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NEW OR LITTLE KNOWN SPECIES OF THE SUBFAMILY OLETHREUTINAE INJURIOUS TO CONIFEROUS TREES FROM JAPAN (Lepidoptera : Tortricidae)*

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So far as I am aware, about fourty species of Tortricidae have been known to occur in Japan as pests of coniferous trees. The opportunity is here taken to add to the fauna of Japan nine species and one subspecies of Olethreutinae injurious to conifers, of which five are new to science and the rest new to Japan. On this occasion a note on *Epinotia piceae* (Issiki) is also given.

Before going further I wish to express my hearty thanks to Prof. C. Watanabe of the Hokkaido University for his kind advice and encouragement. Thanks are also due to Dr. K. Kamijo and Mr. S. Suzuki of Hokkaido Forestry Experiment Station, Mr. T. Yasuda of the University of Osaka Prefecture, Mr. I. Tateyama of the Department of Forestry, Hokkaido Prefecture, Dr. M. Konishi of Hokkô Chemical Industry Company, and Mr. K. Yoshida of Hachinohe for their kindness in offering invaluable specimens, and to Dr. M. I. Falkovitsh of Academia Nauk, U. S. S. R. who gave material for comparison. Types of the present new species will be deposited in the collection of the Entomological Institute, Hokkaido University.

1. **Pseudohermenias ajaensis** Falkovitsh

(Fig. 1 : 1, 1 A, Fig. 2 : 1, & Pl. 8 : A)

Pseudohermenias ajaensis Falkovitsh, 1966, Trud. Zool. 37 : 223, figs. 14-15.

This species is similar to *Pseudohermenias clausthaliana* (Saxsen) feeding on *Abies*, from which it may be easily separable by the different structure of the genitalia and the fasciae of the fore wing never interrupted. The larva feeds on the foliage of *Picea* in spring.

Specimens examined : Asahikawa, Hokkaido, 2 ♂ 2 ♀, VI 14-1 VII, 1965, S. Suzuki leg., 1 ♀, 15 VI, 1964, K. Kamijo leg. ; Bibai, Hokkaido, 1 ♂, 21 VI, 1965, K. Kato leg.

Distribution : Ussuri ; Japan (Hokkaido).

Host plants : *Picea jezoensis* and *P. abies*.

2. **Olethreutes tephrea** Falkovitsh

(Fig. 1 : 2, 2 A, Fig. 2 : 2, & Pl. 8 : B)

Olethreutes tephrea Falkovitsh, 1966, Trud. Zool. 37 : 218, figs. 10-11.

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* Notes on Japanese Tortricidae VI.

This species may be distinct from any other congeneric species by the whitish-grey fore wing with much faded costal strigulae, and by the structure of the genitalia. The larva feeds on the foliage of *Abies* and *Picea*.

Specimens examined: Jozankei, Hokkaido, 1 ♂, 15 VIII, 1965; Asahikawa, Hokkaido, 1 ♀, 7 VII, 1965, S. Suzuki leg., 1 ♂, 16 VII, 1966, S. Suzuki leg., 3 ♂ 1 ♀, 7-9 VII, 1967, S. Suzuki leg.

Distribution: Ussuri; Japan (Hokkaido).

Host plants: *Abies sachalinensis* and *Picea jezoensis*.

3. **Epinotia piceae** (Issiki)

(Figs. 1: 3, Fig. 2: 3, & Pl. 8: C)

Panoplia piceae Issiki, 1961, Microlep. injurious to coniferous trees, Tokyo: 36, pl. 11.

Epinotia elatana Falkovitsh, 1965, Ent. Obozr. 44 (2): 426, figs. 19-20. **Syn. nov.**

This species has been known as a pest of *Abies* and *Picea* in Japan. Having read the original description of *Epinotia elatana*, I have been convinced that *elatana* should be suppressed as a synonym of *piceae*.

Specimens examined: Mt. Hayachine, Iwate-ken, Honshu, 15 ♂ 7 ♀, 26 VII, 1966, T. Oku leg.

Distribution: Ussuri; Japan (Hokkaido, Honshu).

Host plants: *Abies mariesii, A. sachalinensis* and *Picea* spp.

