

Panolis flammea auct. — two species
(Lepidoptera, Noctuidae, Hadeninae) ⁽¹⁾

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Summary

Panolis japonica DRAUDT, 1935 is recognized as a distinct species, being the eastern counterpart of *P. flammea* ([DENIS & SCHIFFERMÜLLER, 1775]). The name *sutshana* DRAUDT, 1935 is treated as a synonym of *japonica*. Externally *P. japonica* differs from *P. flammea* in having brighter reddish forewings, with weaker or obsolete transverse lines, arch-like reniform stigma and reddish streaks on the subterminal area. The males are easily determined by the simple antennae (serrate in *P. flammea*). The genitalia of both sexes show clear differences. The taxa seem to be allopatric, being widely separated : in the east, *P. flammea* seems not to extend to the well-collected Baikal area, and *P. japonica* seems to be restricted to the Far East and Japan.

It is suggested that the name *P. excusita* DRAUDT, 1950 (from China) is a junior synonym of *P. variegata* (WILEMAN, 1914) (from Taiwan). The total number of species in the genus *Panolis* would then be four, all Palaearctic in distribution.

Taxonomic studies of the Noctuidae of northern Europe and Siberia induced us to compare some widely distributed taxa from the western and eastern parts of their ranges. A study of the well-known pest of *Pinus* forests, *Panolis flammea* ([DENIS & SCHIFFERMÜLLER, 1775]) revealed that the European and Far-Eastern populations represent two different taxa of specific rank. They can easily be separated from each other on the basis of external and internal characters.

DRAUDT (1935) described two new forms of *P. flammea* in the same work : “*sutshana*” from the Primorye Territory, U.S.S.R., and “*japonica*” from Kobe, Japan. Both names have subspecific rank according to Article 45g of the ICZN (ed. 3, 1985). INOUE and SUGI (1958) and SUGI (1982) have already used the trinomen *P. flammea japonica* for the Japanese population

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of *P. flammea*. We compared specimens from Japan and from Primorye Territory, and found that they belong to the same species, similarly differing from the populations of true *P. flammea*. We could not even find any subspecific differences, and therefore we consider that *sutshana* and *japonica* are synonymous. In the choice between the names *japonica* and *sutshana*, we adopt *japonica* following INOUE & SUGI (1958) who used this name for the Japanese population of the taxon, realising that it was different from *P. flammea*.

Panolis japonica DRAUDT, 1935 stat. n. (Figs. 1-2)

Panolis flammea f. *japonica* DRAUDT, 1935 : 199, pl. 22 h. Type locality : Kobe, Japan.

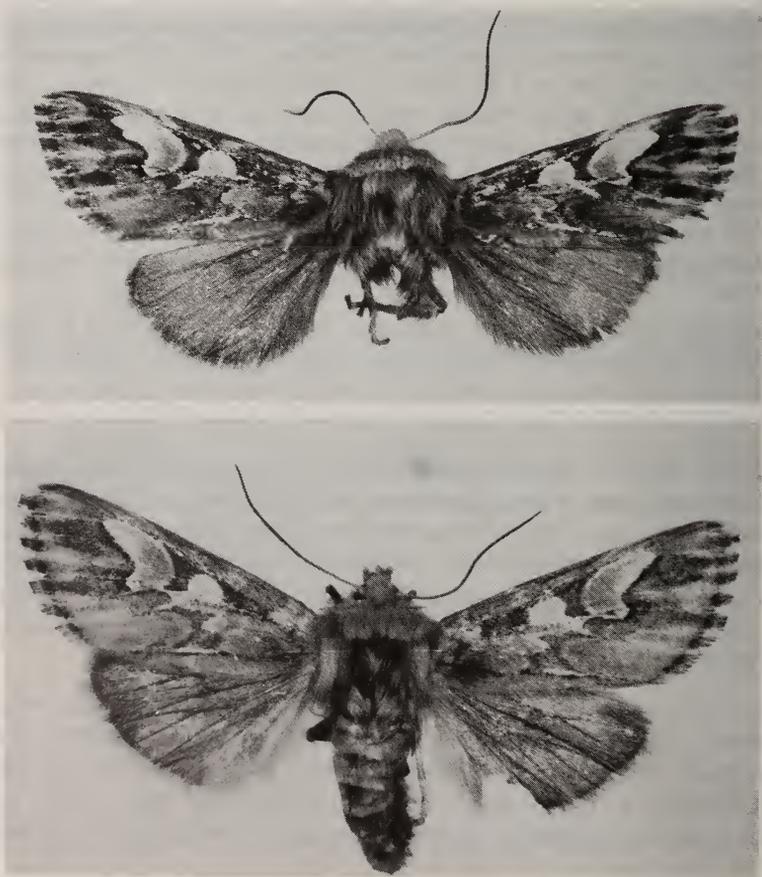


Fig. 1-2. *Panolis japonica* DRAUDT, 1935. 1. Male. 2. Female (both from the Primorye Territory, U.S.S.R.).

