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The Japanese Species of the Tortricid Genus *Acleris* (Lepidoptera)

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In Japan the genus *Acleris* comprises many species of medium-sized moths, most of which are conspicuous coloured. A few, however, are unobtrusively marked. The descriptions of them are widely scattered in the literature and journals.

From 1922 to 1964 many important papers on the Japanese *Acleris* have been published. ISSIKI (1922) listed 21 species from Japan, Korea, Formosa and Saghalien. MATSUMURA (1931) illustrated 7 species including one new species, *Peronea baracola*, from Japan. ISSIKI (1932, 1950) illustrated 5 species from Japan in "Iconographia Insectorum Japonicorum." He (1957) also illustrated 20 species including 5 newly recorded species from Japan in "Icones Heterocerorum Japonicorum in Coloribus Naturalibus." INOUE (1955) listed 21 species including one newly recorded species from Japan. OKU (1956) recorded 4 species, and described 2 new species, *Acleris alnivora* and *Acleris elegans*, from Hokkaido. He (1957) also described a new species, *Acleris issikii*, from Japan. OKANO (1959) illustrated 19 species from Japan in "Iconographia Insectorum Japonicorum Colore Naturali." KAWABE (1963) described 3 new species, *Acleris bicolor*, *Acleris pulchella* and *Acleris nigrilineana*, and recorded one species from Japan. RAZOWSKI and YASUDA (1964) described 8 new species.

In the present paper, I treat 44 species belonging to the present genus from Japan. Three species are originally described and 2 species are recorded for the first time from Japan. The redescrptions of well-known species are excluded, but both male and female genitalia are described as far as possible.

The genitalia of both sexes show excellent specific characters. The male genitalia are fairly large and the number of cornuti, structure of subscaphium and shape of valva are fairly stable characters. In the female genitalia the structure of the sterigma and the shape of the antrum are important diagnostic characters for each species. The structures of the genitalia of both sexes are as follows:-

Male: Uncus lacking; valva longer than broad; costa usually distinct only at base; sacculus broad, strongly haired; brachiola present; subscaphium always present, large; socii variable in form; transtilla usually present, at times forming an arch at middle; aedoeagus short to medium length, with a broad phallobase; vesica with cornuti.

Female: Sterigma well developed; ductus bursae developed, basally often strongly sclerotized; corpus bursae usually large, ovate; signum a star-shaped patch or elongate rasplike, rarely lacking.

When OKU described *elegans* he placed it in the genus *Acleris* because vein 7 of the forewing runs to costa, usually a positive character of the genus *Acleris*, but the genitalia favour retention of the species in the genus *Croesia*.

The species of the present genus fall into four groups on the basis of the form of socius. The first group consists of species in which the socius is narrow and thinly-haired, the aedoeagus is short and lacks the cornuti.—*emargana* and *issikii*. In the second group the socius is very large and erect. Species in this group are: *latifasciana*, *albiscapulana*, *bicolor*, *comariana*,

nigrilineana, *kodomai* sp. nov., *submaccana*, *exsucana*, *platynotana*, *kurokoi* sp. nov., *paradiseana* and *caerulescens*. In the third group the socius drooping, slender. This group consists of *phantastica*, *eastuosa* sp. nov., *ophthalmicana*, *delicatana*, *pulchella*, *crassa*, *alnivora*, and *hokkaidana*. The fourth and the largest group of the genus consists of species in which the socius is moderate: The following fall in the fourth group with *filipjevi*, *cristana*, *expressa*, *placata*, *perfundana*, *nigriradix*, *strigifera*, *affinitana*, *tunicatana*, *roscidana amurensis*, *logiana*, *lacordairana*, *takeuchii*, *japonica*, *ulmicola*, *apician*, *uniformis*, *simplex*, *umbrana*, *longipalpana*, *enitescens* and *fuscotogata*.

The study is based on the materials in the collections of the Entomological Laboratory, College of Agriculture, University of Osaka Prefecture and some others.

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GROUP A

Acleris emargana (FABR.)

(Figs. 1, 50, 79)

Pyralis emargana FABRICIUS, 1775, Syst. Ent.: 651, no. 37.

Acalla emargana: MATSUMURA, 1931, 6000 Ill. Ins. Jap.: 1060-1061, no. 2092.

Rhacodia emargana: ISSIKI, 1957, Icon. Het. Jap. Col. Nat. 1: 186, fig. 483.

Acleris emargana: OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed. 1: 268, pl. 178, fig. 24.

This species presents a peculiar but highly characteristic type of male genitalia in which the aedoeagus is disproportionately short and straight and lacks the cornuti, the valva is peculiar shaped and the socius is narrow and thinly-haired. But in all other respects the species clearly belongs here.

Male.-Length of forewing about 10-11 mm.

Genitalia: Tegumen moderate; subscaphium smooth; socii long, very narrow, upright. Valvae strongly narrowed apically; brachiola rather narrow; sacculus bent upward toward costa beyond half, then curving costad, forming a semicircular ventral excavation; apical tuft moderate.

Female.-Length of forewing about 10-11 mm.

Genitalia: Sterigma with moderately long lateral lobes rotundate at tips. Ostium bursae indicated by a long narrow split; ductus bursae entirely membranous, long narrow. Signum a narrow plate of chitin—a few scattered small plate.

Specimens examined: 7♂♂, 2♀♀, Tokusawa, 27. IX. 1957 (T. YASUDA).

Distribution: This species known from mountainous areas of the central Honshu and Hokkaido; Europe, N. America, Saghalien, Siberia, China.

Notes: MATSUMURA gives the hosts as *Salix*, *Populus* and *Betula*. In Japan the species may have one generation.

***Acleris issikii* OKU**

(Figs. 2, 51, 80)

Acleris issikii OKU, 1957, Insecta Matsumurana **21** (1-2): 74.

Acleris quadridentana: OKU (nec WALSINGHAM), 1956, Ins. Mats. **20** (3/4): 114.

Rhacodia issikii: ISSIKI, 1957, Icon. Het. Jap. Col. Nat. **1**: 86, fig. 282.

Acleris issikii: OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed. **1**: 268, pl. 178, fig. 25.— OKU, 1961, Coenonympha **11**: 190.

A. issikii superficially resembles *A. emargana*, but this is smaller than *emargana* in size. And having the excavation of costa of forewing with three narrow creamy white patches.

Male.—Length of forewing about 7.5-8.5 mm.

Genitalia: Socii erected, long and slender. Valvae strong; sacculus clefted at 4/5 from base, set with two heavily spines at angulated apex; brachiola moderate. Aedoeagus arched, with a small projection at top; cornuti absent.

Female.—Length of forewing about 9-10 mm.

Genitalia: Sterigma with slender lateral lobes which are tapering towards obtuse apex. Corpus bursae rather small, with a signum of irregular dentate plate.

Distribution: Hokkaido and mountainous areas of Honshu.

Specimens examined: 1♂, Sapporo, 16. VI. 1961 (T. OKU); 1♀, Asahikawa, 1. X. 1957 (T. KODAMA); 1♂, Towada, 6. VII. 1958 (T. YASUDA); 1♀, Shigakogen, 20. IX. 1955 (T. YASUDA); 1♀, Kamikochi, 19. VII. 1922 (S. ISSIKI); 1♂, 2♀♀, Kamikochi, 25. IX. 1954 (T. YASUDA); 1♂, Sandankyo, 27. X. 1959 (M. OKADA).

Host plants: *Populus nigra* var. *italica* MUENCHH., *P. Sieboldii* MIQ. and *Salix* sp.

Notes: Records from my collection, indicate that there are two generations with the adults overwintering. The adult flights occur in June and July, and again from late September through October.

GROUP B

***Acleris latifasciana* (Hw.)**

(Figs. 3, 52, 81, 82)

Totrix latifasciana HAWORTH, 1811, Lep. Brit.: 414.

Acalla schalleriana: MATSUMURA (nec LINNÉ), 1917, Ôyô-Konchûgaku: 517.

Peronea schalleriana: ISSIKI (nec LINNÉ), 1922, Dôbutsugaku Zasshi **34**: 282.

Acleris schalleriana: INOUE (nec LINNÉ), 1955, Check List Lep. Jap. **1**: 79.— OKANO (nec LINNÉ), 1959, Icon. Ins. Jap. Col. Nat. Ed. **1**: 268, pl. 178, figs. 7a, b.

Phylacophora schalleriana: ISSIKI (nec LINNÉ), 1957, Icon. Het. Jap. Col. Nat. **1**: 84, figs. 449, 450.

This is the species confused in the collections and literature for the Palaearctic *Acleris schalleriana* (L.), which it really resembles.

Male.-Length of forewing about 7-9.5 mm.

Genitalia: Tegumen moderate; subsclaphium with a distinct ventroapical keel; socii very large, erect. Valvae elongate; brachiola rather narrow; sacculus narrowly emarginate beyond half, the outer edge of emargination produced downward to form a fine spine. Aedoeagus very short, vesica with one long thick cornutus and many shorter cornuti.

Female.-Length of forewing about 8-10 mm.

Genitalia: Sterigma with moderately long lateral lobes pointed at tips. Ductus bursae entirely membranous, narrow. Corpus bursae without signum.

Distribution: In Japan the species is widely distributed from Hokkaido to Kyushu; Europe, Southeast Siberia.

Specimens examined: 1 ♂, 1 ♀, Sounkyo, 29. IX. 1957 (T. KODAMA); 5 ♂♂, Shigakogen, 20-21. IX. 1955 (T. YASUDA); 1 ♂, Iwawakisan, 7. X. 1920 (S. ISSIKI); 1 ♂, Hirasan, 30. X. 1954 (T. YASUDA); 1 ♂, Saradake, 19. VI. 1961 (M. OKADA); 2 ♂♂, 1 ♀, Jojusha, 12. VI. 1961 (T. SAITO); 1 ♀, Tsurugisan (1450 m), 15. VI. 1961 (T. SAITO); 5 ♂♂, 9 ♀♀, Mitake, r.f. *Salix* sp., emgd. 2. VI. 1964 (T. YASUDA).

Notes: Five males and nine females from Mitake, reared from *Salix* sp., have variations of the ground colour or marking of forewings. In some specimens, ground colour yellowish brown with fine dark brown costal patch. And this patch in two of the examined specimens is interrupted by a pale patch.

There appear to be two fairly well defined generations in Japan, adults flying from May to June and again from September to October. The larvae observed on *Salix* fastened two or three leaves together.

***Acleris albiscapulana* (CHR.)**

(Figs. 4, 53, 83, 84)

Teras albiscapulana CHRISTOPH, 1881, Bull. Soc. Imp. Nat. Moscou **56**: (1): 63.

Acleris albiscapulana: OKU, 1956, Ins. Mats. **20** (3/4): 115.

A. albiscapulana is a rather small darker species, and the pattern is nearly always indistinct.

Male.-Length of forewing about 7.5-9 mm.

Genitalia: Tegumen moderate; subsclaphium with a distinct ventroapical keel; socii very large erect, extending beyond apex of tegumen. Transtilla well developed. Valvae large; sacculus strong, broad basally, provided with large terminal portion; rounded apically. Aedoeagus short, bent; three cornuti present in vesica.

Female.-Length of forewing about 7.5-10 mm.

Genitalia: Sterigma with long horned lateral lobes. Ostium bursae broad, sinuate. Antrum a sclerotized, elongate rectangular; ductus bursae long narrow. Signum stellate, scobinate.

Distribution: Hokkaido and mountainous areas of Honshu and Shikoku; Amur, Korea, East-Siberia.

Specimens examined: 1 ♂, 1 ♀, Teshikaga, 26. IX. 1957 (T. KODAMA); 1 ♀, Sounkyo, 29. IX. 1957 (T. KODAMA); 8 ♂♂, 2 ♀♀, Usuitoge, 22. IX. 1955 (T. YASUDA); 2 ♀♀, Tokusawa, 27. IX. 1954 (T. YASUDA); 1 ♂, Tsurugisan, 15. VI. 1961 (T. SAITO); 1 ♂, 1 ♀, Takanawasan, 19. V. 1956 (M. OKADA); 1 ♀, Omogokei, 16. VI. 1956 (M. OKADA).

***Acleris bicolor* KAWABE**

(Figs. 5, 55, 85)

Acleris bicolor KAWABE, 1963. Trans. Lep. Soc. Jap. **14**(3): 70 (= *bicolor* KAWABE, 1963).

This Japanese species has orange-yellow head and thorax. The forewings are suffused

with reddish brown basally and have a reddish brown large costal triangle.

Male.-Length of forewing about 9 mm.

Genitalia: Tegumen broad; socii very large, erect. Transtilla a faintly arched band. Valvae elongate; brachiola rather small; sacculus finely excavated at about 1/3 of lower margin, forming a blunt angle on the outside of the excavation, with dense hairs broadly emarginated beyond the excavation. Aedoeagus simple; cornuti two strong spines.

Female.-Length of forewing about 10 mm.

Genitalia: Sterigma with short, broad lateral lobes rotundate at tips. Ostium bursae broad, sinuate. Membranous portion of ductus bursae long, broad. Corpus bursae missing.

Distribution. This species known only high altitude region in the central Honshu.

Specimens examined: 1 ♂, Usuitoge, 22. IX. 1951 (M. HOSHINO); 1 ♀, Usuitoge, 22. IX. 1955 (T. YASUDA); 2 ♂♂, Gozaishoyama, 24. IX. 1963 (T. YASUDA).

Notes: KAWABE established this species on the basis of the materials of the HOSHINO's collection and MAENAMI's collection which are deposited now in the collection of KAWABE. The present author examined these specimens during his visit to Tokyo. But, the abdomen of paratype, female, were missing. The present author first described and figured the female genitalia of this species.

Acleris comariana (Z.)

(Figs. 6, 86)

Teras comariana ZELLER, 1846, Isis **1846**: 262.

Acalla comariana: MATSUMURA, 1917, Ōyô-Konchûgaku, 517.

Acleris comariana: OKU, 1961, Coenonympha **11**: 190.

A. comariana is a small moth having brown forewings with distinct dark semicircular costal patch.

Male.-Length of forewing about 7.5 mm.

Genitalia: Tegumen rather broad; socii very large, erect, extending beyond apex of tegumen. Transtilla broad. Valvae elongate; brachiola rather broad; sacculus finely excavated at 2/5 of lower margin, forming a blunt angle on the outer side of the excavation; external tuft rather broad. Aedoeagus short without cornuti.

Distribution: This species known only from Hokkaido in Japan; Europe, East-Russia.

Specimens examined: 1 ♂, Sapporo, 19. IX. 1958, on apple (T. YASUDA).

Notes: OKU (1961) reported rearing *comariana* from rose in Sapporo. Apple was also reported as a food plant by the present author. In Japan this species has not been reared at any locality. On the other hand, MATSUMURA established the species, *Acalla baracola*, 1931, on the basis of the specimens which were reared from rose in Sapporo. But the type specimen of *baracola* missing. According to the original description of this species, it seems to be *comariana*.

MATSUMURA (1917) gives the hosts as rose and strawberries. The larvae have been collected in May and August. There appear to be two fairly well defined generations in Hokkaido, adults flying late June to mid July and again from mid September to mid October. The full-grown larva is about 12 mm long, uniformly yellowish dark-green; head and prothoracic shield shiny brown.

Acleris nigrilineana KAWABE

(Figs. 7, 87)

Acleris nigrilineana KAWABE, 1963, Trans. Lep. Soc. Jap. **14**(3): 71, figs. 1,2, 11, 12a, b.*A. nigrilineana*, a large dark grey moth, superficially resembles *A. abietana*.

Male.-Length of forewing about 10.5-11 mm.

Genitalia: Tegumen broad, socii very large, erect, narrow above. Transtilla a rather narrow band. Valvae moderate, rather narrow; brachiola moderate; sacculus narrow, hardly sclerotized, with four large and small thorns being from about 1/3 to before 1/5 of the lower edge (the number of thorn varies individually from three to five); the lower margin strongly curved towards costa beyond half, then strongly recurved forming an excavation, terminating in hair-tuft tip. Aedoeagus short, very wide, opening towards tip; the right side of the apex with a broad angle, the left forming a blunt thorn; cornuti one or two large and strong spines.

Distribution: This species known only from mountainous areas of the central Honshu.