4. **Epinotia aciculana** Falkovitsh

(Fig. 1: 4, 4 A, Fig. 2: 4, & Pl. 8: D)

Epinotia aciculana Falkovitsh, 1965, Ent. Obozr. 44(2): 424, figs. 15-16.

This species was originally described from East Siberia as a pest of *Abies* and *Picea*. The present specimens are somewhat larger in size than those of East Siberia. The species may be distinguishable from any other congeneric species by the clear brownish markings in contrast with the greyish-white ground colour of the fore wing, the large ocelloid patch, and the absence of signa.

Specimens examined: Asahikawa, Hokkaido, 4 ♂ 5 ♀, 3-28 VII, 1965, S. Suzuki leg.

Distribution: Amur; Ussuri; Japan (Hokkaido).

Host plants: *Abies sachalinensis* and *Picea abies*.

5. **Epinotia rubiginosana koraiensis** Falkovitsh

(Fig. 1: 5, 5 A, Fig. 2: 5, & Pl. 8: E)

Epinotia rubiginosana koraiensis Falkovitsh, 1965, Ent. Obozr. 44 (2): 426, figs. 17-18.

This subspecies was originally described from East Siberia as a pest of *Pinus koraiensis*. It may be separable from any other congeneric species feeding on coniferous trees in Japan by the colour of the fore wing greyish-brown much mixed with leaden-grey without any apparent fasciae.

Specimens examined: Kotoni, Hokkaido, 1 ♀, 3 VII, 1962, T. Oku leg.; Shiriuchi, Hokkaido, 4 ♂ 1 ♀, 30 V, 1963, I. Tateyama leg.; Asahikawa, Hokkaido, 1 ♂ 1 ♀, 14-16 VI, 1958, T. Yasuda leg.; Kuzakai, Iwate-ken, Honshu, 1 ♂, 28 VI, 1966, T. Oku leg.; Morioka, Honshu, 1 ♂, 29 V, 1966, 1 ♀, 28 VI, 1966, T. Oku leg.; Tagajô, Miyagi-ken, Honshu, 1 ♂, 13 V, 1965, K. Yoshida leg.

Distribution: Ussuri; Japan (Hokkaido, Honshu).

Host plants: *Pinus koraiensis, P. densiflora* and *P. strobus*.

6. **Zeiraphera truncata** sp. nov.

(Fig. 1:6, Fig. 2:6, & Pl. 8: F)

♂ & ♀. Expanse 13-14 mm. Antenna ciliated, blackish-grey. Head and thorax rust-yellowish, darker at base of tegula. Palpus porrected, dark grey, whitish internally, the apical joint exposed. Abdomen pale brownish-grey, with silvery gloss. Fore wing rather elongate, without costal fold, pale greyish-brown in ground, somewhat tinged with orange-yellow, with markings dark grey mixed with rust-brown and edged narrowly with silvery-white; basal patch sharply angulated at middle of wing, much mixed with brownish scales towards base, and striated with black; central fascia running from middle of costa to dorsum before tornus, often obsolete on its costal part; three costal strigulae dark grey, arranged between central fascia and a blackish apical spot; ocelloid patch rust-yellowish, with a blackish circular spot on its upper end, the blackish spot being not joined with a narrow dark greyish area along termen of wing; cilia dark grey, somewhat lighter at tornus. Hind wing brownish-grey with bronzy gloss. Legs shining dark grey, faintly annulated with dirty white at end of tarsi.

♂ Genitalia: tegumen concave at both sides of its top; valva broadest at middle, slightly narrowed towards its base and apex; socii drooping, curved inwards at its apex; aedoeagus moderate, with many thorn-like cornuti.

♀ Genitalia: ovipositor retractile; papillae anales narrow, not curved; antrum cup-like; ductus bursae chitinized at its posterior 1/3; signa flattened and truncated apically, one being somewhat longer and much broader than the other.

Holotype: ♂, Asahikawa, Hokkaido, 8 VII, 1965, S. Suzuki leg.

Paratypes: 5 ♂ 2 ♀, Asahikawa, Hokkaido, 7-16 Vll, 1965, S. Suzuki leg.

Host plants: *Abies sachalinensis*.

