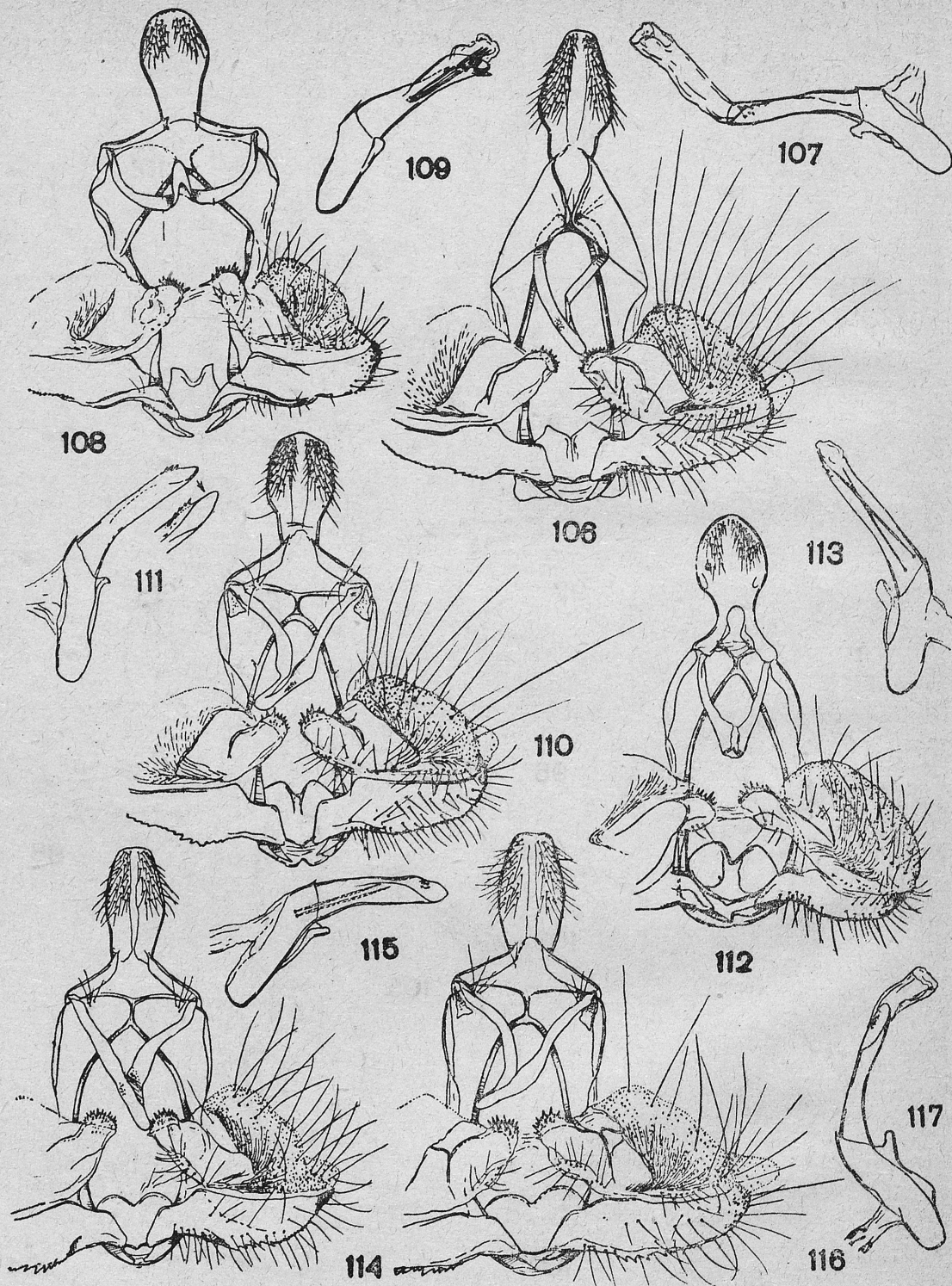
Figs. 75—82. Male genitalia of *Clepsia*: 75 — *C. humana* (MEYR.), Taplejung, N. E. Nepal, G. S. 10338, 76 — aedeagus and juxta of same species, 77 — same species, paratype of *Mochlopyga khola* YAS., G. S. 12853, 78 — aedeagus of same specimen, 79 — *C. leptograpta* (MEYR.), Kashmir, Pir Panjal Range, G. S. 12853, 80 — aedeagus of same specimen, 81 — *C. rurinana* (L.), Jamy, distr. Bydgoszcz, Poland, G. S. 12769, 82 — aedeagus of same specimen



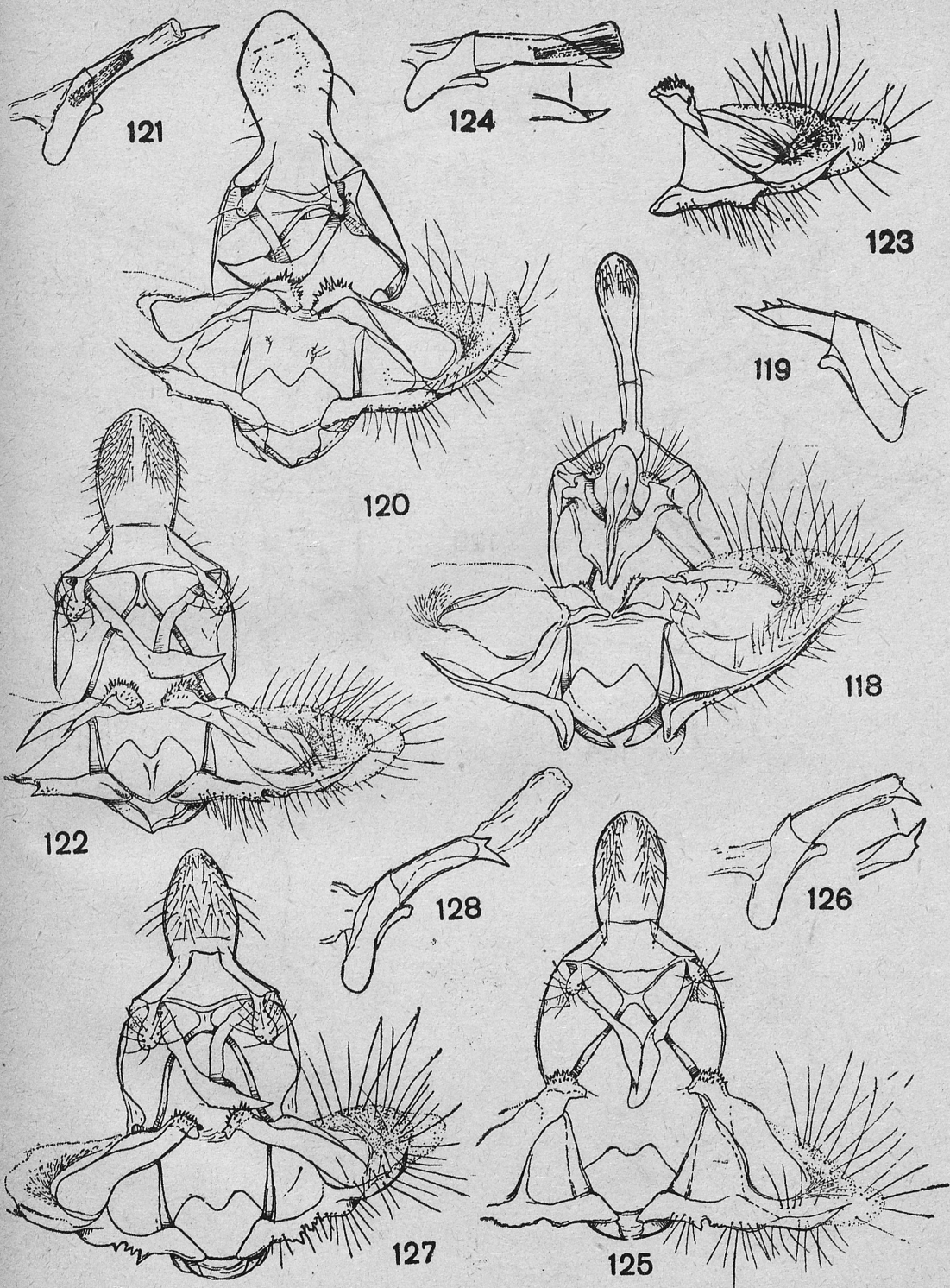
Figs. 83—93. Male genitalia of *Clepsia*: 83 — *C. melissa* (MEYR.), lectotype, 84 — aedeagus of same specimen, 85 — uncus of same species, Khasi Hills, Assam, G. S. 6285 [BM], 86 — same species, ssp.? Darjeeling, India, G. S. 10278, 87 — aedeagus of same specimen, 88 — *C. insulata* (MEYR.), lectotype, 89 — aedeagus of