Specimens examined: Paratype, male, labelled "Utsukushigahara, 12. X. 1957, M. SUZUKI" (genitalia on slides, no. 1114, prepared by A. KAWABE); 1 ♂, Utsukushigahara, 5. V. 1954 (T. KODAMA).

Notes: This species closely related to *A. abietana*. According to the figure of genitalia of *abietana* by H. J. HANNEMANN (1961), *nigrilineana* is seemingly conspecific with *abietana*. But a difference is in the male genitalia: sacculus narrow, strongly sclerotized, with four or five distinct thorne on lower edge.

Acleris kodamai sp. nov.

(Figs. 8, 88)

This species superficially resembles *A. abietana*, but it may be separated from *abietana* by the following point: The basal area of the forewing which is bordered by a distinct black line of raised scales, is larger than in *A. abietana*.

Head, labial palpi, antennae and thorax greyish ochreous. Forewings concolorous with thorax, finely powdered with rusty ochreous. Or, forewings with two parallel obliqu greyish raised scale lines: first from about one-quarter of costa to one-third of vein c_{u1} , then sharply curved towards the base of dorsum; second from about 1/2 to 2/3 of dorsum, interrupted in fold. Some less distinct groups of raised scales on basal area and three groups of black raised scales in distal part of discal cell. A raised scale line with short, arising at about three-quarters of costa ending at upper corner of cell. Cilia concolorous with ground of forewings. Hindwings pale, shining, whitish grey. Cilia concolorous with ground.

Male genitalia: Similar to those of *A. coniferarum* (FILIPJEV)-new combination-, but with aedoeagus somewhat thicker and its cornuti large and strong.

The present species seems to be fairly closely related to *A. abietana* and *A. coniferarum*, but separated from them by the following points: socii upright, narrower and more pointed than in *abietana* or *nigrilineana*. Cornuti larger and stronger than in *abietana* and *coniferarum*. Apical tuft of sacculus larger than in *abietana*.

Type.-Holotype, male, Iwawakisan, 1. IV. 1954, T. KOKAMA (G. Sl. Pr 405m).

Female.-Unknown.

Acleris submaccana (FIL.)

(Figs. 9, 54, 89, 90, 91, 92)

Peronea submaccana FILIPJEV, 1962, Bull. Zool. Lab. Acad. Sci. USSR **30**: 378, fig. 16.

Peronea hastiana: ISSIKI (nec LINNÉ), 1922, *Dôbutsugaku Zasshi* **34**: 282.

Peronea hastiana: ISSIKI (nec LINNÉ), 1957, *Icon. Het. Jap. Col. Nat.* **1**: 85, figs. 467-469.

Acleris hastiana: ISSIKI (nec LINNÉ), 1964, *Icon. Het. Jap. Col. Nat.* (rev. ed.) **1**: 85, figs. 467-469.

Acleris simplex RAZOWSKI & YASUDA, 1964, *Trans. Lep. Soc. Jap.* **14**(4): 80, figs. 1-3, 23-25.

A. submaccana, a polymorphic species, has at least four distinct forms in Japan.

Male.-Length of forewing about 10-12 mm.

Genitalia: Tegumen well developed; subscaaphium elongate, unarmed. Socii large, rounded apically protruding and pointed anteriorly. Transtilla well developed. Valvae very large, broad. Sacculus strong, convex in basal half, well sinuate postmedially. Postmedial projection large, rounded. Aedoeagus small, pointed, provided with small dorso-terminal thorn. Three very long cornuti present in vesica.

Female.-Length of forewing about 10-12 mm.

Genitalia: Sterigma with long lateral lobes, curved and pointed apically. Ostium bursae moderate. Antrum a sclerotized, elongate rectangular; ductus bursae long narrow. No signum present in corpus bursae.

Distribution: Known from Hokkaido and central Honshu; Siberia (Irukutsk).

Specimens examined: 1 ♀, Jozankei, 9. IX. 1916 (S. ISSIKI); 5 ♂♂, 4 ♀♀, Shigakogen, 17. V. 1961 (T. YASUDA); 9 ♂♂, 4 ♀♀, Tokusawa, 27. IX. 1954 (T. YASUDA); 1 ♀, Kanmuriyama, 1. VI. 1953 (T. KODAMA).

Notes: The species occurs commonly from central part to northern part of Japan, feeding on *Betula platyphylla*. Having examined the specimens determined by ISSIKI as *Peronea hastiana* L., I have convinced that they are fairly identical with the present species. I described a new species, *Acleris simplex*, from Japan (1964). But, *submaccana* supersedes *simplex*.

The species has an extensive range of variation, as in *A. cristana* (SCHIFF.) and *A. hastiana* (L.), two of the most variable species of the genus. The various colour-forms examined were found to fall into four. The forms illustrated on figures 89-92, and the following forms are recognized.

- a) Ground colour grey-brown, scattered with many blackish striae, base a little darker; a blackish raised-tuft on basal area and greyish or brownish raised-tufts on basal area and middle of wing; brownish mottlings about middle of wing in some specimens. Costal blotch large, protruding terminally with distinct borders. Termen spotted with black. Hindwing cream-brown, rather pale, striped with brownish grey.
- b) Forewing of typical colour, with numerous blackish lines among veins.
- c) Forewing pale brownish grey, except a broad blackish band from base towards middle, usually obscure, but sometimes much prominent, narrow, reaching middle and followed by another similar black band which occurs from above end of the preceding band to before apex.
- d) Ground colour yellowish-brown. Costal blotch elongate triangular, greyish; a curved, suffused, broad brownish fascia, beginning below costal blotch, running into 2/3 of dorsum and along this connected with blackish dorsal patch.

I have not seen this typical form. The description (in Russian) may be translated as form a.*

Acleris exsucana (KENN.)

(Figs. 10, 56, 106)

Rhacodia exsucana KENNEL, 1901, *Iris* **13**, (1900): 208.

* The term "form" is here used in the neutral sense but implies infrasubspecific rank in accordance with the Cord (1961).

Acleris exsucana OKU, 1956, Ins. Mats. 20 (3/4): 115.

A. exsucana has a yellowish to pale orange-brown costal triangle.

Male.-Length of forewing about 9-10.5 mm.

Genitalia: Tegumen rather broad; subscaphium simple without any spiculation; socii large, erect, extending beyond apex of tegumen. Transtilla weak. Valvae elongate; brachiola large; sacculus strong, with semicircular projection at 3/5, then curving costad, forming a subrectangular ventral excavation, and descending to a more or less sharply pointed tip directed downward; apical tuft moderate. Aedoeagus strongly curved; vesica with three long and three short cornuti.

Female.-Length of forewing about 9-10.5 mm.

Genitalia; Sterigma with broad lateral lobes rotundate at tips and slightly bent inward apically. Antrum a cylindrical sclerotized tube. Ductus bursae short. Corpus bursae large, ovate. Signum elongate, scobinate.

Distribution: This species is widely distributed from Hokkaido to Kyushu; Amur, N-China.

Specimens examined: 2 ♂♂, Soukyo, 29. IX. 1957 (T. KODAMA); 1 ♂, Shigakogen, 21. IX. 1955 (T. YASUDA); 1 ♂, 3 ♀♀, Taihizankei, r.f. *Deutzia scabra*, emgd. 8. VI. 1959 (T. KODAMA).

Notes: The larvae were found at Taihizankei on May 1959, rolling and eating the leaves of *Deutzia scabra* THUNB. The larvae pupated on 2nd June and emerged as a moth on 8th June.

***Acleris platynotana* (WLSM.)**

(Figs. 77, 57, 93)

Oxygrapha platynotana WALSINGHAM, 1900, Ann. & Mag. N. H. (ser. 7) 5: 376.

Peronea platynotana: ISSIKI, 1922, Dôbutsugaku Zasshi 34: 282.—ISSIKI, 1950, Icon. Ins. Jap. (rev. ed.), 488, no. 1327.

Acleris platynotana: INOUE, 1955, Check List Lep. Jap. 1: 79.—OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed. 1: 268, pl. 178, fig. 20.—OKU, 1961, Coenonympha 11: 190.

Oxigrapha platynotana: ISSIKI, 1957, 1964, Icon. Het. Jap. Col. Nat. 1: 79, fig. 478.

This species has a brown forewing with two reddish brown fascia which are defined inwardly by pale line.

Male.-Length of forewing about 7.5-9 mm.

Genitalia: Tegumen excavated at tip; subscaphium broad; socii large, erect. Transtilla narrow at the middle. Valvae elongate; brachiola large; sacculus strong, with outer edge of emargination produced downward; external tuft well developed.

Female.-Length of forewing about 8-9 mm.

Genitalia: Sterigma with broad and large lateral lobes, rotundate at tips. Ductus bursae with a broad sclerotized girdle remote from antrum. Signum elongate, scobinate.

Distribution: This species widely distributed from Honshu to Kyushu.

Specimens examined: 1 ♀, Takayama, 23. VIII. 1954 (T. YASUDA); 3 ♀♀, Iwawakisan, r.f. *Ilex pedunculosa* MIQ., emgd. 19. VI. 1954 (T. KODAMA); 1 ♀, Hirasano, 30. X. 1954 (T. YASUDA); 2 ♂♂, 3 ♀♀, Myoken, r.f. *Lyonia ovalifolia* var. *elliptica* (SIEB, et ZUCC.), emgd. 1. VI. 1962 (S. MORIUTI); 1 ♂, Matsuyama, 25. V. 1956 (M. OKADA); 1 ♀, Omogokei, 15. VI. 1956 (M. OKADA).

***Acleris kurokoi* sp. nov.**

(Figs. 12, 94)

Head, labial palpi black. Antennae dark brownish ochreous; at upperside somewhat

darker. Forewings moderate; costa moderately arched from base to obtuse dentation before middle, thence slightly excavated; apex pointed. Colour brownish black in two basal thirds, with an incurved outer edge of this area; costa marked at the excavation with two narrow brown patches. Some small, black, upraised scale tufts in basal area frequently present. Small groups of brown raised scales in discal cell. Outer third of forewing brownish ochreous, irregularly crossed by narrow, interrupted blackish lines. Cilia concolorous with outer part of forewing. Length of forewing 11 mm. Hind wings pale whitish brown, becoming brownish apically. Cilia concolorous.

Genitalia: Tegumen broad; socii large; subscaphium with small ventroapical projection. Valvae narrowed apically; brachiola rather narrow; sacculus long slender; subterminal projection large, rounded apically, turned towards the base of sacculus. Apical tuft moderate. Aedoeagus strongly curved, rather stout, dilated cephalad; vesica with two long cornuti.

Type.-Holotype, male, Hikosan, 13. X. 1955, at light (H. KUROKO).

This species is named in honour of Dr. H. KUROKO.

Distribution: This moth seems to be rare, since I have seen only the above recorded specimen.

***Acleris paradiseana* (WLSM.)**

(Figs. 13, 58, 107)

Oxygrapha paradiseana WALSINGHAM, 1900, Ann. & Mag. N. H. (ser 7) 5, 371.

Peronea paradiseana: ISSIKI, 1922, Dôbutsugaku Zasshi 34: 282.

Acalla paradiseana: MATSUMURA, 1931, 6000 Ill. Ins. Jap., 1051, no. 2093.

Peronea paradiseana: ISSIKI, 1950, Icon. Ins. Jap. (rev. ed.), 489, fig. 1329.

Acleris paradiseana: INOUE, 1955, Check List Lep. Jap. 1: 78. — OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed.1: 268, pl. 178, fig. 22.

Oxygrapha paradiseana: ISSIKI, 1957, Icon. Het. Jap. Col. Nat. 1: 85, fig. 480.

This is a large beautiful species. Forewing yellowish green except the outer dorsal area orange-yellow.

Male.-Length of forewing about 8.5-9 mm.

Genitalia: Tegumen moderate; socii large, erect; subscaphium with a distinct apical keel. Valvae rather broad; brachiola broad; sacculus broad, strong, convex beyond half; then curving costad sharply; subterminal projection large, rounded terminally. Aedoeagus long, rather narrow. Many slender, small cornuti present in vesica.

Female.-Length of forewing about 9-11 mm.

Genitalia: Sterigma with broad lateral lobes rotundate at tips. Ostium bursae broad. Ductus bursae moderately long. Cervix bursae moderate, and sclerotized at middle. Corpus bursae slightly elongate; signum rather large.

Distribution: This species is widely distributed from Hokkaido to Kyushu; Amur.

Host plant: *Sorbus sambucifolia* M. ROEMER

Specimens examined: 1 ♀, Sapporo, 19. VII. 1959 (K. YANO); 2 ♂♂, 5 ♀♀, Karuizawa, 6. VIII. 1952 (A. MUTUURA); 1 ♀, Towada, 23. VII. 1962 (T. YASUDA); Shigakogen, 20. IX. 1955 (T. YASUDA); 1 ♂, Kanayama, 22. VIII. 1958 (K. YANO); 3 ♀♀, Gozaishoyama, 25. VII. 1957 (T. YASUDA); 1 ♀, Daisen, 10. VII. 1964 (S. MORIUTI).

***Acleris caeruleascens* (WLSM.)**

(Figs. 14, 59, 95)

Oxygrapha caeruleascens WALSINGHAM, 1900, Ann. & Mag. N. H. (ser 7) 5: 370.

Peronea caerulescens: ISSIKI, 1922, Dôbutsugaku Zasshi **34**: 282.

Acalla caerulescens: MATSUMURA, 1931, 6000 Ill. Ins. Jap., 1060, no. 2090.

Acleris caerulescens: INOUE, 1955, Check List Lep. Jap. **1**: 78.—OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed. **1**: 268, pl. 178, fig. 23.

Oxigrapha caerulescens: ISSIKI, 1957, Icon. Het. Jap. Col. Nat. **1**: 86, fig. 481.

This is a large moth having dark brown forewing with two distinct white costal patch.

Male.-Length of forewing about 10-11 mm.

Genitalia: Tegumen rather broad; socii very large; subscaphium with distinct apical keel. Valvae elongate; brachiola large; sacculus clefted at 3/5 from base; external tuft well developed. Aedoeagus geniculate, with a apical cornutus; vesica with five cornuti.

Female.-Length of forewing about 10-11 mm.

Genitalia: Sterigma with broad lateral lobes pointed apically. Ostium bursae broad. Ductus bursae long. Corpus bursae large; signum small plate.

Distribution: This species is widely distributed in Japan; Amur, E-China.

Specimens examined: 1 ♀, Sapporo, 19. VII. 1959 (K. YANO); 1 ♂, 1 ♀, Karuizawa, 6. VIII. 1952 (A. MUTUURA); 1 ♂, Hatonoyu, 28. VII. 1961 (T. YASUDA); 1 ♀, Tokusawa, 27. IX. 1954 (T. YASUDA).

GROUP C

Acleris phantastica RAZOWSKI & YASUDA

(Figs. 15, 60, 96)

Acleris phantastica RAZOWSKI & YASUDA, 1964, Trans. Lep. Soc. Jap. **14** (4): 83-84, figs. 11-13, 28.

This is a medium-sized moth having orange forewings with very characteristic rusty red basal blotch.

Male.-Length of forewing about 8 mm.

Genitalia: Tegumen well developed; subscaphium strongly sclerotized, provided with ventral rounded projection subterminally. Socii very long, large basally, narrow in posterior portions; transtilla large. Valvae rather narrow; sacculus long, broad basally, curved and sinuated in posterior portion. Aedoeagus short, bent; two cornuti present in vesica.

Female.-Length of forewing about 9 mm.

Genitalia: Sterigma with short lateral lobes, curved and pointed apically. Ostium bursae modelate, sinuate. A large stellate signum present in corpus bursae.

Distribution: A widespread yet scarce species in Japan.

Specimens examined: 2 ♂ ♂, 1 ♀, Shigakogen, 20-21. IX. 1955 (T. YASUDA) (Paratypes). 1 ♀, Shimokita Pen., 5. VIII. 1957 (T. SAIGUSA); 1 ♀, Takanawasan, 17. VIII. 1955 (M. OKADA).

Acleris aestuosa sp. nov.

(Figs. 16, 61, 108)

Head and labial palpi pale yellow, brownish orange laterally. Thorax pale yellow, tegula brownish orange. Forewing of equal width throughout; costa strongly curved outwards to 1/3, then very slightly edged outwards. Apex pointed; termen oblique, slightly concave beyond the apex, convex in median portion. Ground colour orange, with two parallel oblique lead-coloured bands: first from about one-third of costa to middle of dorsum,

second from about middle of costa to tornus. Costo-posterior and terminal portions of the wing rusty red with delicate whitish hue. Small groups of black scales: one in distal part of discal cell, and one in apex. Cilia rusty red. Hindwings brownish grey; cilia pale brownish grey.