Remarks:- This species is very closely related to *Zeiraphera rufimitrana* (Herrich-Schäffer) feeding on *Abies* in Europe, from which it may be distinguished by the following characters:-

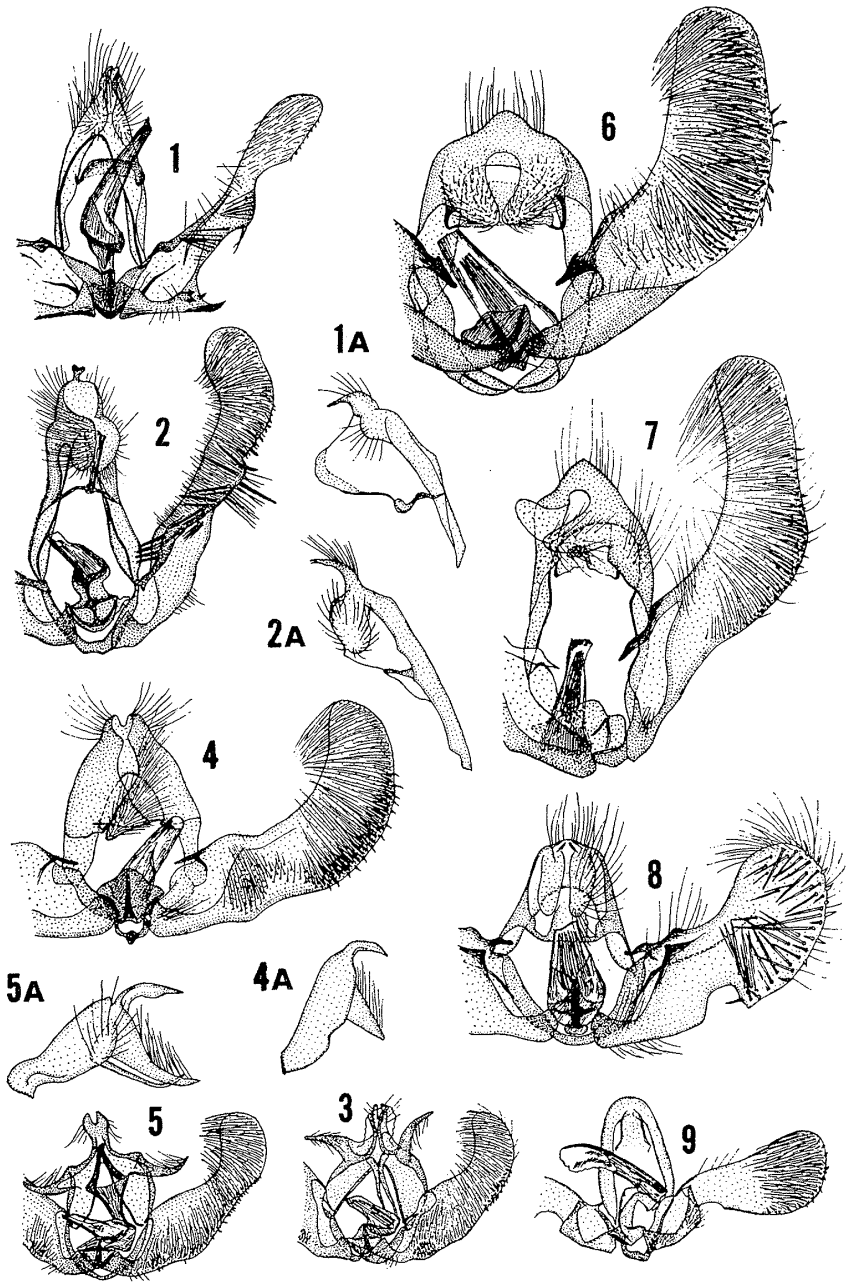

Fig. 1. Male genitalia of some Japanese Olethreutinae injurious to coniferous trees. 1: *Pseudohermenias ajaensis* Falkovitsh; 1A: ibid., lateral view of tegumen; 2: *Olethreutes tephrea* Falkovitsh; 2A: ibid., lateral view of tegumen; 3: *Epinotia piceae* (Issiki); 4: *E. aciculana* Falkovitsh; 4A: idid., lateral view of tegumen; 5: *E. rubiginosana koraiensis* Falkovitsh; 5A: ibid., lateral view of tegumen; 6: *Zeiraphera truncata* sp. nov.; 7: *Z. suzukii* sp. nov.; 8: *Petrova monopunctata* sp. nov.; 9: *Laspeyresia yasudai* sp. nov.

