Description of the female of *Hyptioxesta magadanica*, with notes on the occurrence of *H. magadanica* and *H. penthima* adults (Lepidoptera, Noctuidae)

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The previously unknown female of the noctuid moth *Hyptioxesta magadanica* (Kononenko, 1981) is described and compared with other *Hyptioxesta* species. The *H. magadanica* female is brachypterous, unlike the females of the other two species included in the genus. The female genitalia of *H. magadanica* and the adults of all three species are illustrated. Notes on the flight behaviour of the adults of *H. magadanica* and *H. penthima* (Erschoff, 1870) are given and their habitats are illustrated.

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1. Introduction

The genus *Hyptioxesta* Rebel, 1901 consists of three species occurring in the eastern Palearctic (Kononenko 1984) and one undescribed species occurring in North America (Mikkola pers. comm.). The genus *Hyptioxesta* was established by Rebel in Staudinger & Rebel (1901). The type species of the genus is *Erastria penthima* Erschoff, 1870 by monotypy. Draudt in Seitz (1938:333) considered this genus to belong to Erastrianae and Nye (1975) placed it into Acontiinae. Kononenko (1984) revised the genus *Hyptioxesta* transferring it into the subfamily Noctuinae. He noticed that the hind leg of *Hyptioxesta* differs morphologically from that of *Estimata herrichschaefferi* (Alpheraky, 1895). The legs of all three *Hyptioxesta* species are similar to each other, as illustrated by Kononenko (1984). He transferred *H. magadanica* from *Estimata* to *Hyptioxesta* and described a third species, *H. kurentzovi* Kononenko, 1984.

In summer 1990 the Department of Zoology, University of Helsinki, organized a student expedition to the Russian Far East in co-operation with the Biological Station of Aborigen, Institute for Biological Problems of the North, Magadan. During

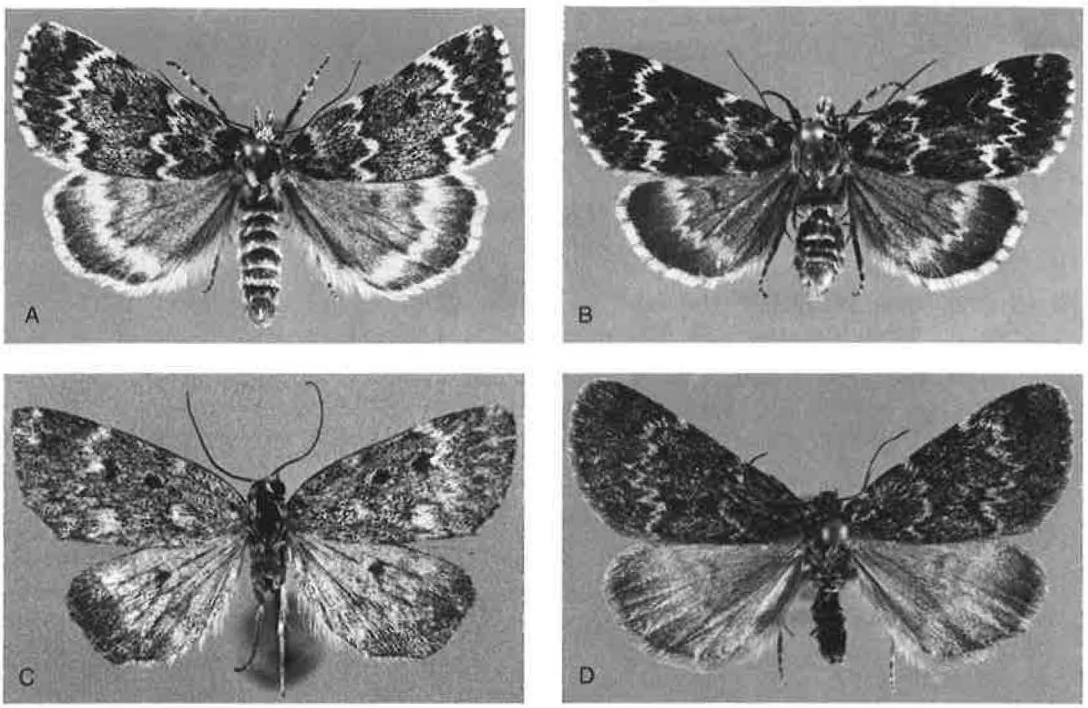

Fig. 1. *Hyptioxesta penthima* male (A); *H. penthima* female (B); *H. kurentzovi* male (C); *H. magadanica* male (D).