Male.-Length of forewing about 7.5 mm.

Genitalia: Tegumen well developed; subscaphium simple without any spiculation; socii very long, large basally, narrow in posterior portions. Valvae moderate; sacculus long, broad basally, curved and sinuated in middle, set with one heavily sclerotized spine at apex; brachiola rather short. Aedoeagus strongly curved; vesica with two of almost equally sized cornuti.

Female.-Length of forewing about 9.5 mm.

Genitalia: Sterigma broad; lateral lobes moderate, a little curved. Ostium bursae broad. Antrum is membranous. Ductus bursae and cervix bursae short; corpus bursae rotundate without signum.

Holotype: ♂, Jojusha, 25. VII. 1958 (M. OKADA).

Paratypes: ♀, Ishizuchiyama, 14. X. 1960 (Y. ARITA);

♀, Sanjogatake, 30. VII. 1951 (S. ISSIKI).

***Acleris ophthalmicana* RAZOWSKI & YASUDA**

(Figs. 17, 62, 97~101)

Acleris ophthalmicana RAZOWSKI & YASUDA, 1964, Trans. Lep. Soc. Jap. **14**(4): 84, figs. 14-16, 30-33.

A. ophthalmicana is a highly polymorphic species in wing colour and pattern.

Male.-Length of forewing about 7.5-9 mm.

Genitalia: Tegumen elongate; subscaphium large, broadened terminally. Socii large on bases, very narrow in posterior portions. Valvae broad with long, well developed costa. Sacculus strong, delicately convex beyond the middle ventrally, provided with large terminal portion. Transtilla broad. Aedoeagus long narrowing posteriorly, provided with a subterminal, curved hook laterally. Four rather short cornuti in vesica.

Female.-Length of forewing about 7.5-9 mm.

Genitalia: Sterigma with large lateral lobes. Ostium bursae indicated by a long narrow split; antrum well sclerotized; ductus bursae broad in the posterior portion, narrow in the remainder, provided with internal sclerite. Corpus bursae small, delicately sculptured; signum rather weak.

Distribution: This species known only from mountainous areas of the central Honshu.

Specimens examined: 10 ♂♂, 4 ♀♀, Shigakogen, 21. IX. 1955 (T. YASUDA) (Paratypes).

Notes: In size and superficial appearance this species resembles *A. albiscaplanata*, but they can be distinguished by the raised-tufts on the forewing, which in *ophthalmicana* is conspicuous, while in *albiscaplanata* is almost obsolete.

This is a variable species and this variability occurs in the darkening of the pattern or in the changing the shape of the pattern (costal blotch). I consider the typical form of this species to be that with brownish ground colour and delicate pattern.

***Acleris delicatana* (CHR.)**

(Figs. 18, 63, 109)

Teras delicatana CHRISTOPH, 1881, Bull. Soc. Imp. Nat. Moscou **56** (1) : 60.

Peronea delicatana: ISSIKI, 1922, Dôbutsugaku Zasshi **31**: 282.

Acleris delicatana: INOUE, 1955, Check List Lep. Jap. **1**: 78.—OKANO, 1959, Icon. Ins.

Jap. Col. Nat. Ed. **1**: 286, pl. 178, fig. 21.

Oxigrapta delicatana ISSIKI, 1957, Icon. Het. Jap. Col. Nat. 1: 86, fig. 479.

Male.-Length of forewing about 8-9 mm.

Genitalia: Tegumen moderate; subscaphium with a strong ventroapical keel; socii drooping, narrow and long. Valvae narrowed apicad; brachiola rather large; sacculus strong, terminating in a curved, buffalo's horn-like process. Aedoeagus strongly curved; pointed apically; vesica without cornuti.

Female.-Length of forewing about 8-9 mm.

Genitalia: Sterigma with very long lateral lobes rotundate at tips and slightly bent apically. Ostium bursae broad, sinuate. Antrum a broad sclerotized tube. Signum well developed.

Distribution: The species is widely distributed from Hokkaido to Kyushu; Amur.

Specimens examined: 1 ♀, Teinesan, 17. IX. 1918 (S. ISSIKI); 1 ♂, Karuisawa, 6. VIII. 1952 (A. MUTUURA); 1 ♀, Gozaishoyama, 28. VII. 1957 (K. Yano); 3 ♂ ♂, 2 ♀ ♀, Kasugayama, 30. VIII. 1955 (T. YASUDA); 1 ♂, Daisen, 10. VII. 1964 (T. YASUDA); 1 ♀, Jojusha, r.f. *Carpinus japonica*, emgd. 12. VI. 1961 (T. SAITO).

Host plant: *Carpinus japonica* BLUME.

***Acleris pulchella* KAWABE**

(Figs. 19, 64, 110)

Acleris pulchella KAWABE, 1963, Trans. Lep. Soc. Jap. 14(3): 71, figs. 3, 13-14.

This is a small moth having orange forewings with distinct brownish basal and costal markings.

Male.-Length of forewing about 6-7 mm.

Genitalia: Tegumen rather broad, bilobed at top. Socii drooping, narrow and long. Transtilla a rather narrow band. Valvae narrow, with narrow costa scarcely edged. Brachiola rather large. Sacculus with basal 1/3 broad, gently curved, forming a shallow excavation, ending in spine-like tuft tip. Aedoeagus rather short, broad basally, narrowed apically; cornuti four short spines.

Female.-Length of forewing about 6.5-8 mm.

Genitalia: Sterigma with narrow pointed lateral lobes. Ostium bursae moderate. Ductus bursae slightly enlarged on proximal portion, containing a faintly sclerotized portion. Corpus bursae weakly membranous, without signum.

Distribution: This species known only from Honshu.

Specimens examined: 2 ♂ ♂, Kasugayama, 23. VI. 1955 (T. YASUDA); 1 ♂, Iwawakisan, 25. VII. 1952 (T. KODAMA); 2 ♀ ♀, Daisen, 9. VII. 1964 (S. MORIUTI); 1 ♂, Senzan, 20. VI. 1946 (A. MUTUURA).

***Acleris crassa* RAZOWSKI & YASUDA**

(Figs. 20, 65, 102)

Acleris crassa RAZOWSKI & YASUDA, 1964, Trans. Lep. Soc. Jap. 14(4): 83, figs. 8-10, 27.

This large moth has dark brown forewings.

Male.-Length of forewing about 12 mm.

Genitalia: Tegumen narrowing terminated; subscaphium small; socii subapically on the tegumen, very long, broadened before the middle, slender in posterior portion. Transtilla with well sclerotized central portion. Valvae elongate; sacculus concave in the middle ventrally. Postmedian projection large; terminal portion rather weak. Aedoeagus slender, of equal width; small thorn ventro-terminally. Three rather small cornuti in vesica.

Distribution: This species known only from mountainous areas of the central Honshu.

Specimens examined: 1 ♂, Hosono, 27. IX. 1957 (T. YASUDA) (Paratype).

***Acleris alnivora* OKU**
(Figs. 21, 66, 103-105)

Acleris alnivora OKU, 1956, Insecta Matsumurana **20** (3/4): 115, figs. 6-7.

A. alnivola is a polymorphic species having four principal forms.

Male.-Length of forewing about 10-12 mm.

Genitalia: Tegumen bilobed at top; subscaphium with a small hooklike ventroapical projection; socii drooping, slender. Valvae moderate; sacculus strongly bent at 1/5 from base, prominently excavated about middle of lower margin, forming opposite angles on either side of the excavation; a slender short projection on the basal angle. Brachiola moderate. Aedoeagus curved, with a pointed projection at top. Cornuti of strong three spines.

Female.-Length of forewing about 10-12 mm.

Genitalia: Sterigma with broad rather short lateral lobes. Ductus bursae swelling and very weakly sclerotized at the entrance. Corpus bursae elliptical. Signum of a stellate plate.

Distribution: Hokkaido and Central Honshu.

Specimens examined: 4 ♂♂, 4 ♀♀, Tokusawa, 27. IX. 1954 (T. YASUDA).

Notes: This species is close to the *A. submaccana*, but is readily distinguished superficially; *alnivora* does not have the blackish raised-tuft on the basal area, and its general colouration especially of the hindwing is darker. In colour this species much variable. OKU (1956) wrote about the variation of this species. The forms illustrated on figures 103-105.

Host plant: *Alnus hirsuta* TURCZ.

***Acleris hokkaidana* RAZOWSKI & YASUDA**

Acleris hokkaidana RAZOWSKI & YASUDA, 1964, Trans. Lep. Soc. Jap. **14** (4): 81, figs. 4,5.

Male.-Length of forewing about 11 mm.

Genitalia: Tegumen long with pointed apical lobes. Subscaphium strongly developed projecting terminally. Socii on long bases, rather small, elongate. Transtilla narrow. Valvae long with elongate costa; sacculus very long, slender, concave before middle. Posterior portion of sacculus with small projections. Aedoeagus strongly bent, provided with terminal thorn. Six rather short cornuti in vesica.

Distribution: Hokkaido.

GROUP D

This group consists of twenty-two species, including many species which have distinct seasonal forms.

***Acleris filipjevi* OBRAZTSOV**
(Figs. 22, 67, 133-135)

Acleris filipjevi OBRAZTSOV, 1956, Tijdschr. Ent. **99**(3): 147.

Acleris grisea: OKU, 1956, Ins. Mats. **20**(3/4): 115.

A. filipjevi, a medium-sized greyish species, is polymorphic, but the patterns are nearly

always indistinct.

Male.-Length of forewing about 9.5-11 mm.

Genitalia: Tegumen broad, bilobed at top, with two distinct apical projection; subscaaphium smooth; socii decumbent, elongate, broadly lanceolate. Valvae elongate; brachiola moderate; sacculus concave in the middle, with an elongate terminal hair tuft. Postmedian projection large.

Female.-Length of forewing about 9.5-11 mm.

Genitalia: Sterigma with long lateral lobes narrowing terminally. Antrum wide and long, bifurcate cephalad. Ductus bursae rather long, with narrow sclerotized tube. Signum large, stellate.

Distribution: Known from central Honshu; Amur.

Specimens examined: 1 ♂, Utsukushigahara, 22. IX. 1955 (T. YASUDA); 1 ♀, Hosono, 27. IX. 1957 (T. YASUDA); 1 ♂, Hirasan, 30. X. 1954 (T. YASUDA).

***Acleris cristana* (SCHIFF.)**

(Figs. 23, 68, 136-139)

Phalaena (Tortrix) cristana SCHIFFERMILLER & DENIS, 1776, Syst. Verz. Schm. Wien. Geg. : 129.

Peronea cristana: ISSIKI, 1922, Dôbutsugaku Zasshi **34**: 282.—Issiki, 1957, Icon. Het. Jap. Col. Nat. **1**: 86, figs. 474-477.

Acalla cristana: MATSUMURA, 1931, 6000 Ill. Ins. Jap., 1060, no. 2091.

Acleris cristana: INOUE, 1955, Check List Lep. Jap. **1**: 78.—OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed. **1**: 267, pl. 178, fig. 18b.—ISSIKI, 1964, Icon. Het. Jap. Col. Nat. (rev. ed.) **1**: 86, figs. 474-477.

A. cristana is a highly polymorphic species in wing colour and pattern. This species apparently has seven aberrations in Japan.

Male.-Length of forewing about 9-11 mm.

Genitalia: Tegumen rather broad; subscaaphium broad without any spiculation; socii decumbent, elongate, broadly lanceolate. Valvae elongate; brachiola moderate; sacculus with emargination at half; external tuft well developed. Aedoeagus strongly curved; vesica with six cornuti.

Female.-Length of forewing about 9-11 mm.

Genitalia: Sterigma with broad lateral lobes situated wide apart; ostium bursae broad, slightly convex. Antrum strongly sclerotized to a point beyond ends of lateral lobes; membranous portion of ductus bursae broadened proximally as in *hastiana*. Signum large, stellate.

Distribution: In Japan the species is widely distributed from Hokkaido to Kyushu.

Specimens examined: 1 ♂, 5 ♀ ♀, Taihisankei, r.f. *Prnus salicina*, emgd. 28. VI. —7. VII. 1958 (T. YASUDA).

Notes: This has been reared at Taihisankei from larvae collected on 3rd June 1958, rolling and eating top-shoots of *Prnus salicina* LINDL. ISSIKI (1957) reported the larvae of *A. cristana* on oak.

***Acleris expressa* (FIL.)**

(Figs. 24, 111)

Peronea expressa FILIPJEV, 1931, Annu. Mus. Zool. Acad. Sci. URSS **31**, (1930), 517.

Acleris expressa: OKU, 1956, Ins. Mats. **20** (3/4): 115.

A. expressa, a medium-sized grey moth, superficially resembles *A. filipievi*, but the forewings are usually a darker grey with large, diffuse blackish markings.

Male.-Length of forewing about 9.5 mm.

Genitalia: Tegumen broad; subscaphium broad and spatulate at tip; socii large, erect, broad at base, tapering apically. Valvae elongate; sacculus with ventral margin gently sinuate, apical hair-tuft short, broad. Aedoeagus rather chunky vesica with six small apical spines arranged in two groups.

Distribution: A widespread yet relatively scarce species. This species known from Hokkaido and the mountainous areas of central Honshu; Amur.

Specimens examined: 1 ♂, Hakodate, 3. X. 1957 (T. KODAMA).

***Acleris placata* (MEYR.)**

(Figs. 25, 70, 112, 113)

Peronea placata MEYRICK, 1912, Exot. Micr. 1: 17.

Acleris placata: INOUE, 1955, Check List Lep. Jap. 1: 80.—OKANO, 1959, Icon. Ins. Jap.

Col. Nat. Ed. 1: 267, pl. 178, fig. 11.

The Asiatic species has a dark head contrasting with a whitish ochreous thorax. The forewings have a brown costal triangle.

Male.-Length of forewing about; summer generation 6.5 mm, autumn generation 9 mm.

Genitalia: Tegumen broad; subscaphium with a large ventroapical keel; socii roughly circular. Valvae elongate; brachiola moderate; sacculus with prominent truncate projection from lower margin apically, preceded by a deep, narrow emargination, external tuft rather broad. Transtilla broad. Aedoeagus short, slightly curved, with a strong cristated apical cornutus; vesica without cornuti.

Female.-Length of forewing about; summer generation 7.5 mm, autumn generation 9 mm.

Genitalia: Sterigma with broad and long lateral lobes; ostium bursae moderate, ventral region is more heavily sclerotized and strongly excavated in median section. Antrum a moderate tube. Signum large, stellate.

Distribution: Known from southern part of Honshu, and Kyushu; Assam, Formosa.

Specimens examined: 2 ♂♂, 1 ♀, Sata, 17. V. 1952 (T. KODAMA); 1 ♂, Kasugayama, 20. VI. 1955 (T. YASUDA); 1 ♂, Iwawakisan, 22. IX. 1954 (T. YASUDA); 1 ♀, Hikosan, XI. 1957 (T. YASUDA); 1 ♀, Hikosan, 12. X. 1958 (K. YANO); 1 ♂, Naidaijinkei, 11. X. 1958 (T. YASUDA).

Notes: *A. placata* has two distinct seasonal forms; in the autumn generation, length of forewing 9 mm, with a large chestnut-brown triangle. And in the summer generation, this patch is interrupted by a pale patch, and smaller in size.

***Acleris perfundana* KUZNETZOV**

(Figs. 26, 69, 114, 115)

Acleris perfundana KUZNETZOV, 1962, Bull. Zool. Lab. Acad. Sci. USSR 30: 337-340.

Peronea ferrugana: ISSIKI (nec TREITSCHKE), 1957, Icon. Het. Jap. Col. Nat. 1: 84, figs. 454-455.

Acleris ferrugana: ISSIKI (nec TREITSCHKE), 1964, Icon. Het. Jap. Col. Nat. (rev. ed.) 1: 84, figs. 454-455.

This is a small moth having ochreous forewings with indistinct brownish costal triangle. And this is the species usually treated in the literature as *A. ferrugana*.

Male.-Length of forewing about 6.5-7 mm.