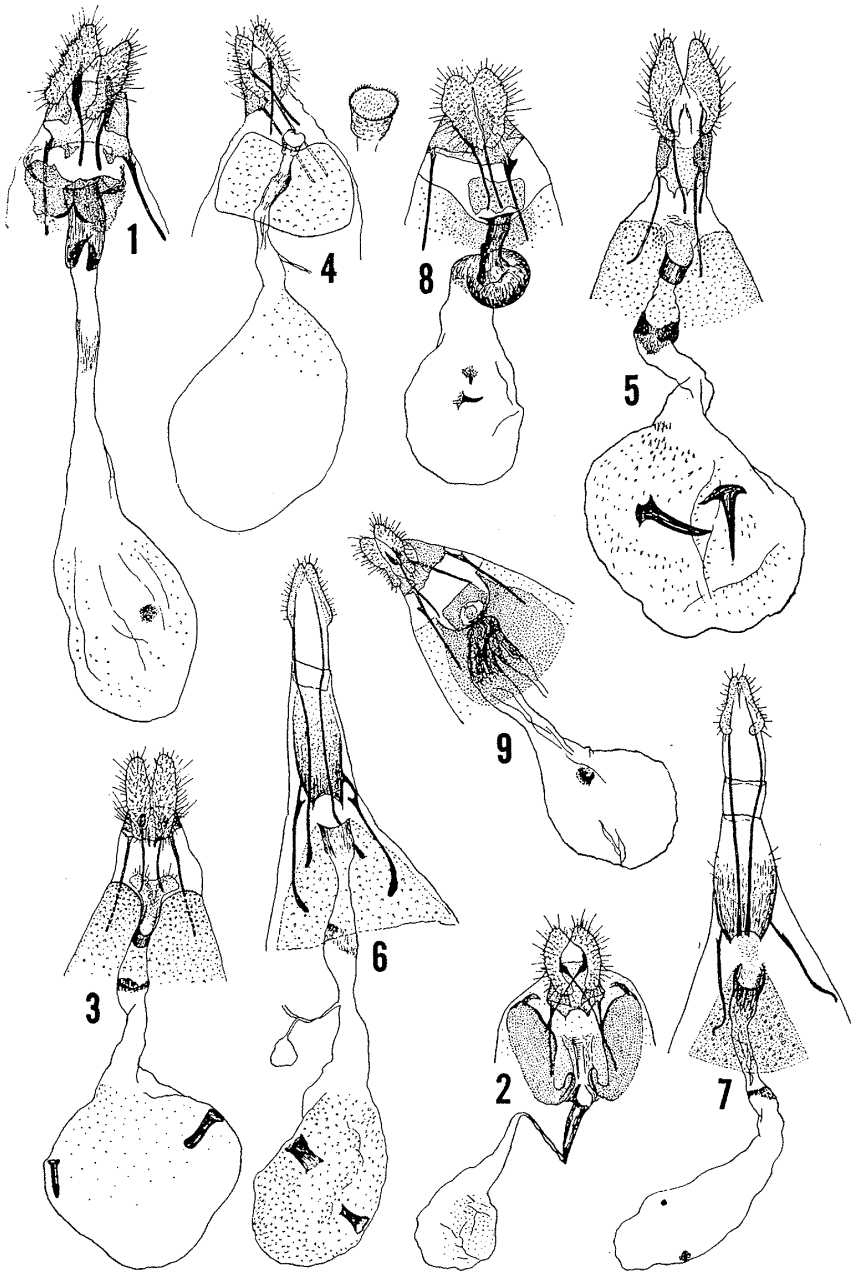

Fig. 2. Female genitalia of some Japanese Olethreutinae injurious to coniferous trees. 1: *Pseudohermenias ajaensis* Falkovitsh; 2: *Olethreutes tephrea* Falkovitsh; 3: *Epinotia piceae* (Issiki); 4: *E. aciculana* Falkovitsh; 5: *E. rubiginosana koraiensis* Falkovitsh; 6: *Zeiraphera truncata* sp. nov.; 7: *Z. suzukii* sp. nov.; 8: *Laspeyresia yasudai* sp. nov.; 9: *L. kamijoi* sp. nov.

