Short communication

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New Records of Three Yponomeutine Moths (Lepidoptera: Yponomeutidae) from Korea

Jae-Cheon Sohn[1], Kyu-Tek Park[2] and Soowon Cho[3,*]

[1]Department of Entomology, University of Maryland, 4112
Plant Sciences Bldg., College Park, MD 20742, USA
[2]McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History,
University of Florida, Gainesville, FL 32611, USA
[3]Department of Plant Medicine, Chungbuk National University, Cheongju 361-763, Korea

ABSTRACT

Two species of Yponomeutinae new to Korea, *Euhyponomeutoides trachydeltus* (Meyrick) and *Thecobathra anas* (Stringer), are reported. In addition, occurrence of *Yponomeuta anatolicus* (Stringer) in Korea is confirmed with proper collection of data. The adults and genitalia for the three species are illustrated.

Keywords: Yponomeutoidea, fauna, Korean Peninsula

INTRODUCTION

Yponomeutinae is the major group of the family Yponomeutidae with over 360 species, occurring predominantly in the Holarctic temperate regions (Dugdale et al., 1998). The East Asian fauna of the moth group is especially interesting because it includes some genera that are exclusively speciose in the area (e.g. *Yponomeuta* and *Thecobathra*). In some East Asian countries, a few yponomeutines are often of economic importance due to their damage of trees cultivated for fruits or gardening. *Yponomeuta orientalis* Zagulajev, formerly known as *malinellus* Zeller, and *Yponomeuta refrigerata* Meyrick, formerly known as *evonymellus* (Linnaeus), are two examples of such pests.

A very limited number of faunistic studies have been performed for the Korean Yponomeutinae and a total of 21 species have been known to date (Park, 1983; Shin, 1994; Gershenson & Ulenberg, 1998; Byun & Bae, 2003; Sohn, 2007, 2009). This figure is far less than the species diversity of Yponomeutinae in Japan, 48 spp. (excepting *Saridoscelis*) (Jinbo, 2008), and to that in China, 67 spp. (Sohn et al., manuscript in preparation), making the discovery of more species in Korea expected.

This paper reports three species of Yponomeutinae previously unknown to the Korean fauna or known based on insufficient collection data. The photos of adults and their genitalia for the available sex are provided. The specimens were examined for external features and some of them were dissected for genitalia examination. Terminology for adult morphology and genitalia follows Moriuti (1977). All the specimens examined are deposited in the Korea National Arboretum (KNA), Pocheon Korea and the United States National Museum of Natural History (USNM), Washington DC, USA.

*To whom correspondence should be addressed
Tel: 82-43-261-2558, Fax: 82-43-271-4414
E-mail: chosoowon@gmail.com

SYSTEMATIC ACCOUNTS

[1]*_Euhyponomeutoides trachydeltus_ (Meyrick)

Hyponomeuta trachydelta Meyrick, 1931: 172 [TL: Mt. Teinesan, Hokkaido, Japan].
Yponomeuta trachydelta: Inoue, 1953: 38, no. 175.
Nordmanina [sic] *trachydelta*: Issiki, 1957: 24, pl. 3, f. 86.
Nordmaniana trachydelta: Freise, 1962: 316, f. 12. 13, 21.
Paradoxus lushanensis Gozmany, 1960: 423.
Euhyponomeutoides trachydeltus: Moriuti, 1977: 212.

Diagnosis (Fig. 1A). Wingspan 16-22 mm (n=2). This species is superficially similar to *Xyrosaris lichneuta* Meyrick, which has a slender forewing, but the large triangular patch on basal third of costa in *E. trachydeltus* is much larger than that of *Xyrosaris lichneuta*. It can also be distinguished by its larger size from *Xyrosaris lichneuta* whose wingspan is no more than 16 mm. The females are larger than the males.
Male genitalia (Fig. 2A, B) - Socius rather stout basally, with a small spine on tip. Valva straight costally, broadly round posteromarginally, angled apically; saccular margin slightly concave; sacculus with a spinose zone terminally. Saccus elongate, robust. Aedeagus (Fig. 2B) long, slender; cornuti lined with long spines from the middle of aedeagus.

