

**Erannis jacobsoni Djakonov, 1926: new for the fauna of Korea
(Lepidoptera, Geometridae: Ennominae)**

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Abstract – *Erannis jacobsoni sichotenaria* Kurentzov, 1937 is recorded for the first time from the Korean Peninsula on the basis of one male specimen deposited in the collection of the Hungarian Natural History Museum, Budapest. A key to the males of the Siberian and Pacific species of *Erannis* Hübner, 1825 are given. With 8 figures.

Key words – *Erannis*, Geometridae, Korean Peninsula, new record, winter moth

INTRODUCTION

At present, two species of the genus *Erannis* Hübner, 1825 are known to occur in the Pacific coasts of the Palaearctic Region, of which *E. golda* Djakonov, 1929 has been recorded from the southern part of the Korean Peninsula for a long time (SHIN 1996). When the Korean Ennominae material deposited in the Hungarian Natural History Museum (HNHM) was catalogued, it was recorded as new for North Korea by BÁLINT & KATONA (2011). The other species, *E. jacobsoni* is known from Japan, NE China and the Russian Far East up to now, but there is no published record from Korea.

While studying the Korean Ennominae collection of the HNHM, I found one male specimen assigned to *E. golda*, which was different from the other specimens, rather similar to *E. defoliaria* (Clerck, 1759) based on its wing traits (Fig. 1). The aim of the present paper is to document this specimen and clarify its identity.

MATERIAL AND METHODS

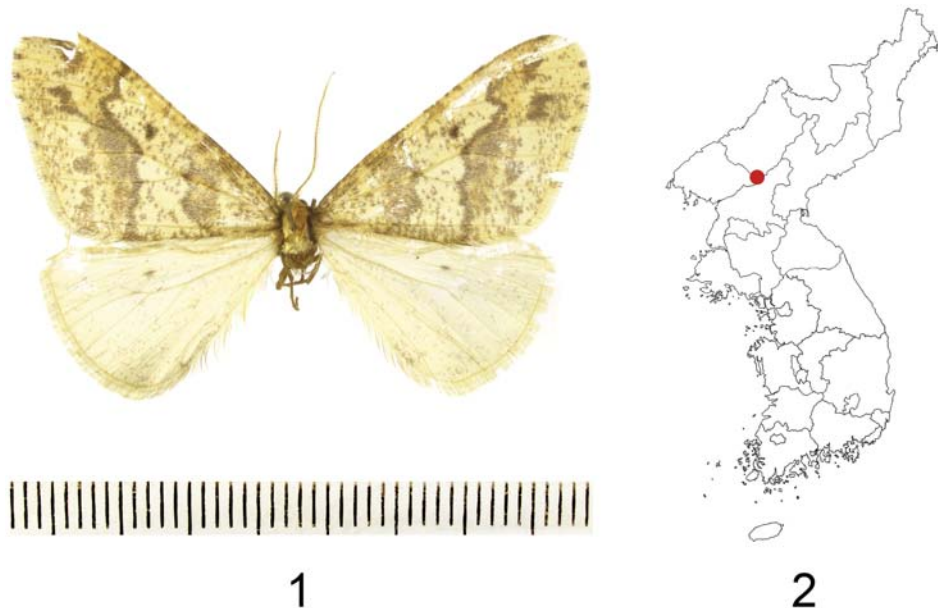
Genital dissection was performed to verify the identification of the specimen. Dissection was made using conventional method, i.e. maceration in KOH

solution. The chitinous structures were stained with eosine and mounted in euparal. The slide was digitised with Nikon Super Coolscan 5000 scanner, and the adult was photographed with Olympus B 101 camera. Adobe Photoshop CS2 was used for adjusting the images.