	Z. rufimitrana	*Z. suzukii*
Ocelloid patch of fore wing	edged with an irregular blackish mark along its upper and posterior margin.	with a circular blackish spot situated its upper end and separated from blackish mark along posterior margin of ocelloid patch.
Tegumen	slightly angulated at top, but not concave at both sides of its top.	apparently concave at both sides of its top.
Signa	normal; one much smaller than the other.	truncated apically; one somewhat smaller than the other.

7. **Zeiraphera suzukii** sp. nov.

(Fig. 1: 7, Fig. 2: 7, & Pl. 8: G)

♂ & ♀. Expanse about 12 mm. Antenna shortly ciliated, dark grey, faintly annulated with paler colour. Head light greyish-yellow. Palpus porrected, dark brownish-grey, paler internally, the apical joint being shortly exposed. Thorax dark yellowish-brown. Abdomen light brownish-grey. Fore wing elongate, with costa arched towards base, and with termen rather oblique; costal fold absent; colour greyish-white with silvery gloss in ground, striated with yellowish-brown, with dark greyish markings; basal patch acutely angulated at middle, its angle touching inner edge of central fascia to enclose a somewhat paler triangular dorsal patch; central fascia obliquely extending from middle of costa to dorsum just before tornus, much mixed with ferruginous-brown; subapical patch circular, dark grey mixed with brown, situated at about middle between posterior end of discal cell and termen of wing; three blackish costal strigulae arranged between central fascia and a blackish apical spot; cilia grey, with a blackish subbasal line. Hind wing pale grey; cilia with a darker subbasal shade. Legs brownish-grey.

♂ Genitalia: top of tegumen obtusely pointed; socii drooping; valva elongate, broadest at middle, and narrowest at basal 1/4; aedoeagus moderate, with many thorn-like cornuti.

♀ Genitalia: ovipositor retractile; papillae anales curved on its anterior end; antrum cup-like, with semi-circular ostium; ductus bursae rather short; signa very small, scobinate.

Holotype: ♂, Asahikawa, Hokkaido, 5 VII, 1965, S. Suzuki leg.

Paratypes: 1 ♂ 1 ♀, Asahikawa, Hokkaido, 5 VII, 1965, S. Suzuki leg.

Host plant: *Picea jezoensis.*

Remarks:- This species is smallest in size among the genus *Zeiraphera*, and

closely related to *Z. ratzeburgiana* (Saxsen) attacking conifers in Europe, but it may be easily separated from the latter by the following aspects:- somewhat smaller in size; antenna thicker; fore wing darker, with costa arched towards base (in *ratzeburgiana* costa very slightly arched throughout); circular subapical patch present on terminal area of fore wing; signa very much smaller; valva narrower especially on its basal half.

8. **Petrova monopunctata** sp. nov.

(Fig. 1: 8, & Pl. 8: H)

♂. Expanse 13 mm. Antenna smooth, brownish-grey, minutely annulated with light grey. Head brownish-grey, mixed with white especially on frontal tuft. Palpus ascending, brownish-grey, the median joint being expanded with dense scales towards top, and the apical joint exposed. Thorax brownish-grey; tip of tegula whitish. Abdomen grey, with anal tuft pale yellowish-grey. Fore wing elongate, dilated towards termen, greyish in ground except for a whitish band before middle; costa slightly arched, without fold; termen oblique, somewhat rounded; apex obtuse; basal patch reaching just beyond basal 1/4 of wing, leaden-grey, faintly striated with dark grey, mixed with blackish scales along its posterior margin, which is irregular and angularly curved out on fold towards termen; a whitish band occupying from posterior margin of basal patch to just before middle on costa and to about basal 2/3 on dorsum, with some greyish strigae; posterior part of wing beyond this whitish band leaden-grey, its costal margin being greyish-brown and marked with several whitish strigulae; an irregular, often interrupted, greyish-brown stria passing through the leaden-greyish area from middle of costa to before tornus on dorsum, edged with an obscure whitish line posteriorly; a conspicuous subcostal patch circular, blackish, situated at middle between posterior end of discal cell and termen; some greyish-brown scales scattered along termen and below subcostal patch; cilia leaden-grey, brownish towards tip, with much faded subbasal shade. Hind wing narrowed towards obtuse apex; colour greyish-brown, much paler towards base; cilia grey, paler towards tornus, with darker subbasal and subapical lines, the former being distinct and the latter much obscure.