same specimen, 90 — same species, Jiri, Prov. 2, East, Nepal, G. S. 12858, 91 — aedeagus of same specimen, 92 — *C. gemina* sp. nov., holotype, 93 — aedeagus of same specimen



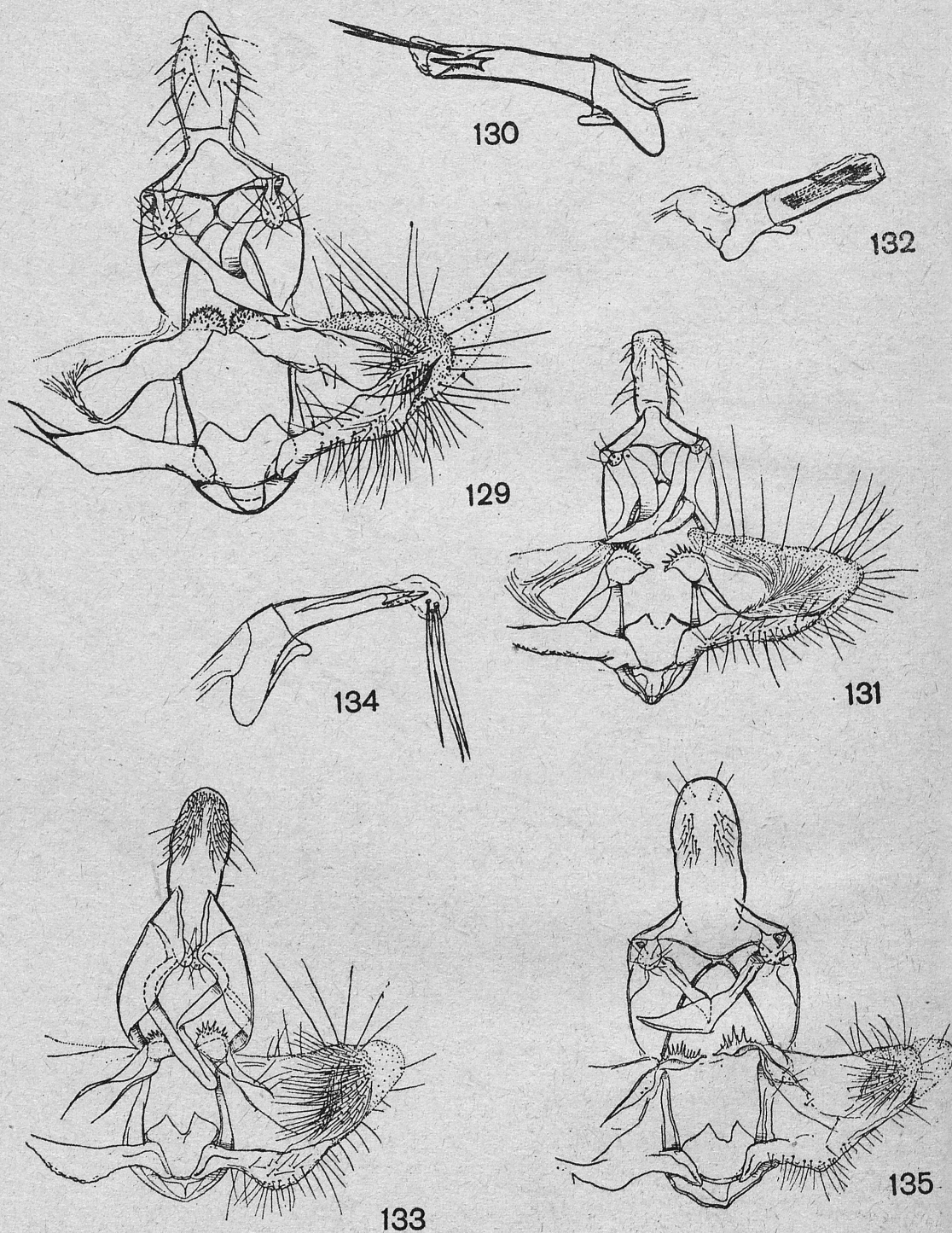
Figs. 94—105. Male genitalia of *Clepsia*: 94 — *C. tannuolana* Kost., W. Tannu-ola, Tuva, G. S. 12792, 95 — aedeagus of same specimen, 96 — *C. insignata insignata* OKU, holotype, 97 — aedeagus and juxta of same specimen, 98 — *C. insignata mehli* (OPHEIM), holotype, 99 — aedeagus and juxta of same species, 100 — *C. lindebergi* (KROG.), Baligród, Bieszczady Mtns., Poland, G. S. 12777, 101 — aedeagus of same specimen, 102 — *C. unicolorana* (DUP.), Nantes, France, G. S. 4156, 103 — aedeagus of same specimen, 104 — same species, Mankes, Morocco, G. S. 12430, 105 — aedeagus of same specimen



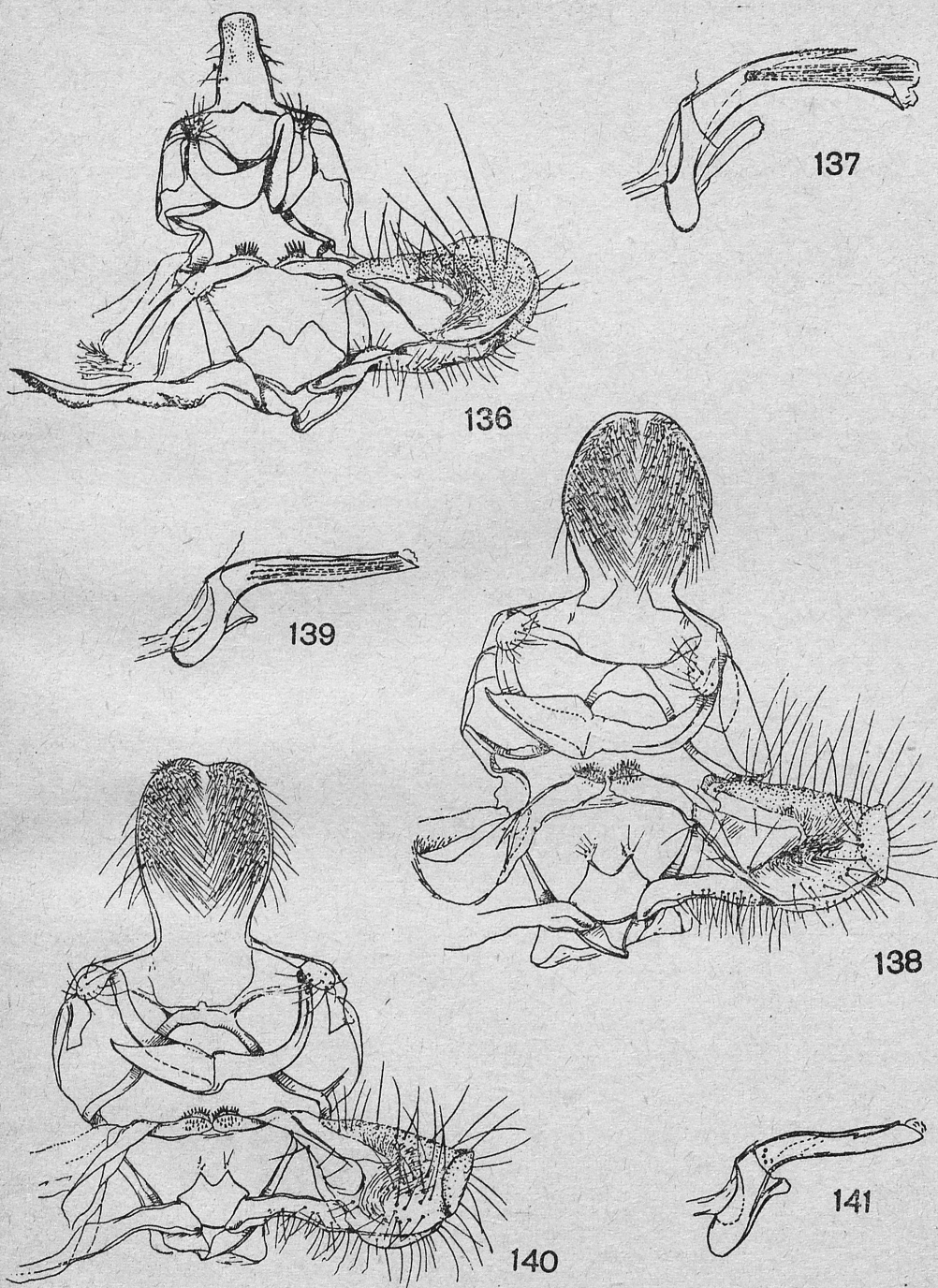