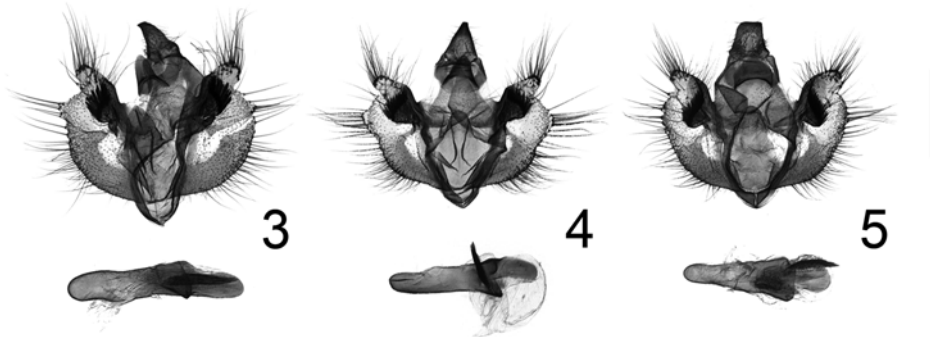
RESULTS

Material – Korea, N Pyongan Prov., Myohyang-san Mts, No. 1030, 9.X.1987, leg. Korsós and Ronkay; slide No. TB1298m (one male, HNHM). For the geographic location of the collecting site in Korea see Fig. 2.

Diagnostic features – The specimen has the following features: (1) length of forewing is 22 mm (measured from base to apex); (2) in dorsal wing surface the antemedial line basally and the postmedial line distally are bordered by narrow, dark brown bands in pale yellow background; (3) the postmedial line between the cell and the dorsum is nearly straight, i.e. not curved at dorsum towards the tornus; and (4) in the male genitalia the gnathos is quite broad, the ventro-lateral corner of valva is blunt and the aedeagus is elongate (Fig. 3), the juxta is comparatively long (Fig. 6).



Figs 1–2. 1 = *Erannis jacobsoni sichotenaria* Kurentzov, 1937, male, Korea, Myohyang-san Mts (dissected, HNHM) (forewing costa length: 22 mm), 2 = collecting site of the specimen (red dot) in Korea



Figs 3–5. Male genitalia of *Erannis* species: 3 = *E. jacobsoni sichotenaria* Kurentzov, 1937 (gen. prep. no. TB1298m, HNHM), 4 = *E. defoliaria* (Clerck, 1759), Hungary, Fót, 14.XI.2006, leg. B. Tóth, gen. prep. no. BJ2150m (coll. B. Tóth), 5 = *E. golda* Djakonov, 1926, Korea, Gapyeong county, Mt. Yeonin, 5.XI.2016, leg. J. Babics & B. Tóth, gen. prep. no. TB1297m (coll. B. Tóth). Scale bar: 1 mm

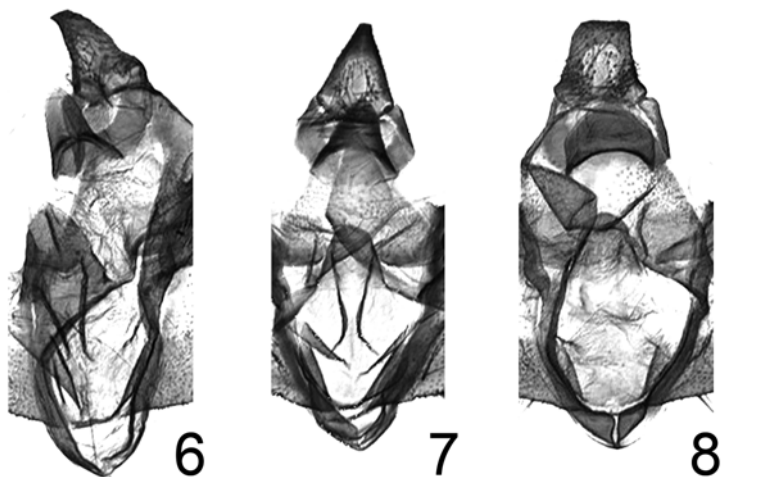
DISCUSSION

Erannis defoliaria defoliaria is a Western Palaearctic subspecies, which reaches the eastern border of its distribution near Novosibirsk. The North Korean specimen is similar to the nominotypical subspecies of *E. defoliaria*, however the presence of a highly isolated population or subspecies at the Pacific coast would be surprising. The above-mentioned character states match well with the diagnostic features of *E. jacobsoni* presented by BELJAEV (1996), consequently the species is new for the fauna of the Korean Peninsula. In accordance with this, the record “1030 (1)” of *E. golda* should be omitted from the paper of BÁLINT & KATONA (2011).