Genitalia: Tegumen slightly excavated at tip; subscaphium with a distinct ventro-apical keel; socii smaller and less produced distally than in *ferrugana*. Valvae elongate; brachiola moderate; sacculus feebly emarginate with a shorter apical hair-tuft. Aedoeagus strongly curved; vesica with two cornuti and with a stout coniform apical cornutus.

Female.-Length of forewing about 6.5-7 mm.

Genitalia: Sterigma with long lateral lobes. Antrum well developed, subcylindrical. Ductus bursae with a broad sclerotized girdle remote from antrum. Corpus bursae large; signum stellate.

Distribution: Widespread in Japan; Amur.

Specimens examined: 1 ♂, 2 ♀ ♀, Torokko, (Northeast-Honshu), r.f. *Q. serrata*, emgd. 11, 13, 17. IX. 1950 (A. MUTUURA); 2 ♂ ♂, 1 ♀, Kurobishi, 16. VIII. 1955 (T. YASUDA); 2 ♂ ♂, Hieisan, 23. VIII. 1949 (S. ISSIKI).

Notes: Quite similar to *A. ferrugana*, but the genitalia of both sexes of Japanese specimen correspond to those of the species described by KUZNETZOV (1962) as *perfundana*.

Host plant: *Quercus serrata* THUNB.

Acleris nigriradix (FIL.)

(Figs. 27, 71, 140-142)

Peronea nigriradix FILIPJEV, 1931, Annu. Mus. Zool. Acad. Sci. URSS **31**, (1930): 513.

Peronea nigriradix: ISSIKI, 1957, Icon. Het. Jap. Col. Nat. **1**: 86, figs 472-473.

Acleris nigriradix: ISSIKI, 1964, Icon. Het. Jap. Co. Nat. (rev. ed.) **1**: 86, figs. 472-473.

A. nigriradix, a polymorphic species, has at least three distinct forms in Japan. The three basic patterns are: (a) blackish basal and greyish outer area; (b) forewing dull red-brown with the white basal patch; (c) greyish with the dorsal margin yellow.

Male.-Length of forewing about 9.5-10.5 mm.

Genitalia: Tegumen rather broad; subscaphium with a small ventroapical projection; socii small. Valvae elongate; brachiola rather broad; sacculus rather narrow, sinuate; external tuft rather broad. Aedoeagus strongly curved, pointed at top; vesica with three long cornuti.

Female.-Length of forewing about 9.5-10.5 mm.

Genitalia: Sterigma with small lateral lobes. Antrum well developed, subcylindrical. Ductus bursae with a rectangular girdle remote from antrum. Corpus bursae small; signum large, stellate.

Distribution: Known only from a few scattered localities in the central area of Honshu; Amur.

Specimens examined: 1 ♂, Usuitoge, 22. IX. 1955 (T. YASUDA); 1 ♂, Utsukushigahara, 18. V. 1953 (T. KODAMA); 1 ♂, Hosono, 27. IX. 1957 (T. YASUDA); 1 ♀, Makinoosan, 23. IV. 1960 (T. SAITO); 2 ♀ ♀, Hanase, 24. IV. 1962 (T. SAITO).

Acleris strigifera (FIL.)

(Figs. 28, 72, 116)

Peronea strigifera FILIPJEV, 1931, Annu. Mus. Zool. Acad. Sci. URSS **31**, (1930): 518.

Peronea strigifera: ISSIKI, 1957, Icon. Het. Jap. Col. Nat. **1**: 85, fig. 466.

Acleris strigifera: OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed. **1**: 267, pl. 178, fig. 16.—
ISSIKI, 1964, Icon. Het. Jap. Col. Nat. (rev. ed.) **1**: 85, fig. 466.

A. strigifera is a medium-sized moth having whitish grey forewings powdered with dark grey, and with many similarly coloured tufts of raised scales.

Male.-Length of forewing about 10.5 mm.

Genitalia: Tegumen broad, heavily excavated at tip: subscaphium with distinct, bifurcate projection at tip; socii small. Valvae elongate; sacculus rather broad, with a strong basal thorn; external tuft broad. Aedoeagus strongly curved; vecica with 5 rather thick spinelike, almost equally sized cornuti.

Female.-Length of forewing about 10.5 mm.

Genitalia: Sterigma with moderately long lateral lobes. Antrum moderate, subcylindrical. Signum large stellate.

Distribution: So far as is known, *A. strigifera* limited to the high altitude region of central Honshu.

Specimens examined: 3 ♂♂, 3 ♀♀, Tokusawa, 27. IX. 1954 (T. YASUDA).

Acleris affinitana (SNELL.)

(Figs. 29, 73, 117-120)

Teras affinitana SNELLEN, 1883, Tijdschr. v. Ent. 26: 185.

Peronea pryerana: ISSIKI, 1922, Dôbutsugaku Zasshi 34: 282.—ISSIKI, 1950, Icon. Ins. Jap. (rev. ed.), 487, no. 1325.—ISSIKI, 1957, Icon. Het. Jap. Col. Nat. 1: 85.

Peronea affinitana: ISSIKI, 1922, Dôbutsugaku Zasshi 34: 282.—ISSIKI, 1957, Icon. Het. Jap. Col. Nat. 1: 84-85, figs. 456-459.

Acleris pryerana: INOUE, 1955, Check List Lep. Jap. 1: 79.

Acleris affinitana: INOUE, 1955, Check List Lep. Jap. 1: 79.—OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed. 1: 267, pl. 178, figs. 10a, b, c.—ISSIKI, 1964, Icon. Het. Jap. Col. Nat. (rev. ed.) 1: 84-85, figs. 456-459.

A. affinitana has two distinct seasonal forms: yellow in the summer generation (f. *affinitana*), ochreous in the autumn generation (f. *pryerana*).

Male.-Length of forewing about; summer generation 6-7.5 mm, autumn generation 8 mm.

Genitalia: Tegumen strongly produced; subscaphium with a peculiar ventroapical keel; socii small. Valvae elongate; sacculus rather narrow, with a sharp pointed projection at the middle of inner margin, and with semicircular haired terminal projection. Aedoeagus slightly curved, vesica with 10 cornuti and with a coniform apical cornutus.

Female.-Length of forewing about; summer generation 6-8 mm, autumn generation 8-9 mm.

Genitalia: Sterigma broad, with narrow lateral lobes. Antrum well developed, subcylindrical. Signum smistellate.

Distribution: Japan, Amur.

Specimens examined: 1 ♂, 2 ♀♀, Sapporo, r.f. *Quercus dentata*, emgd. 23. IX. 1962 (T. OKU); 1 ♂, Shigakogen, 20. IX. 1955 (T. YASUDA); 1 ♂, Hirasan, 30. X. 1954 (T. YASUDA); 2 ♀♀, Sakai, 24. XI. 1960 (T. SAITO); 2 ♂♂, 3 ♀♀, Sakai, 24. V. 1957 (T. YASUDA); 3 ♂♂, 5 ♀♀, Kumamoto, -. XI. 1963 (T. YASUDA); 1 ♀, Sugitate, 4. XII. 1955 (M. OKADA).

Notes: KUZUNETZOV (1962) treated *affinitana* which was illustrated by ISSIKI (1957, figs. 458, 459) as the forms of *A. perfundana* (458=var. *perfundana*, 459=var. *nigropunctata*). But there is no doubt that ISSIKI's specimens are autumn forms of *A. affinitana*.

Species of *Quercus* usually comprise the food plants. Overwintering adults of the autumn generation laid eggs in early Mar, which hatched soon. Of greatest interest was the fact that virtually all eggs deposited on slender stem.

Acleris tunicatana (WLSM.)

(Figs. 30, 74, 143, 144)

Oxygrapha tunicatana WALSINGHAM, 1900, Ann. & Mag. N. H. (ser. 7) 5: 372.*Peronea tunicatana*: ISSIKI, 1922, Dôbutsugaku Zasshi 34: 282.—ISSIKI, 1957, Icon. Het. Jap. Col. Nat. 1: 85-86, figs. 470-471.*Acleris tunicatana*: INOUE, 1955, Check List Lep. Jap. 1: 78.—OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed. 1: 267, pl. 178, fig. 17.—ISSIKI, 1964, Icon. Het. Jap. Col. Nat. (red. ed.) 1: 85-86, figs. 470-471.

Male.—Length of forewing about 9-11 mm.

Genitalia: Tegumen broad; subscaphium with a small hook-like ventroapical projection; socii small. Valvae elongate; brachiola small; sacculus rather narrow, sinuate; external tuft rather broad. Aedoeagus slightly curved, rather stout, dilated cephalad; vesica with two long cornuti and with a stout coniform subapical cornutus.

Female.—Length of forewing about 9-11 mm.

Genitalia: Sterigma rather broad, with short lateral lobes. Signum large, stellate.

Distribution: This species known only from mountainous areas of Honshu.

Specimens examined: 2 ♀ ♀, Nachi, r.f. *Enkianthus sikokianus* OHWI, emgd. 28. VI. 1957 (T. YASUDA); 1 ♂, 1 ♀, Hirasan, 30. X. 1954 (T. YASUDA); 7 ♂ ♂, 6 ♀ ♀, Gozaishoyama, r.f. *Enkianthus campanulatus* MIQ., emgd. 3. X. 1963 (T. YASUDA).Note: In Japan, larvae have thus far been found almost exclusively on species of *Enkianthus*.**Acleris roscidana amurensis** (CAR.)

(Figs. 31, 75, 121, 122)

Acalla roscidana amurensis CARADJA, 1928, Iris 42: 293.*Peronea hispidana*: ISSIKI (nec CHRISTOPH), 1922, Dôbutsugaku Zasshi 34: 282.*Acleris hispidana*: INOUE (nec CHRISTOPH), 1955, Check List Lep. Jap. 1: 78.*Peronea roscidana*: ISSIKI (nec HÜBNER), 1957, Icon. Het. Jap. Col. Nat. 1: 85, fig. 465.*Acleris roscidana*: OKANO (nec HÜBNER), 1959, Icon. Ins. Jap. Col. Nat. Ed. 1: 267, pl. 178, fig. 15.

This large moth has whitish grey forewings usually distinctly spotted with grey or black; the surface is usually quite roughened by upraised scale groups.

Male.—Length of forewing about 11.5-13.5 mm.

Genitalia: Tegumen rather broad; subscaphium with a large ventroapical keel; socii small, not produced distally. Valvae elongate; brachiola rather long; sacculus rather narrow, sinuate, with a rectangular projection at terminal portion of sacculus; terminal tuft narrow. Postmedian projection small. Aedocagus slightly curved; vesica with 12 cornuti arranged in two groups.

Female.—Length of forewing about 11.5-13.5 mm.

Genitalia: Sterigma with strongly dilated, then tapering lateral lobes with tips more or less acute and usually curved. Antrum wide and long, bifurcate cephalad, sclerotized especially caudad. Corpus bursae rotundate or slightly ovate; signum large stellate.

Distribution: This species known from mountainous areas of central Honshu, but northern and southern limits of the distribution are unknown; Amur.

Specimens examined: 1 ♂, 1 ♀, Tokusawa, 27. IX. 1954 (T. YASUDA); 1 ♂, 1 ♀, Shigakogen, 20. IX. 1955 (T. YASUDA); 1 ♂, 2 ♀ ♀, Shigakogen, 3. V. 1959 (T. YASUDA).

***Acleris logiana* (CL.)**

(Figs. 32, 123)

Phalaena logiana CLERCK, 1759, Icon. Ins., t. 10, fig. 3.*Peronea niveana*: ISSIKI, 1922, Dôbutsugaku Zasshi **34**: 282.—ISSIKI, 1957, Icon. Het. Jap. Col. Nat. **1**: 85, fig. 464.*Acleris niveana*: ISSIKI, 1964, Icon. Het. Jap. Col. Nat. (rev. ed.) **1**: 85, fig. 464.*Acleris logiana*: Inoue, 1955, Check List Lep. Jap. **1**: 79.—OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed. **1**: 267, pl. 178, fig. 14.*A. logiana*, an early spring and late autumn flying species, has elongate whitish grey forewings.

Male.—Length of forewing 9.5 mm.

Genitalia: Tegumen rather narrow; subsclaphium simple without middle spine; socii small. Valvae elongate; brachiola rather long; sacculus broad; external tuft small. Aedoeagus strongly curved; vesica with an apical, shorter and a basal, longer pair of strong cornuti.

Distribution: Known from Hokkaido and the mountainous region of central Honshu; Siberia, N-America.

Specimens examined: 1 ♂, Shigakogen, 12. IX. 1953 (T. KODAMA).

***Acleris lacordairana* (DUP.)**

(Figs. 33, 76, 124, 125)

Peronea lacordairana DUPONCHEL, 1836, Hist. Nat. Lép. France **9**: 562.*Peronea lacordairana*: ISSIKI, 1922, Dobutsugaku Zasshi **34**: 282.*Acleris lacordairana*: INOUE, 1955, Check List Lep. Jap. **1**: 79.*Acleris roxana* RAZOSWIKI & YASUDA, 1964, Trans Lep. Soc. Jap. **14**(4): 87.*A. lacordairana* is a pale-coloured moth having whitish grey forewing blotched with tan and a distinct blackish costal triangle.

Male.—Length of forewing about 8.5 mm.

Genitalia: Tegumen slender; subsclaphium simple without any spiculation; socii long, upright, similar in shape to those in the latifasciana group. Valvae elongate; brachiola rather broad; sacculus rather broad, with prominent truncate projection from lower margin apically, preceded by a deep, narrow emargination, hair-tuft short, broad. Aedoeagus long, slightly bent. Two cornuti present in vesica, and a stout robust thornlike apical cornutus dilated basad.

Female.—Length of forewing 8.5 mm.

Genitalia: Sterigma with long, parallel lateral lobes. Ostium bursae broad, strongly convex. Antrum well developed, lateral praeostial lobes large. Ductus bursae very long, broad posteriorly. Signum large, stellate.

Distribution: Widespread in Japan from Hokkaido and northeast Honshu across central Honshu to Kyushu; Siberia, Europe.

Specimens examined: 1 ♂, 2 ♀ ♀, Hikosan, 8. XI. 1953 (H. KUROKO); 2 ♂ ♂, 1 ♀, Takayama, 23-25. VII. 1954 (T. YASUDA).

Note: This species has two distinct seasonal forms: white in the autumn generation, tan in the summer generation. *A. roxana* is a form of the summer generation of this species.***Acleris japonica* (WLSM.)**

(Figs. 34, 78, 127, 128)

Oxygrapha japonica WALSINGHAM, 1900, Ann. & Mag. N. H. (ser. 7) **5**: 373.

- Peronea japonica*: ISSIKI, 1922, Dôbutsugaku Zasshi **34**: 2.82—ISSIKI, 1950, Icon. Ins. Jap. (rev. ed.) 488, no. 1328—ISSIKI, 1957, Icon. Het. Jap. Col. Nat. **1**: 85, figs. 462-463.
Acleris japonica: INOUE, 1955, Check List Lep. Jap. **1**: 79.—OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed. **1**: 267, pl. 178, fig. 13.—ISSIKI, 1964, Icon. Het. Jap. Col. Nat. (rev. ed.) **1**: 85, figs. 462-463.

This species has a white head and thorax. The forewings are suffused with yellowish brown apically.

Male.-Length of forewing about; summer generation 6-7 mm, autumn generation 8 mm.

Genitalia: Tegumen moderate; subsclaphium with a distinct ventroapical hook; socii ovate. Valvae elongate; brachiola indicated by a slight obtuse projection; sacculus rather narrow, strongly sinuate, with a subrectangular projection beyond half; external tuft short. Aedoeagus slender; two cornuti present in vesica.

Female.-Length of forewing about 7.5 mm.

Genitalia: Sterigma with long, rather thin, almost vertical lateral lobes. Ostium bursae moderate. Signum large, semistettate.

Distribution: Known only from Honshu.

Specimens examined: 1 ♂, Nagano, 21. V. 1961 (T. YASUDA); 1 ♂, Kasugayama, 23. VI. 1955 (T. YASUDA); 1 ♀, Ootakimura, 25. VII. 1957 (S. MORIUTI); 1 ♂, Makinoosan, 18. VIII. 1958 (K. YANO); 1 ♀, Iwawakisan, 28. VI. 1954 (T. KODAMA); 1 ♂, Iwawakisan, 16. X. 1950 (S. ISSIKI).