Figs. 106—117. Male genitalia of *Clepsia*: 106 — *C. monticolana* KAW., paratype, Mtn. Tateyama, Toyama Pref., Japan, G. S. 12801, 107 — aedeagus of same specimen, 108 — *C. chisimana* OKU, holotype, 109 — aedeagus of same specimen, 110 — same species, topotype of *C. jinboi* KAW., Ghausu-goya, Japan, G. S. 12800, 111 — aedeagus of same specimen, 112 — *D. aliana* KAW., holotype, 113 — aedeagus of same specimen, 114 — *C. fucana* (WALSM.), Humboldt Co., California, G. S. 12757, 115 — aedeagus of same specimen, 116 — same species, San Francisco, California, G. S. 12719, 117 — aedeagus of same specimen



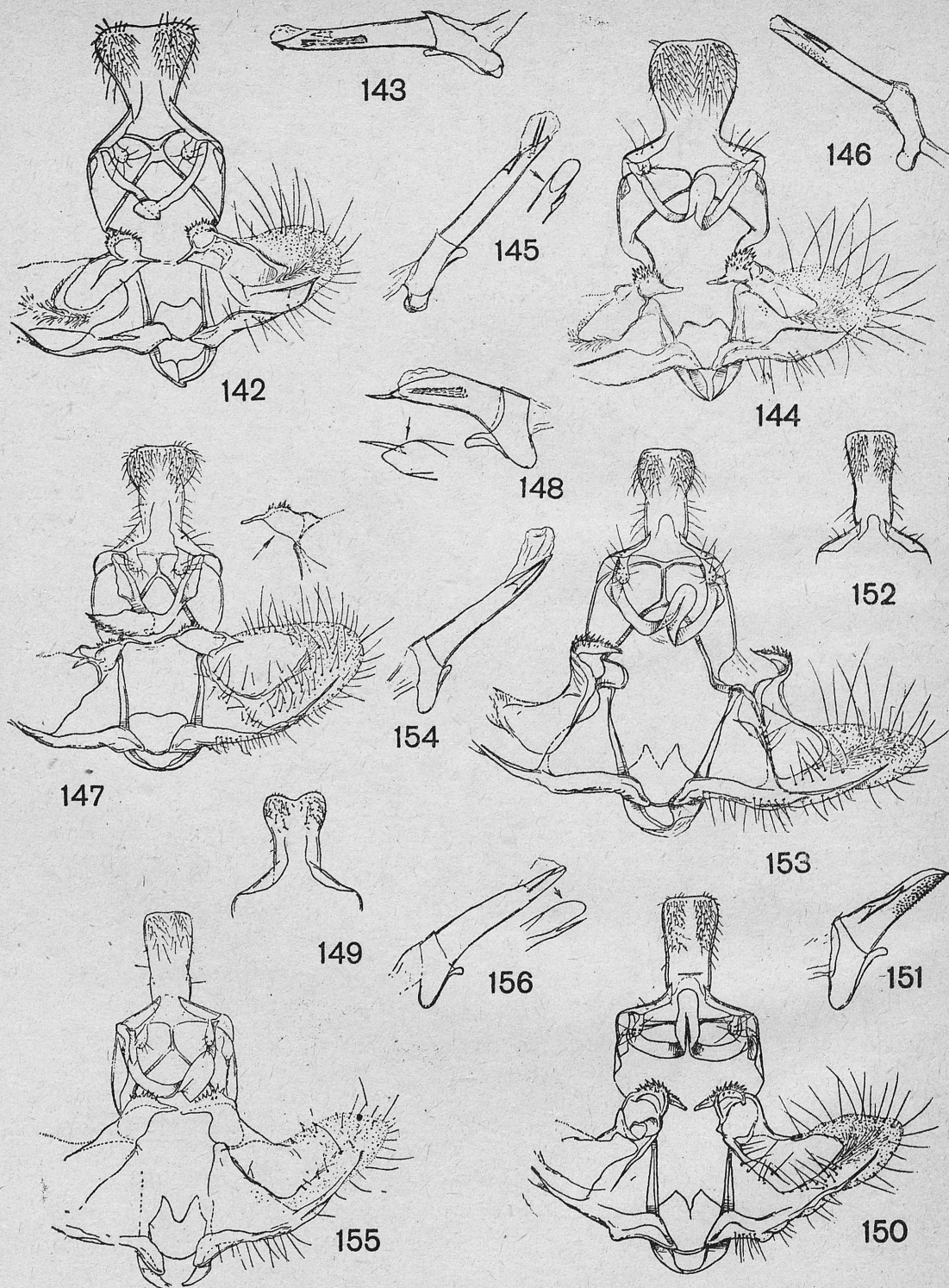
Figs. 118—128. Male genitalia of *Clepsis*: 118 — *C. gerasimovi* DANIL., holotype, 119 — aedeagus of same specimen, 120 — *C. sarthana* (RAG.), holotype, 121 — aedeagus of same specimen, 122 — same