the expedition we collected several specimens of *Hyptioxesta penthima* and *H. magadanica.* This material included also three specimens of the previously undescribed female of *H. magadanica.*

2. The Palearctic species of *Hyptioxesta*

H. penthima is the largest species of the genus, the wingspan of male being 25–37 mm and that of female 25–30 mm (Fig. 1A–B). According to Kononenko (1984), the wingspan of *H. kurentzovi* male is 22–33 mm (Fig. 1C) and that of female 25 mm. The wings of the females of both species are on average shorter than those of the males. The wingspan of *H. magadanica* male is 22–28 mm (Fig. 1D), and the female is brachypterous (Fig. 2).

The forewings of *H. penthima* and *H. kurentzovi* are brownish black with pale buff wing pattern, and the reniform and orbicular stigmata are dark and clearly visible. The latter species has paler wing coloration, more diffused wing pattern and more straight antemedian fascia. The appearance of *H. magadanica* male is dark brown. The antemedian and postmedian fasciae of the forewing are weak, consisting of pale buff scales, and the reniform and orbicular stigmata hardly visible. The hindwing is almost unicolorously greyish brown with weak postmedian fascia and terminal shade.

The genitalia of the males of all three species, as well as those of the females of *H. penthima* and *H. kurentzovi,* are as described by Kononenko (1984).

3. Description of the female of *Hyptioxesta magadanica*

Diagnosis: The female of *Hyptioxesta magadanica* is brachypterous without any clear wing pattern (unlike females of the other species of the genus, which have fully developed wings). In the genitalia the bursa copulatrix is divided into posterior and anterior parts, the former with saddle-like extension (it is undivided and without any extensions in the other species).

Description: Brachypterous (Fig. 2), wingspan 8–11 mm, forewing length 3.2–4.4 mm. Body length of dried specimens 7.6–8.2 mm. Proboscis well developed. Antennae dark brown, with few pale

Fig. 2. *Hyptioxesta magadanica* female.

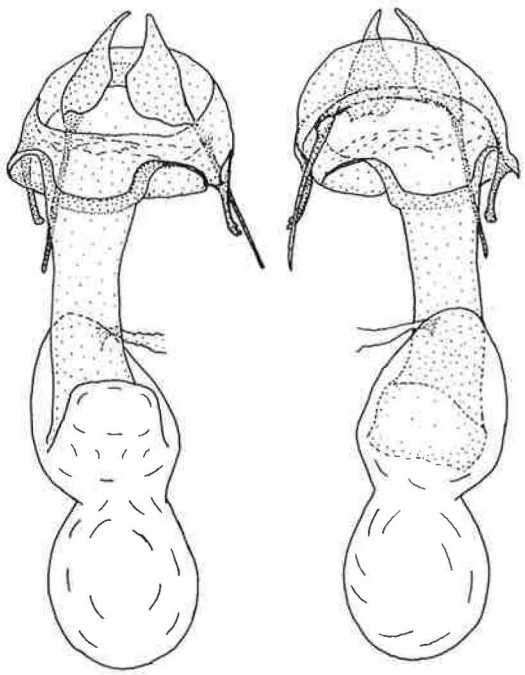

Fig. 3. Female genitalia of *Hyptioxesta magadanica* in (a) dorsal and ventral (b) view.

buff scales on dorsal side and short cilia on ventral side. Upper side of palpi, head and thorax covered with dark brown and scattered pale buff scales, underside almost entirely covered with long and hairy white scales. Abdomen dark brown without hairy scales, with scattered pale buff scales, more densely on ventral side. Forewing dark brown, slightly shiny, with scattered pale buff scales; in one specimen dark brown scales forming weak fascia in middle part of wing. Underside of forewing greyish brown with scattered buff scales, costa with dark brown scales. Hindwing dark greyish brown, costa and basal parts shiny light grey, underside dark grey with buff basal part. Legs stronger than in male, coxa with long and hairy scales, femur dark greyish brown with scattered pale buff scales, tibia and tarsus dark brown with few scattered pale buff scales except basal parts which are entirely pale buff.