Host plant: *Zelkova serrata* THUNB.

***Acleris takeuchii* RAZOWSKI & YASUDA**

(Figs. 35, 77, 126)

Acleris takeuchii RAZOWSKI & YASUDA, 1964, Trans. Lep. Soc. Jap. **14**(4): 86.

This is a pale-coloured moth having white forewing strigulated with dark brown and a distinct brownish costal triangle.

Male.-Length of forewing about 7 mm.

Genitalia: Tegumen large; subsclaphium with ventral projection subterminally; socii large, elongate-ovate, narrowing anteriorly. Valvae elongate; sacculus with strong basal thorn, delicately concave in the middle area; terminal tuft narrow. Aedoeagus short, rather broad apically, provided with ventroapical thorn. One strong and approximately ten slender cornuti in vesica.

Female.-Length of forewing about 7.5 mm.

Genitalia: Sterigma with large lateral lobes. Antrum well developed, bifurcate cephalad. Posterior portion of ductus bursae broad. Signum large, stellate.

Distribution: This species known only from the central Honshu.

Specimens examined: 1 ♂, 1 ♀, Ikeno, 5.8. XI. 1918 (K. TAKEUCHI) (Paratypes); 1 ♀, Hieisan, 4. VIII. 1954 (T. KODAMA); 1 ♂, Nippara, 11. IV. 1964 (A. KAWABE).

***Acleris ulmicola* (MEYR.)**

(Figs. 36, 45, 129, 130)

Peronea ulmicola MEYRICK, 1930, Exot. Micr. **3**: 612.

Peronea boscana: ISSIKI (nec FABRICIUS), 1922, Dôbutsugaku Zasshi **34**: 282.

—ISSIKI (nec FABRICIUS), 1950, Icon. Ins. Jap. (rev. ed.) 488, no. 1326.

—ISSIKI (nec FABRICIUS), 1957, Icon. Het. Jap. Col. Nat. **1**: 85, figs. 460-461.

Acalla boscana: MATSUMURA, 1931, 6000 Ill. Ins. Jap., 1060, no. 2089.

Acleris boscana: INOUE, 1955, Check List Lep. Jap. **1**: 78.—OKANO, 1959, Icon Ins. Jap. Col. Nat. Ed. **1**: 267, pl. 178, figs. 12a, b.—OKU, 1961, Coenonympha, no. 11: 2.—ISSIKI, 1964, Icon Het. Jap. Col. Nat. (rev. ed.) **1**: 85, figs. 460-461.

Acleris ulmicola: RAZOWSKI & YASUDA, 1964, Trans. Lep. Soc. Jap., **14**(4): 87-89.

Acleris ulmicola was described from Manchuria. The abdomen of the type is missing and its comparison with other specimens is rather difficult. However, the colouration of the forewing in one specimen from Sounkyo (Hokkaido) is very similar to that in Meyrick's species, and the identification is based on this specimen. *Acleris ulmicola* (MEYR.) is similar to *A. boscana* (F.) and its variation is similar to that of the species. It also has two seasonal forms: white in the summer generation, grey in the autumn generation. It differs very slightly from *A. boscana* (F.) both in genitalia and superficially. In the male genitalia the tegumen is shorter than that in *A. boscana* (F.) and concave in the middle portion of the ventral edge. Termination of sacculus large, rounded. Female genitalia with large sterigma. Proximal projections long, pointed. Ductus bursae very long; introitus sinuated ventro-distally, rather well sclerotized. Signum well developed. Female genitalia rather resembles those in *A. boscanoides* RAZ.

Length of forewing about; summer generation 7-8.5 mm, autumn generation 8.5-10 mm.

Distribution: Known from Hokkaido and Honshu; Manchuria.

Specimens examined: 3 ♂♂, 1 ♀, Asahikawa, 1. X. 1957 (T. KODAMA); 1 ♂, 2 ♀♀, Sapporo, r.f. *Ulmus Davidiana* PLANCH. var. *japonica*, emgd. 8. VII. 1958 (T. YASUDA); 5 ♂♂, 13 ♀♀, Daisen, 5. VIII. 1963 (T. YASUDA).

***Acleris apiciana* (HB.)**

(Figs. 37, 46, 132)

Phalaena apiciana HÜBNER, 1793, Samml. auserl. Vög. u. Schm. : 10.

Acleris apiciana: KAWABE, 1963, Trans. Lep. Soc. Jap. **14**(3): 72, 75.

This large moth has pale greyish tan forewings usually distinctly spotted with grey or black.

Male.-Length of forewing about 10-12 mm.

Genitalia: Tegumen narrow apically; subscaphium smooth; socii on a long, narrow, rod-like base, small, hemispherical. Valvae rather broad; brachiola rather short; sacculus broad; external tuft broad. Aedoeagus thin; vesica with five short cornuti.

Female.-Length of forewing about 10-12 mm.

Genitalia: Sterigma rather narrow, with long lateral lobes usually curved. Antrum wide and long, bifurcate cephalad, sclerotized especially caudad. Corpus bursae large; signum large, well-spined.

Distribution: Known from Hokkaido and central Honshu; Europe.

Specimens examined: 3 ♂♂, 2 ♀♀, Tateshina, 11. V. 1957 (T. YASUDA); 1 ♂, 1 ♀, Shigakogen, 2. V. 1959 (T. YASUDA).

***Acleris uniformis* (FIL.)**

(Figs. 38, 49, 145, 146)

Peronea uniformis FILIPJEV, 1931, Annu. Mus. Zool. Acad. URSS **31**, (1930): 512.

A. uniformis is a small moth having dark tan forewings with a distinct blackish costal triangle.

Male.-Length of forewing about; summer generation 7 mm, autumn generation 8.5 mm.

Genitalia: Quite similar to those of *hastiana*, but differing in all specimens examined

in the following points: the socii are less drawn out distally and consequently more nearly circular in outline; subscaphium simple without any apiculation.

Female.-Length of forewing about; summer generation 8 mm, autumn generation 8.5 mm.

Genitalia: Sterigma with rather short lateral lobes rotundate at tips. Ostium bursae broad. Antrum a broad sclerotized band. Ductus bursae rather short, extending below lower margin of antrum. Signum large stellate.

Distribution: Hokkaido and Honshu; Amur.

Specimens examined: 1 ♀, Toya, 21. VII. 1961 (T. KUROSAWA); 1 ♂, Ikeda (near Osaka), 22. VIII. 1920 (S. ISSIKI); 1 ♂, Sapporo, 15. IX. 1917 (S. ISSIKI).

Note: This species has seasonal variation: in the summer generation, costal patch of forewing almost absorbed in the ground colour.

Acleris umbrana (Hw.)

(Figs. 39, 148)

Tortrix umbrana HAWORTH, 1811, Lep. Brit. : 411.

Peronea umbrana: ISSIKI (err. typogr.), 1922, Dōbutsugaku Zasshi **34**: 282.

Acleris umbrana: INOUE, 1955, Check List Lep. Jap. **1**: 78.

Male.-Length of forewing about 13 mm.

Genitalia: Tegumen rather narrow; subscaphium smooth; socii narrow. Valvae elongate; brachiola short; sacculus rather broad, strongly emarginate at half; external tuft large. Aedoeagus strongly curved; vesica with two slender, sclerite plates and two fine spines.

Distribution: Known from the mountainous areas of Honshu; Europe, E-Russia.

Specimens examined: 1 ♂, Karuizawa, 20. X. 1962 (T. MAENAMI).

Acleris similis (FIL.)

(Figs. 40, 147)

Peronea similis FILIPJEV, 1931, Annu. Mus. Zool. Acad. Sci. URSS **31**, (1930): 515.

This large moth has dark grey forewings.

Male.-Length of forewing about 11mm.

Genitalia: Tegumen rather broad; cristae of tegumen large and sharply pointed; subscaphium with a distinct ventroapical keel; socii small. Valvae elongate; brachiola broad; sacculus drawn out to a sharp point beyond half, then curving costad sharply, forming a small semicircular ventral excavation. Aedoeagus long; vesica with two long cornuti.

Distribution: Hokkaido; Amur.

Specimens examined: 1 ♂, Onneyu, 29. IX. 1957 (T. KODAMA).

Acleris longipalpana (SNELL.)

(Figs. 41, 131)

Teras longipalpana SNELLEN, 1883, Tijdschr. v. Ent. **26**: 184.

Peronea longipalpana: ISSIKI, 1922, Dōbutsugaku Zasshi **34**: 282.

Acleris longipalpana: INOUE, 1955, Check List Lep. Jap. **1**: 79.

Acleris electrina RAZOWSKI & YASUDA, 1964, Trans. Lep. Soc. Jap. **14**(4): 81, 83.

A. longipalpana is a pale-coloured moth having tan forewings usually distinctly spotted with brack and an indistinct brownish costal triangle.

Male.-Length of forewing about 11 mm.

Genitalia: Tegumen large bilobed and rounded apically. Subscaphium with small ventral projection subterminally. Socii large, elongate, protruding terminad. Valvae with rather short costal edge; sacculus strong, with a rather straight ventral edge to half of its length. Large sinuation present beyond the middle; subterminal projection large, rounded terminally, turned towards the base of sacculus. Aedoeagus long, rather narrow, terminating in the characteristic ventral projection. Two slender, small cornuti present.

Distribution: This species known from Hokkaido and mountainous areas of central Honshu; Amur.

Specimens examined: 1 ♂, Sapporo, 15. VIII. 1916 (S. ISSIKI); 1 ♂, Shigakogen, 30. IV. 1959 (T. KODAMA); 1 ♂, Kasugayama, 5. IV. 1956 (T. YASUDA).

Acleris enitescens (MEYR.)

(Figs. 42, 47, 149)

Peronea enitescens MEYRICK, 1912, Exot. Micr. 1: 16. —ISSIKI, 1957, Icon. Het.

Jap. Col. Nat. 1: 84, fig. 451.

Acleris enitescens: OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed. 1: 267, pl. 178, fig. 8.—ISSIKI, 1964, Icon. Het. Jap. Col. Nat. (rev. ed.) 1: 84, fig. 451.

This is a small moth having yellowish brown forewings with indistinct purplish markings.

Male.—Length of forewing about 6-8 mm.

Genitalia: Tegumen rather broad; subscaphium with a strongly curved large ventro-apical keel; socii subtriangular, decumbent, produced distally. Valvae narrow; brachiola large; sacculus broad, feebly emarginate with a shorter apical hair-tuft. Aedoeagus short, stout, slightly bent; vesica with 12 rather thick spinelike cornuti arranged in two groups.

Female.—Length of forewing 6-8 mm.

Genitalia: Sterigma broad, with short, rather thin lateral lobes. Corpus bursae large; signum large.

Distribution: Widespread in Japan for Hokkaido and northeast Honshu across central Honshu to Shikoku and Kyushu; China, Formosa, India.

Specimens examined: 1 ♂, 1 ♀, Kotoni, 2. IX. 1961 (T. OKU); 2 ♀ ♀, Kasugayama, 2. VII. 1955 (S. MORIUTI); 1 ♂, Naidaijinkei, 11. X. 1958 (T. YASUDA); 1 ♀, Iwawakisan, 28. VI. 1954 (T. YASUDA).

Notes: Evidently wild berry, *Rubus microphyllus* LINN., is the native host plant. The species is a potential pest of strawberries and of other berries if they are grown commercially within the range of *enitescens*.

Acleris fuscotogata (WLSM.)

(Figs. 43, 48, 150)

Oxygrapha fuscotogata WALSINGHAM, 1900, Ann. & Mag. N. H. (ser. 7) 5: 377.

Peronea fuscotogata: ISSIKI, 1922, Dôbutsugaku Zasshi 34: 283.

Acleris fuscotogata: INOUE, 1955, Check List Lep. Jap. 1: 80.—OKANO, 1959, Icon. Ins. Jap. Col. Nat. Ed. 1: 268, pl. 178, figs. 19a, b.

Oxygrapha fuscotogata: ISSIKI, 1957, 1964, Icon. Het. Jap. Col. Nat. 1: 84, figs. 452, 453.

Male.—Length of forewing about 7 mm.

Genitalia: Tegumen broad, bilobed at top; subscaphium smooth; socii small, upright. Valvae rather narrowed apically; brachiola moderate; sacculus bent strongly upward toward costa at half, then just as strongly recurved forming a deep excavation and terminating in a curved, hook-like process, beyond which is a strong apical hair-tuft. Aedoeagus slender;

vesica with three rather thick spinelike cornuti.

Female.-Length of forewing about 8 mm.

Genitalia: Sterigma broad, with short lateral lobes rotundate at tips. Antrum well developed, subcylindrical. Ductus bursae with two triangular sclerite plate remort from antrum. Signum large.

Distribution: Known from southern part of Honshu, Shikoku and Kyushu; Amur.

Specimens examined: 1 ♂, 1 ♀, Izumikatsuragi, XI. 1955 (T. YASUDA); 1 ♀, Iwawakisan, 28. X. 1954 (T. YASUDA); 1 ♂, Takanawasan, 23. X. 1954 (M. OKADA); 1 ♀, Sata, 4. XI. 1957 (T. YASUDA).

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Explanation of figures

Figs. 1-43. Male genitalia.

- Fig. 1. *Acleris emargana* (FABR.)
 Fig. 3. *A. latifasciana* (HW.)
 Fig. 5. *A. dicolor* KAWABE
 Fig. 7. *A. nigrilineana* KAWABE
 Fig. 9. *A. submaccana* (FIL.)
 Fig. 11. *A. platynotana* (WLSM.)
 Fig. 13. *A. paradiseana* (WLSM.)
 Fig. 15. *A. phantastica* RAZ. & YASD.
 Fig. 17. *A. ophthalmicana* RAZ. & YASD.
 Fig. 19. *A. pulchella* KAWABE
 Fig. 21. *A. alnivora* OKU
 Fig. 23. *A. cristana* (SCHIFF.)
 Fig. 25. *A. placata* (MEYR.)
 Fig. 27. *A. nigriradix* (FIL.)
 Fig. 29. *A. affinitana* (SNELL.)
 Fig. 31. *A. roscidana amurensis* (CAR.)
 Fig. 33. *A. lacordairana* (DUP.)
 Fig. 35. *A. takeuchii* RAZ. & YASD.
 Fig. 37. *A. apiciana* (HB.)
 Fig. 39. *A. umbrana* (HW.)
 Fig. 41. *A. longipalpata* (SNELL.)
 Fig. 43. *A. fuscotogata* (WLSM.)

Figs. 45-78, Female genitalia.

- Fig. 45. *Acleris ulmicola* (MEYR.)
 Fig. 47. *A. enitescens* (MEYR.)
 Fig. 49. *A. uniformis* (FIL.)
 Fig. 51. *A. issikii* OKU
 Fig. 53. *A. albiscapulana* (CHR.)
 Fig. 55. *A. dicolor* KAWABE
 Fig. 57. *A. platynotana* (WLSM.)
 Fig. 59. *A. caerulea* (WLSM.)
 Fig. 61. *A. aestuosa* sp. nov.
 Fig. 63. *A. delicatana* (CHR.)
 Fig. 65. *A. crassa* RAZ. & YASD.
 Fig. 67. *A. filipjevi* OBR.
 Fig. 69. *A. perfundana* KUZNT.
 Fig. 71. *A. nigriradix* (FIL.)
 Fig. 73. *A. affinitana* (SNELL.)
 Fig. 75. *A. roscidana amurensis* (CAR.)
 Fig. 77. *A. takeuchii* RAZ. & YASD.