Panolis flammea f. *sutshana* DRAUDT, 1935 : 199, pl. 22 h, syn. n. Type locality : Sutshansky rudnik, Partizansk, Primorye Territory, U.S.S.R.

Panolis flammea japonica ; INOUE & SUGI 1958 : 468 ; SUGI 1982, 1 : 708, 2 : 536, pl. 174 : 17, 18.

MATERIAL EXAMINED : Japan : Honshu 1 ♂ 1 ♀ ; U.S.S.R., Primorye Territory : Gornotayozhnoye near Ussuriysk, 24.IV.1983 2 ♂♂ 2 ♀♀ S. SINEV leg. : Razdolnoye 60 km N of Vladivostok, 26.IV.1974 2 ♀♀ V. KIRPICHNIKOVA leg. ; Ussuriysky reservation 25 km E of Ussuriysk, 19.IV.1958 1 ♂ A. KURENTZOV leg.

DESCRIPTION : Wing expanse 36-38 mm, forewing length 15-16 mm. Antenna of male indistinctly serrate, almost simple, fasciculated (antenna of male *P. flammea* clearly serrate). Forewing more oblong and tapered than that of *P. flammea* (Figs. 3-4). Ground colour of forewing varies from pale

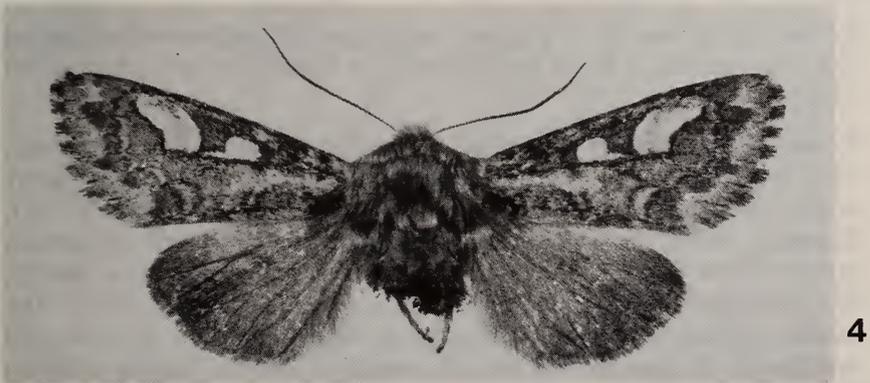


Fig. 3-4. *Panolis flammea* ([DENIS & SCHIFFERMÜLLER, 1775]). 3. Male. 4. Female (both from Finland).

to bright reddish. Head and thorax covered with reddish hairs, patagia and margins of tegulae with grey hairs. Forewing with white spot on costal part of basal area. Antemedian and postmedian lines indistinct or lacking (well visible in *P. flammea*). Particularly reniform stigma larger than that of *P. flammea*, more sickle-formed and its inner area dusted with reddish scales only medially (reniform stigma of *P. flammea* is more rounded and dusted with pale brownish scales for whole inner area). Claviform stigma distinct, light. Longitudinal bright reddish subterminal streaks. Veins on subterminal and terminal areas often pale. Cilia mottled, paler on veins, reddish between. Hindwing brown-grey.

MALE GENITALIA (Fig. 5) : All structures about one third larger than those of *P. flammea* (Fig. 6). Uncus spatulate, gradually expanding towards apex (in *P. flammea* expanded at apex only). Juxta like tip of arrow. Valva wider and more massive than that of *P. flammea*. Sacculus without deep basal invagination as in *P. flammea*. Clasper more massive and tip of valva sharper than that of *P. flammea*. Digitus similar to that of *P. flammea*. Aedeagus without plate of small sclerotized spines at apex. Vesica with long, narrow appendix with small cornutus at tip (in *P. flammea* appendix short and wide with large cornutus).

FEMALE GENITALIA (Fig. 7) : In general all structures larger than those of *P. flammea* (Fig. 8). Apophyses anteriores and posteriores larger, antrum narrower and deeper than that of *P. flammea*. Ductus bursae well sclerotized and expanded cephalad near junction with corpus bursae. Bulla and posterior part of corpus bursae sclerotized, grained ; anterior part of corpus membranous, with four band-like signa.