♂ Genitalia: socii moderate; aedoeagus stout, with many thorn-like cornuti; cucullus wide, angulated at ventro-basal corner; harpe small, situated below costa at base of valva, obtuse at its apex.

♀. Unknown.

Holotype: ♂, Yamabe, Hokkaido, 11 V, 1960, C. Nishiguchi leg.

Host plant: cone of *Picea jezoensis*.

Remarks:- This species is similar to *Petrova cristata* (Walsingham) (= *P. insignis* Heinrich) in the structure of the male genitalia (cf. Heinrich, 1928), but it may be easily distinguishable from the latter by the whitish subbasal band and by the prominent subcostal patch of the fore wing.

9. **Laspeyresia yasudai** sp. nov.

(Fig. 1: 9, Fig. 2: 8, & Pl. 8: I)

♂ & ♀. Expanse about 13 mm. External characters including colour and marking pattern of wing are much similar to those of *Laspeyresia coniferana* (Saxsen), apart from the broader fore wing with apparent brassy tinge at its basal area. On the other hand, this form is much similar to *Laspeyresia pactolana* (Zeller) in the structure of genitalia (cf. Hannemann, 1961; Krogerus, 1962). This species may be separated from those by the following aspects:-

	L. coniferana	*L. pactolana*	*L. yasudai*
Ground colour of fore wing	evenly dark greyish.	olive-brown.	dark greyish, with apparent brassy tinge at basal area.
Cucullus	slightly narrowed at middle, with a dorsal projection.	narrowed towards base, with a much obtuse dorsal angle beyond middle of valva.	narrowed towards base, with an obtuse dorsal angle before middle of valva.
Cornuti	about 10 in number.	more than 15 in number.	more than 15 in number.
Ductus bursae	not convoluted.	convoluted on left side in ventral view.	convoluted on right side in ventral view.
Antrum	moderate, with prominent teeth.	rather narrow, simple.	broad, dilated laterally at posterior edge, without teeth.

Holotype: ♂, Muroran, Hokkaido, 7 VI, 1967, T. Oku leg.

Paratypes: ♂ 1 ♀, Asahikawa, Hokkaido, 14-16 VI, 1962, T. Yasuda leg.; 1 ♀, Yakumo, Hokkaido, 10 VI, 1962, M. Konishi leg.; 1 ♀, Tôya, Hokkaido, 8 VII, 1966, I. Tateyama leg.; 14 ♂ 10 ♀, Muroran, Hokkaido, 27 V-5 VI, 1967, T. Oku leg.

Host plant: *Abies sachalinensis*.

Remarks:- This species is stated under the name *Cydia coniferana* Saxsen by Issiki & Mutuura (1962). The larva is known to bore into the trunk of *Abies*, giving considerable damage in Hokkaido.

10. **Laspeyresia kamijoi** sp. nov.

(Fig. 2; 9, & Pl. 8: J)

♀. Expanse about 12.5 mm. Antenna minutely ciliated, dark brownish-grey. Head and thorax dark bronzy-grey. Palpus ascending along face, light grey, the median joint being roughly scaled and the apical joint exposed. Abdomen dark brownish-grey. Fore wing moderate, with the termen a little oblique, shal-

lowly but distinctly concave below obtuse apex; colour dark brownish-grey, tinged with bronzy colour especially on basal half, scattered with very minute pale ochreous dots (visible only microscopically) on posterior 2/3 of wing 8; whitish costal strigulae arranged between basal 1/3 of costa and apex, the apical third strigula being occasionally divided into narrower two; a bluish-metallic stria given out from innermost costal strigula, turning out towards middle of dorsum at middle of discal cell; a similar metallic stria sent forth from basal third costal strigula, anastomosing on posterior end of discal cell with bluish-metallic inner margin of ocelloid patch, which includes several inconspicuous black dots; posterior edge of ocelloid patch also margined with bluish-metallic stria; another similar metallic stria coming out from apical third costal strigula, curved towards concavation of termen below apex, but not reaching termen; all bluish-metallic striae and whitish costal strigulae mentioned above more or less prominently edged with black; terminal line very narrowly blackish; cilia grey, mixed with light brownish scales at tornus. Hind wing dark brownish-grey; cilia grey, with a distinct darker subbasal line. Legs bronzy-grey.