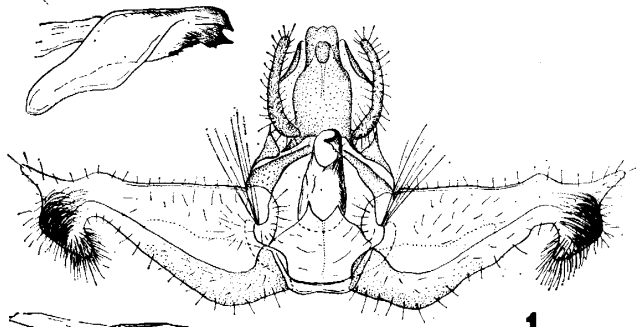
- Fig. 2. *Acleris issikii* OKU
 Fig. 4. *A. albiscapulana* (CHR.)
 Fig. 6. *A. comariana* (Z.)
 Fig. 8. *A. kodamai* sp. nov.
 Fig. 10. *A. exscana* (KENN.)
 Fig. 12. *A. kurokoi* sp. nov.
 Fig. 14. *A. caerulea* (WLSM.)
 Fig. 16. *A. aestuosa* sp. nov.
 Fig. 18. *A. delicatana* (CHR.)
 Fig. 20. *A. crassa* RAZ. & YASD.
 Fig. 22. *A. filipjevi* OBR.
 Fig. 24. *A. expressa* (FIL.)
 Fig. 26. *A. perfundana* KUZNT.
 Fig. 28. *A. strigifera* (FIL.)
 Fig. 30. *A. tunicatana* (WLSM.)
 Fig. 32. *A. logiana* (CL.)
 Fig. 34. *A. japonica* (WLSM.)
 Fig. 36. *A. ulmicola* (MEYR.)
 Fig. 38. *A. uniformis* (FIL.)
 Fig. 40. *A. similis* (FIL.)
 Fig. 42. *A. enitescens* (MEYR.)
 Fig. 44. *Croecia elegans* (OKU)

- Fig. 46. *Acleris apiciana* (HB.)
 Fig. 48. *A. fuscotogata* (WLSM.)
 Fig. 50. *A. emargana* (FABR.)
 Fig. 52. *A. latifasciana* (HW.)
 Fig. 54. *A. submaccana* (FIL.)
 Fig. 56. *A. exscana* (KENN.)
 Fig. 58. *A. paradiseana* (WLSM.)
 Fig. 60. *A. phantastica* RAZ. & YASD.
 Fig. 62. *A. ophthalmicana* RAZ. & YASD.
 Fig. 64. *A. pulchella* KAWABE
 Fig. 66. *A. alnivora* OKU
 Fig. 68. *A. cristana* (SCHIFF.)
 Fig. 70. *A. placata* (MEYR.)
 Fig. 72. *A. strigifera* (FIL.)
 Fig. 74. *A. tunicatana* (WLSM.)
 Fig. 76. *A. lacordairana* (DUP.)
 Fig. 78. *A. japonica* (WLSM.)

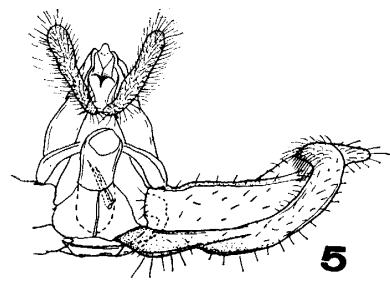
- Fig. 79. *Acleris emargana* (FABR.)
 Figs. 81, 82. *A. latifasciana* (HW.)
 Fig. 85. *A. dicolor* KAWABE
 Fig. 87. *A. nigrilineana* KAWABE
 Figs. 89-92. *A. submaccana* (FIL.)
 Fig. 94. *A. kurokoi* sp. nov.
 Fig. 96. *A. phantastica* RAZ. & YASD.
 Fig. 102. *A. crassa* RAZ. & YASD.
 Fig. 106. *A. exscana* (KENN.)
 Fig. 108. *A. aestuosa* sp. nov.

- Fig. 80. *A. issikii* OKU
 Figs. 83, 84. *A. albiscapulana* (CHR.)
 Fig. 86. *A. comariana* (Z.)
 Fig. 88. *A. kodamai* sp. nov.
 Fig. 93. *A. platynotana* (WLSM.)
 Fig. 95. *A. caerulea* (WLSM.)
 Fig. 97-101. *A. ophthalmicana* RAZ. & YASD.
 Figs. 103-105. *A. alnivora* OKU
 Fig. 107. *A. paradiseana* (WLSM.)
 Fig. 109. *A. delicatana* (CHR.)

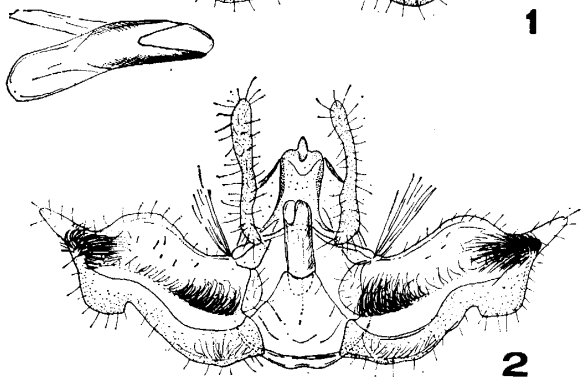
- Fig. 110. *A. pulchella* KAWABE
Fig. 112. *A. placata* (MEYR.), summer form
Fig. 114. *A. perfundana* KUZNT., autumn f.
Fig. 116. *A. strigifera* (FIL.)
Figs. 118-120. *A. affinitana* (SNELL.) autumn f.
Figs. 121.-212 *A. roscidana amurensis* (CAR.)
Fig. 123. *A. logiana* (CL.)
Fig. 125. *A. lacordairana* (DUP.), autumn f.
Fig. 127. *A. japonica* (WLSM.), summer f.
Fig. 129. *A. ulmicola* (MEYR.), summer f.
Fig. 131. *A. longipalpana* (SNELL.)
Figs. 133-135. *A. filipjevi* OBR.
Figs. 140-142. *A. nigriradix* (FIL.)
Fig. 145. *A. uniformis* (FIL.), summer f.
Fig. 147. *A. similis* (FIL.)
Fig. 150. *A. fuscotogata* (WLSM.)
- Fig. 111. *A. expressa* (FIL.)
Fig. 113. *A. placata* (MEYR.) autumn form
Fig. 115. *A. perfundana* KUZNT., summer f.
Fig. 117. *A. affinitana* (SNELL.), summer f.
Fig. 124. *A. lacordairana* (DUP.), summer f.
Fig. 126. *A. takeuchii* RAZ. & YSAD.
Fig. 128. *A. japonica* (WLSM.), autumn f.
Fig. 130. *A. ulmicola* (MEYR.), autumn f.
Fig. 132. *A. apiciana* (HB.)
Fig. 136-139. *A. cristana* (SCHIFF.)
Figs. 143, 144. *A. tunicatana* (WLSM.)
Fig. 146. *A. uniformis* (FIL.), autumn f.
Fig. 149. *A. enitescens* (MEYR.)



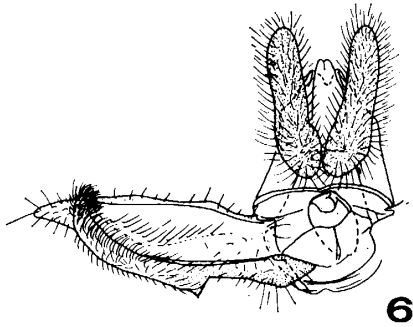
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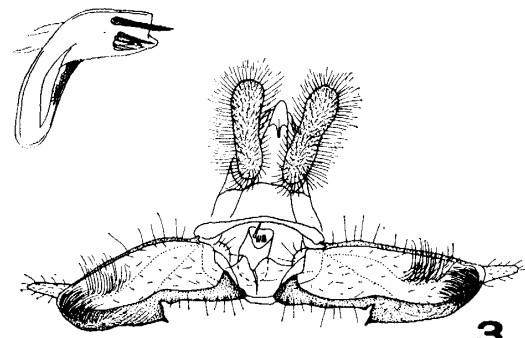
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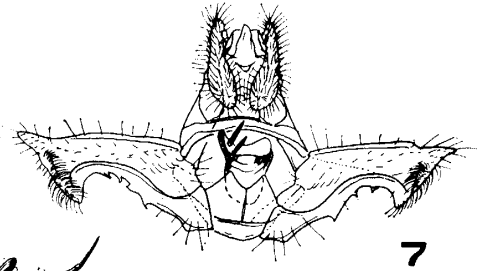
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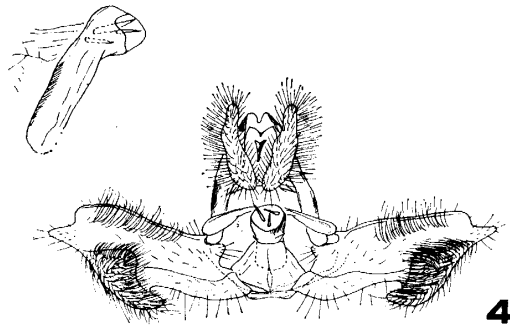
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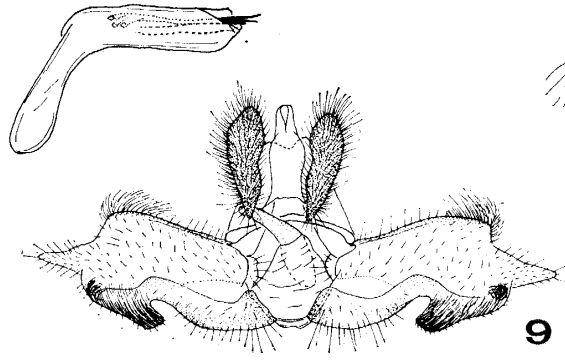
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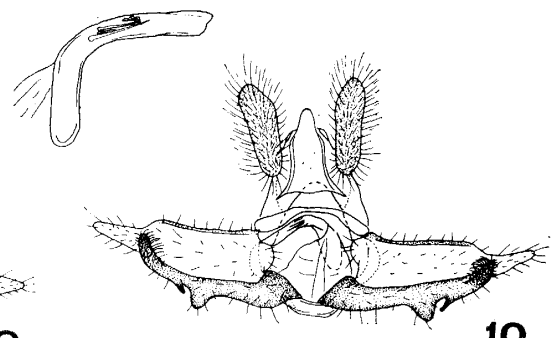
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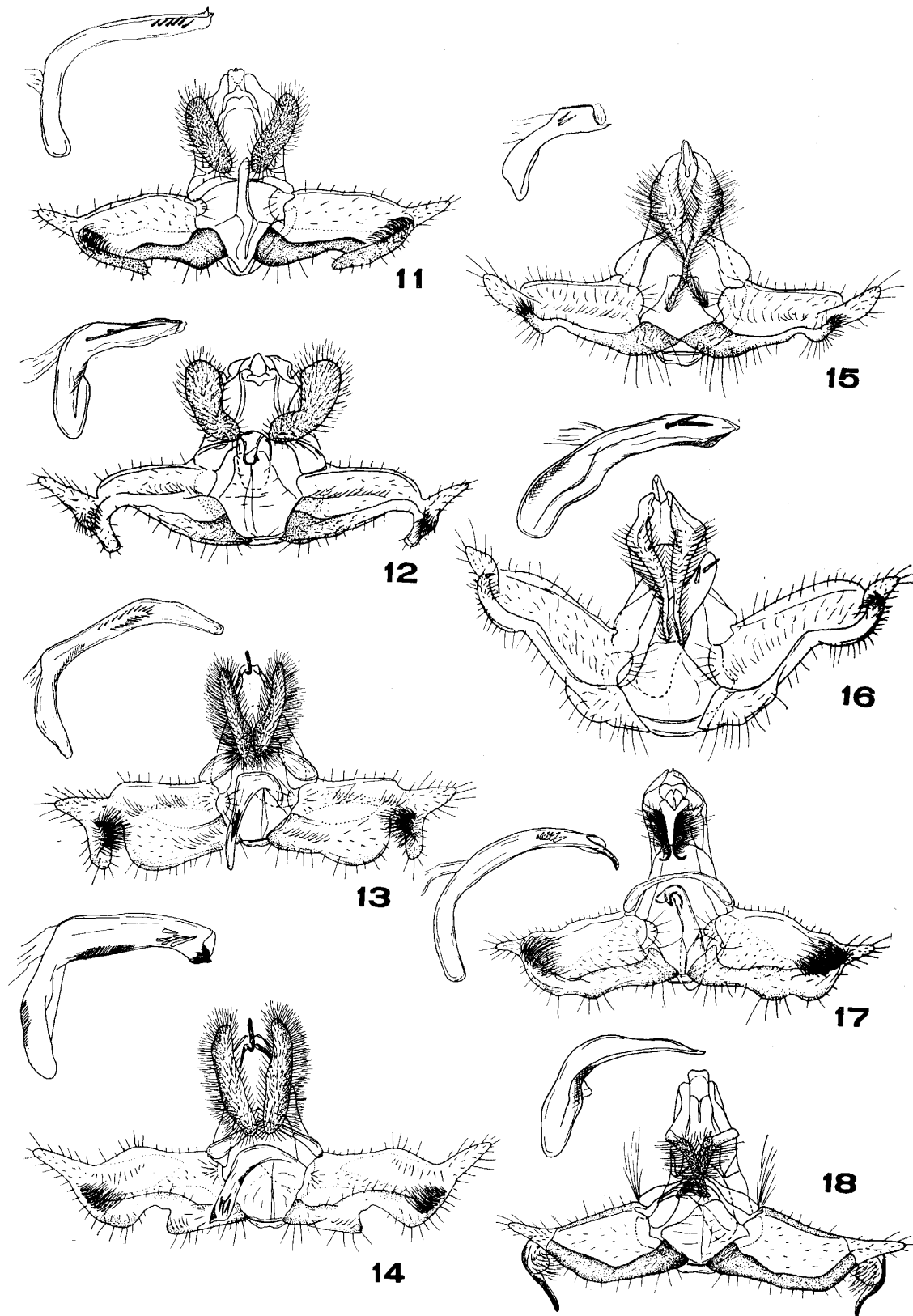
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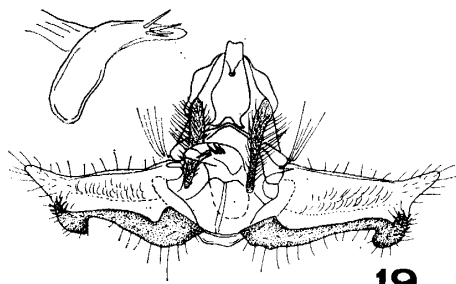


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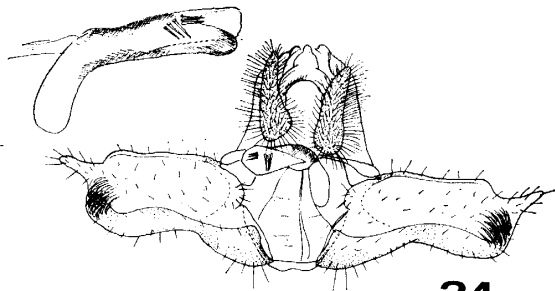


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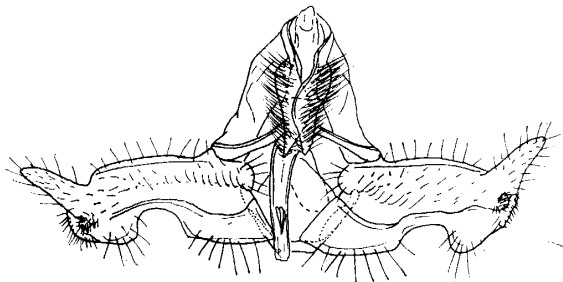