species, Samarkand, G. S. 11582, 123 — valva of same species, Alai Mtns. G. S. 10318, 124 — aedeagus of same species, Thian-Shan, G.S. 8948, 125 — *C. celsana* (KENN.), lectotype, 126 — aedeagus of same specimen, 127 — same species, Topolevka, Dshungarskij Ala Tau, G. S. 12789, 128 — aedeagus of same specimen



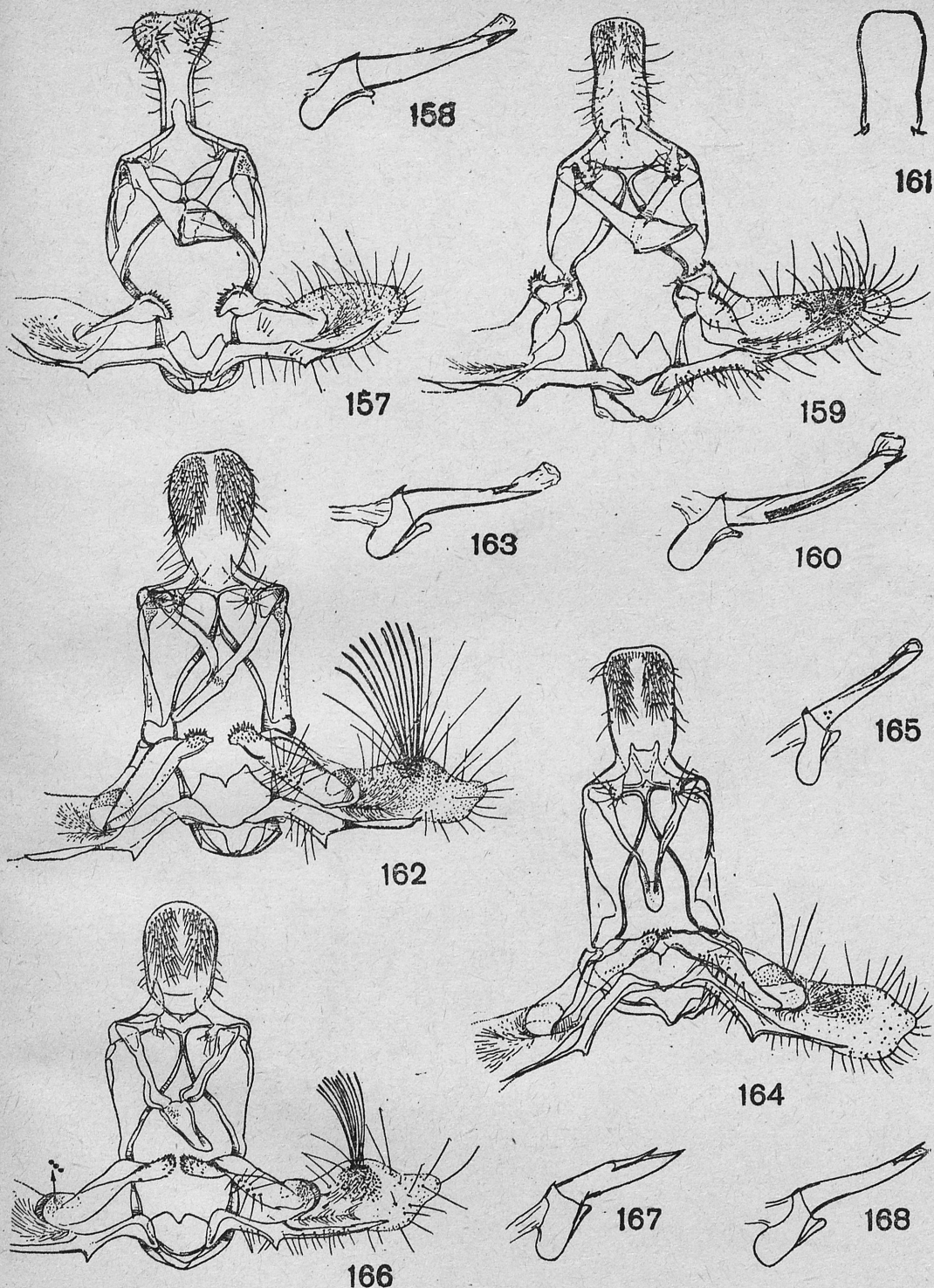
Figs. 129—135. Male genitalia of *Clepsis*: 129 — *C. aba* sp. nov., holotype, 130 — aedeagus of same specimen, 131 — *C. spectrana* (Trembl.), Stemplew, Kalisz distr., Poland, G. S. 12771, 132 — aedeagus of same specimen, 133 — *C. pallidana* (F.), Bydgoszcz, Poland, G. S. 12767 134 — aedeagus of same specimen, 135 — same species (ab. *cesareana*), Césarée, G. S. 11591



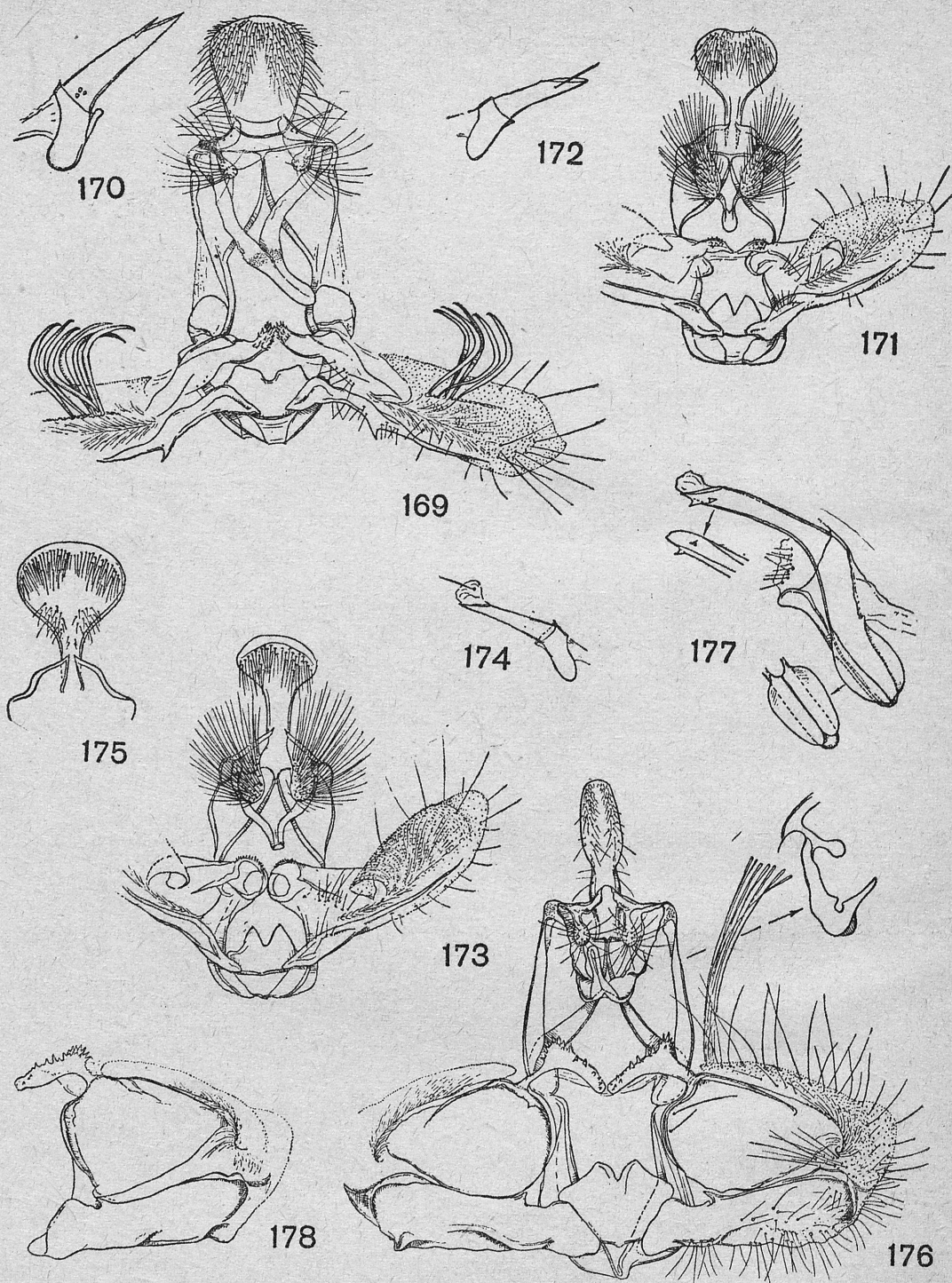