Males of the two *Erannis* species of Korea can be distinguished by the following characters: the ground colour of dorsal forewing surface is pale yellow in *E. jacobsoni*, pale orange to brown in *E. golda*; the postmedial line in *E. jacobsoni* is angled inwards below cell and slightly waved projecting basally on every veins, while in *E. golda* projections are absent and the shape of the line varies from slightly curved to completely straight; in dorso-ventral view uncus is gradually tapering in *E. jacobsoni*, but sides of uncus are nearly parallel and the apex is broadly truncate in *E. golda*; arms of gnathos are broader, medial part of gnathos is much narrower and the harpe is narrower in *E. jacobsoni* (Figs 3, 6) than in *E. golda* (Figs 5, 8).

BELJAEV (1996) distinguishes three subspecies of *E. jacobsoni*:

– *E. jacobsoni jacobsoni* Djakonov, 1926, with unicolorous pale yellow dorsal forewing surface, sometimes with pale brown bands, distributed in S Siberia, Khabarovskii Krai and N Mongolia;



Figs 6–8. Magnified capsulae of *Erannis* species. 6 = *E. jacobsoni sichotenaria* Kurentzov, 1937 (TB1298m), 7 = *E. defoliaria* (Clerck, 1759) (BJ2150m), 8 = *E. golda* Djakonov, 1926 (TB1297m).
Scale bar: 1 mm

– *E. jacobsoni sichotenaria* Kurentzov, 1937, always with brown bands on pale dorsal forewing surface, larger in size than the nominotypical taxon, present in Primorskii Krai and NE China;

– *E. jacobsoni gigantea* Inoue, 1955, with variable ground-colour and pattern of forewing, larger than *sichotenaria*, recorded in Japan (Hokkaido, Honshu, Shikoku). It was described as a distinct species, but later on INOUE *et al.* (1982) classified it as a subspecies of *E. defoliaria*. It was BELJAEV (1996) who treated this taxon for the first time as a subspecies of *E. jacobsoni*.

In conclusion, I identify the above described specimen as representing *E. jacobsoni sichotenaria* Kurentzov.

KEY TO THE *ERANNIS* SPECIES OF SIBERIA AND THE ASIAN PACIFIC COAST (MALES)

- 1 Postmedial line of forewing angled inwards below cell or transverse lines completely absent. Ground colour of forewing variable. Uncus tapering; medial part of gnathos relatively narrow (Figs 6–7) 2
- Postmedial line of forewing slightly curved below cell or completely straight; transverse lines always present 4
- 2 Postmedial line, if present, curved towards tornus near dorsum. Arms of gnathos relatively narrow; juxta relatively small; ventro-lateral corner of valva projected (Fig. 4). From Europe to the vicinity of Novosibirsk *E. defoliaria* (Clerck, 1759)
- Postmedial line of forewing always present, reaching dorsum at right-angle or curved towards base. Arms of gnathos broad; juxta large; valva without conspicuous ventro-lateral corner (Fig. 1) 3

- 3 Ground colour of forewing pale yellow. Wingspan 41–45 mm. Primorskii Krai, NE China and Korea *E. jacobsoni sichotenaria* Kurentzov, 1937
- Ground colour of forewing variable. Wingspan 45–47 mm. Japan
.....*E. jacobsoni gigantea* Inoue, 1955
- 4 Ground colour of forewing from pale orange to brown. Uncus broad, with nearly parallel sides, medial part of gnathos broad (Figs 5, 8). From Lake Baikal to the Pacific coasts, Korea, Sakhalin, Japan *E. golda* Djakonov, 1926
- Ground colour of forewing pale yellow. Uncus tapering; medial part of gnathos narrow. From the Altai Mts through N Mongolia to Khabarovskii Krai
..... *E. jacobsoni jacobsoni* Djakonov, 1926

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