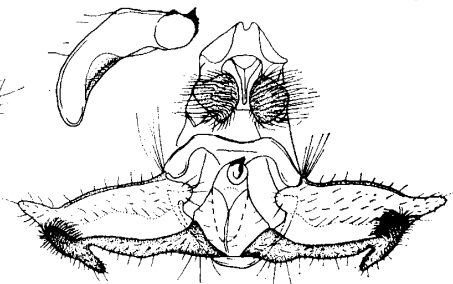
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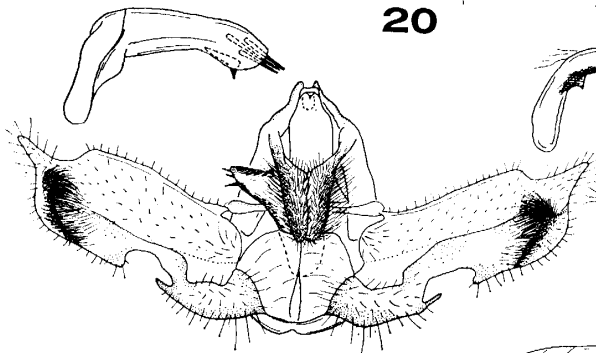
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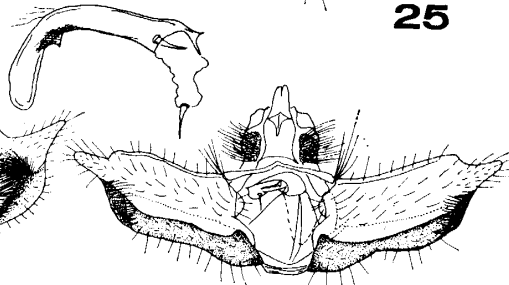
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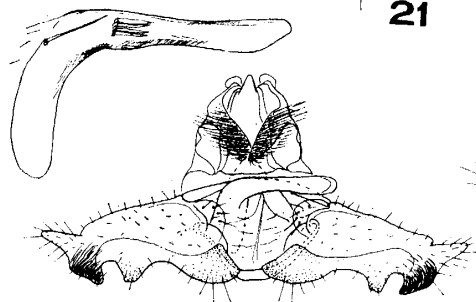
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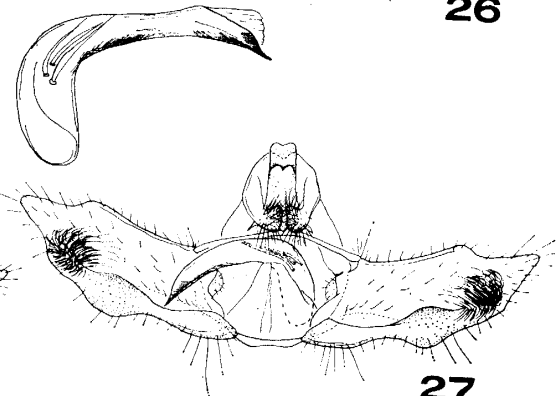
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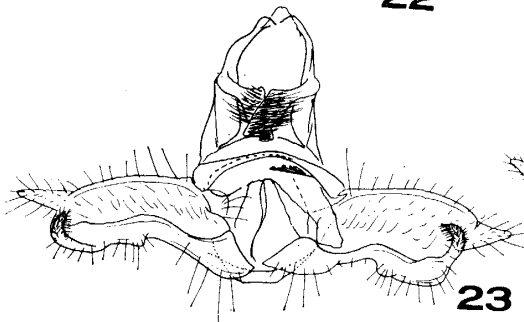
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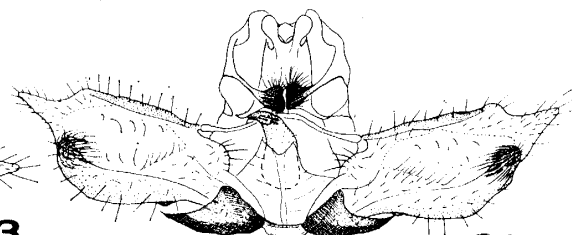
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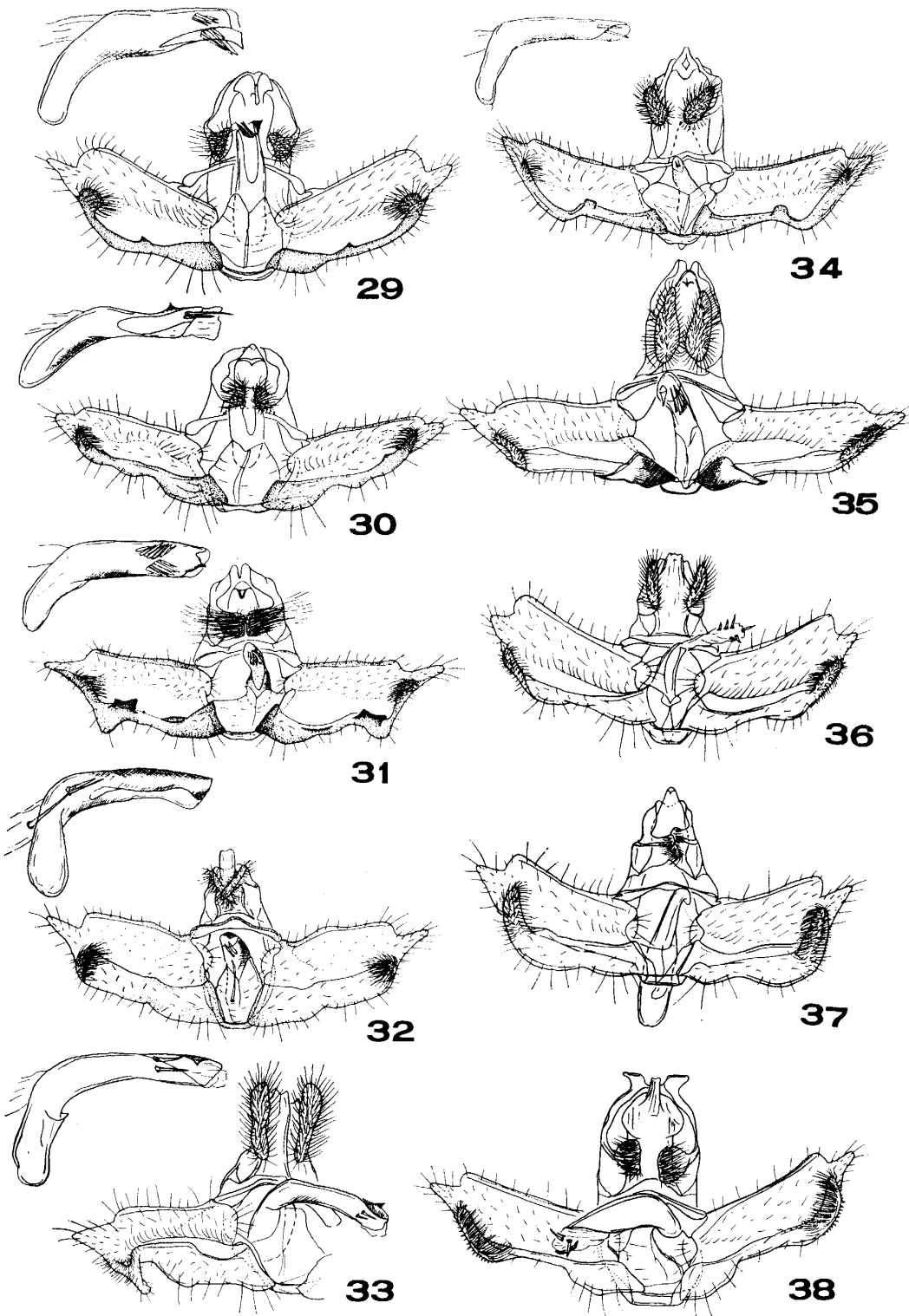
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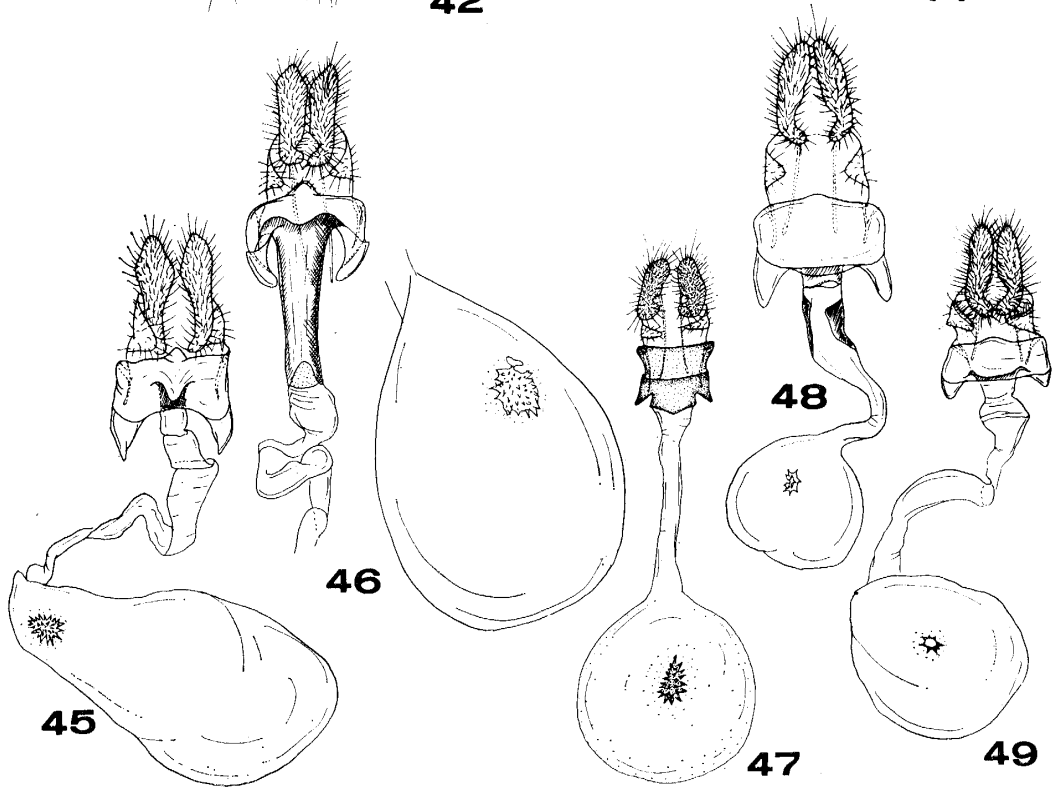
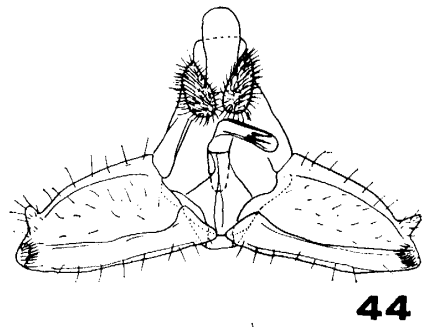
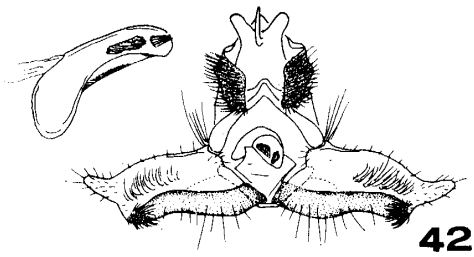
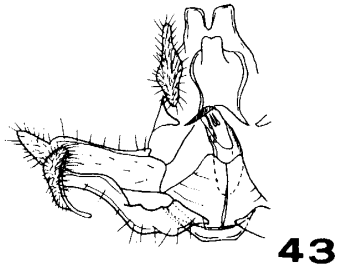
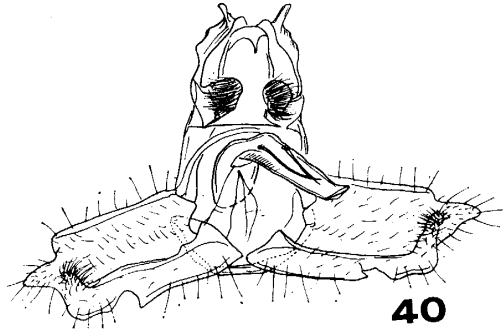
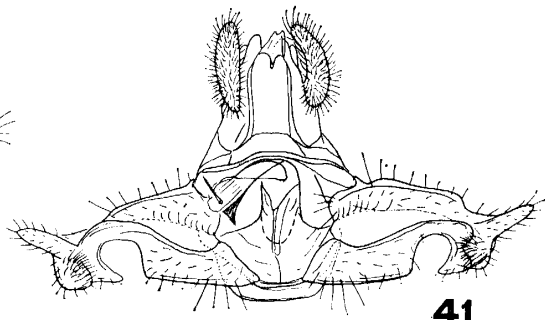
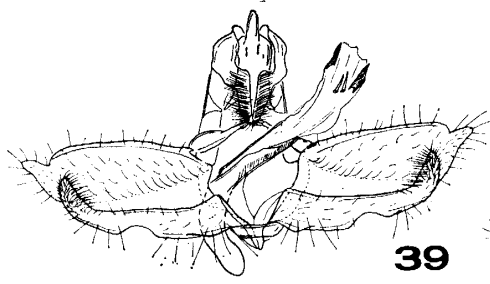


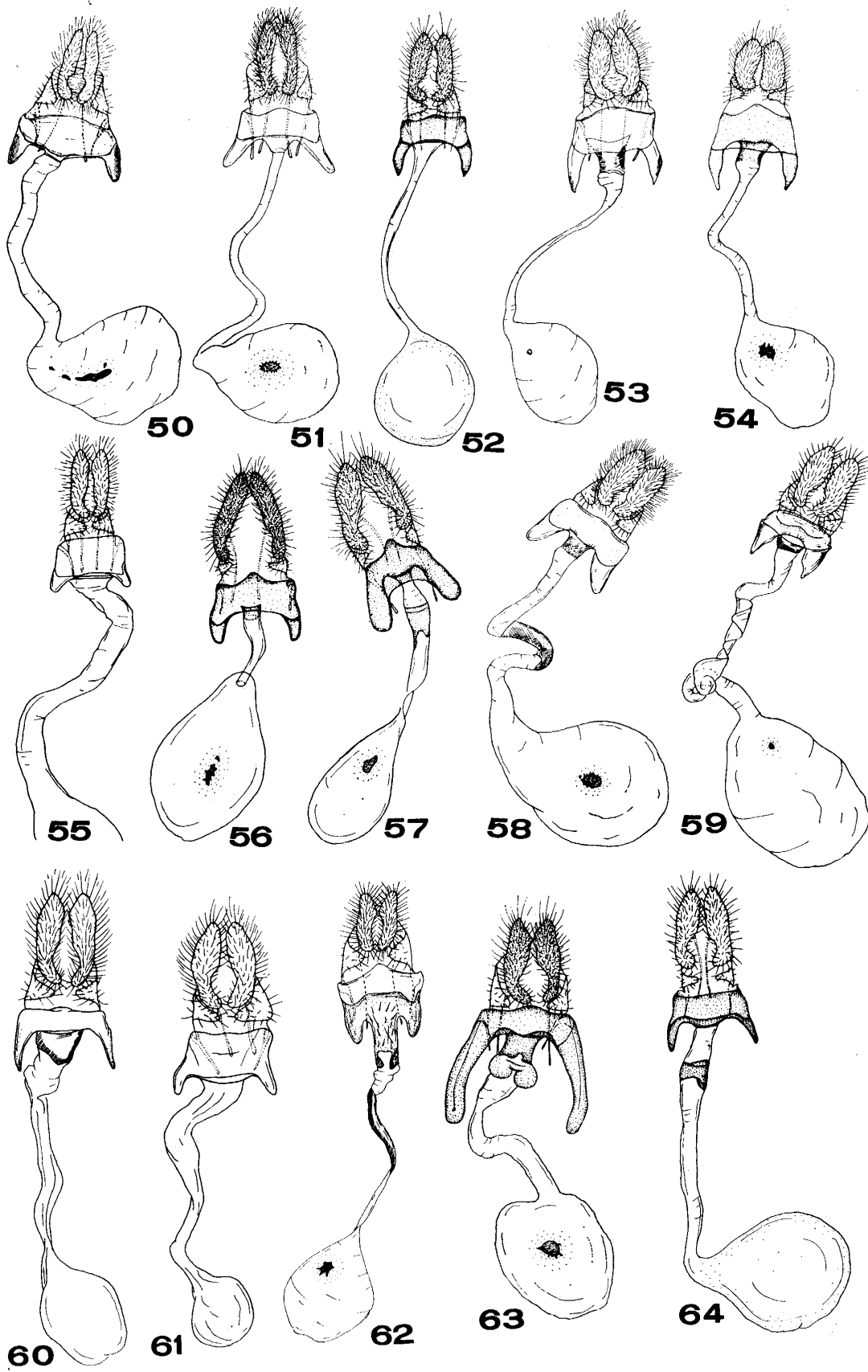
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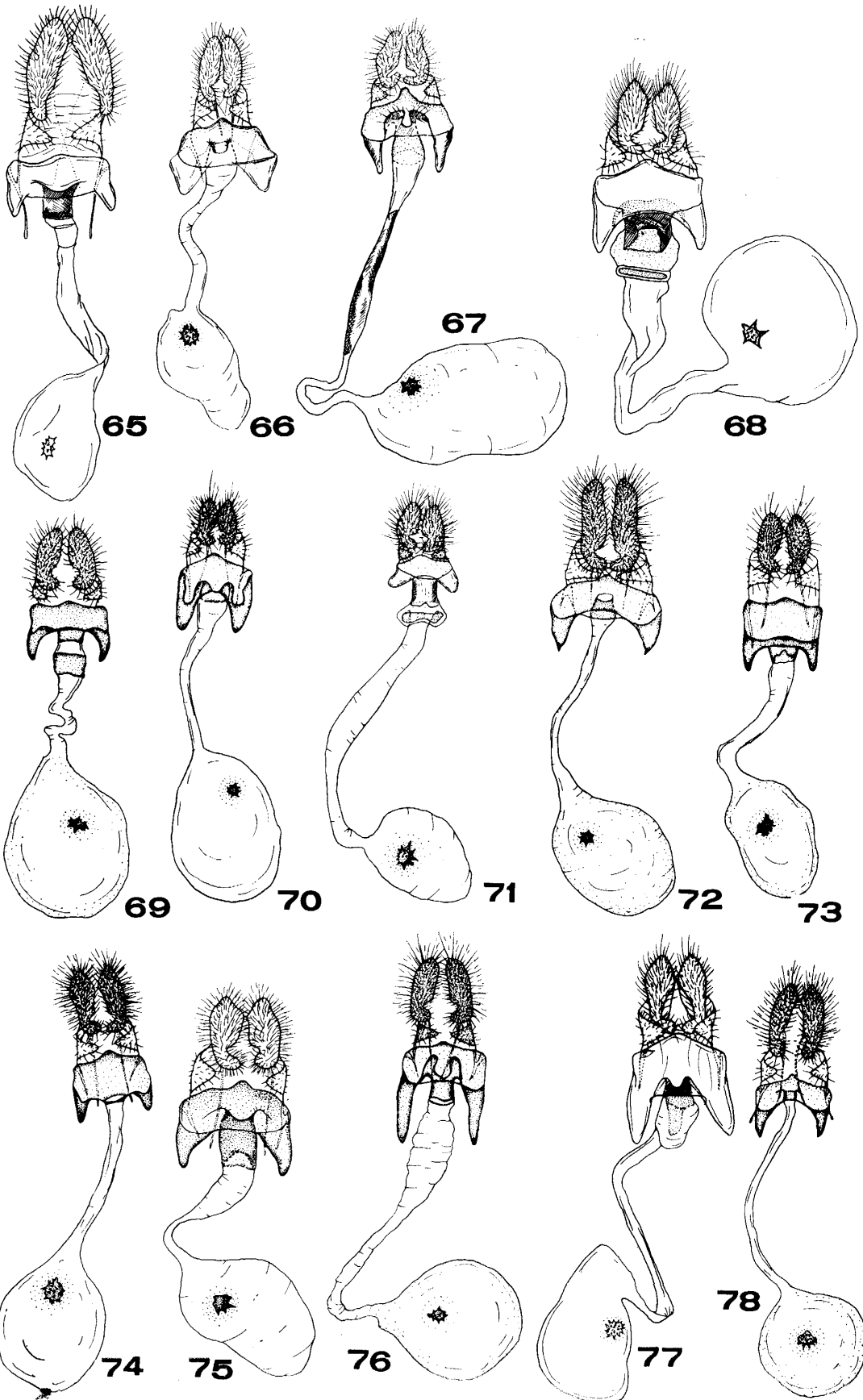