Figs. 136—141. Male genitalia of *Clepsis*: 136 — *C. melaleucana* (WALK.) Oneida Co., Wis., U.S.A., G. S. 12713, 137 — aedeagus of same specimen, 138 — *C. trileucana* (DBLD.), Oneida Co., Wis., U.S.A., G. S. 12720, 139 — aedeagus of same specimen, 140 — *C. forbesi* OBR., Ruby Mt., Elco Co., Nev., U.S.A., G. S. 12715, 141 — aedeagus of same specimen



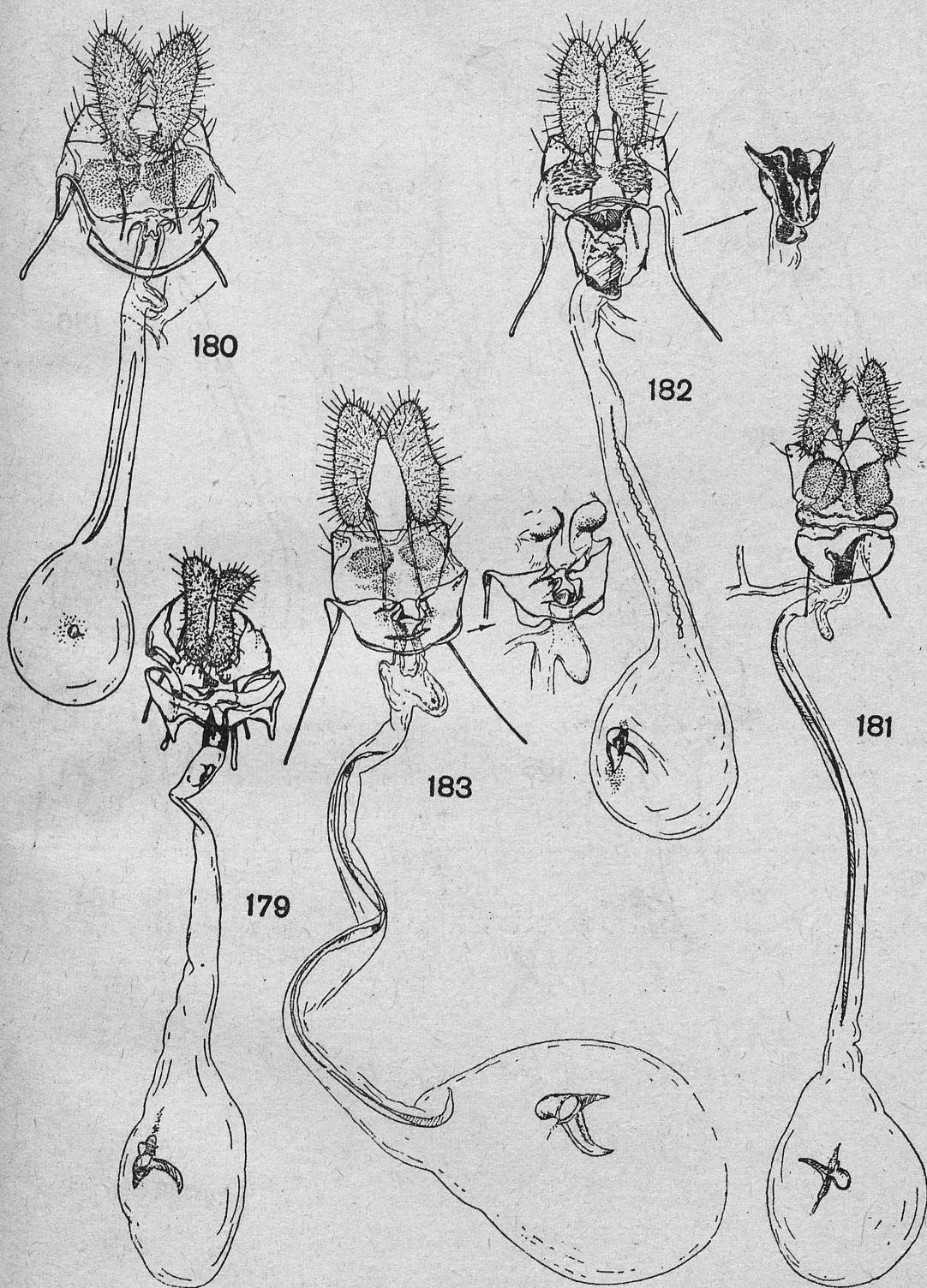
Figs. 142—156. Male genitalia of *Clepsia*: 142 — *C. dumicolana* (ZELL.), Wippach, Austria, G. S. 12862, 143 — aedeagus of same specimen, 144 — *C. agenjoii* OBR., paratype, Teruel, Spain, G. S. 8951, 145 — aedeagus of same specimen, 146 — *C. micromys* (STRING.), aedeagus of holotype, 147 — *C. oblimatana* (KENN.), holotype, 148 — aedeagus of same specimen, 149 — same species, holotype of *T. palaestinensis* RBL., part of tegumen and uncus, 150 — *C. soriana* (KENN.), Tel Aviv, Palestine, G. S. 10816, 151 — aedeagus of same specimen, 152 — part of tegumen and uncus of same species, Ehazir, Syria, G. S. 4158, 153 — *C. burgasiensis* (RBL.), lectotype, 154 — aedeagus of same specimen, 155 — same species, Ochrid, Macedonia, G. S. 8948, 156 — aedeagus of same specimen



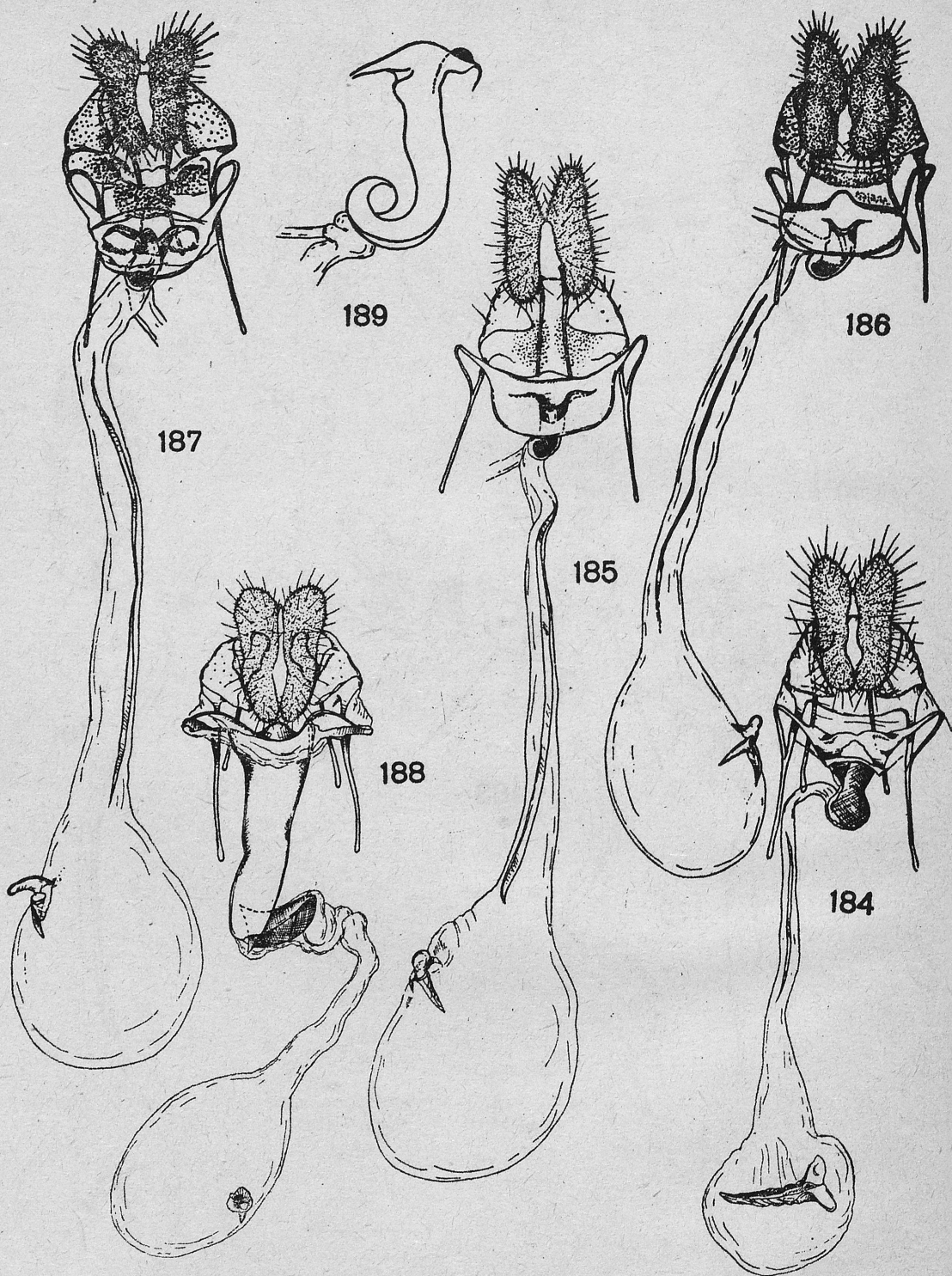
Figs. 157—168. Male genitalia of *Clepsia*: 157 — *C. coriacana* (RBL.), Tenerife, Puerto de la Cruz, Canary Is., G. S. 4487, 158 — aedeagus of same specimen, 159 — *C. canariensis* (RBL.), La Gomera, Agula, Canary Is., G. S. 20012, 160 — aedeagus of same specimen, 161 — uncus of same species, La Palma, Canary Is., G. S. 4484, 162 — *C. neglectana* (H.-S.), Stemplew, Kalisz distr., G. S. 12786, 163 — aedeagus of same specimen, 164 — same species, lectotype of *Cacoecia acclivana* ZERNY, 165 — aedeagus of same specimen, 166 — same species, Guel-es-Stel, C. Algeria, G. S. 10803, 167 — aedeagus of same specimen, 168 — aedeagus of same species, Ain Dahram, Tunisia, G. S. 10823