DISTRIBUTION : U.S.S.R., Primorye Territory ; N. China, Heilongjiang Prov. ; Japan (Honshu, Shikoku, Kyushu).

BIOLOGY : The larva of *P. japonica* has similarly conspicuous longitudinal stripes as that of *P. flammea* and also feeds on *Pinus* (SUGI 1983, YAMAMOTO 1987).

REMARKS : According to our present knowledge, the genus *Panolis* HÜBNER, 1821 includes four or five species in the Palaearctic region : the mainly western Palaearctic species *P. flammea* ([DENIS & SCHIFFERMÜLLER, 1775]), its eastern Palaearctic counterpart, *P. japonica* DRAUDT, 1935, two species described from China : *P. excusita* DRAUDT, 1950 and *P. pinicortex* DRAUDT, 1950, and one species from Taiwan : *P. variegata* (WILEMAN, 1914). The generic position of *P. pinicortex* requires confirmation. *P. variegata* was described in *Hadena* but was recently treated as *Panolis* : judging from the figure shown by KISHIDA (1980), *variegata* seems to be a senior synonym of *excusita*, which was illustrated by DRAUDT (1950) and CHEN (1982) in

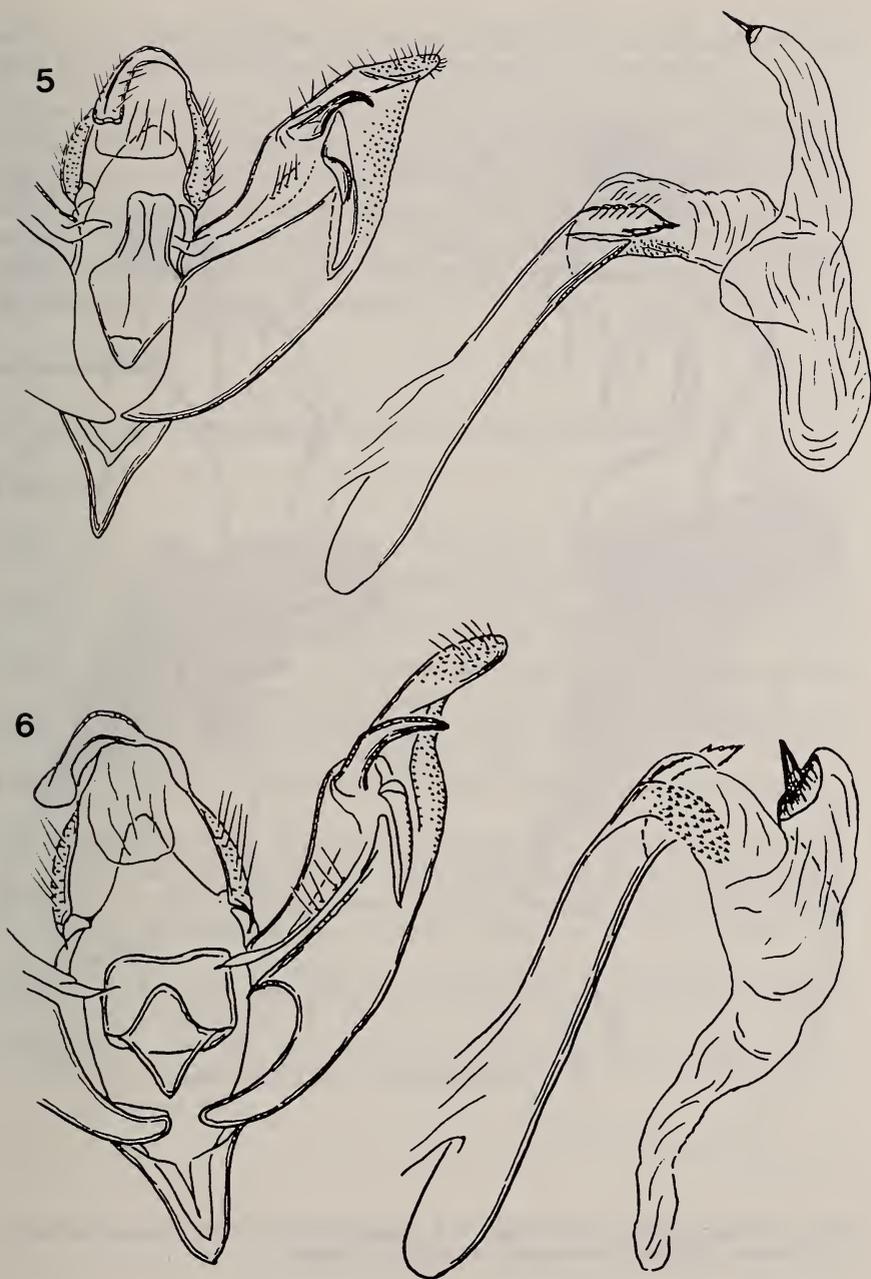