♀ Genitalia: ovipositor narrowed anteriorly; ductus bursae wide, thickened on its initial 1/3; lamella postvaginalis with a circular sklerite anteriorly; signa small, united with each other at base.

♂. Unknown.

Holotype: ♀, Kitami, Hokkaido, 8 VIII, 1962, K. Kamijo leg.

Host plant: cone of *Abies sachalinensis*.

Remarks:- The species is closely related to *Laspeyresia conicolana* (Heyaerts), from which it is distinguishable by the following aspects:-

	L. conicolana	*L. kamijoi*
Colour of fore wing	brownish-grey on basal half, and darker on terminal half with yellowish gloss.	dark brownish-grey, with bronzy gloss on basal half.
Termen of fore wing	oblique.	a little oblique.
Lamella postvaginalis	simple.	with a circular plate more or less isolated from main part of lamella.
Larval behaviour	feeding on bud of *Pinus*.	feeding on cone of *Abies*.

References

Falkovitsh, M. I. (1965). New Eastern-Asiatic species of leaf-rollers (Lepidoptera: Tortricidae). (In Russian.) Ent. Obozr. 44 (2): 414-437.

—— (1966). New palaearctic species of leaf-rollers of the subfamily Olethreutinae (Lepidoptera: Tortricidae). (In Russian.) Trud. Zool. 37: 208-227.

Hannemann, H. J. (1961). Tierwelt Deutschlands. 48 Teil: Klein-Schmetterlinge oder Microlepidoptera. I. Die Wickler (s. str.) (Tortricidae). Jena.

Heinrich, C. (1928). New pine moths from Japan. Proc. ent. Soc. Wash. 30 (4): 61-63.
Issiki, S. & A. Mutuura (1961). Microlepidoptera injurious to coniferous trees. (In Japanese.) Ringyôgijutsu-kyôkai, Tokyo.
—— & —— (1962). A list of the Microlepidoptera bred from coniferous plants in Japan. (In Japanese.) Publ. ent. Lab. Coll. Agric. Univ. Osaka Pref. 7:1-8.
Kennel, J. (1908-1921). Palaearktischen Tortriciden. Stuttgart.
Krogerus, H. (1962). Die an Coniferen lebenden *Laspeyresia*-Arten in Finnland (Lep., Tortricidae). Notul. Ent. 42: 98-103.

Explanation of Plate 8

A: *Pseudohermenias ajaensis* Falkovitsh, ♀; B: *Olethreutes tephrea* Falkovitsh, ♂; C: *Epinotia piceae* (Issiki), ♀; D: *E. aciculana* Falkovitsh, ♀; E: *E. rubiginosana koraiensis* Falkovitsh, ♀; F: *Zeiraphera truncata* sp. nov., ♂ (holotype); G: *Z. suzukii* sp. nov., ♂ (holotype); H: *Petrova monopunctata* sp. nov., ♂ (holotype); I: *Laspeyresia yasudai* sp. nov., ♂, (holotype); *L. kamijoi* sp. nov., ♂ (holotype).

新　著　紹　介

素木先生の大著3種

1. Syrphidae (Insecta) Vol. II (Fauna Japonica) 6+243 頁, 着色図版 2葉, 黒白写真版 33 葉, ジンク版 5 葉, 定価 4,700 円.
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3. Fruit flies of the Ryukyu Islands. Bull. U. S. Nat. Mus. 263, 140 pp., 1968.

本報告は, 1952 年 12 月 20 日から 1953 年 5 月 25 日に亘る間に, 奄美群島および琉球列島で採集された材料を基にしてなされたミバエ類の分類学的研究の報告である. 取扱われた種の総数は 36 種, その中には新属2, 新種 19, 新亜種1を含み, 1種毎に詳しい記載がなされ, また1頁大の挿図が付されている. この報告の原稿は, 既に 1954～5 年に完成していたが, このほどやつと出版されたことは喜ばしい. U. S. Government Printing Office, Washington, D. C. 20402 から1ドルで入手できる.