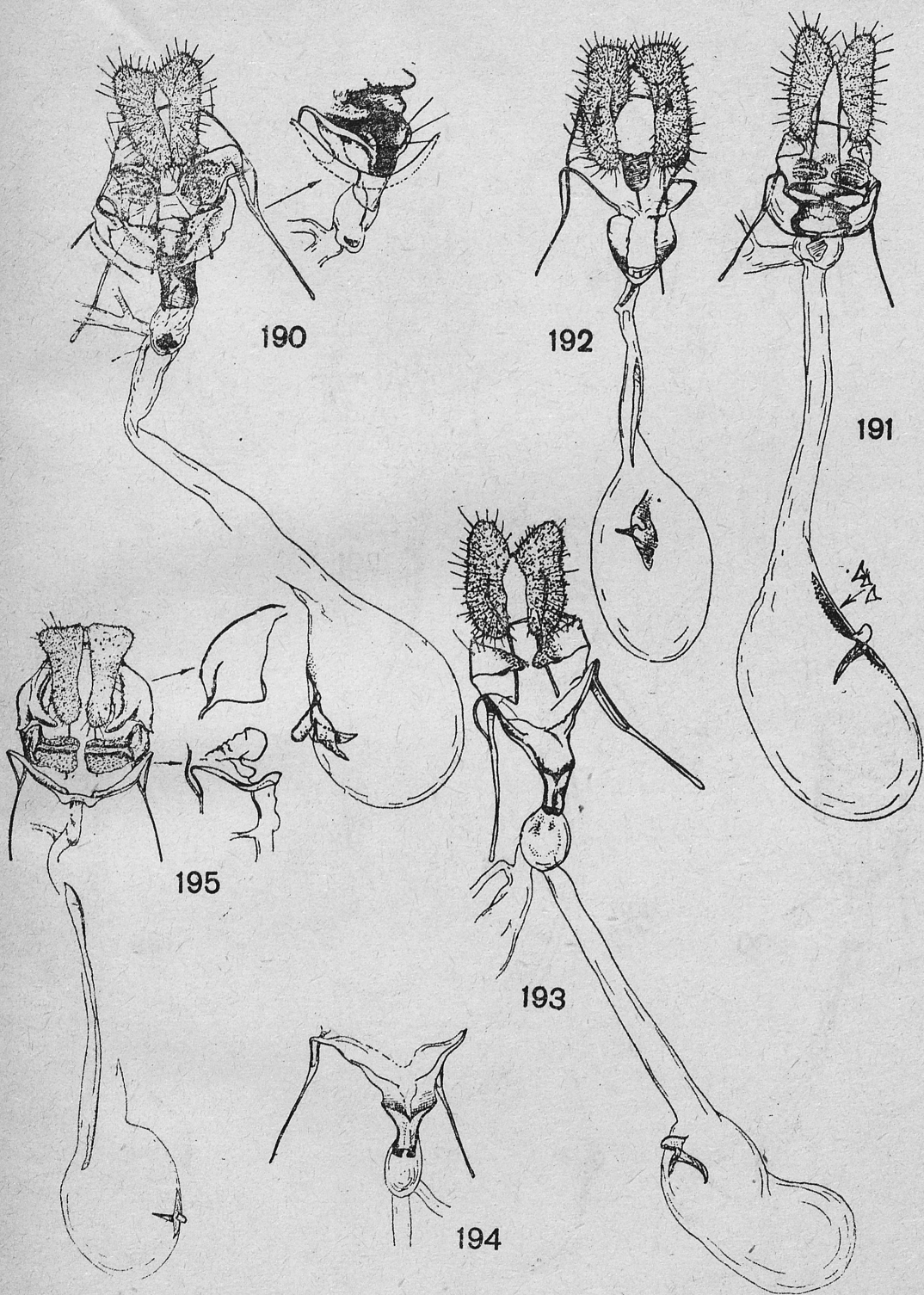
Figs. 169—178. Male genitalia of *Clepsis*: 169 — *C. consimilana* (HBN.), Szczecin, Poland, G. S. 12765, 170 — aedeagus of same specimen, 171 — *C. siciliana* (RAG.), San Ildefonso, Spain, 172 — aedeagus of same specimen, 173 — same species, lectotype of *Archips granadanus* WALSM., 174 — aedeagus of same specimen, 175 — uncus and tegumen of same species, Sierra de Alfacar, Granada, Spain, G. S. 9925, 176 — *C. zeuglodon* sp. nov., holotype, 177 — aedeagus of same specimen, 178 — valva of same species, paratype



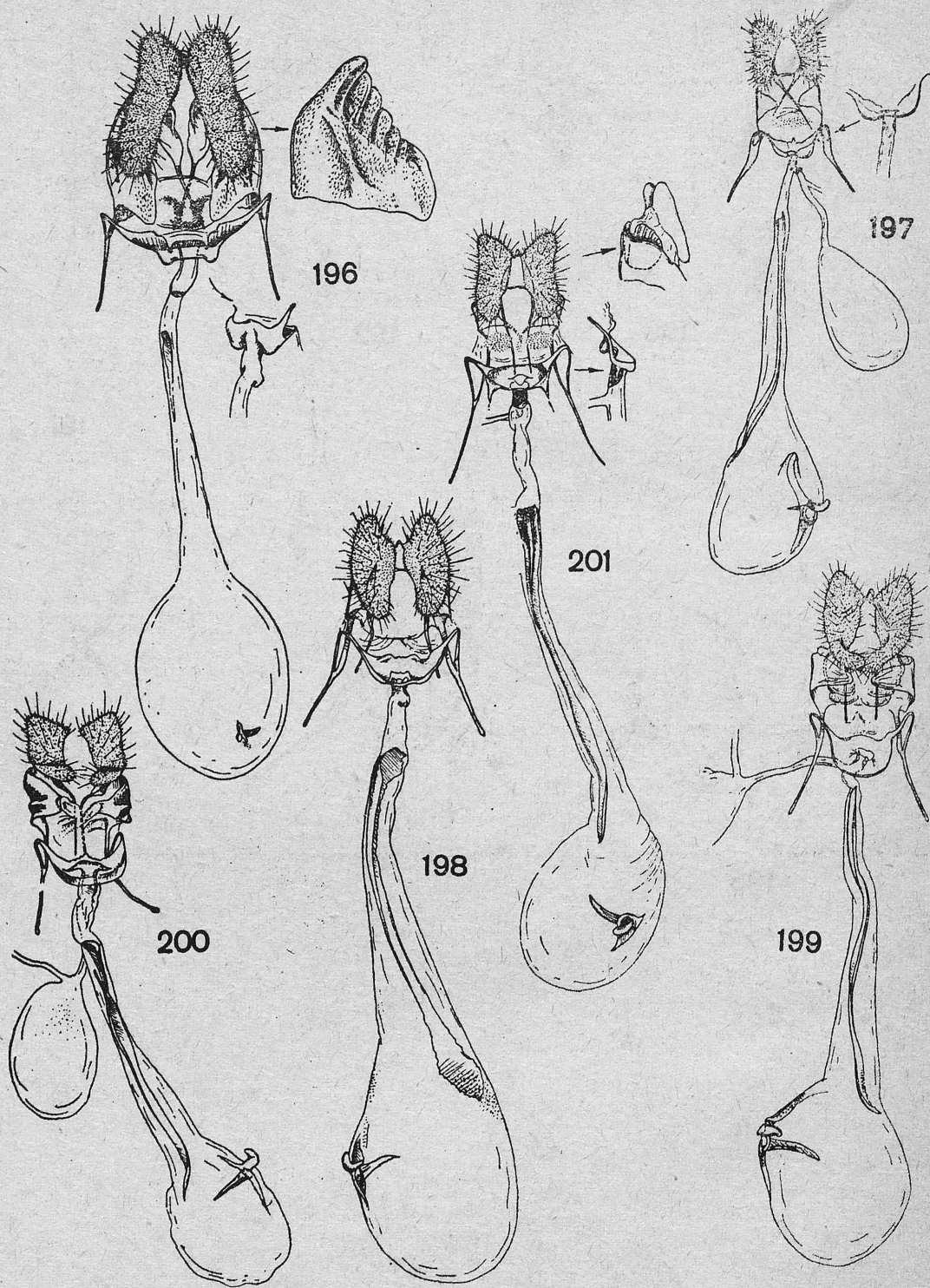
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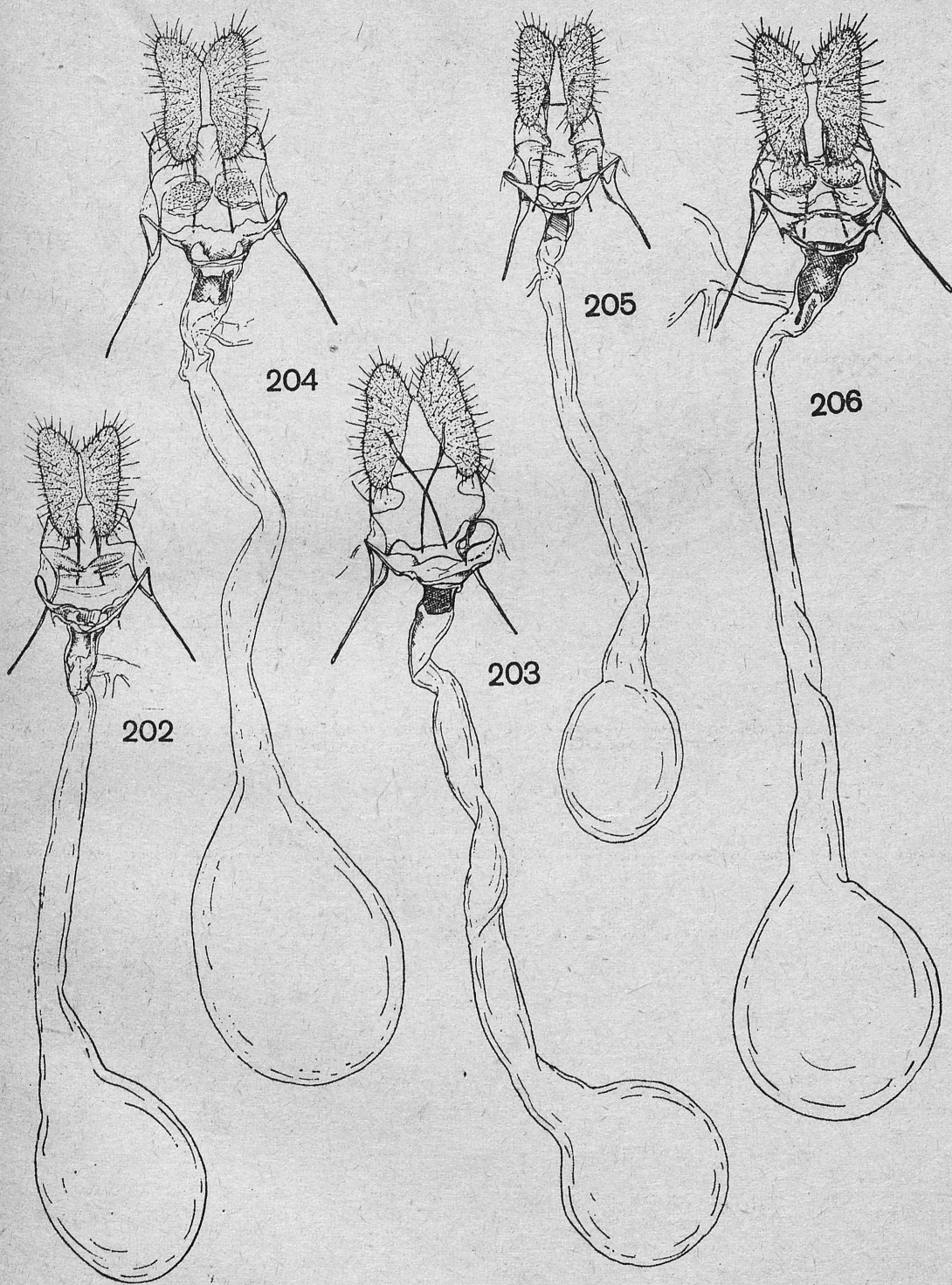
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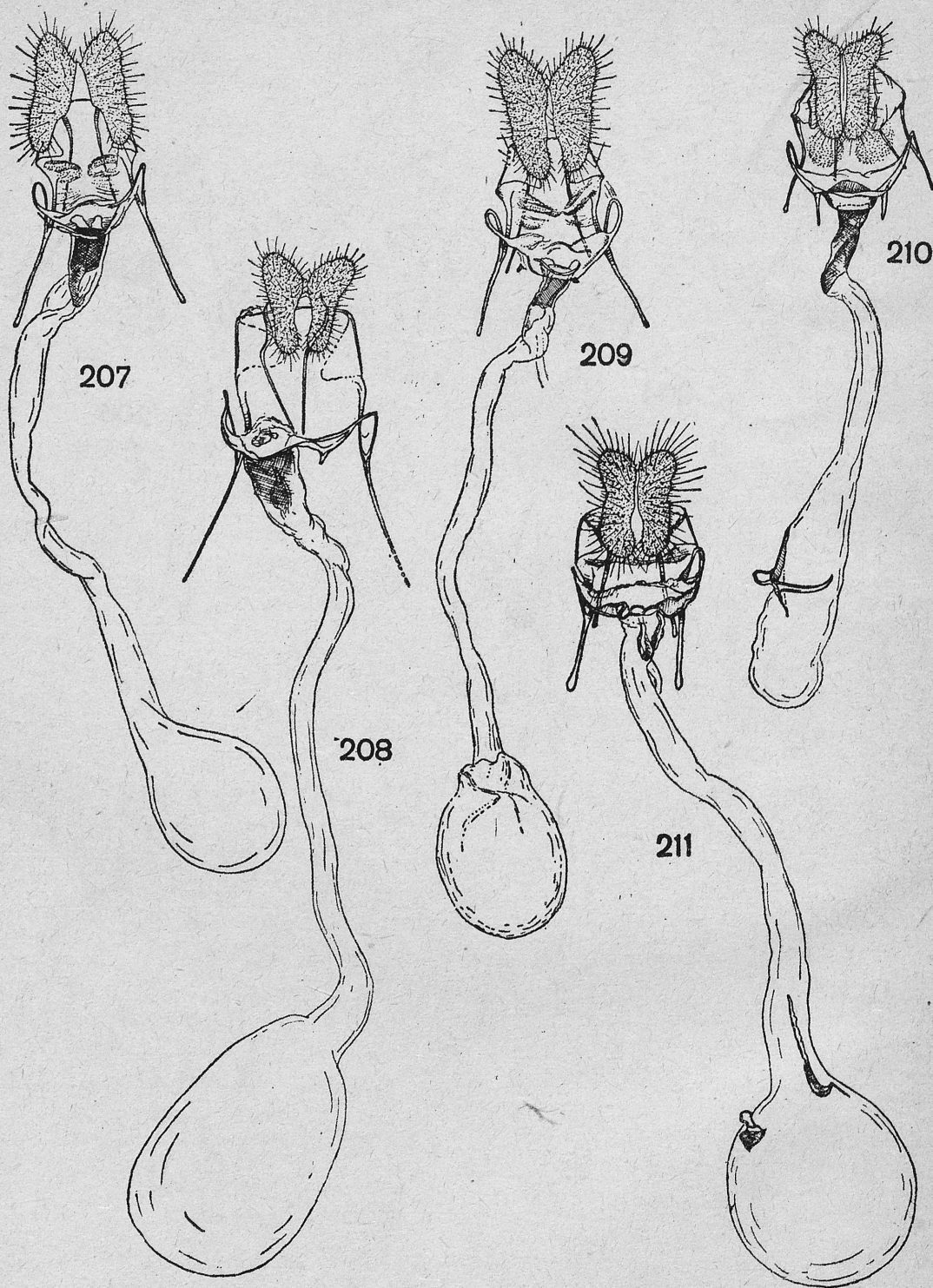