Fig. 5-6. Male genitalia of *Panolis* spp. 5. *P. japonica* DRAUDT, 1950 (Primorye Territory).
6. *P. flammea* ([DENIS & SCHIFFERMÜLLER, 1775]) (Finland).

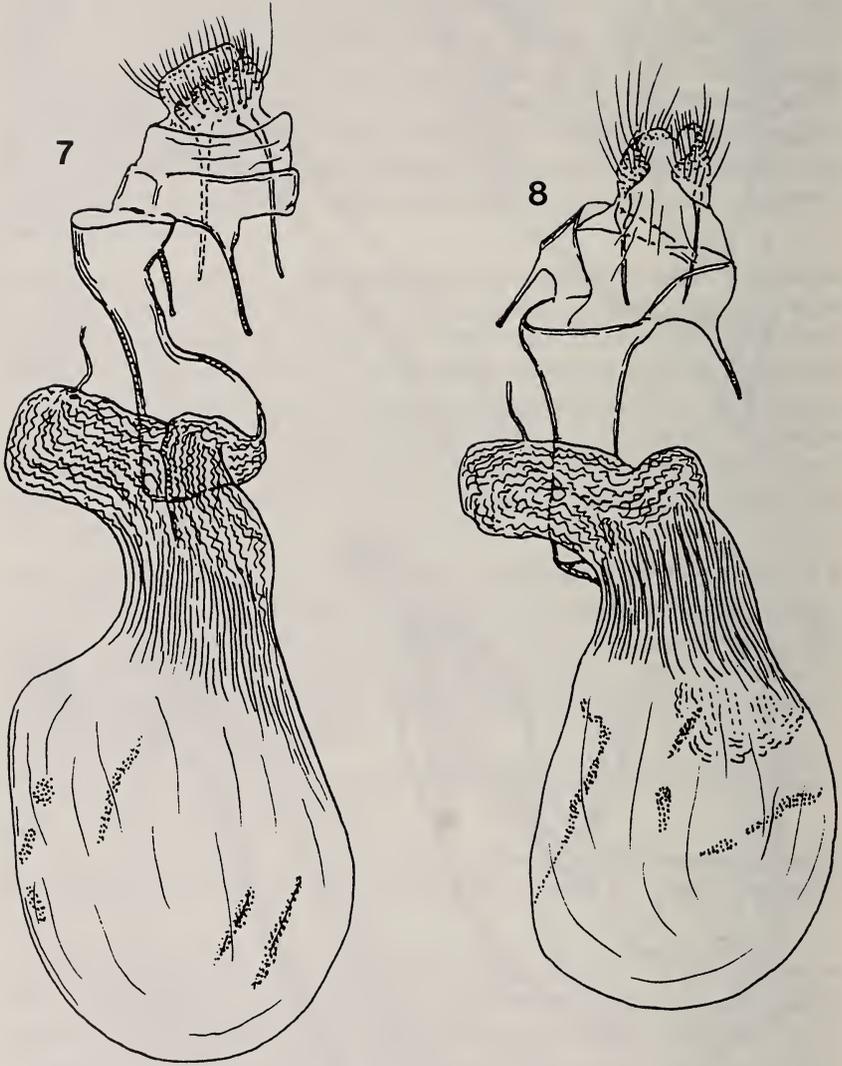


Fig. 7-8. Female genitalia of *Panolis* spp. 7. *P. japonica* DRAUDT, 1950 (Primorye Territory).
8. *P. flammea* ([DENIS & SCHIFFERMÜLLER, 1775]) (Finland).

colour. CHEN also illustrated *P. flammea* from China in colour, and judging from his figure, the Chinese population belongs to *P. japonica*.

The eastern border of the range of *P. flammea* is poorly known. The species has been found in western Siberia and in the Altai Mountains. The easternmost records are from the Krasnoyarsk area and we have been unable to find any collection with specimens from the well-collected Baikal area. The western boundary of the range of *P. japonica* is also unclear; the species could probably be found in the Amur region and Korea, and the details of its distribution in China are unknown.

Acknowledgements

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