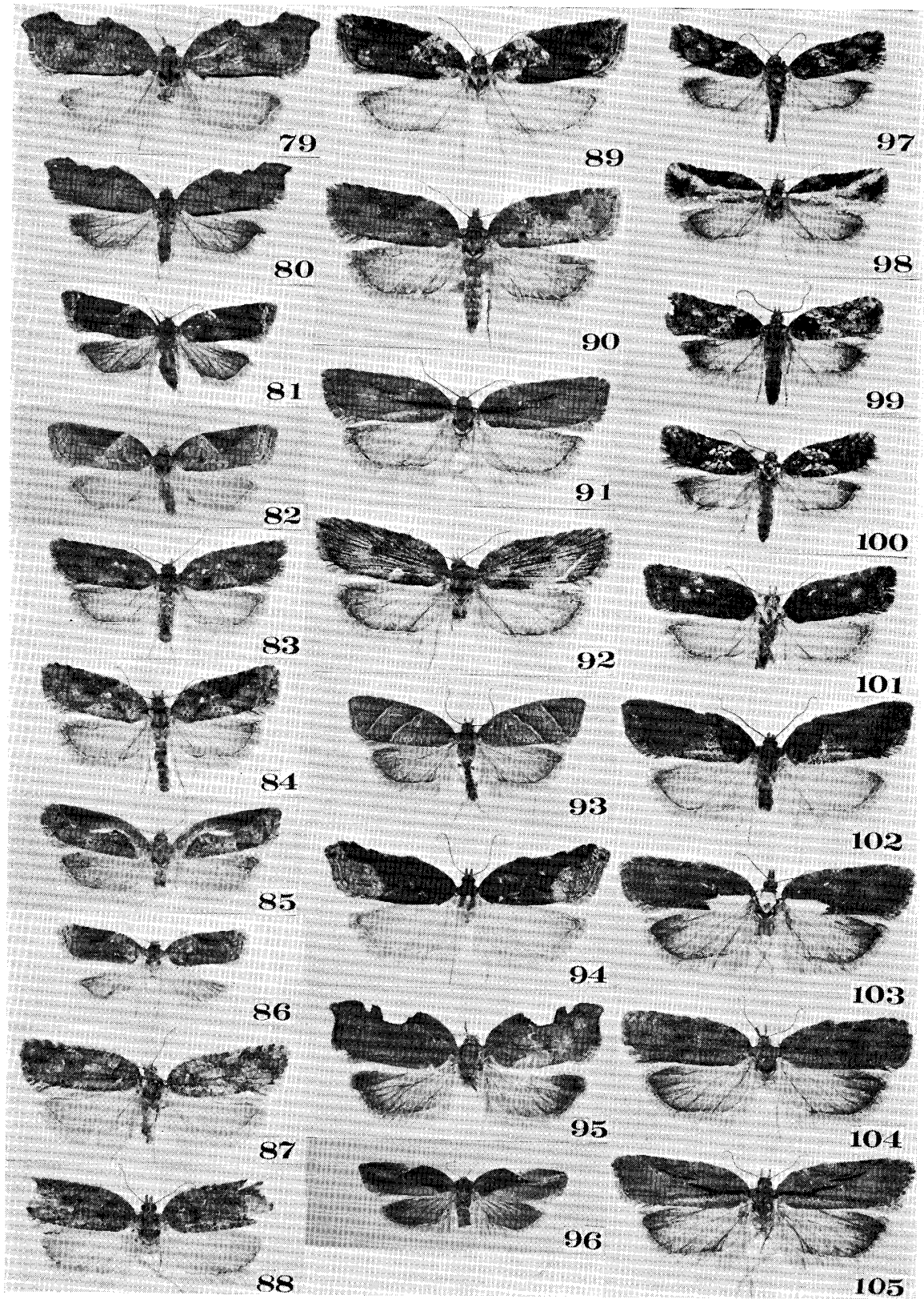
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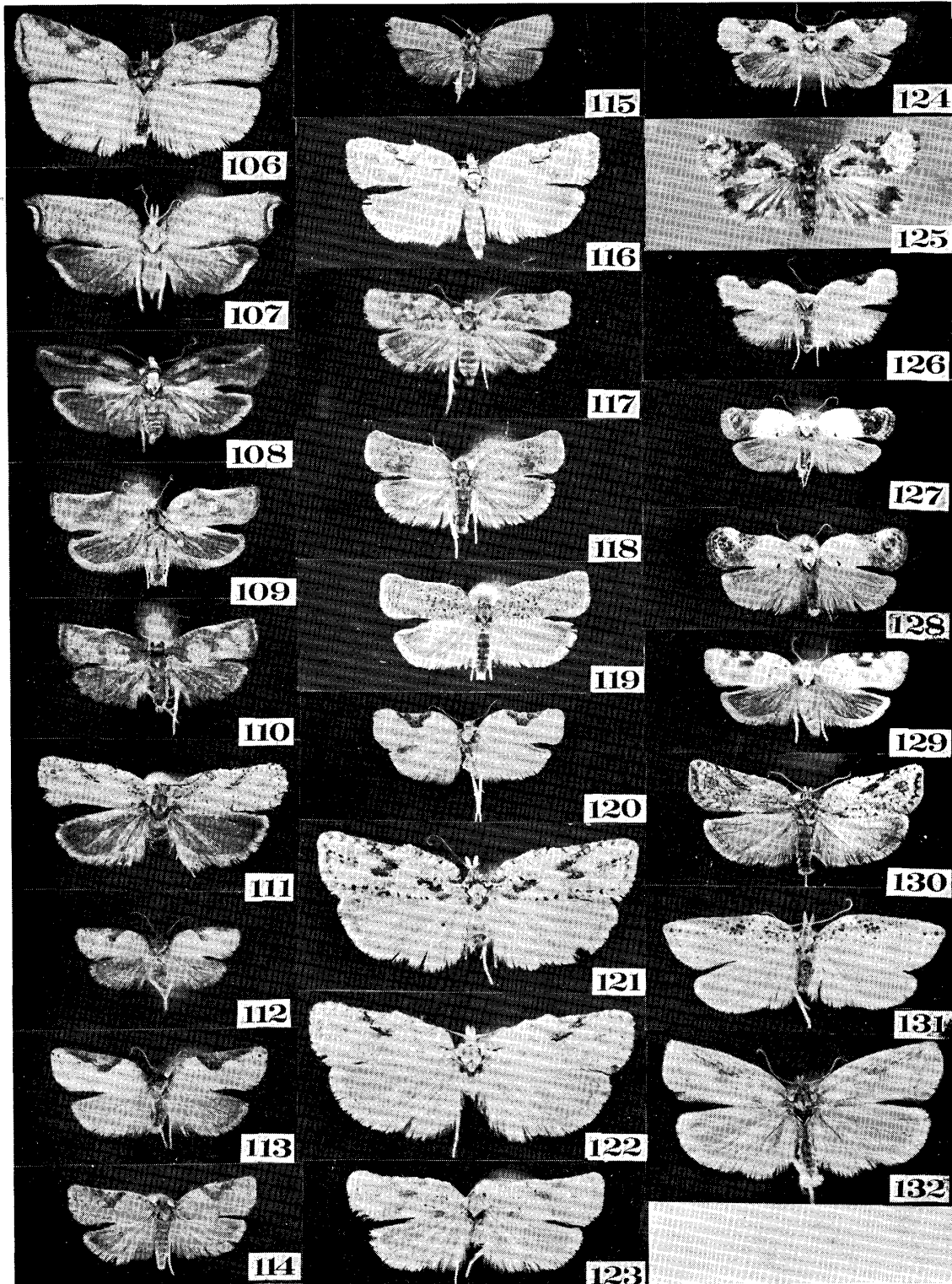


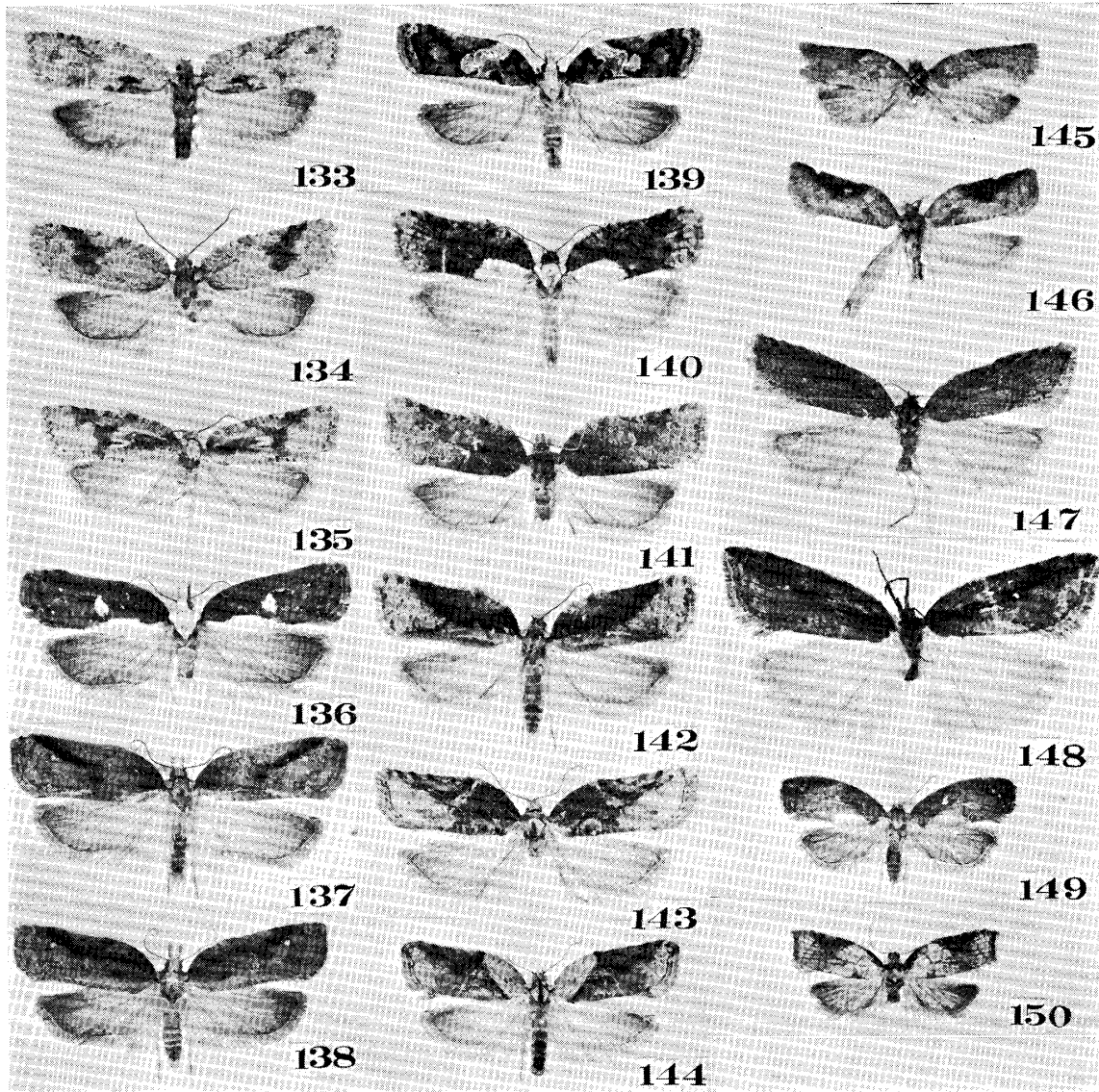












List of localities

Asahikawa	Hokkaido	4	Naidaijinkei	Kyushu	52
Daisen	Honshu	39	Nippara	Honshu	12
Gozaishoyama	Honshu	28	Omogokei	Shikoku	45
Hakodate	Hokkaido	9	Onneyu	Hokkaido	2
Hatonoyu	Honshu	25	Ootakimura	Honshu	24
Hieisan	Honshu	29	Sakai	Honshu	36
Hikosan	Kyushu	50	Sandankyo	Honshu	40
Hirasan	Honshu	27	Sanjogadake	Honshu	34
Hosono	Honshu	17	Sapporo	Hokkaido	6
Ikeno	Honshu	26	Saradake	Shikoku	49
Ishizuchiyama	Shikoku	44	Sata	Kyushu	53
Iwawakisan	Honshu	33	Senzan	Honshu	38
Jojusha	Shikoku	43	Shigakogen	Honshu	15
Jozankei	Hokkaido	5	Sounkyo	Hokkaido	3
Kamikochi	Honshu	22	Sugitate	Shikoku	46
Kanmuriyama	Honshu	41	Taihizan	Honshu	30
Karuizawa	Honshu	14	Takanawasan	Shikoku	47
Kasugayama	Honshu	31	Takayama	Honshu	23
Kotoni	Hokkaido	7	Tateshina	Honshu	19
Kumamoto	Kyushu	51	Teinesan	Hokkaido	8
Kurobishi	Honshu	18	Teshikaga	Hokkaido	1
Makinoosan	Honshu	35	Tokusawa	Honshu	21
Matsuyama	Shikoku	48	Towada	Honshu	10
Mitake	Honshu	11	Tsurugisan	Shikoku	42
Myoken	Honshu	37	Usuitoge	Honshu	13
Nachi	Honshu	32	Utsukushigahara	Honshu	20
Nagano	Honshu	16			