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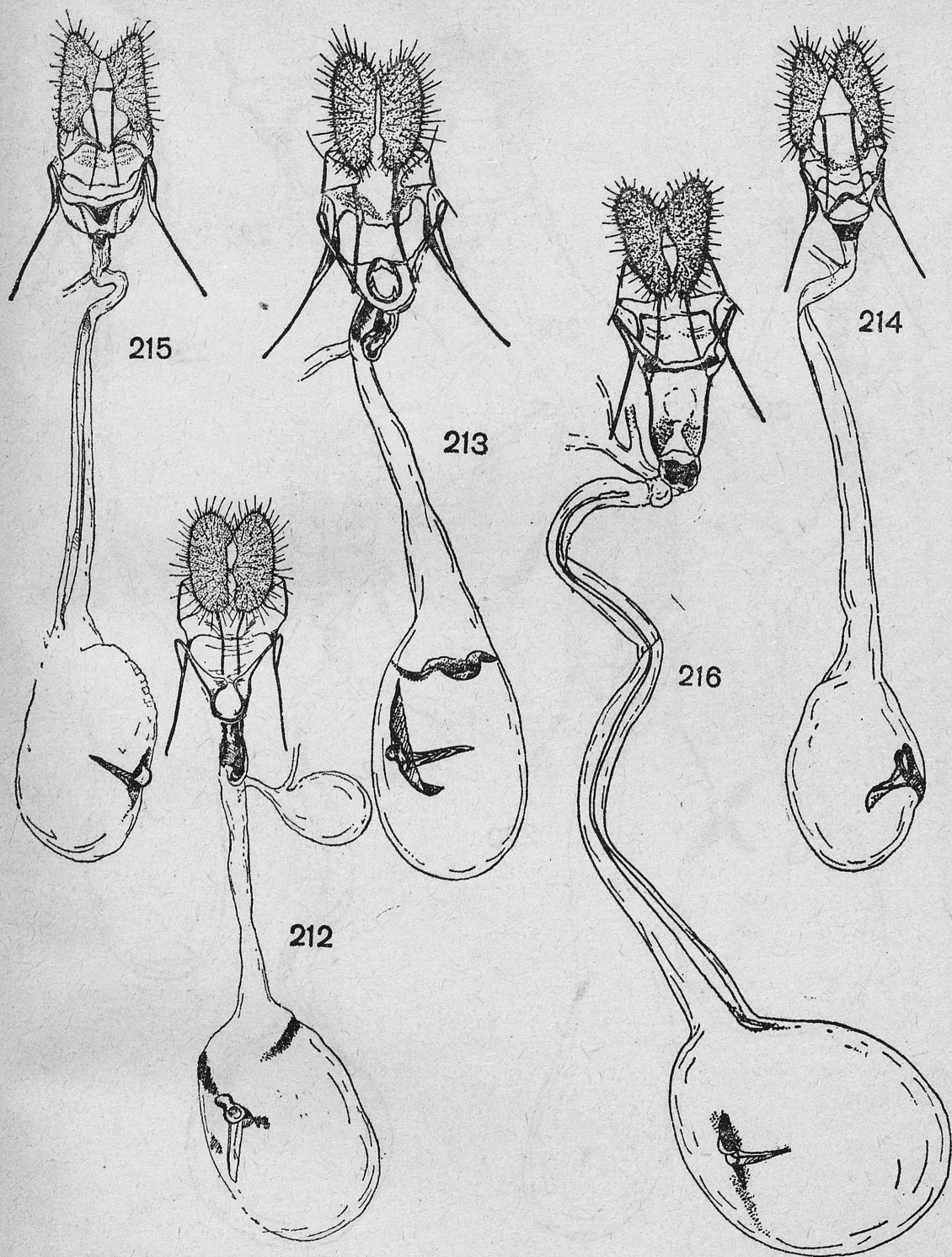
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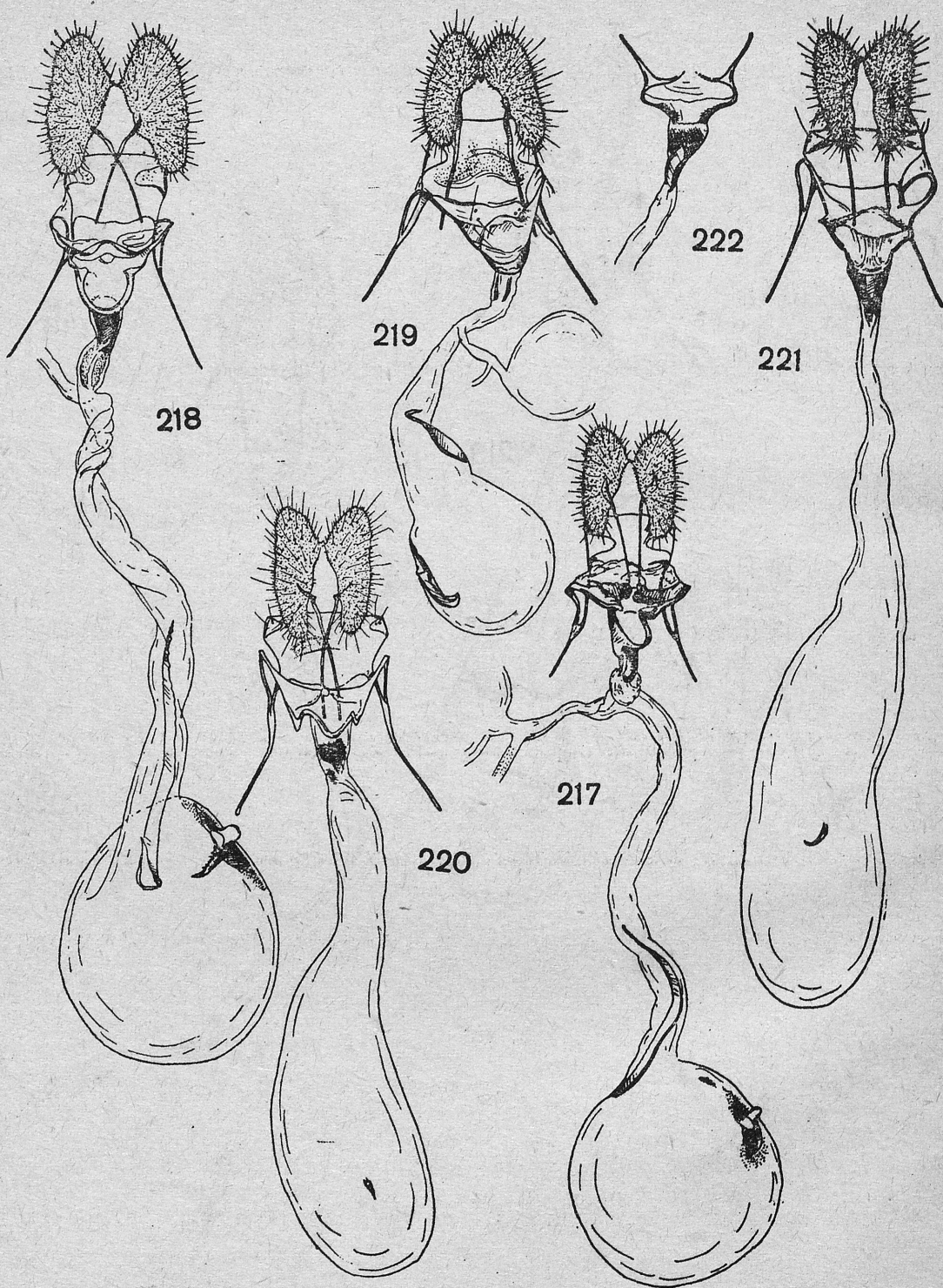
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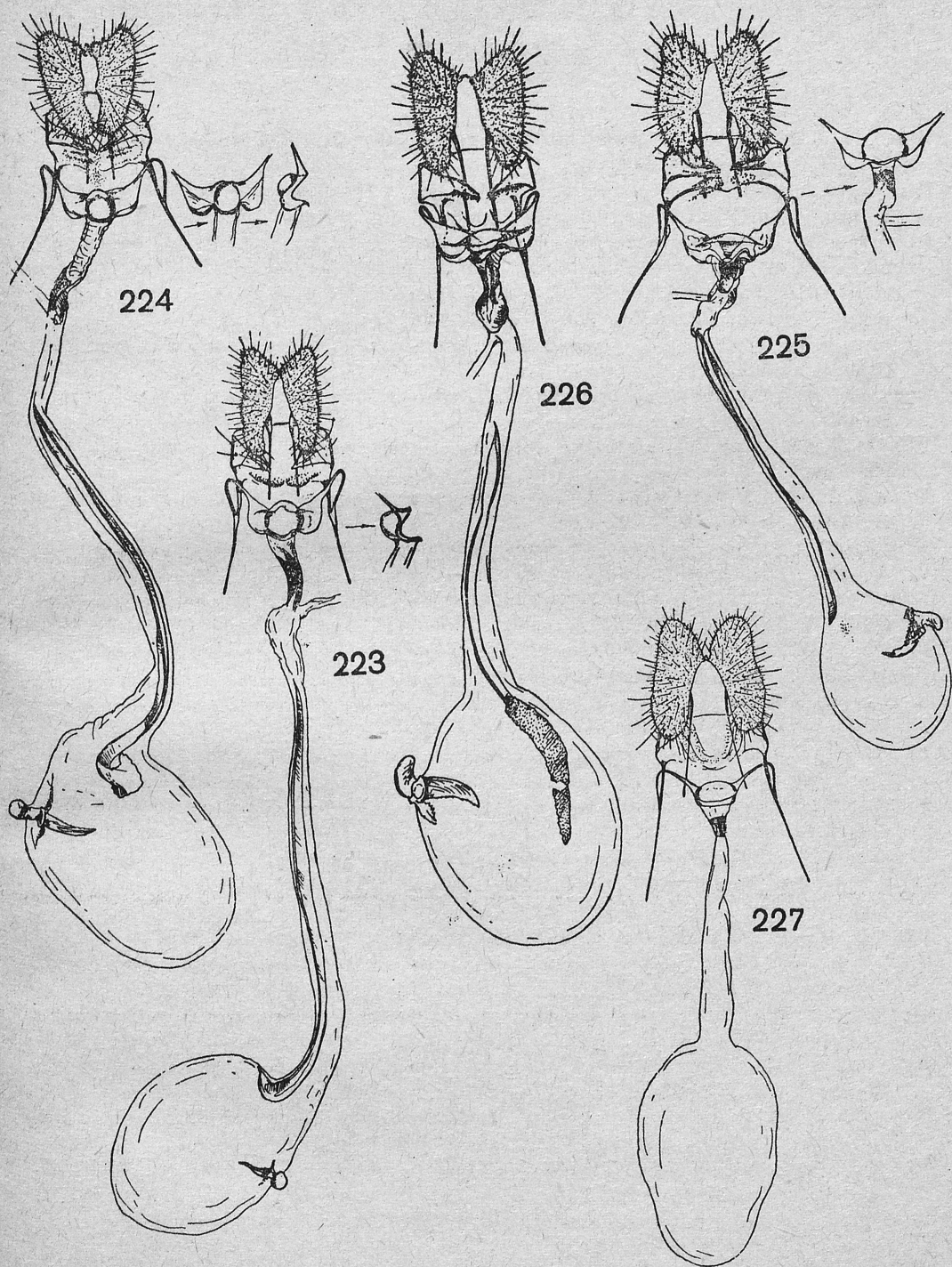
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## STRESZCZENIE

Niniejsza praca stanowi pierwszą część monografii rodzaju *Clepsis* i zawiera jego ogólną charakterystykę i przegląd większości gatunków. Uznawany dotychczas podział na 3 podrodzaje został zastąpiony podziałem na 7 grup gatunków. Dwie z nich (grupa *peritana* i *subcostana*) stanowią treść osobnej pracy. W tej pracy zostały opisane 3 nowe gatunki, a 1 nazwę rodzajową, 2 podrodzajowe i 15 gatunkowych zsynonimizowano.

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