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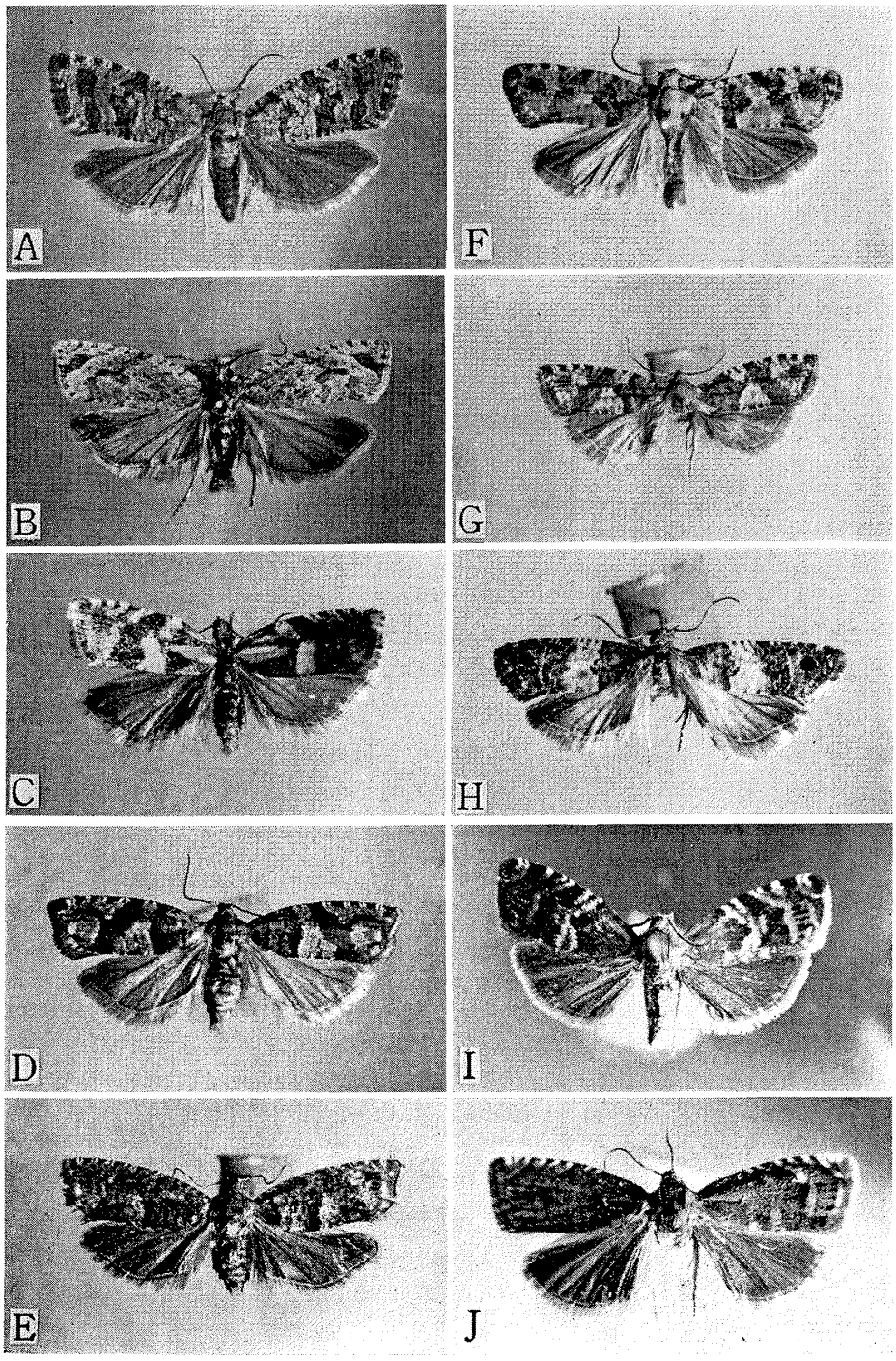

Oku — Olethreutinae injurious to coniferous trees.