Genitalia (Fig. 3): Papillae anales weakly sclerotized, triangular. Eighth segment well sclerotized. Apophyses well developed; posteriores more than two times longer than anteriores. Ostium bursae wide and well sclerotized; ductus bursae weakly sclerotized. Bursa copulatrix slightly constricted medially and thus divided into posterior and anterior parts equal in size; anterior part rounded without extension, posterior part with saddle-like extension ventrally. Opening of ductus bursae on other side of extension. Appendix bursae directed caudally on dorsal side of ductus bursae; ductus seminalis on ventral side of it.

4. Occurrence of *H. magadanica* and *H. penthima* adults

H. magadanica occurred at altitudes between 500–900 m, especially in places where schistose rocks were breaking down and forming sliding scree slopes. Vegetation on these slopes is sparse consisting mostly of lichens and *Saxifraga* species (Fig. 4). If not disturbed, the males flew rather slowly, patrolling over these slopes. We observed them flying at dusk, but sometimes, in overcast weather, also in the daytime. At night they were attracted to light.

All the females were found on 8.VII.1990 on the same scree slope at an altitude of about 800 m, 2 km west of the Aborigen Biological Station. We found two of the females by turning over flat stones 20–50 cm in diameter, which were in many layers on the rocky slope; these females were resting on the underside of the stones. The third female was disturbed and tried to escape by running and jumping.

Fig. 4. Habitat of *Hyptioxesta magadanica* near Aborigen Biological Station.

Near Magadan, *H. penthima* flew in the mountain tundra, but at the Aborigen area they were mainly found on rocky parts of a south-facing steppe slope. The males flew mainly at night and were also attracted to light, but when the weather was warm they flew also in the sunshine. They were faster than *H. magadanica* males. The *H. penthima* females appeared to be less active than males. We found five females flying slowly short distances in warm sunshine and one resting under a stone. At Anadyr Plateau, the males were resting in the daytime on large rocks, 0.5–1.0 m in diameter, on a steep tundra slope, and flying for short distances when disturbed (Mikkola, pers. comm.).

The preimaginal stages and the larval hostplants of all *Hyptioxesta* species are unknown.

Material examined:

Hyptioxesta penthima
Magadan oblast, 20 km N Magadan, 800–1200 m, 2.VII.1990, 4♂♂ 6♀♀, J. Kullberg, M. Kuussaari & M. Nieminen leg; Magadan oblast, Sinegorje, the Dam of Kolyma, a scree slope, 4.VII.1990, 1♂, J. Kullberg, M. Kuussaari & M. Nieminen leg.; Magadan oblast, Upper Kolyma River, Aborigen Biological Station, 16.VII.1980, 1♂; same place but 18.VII.1980, 2♂♂, V. S. Kononenko leg; 600 m a scree slope, 14.VII.1987 ad luc., 3♂♂, K. Mikkola leg.; Magadan oblast, Upper Kolyma River: 2 km W from the Aborigen Biological Station, 600–800 m, mountain ridge, 8.VII.1990, 3♂♂; same place but 10.VII.1990, 2♂♂; 1 km E from the Aborigen Biological Station, 500–550 m, scree slope, 9.VII.1990, 9♂♂, J. Kullberg, M. Kuussaari & M. Nieminen leg.

Hyptioxesta kurentzovi
Primorskij kraj, Tsugujevskij rajon, Oblatsnaja mts.,Tshamo-Dynza 1450 m, southern scree slope with spruce 15.VII.1972, 1♂, Vasjurin leg.

Hyptioxesta magadanica
Magadan oblast, Upper Kolyma River, 62N 14940'E, 700 m, scree slope, 11.VII.1987, 1♂; 600 m, scree slope, 14.VII.1987 ad luc., 5♂♂; same place but 15.VII.1987 ad luc., 7♂♂; same place but 16.VII.1987 ad luc., 2♂♂; same place but 600 m, Larix bog, 14.VII.1987, 14♂♂, K. Mikkola leg.; Magadan oblast, Upper Kolyma River, Aborigen Biological Station, 400–500 m, Larix gmelinii bog, 4.VII.1990, 1♂; 10 km W from the Aborigen Biological Station, 450–500 m, northern steppe slope, 5.VII.1990, 1♂; 2 km W from the Aborigen Biological Station 600–800 m, mountain ridge, 8.VII.1990, 17♂♂, 3♀♀; same place but 10.VII.1990, 1♂; Sinegorje, the Dam of Kolyma, scree slope, 4.VII.1990, 1♂, J. Kullberg, M. Kuussaari & M. Nieminen leg.

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