[1]*긴날개집나방 (신칭)

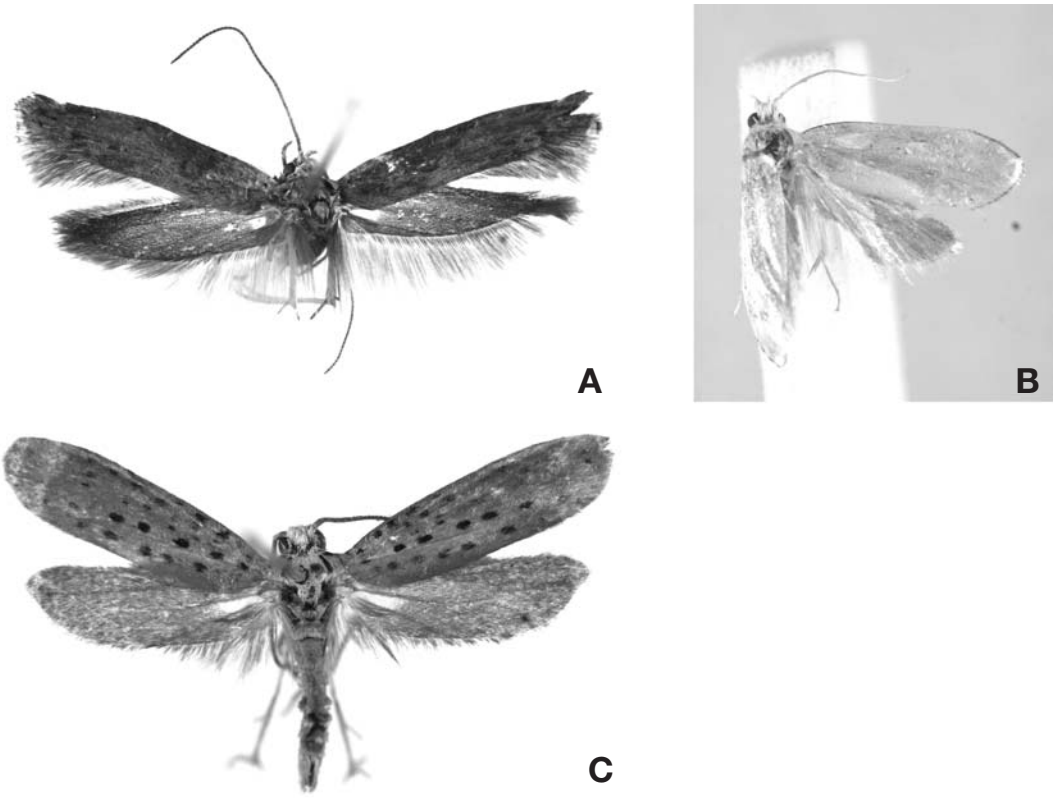

Fig. 1. Adults: A. *Euhyponomeutoides trachydeltus* (Meyrick), female; B. *Thecobathra anas* (Stringer), male; C. *Yponomeuta anatolicus* (Stringer), male.

Female genitalia (Fig. 2E) - Papilla analis short. Lamella postvaginalis lobate. Ductus bursae slender, sclerotized in caudal fourth. Corpus bursae ovate, one half the length of ductus bursae.

Material examined. [KNA] 1♀, Sinbug, Chuncheon, Gangwon Prov., 17 V 1995 (HK Lee & MS Go); 1♀, Jiam-ri, Chuncheon, Gangwon Prov., 28 IV 1998 (SM Lee), genitalia slide no. SJC-270; 1♂, Sangju, Namhae, Gyongnam Prov., 12 X 1994 (BK Byun), genitalia slide no. SJC-269.

Distribution. Korea, Japan, China and Russian Far East.

Host plants. Celastraceae - *Euonymus alatus* & *E. fortunei* (Gershenson and Ulenberg, 1998).

[1]***Thecobathra anas* (Stringer)**

Niphonympha anas Stringer, 1930: 420 [TL: Japan].
Scythropiodes unimaculata Matsumura, 1931: 1099, no. 2278.
Pseudocalantica anas: Friese, 1960: 37, f. 13.
Thecobathra anas: Moriuti, 1971: 232, f. 3, 18, 20, 33, 35.

Diagnosis (Fig. 1B). Wingspan 16 mm (n=2). This silvery white species is very close to *Niphonympha vera* Moriuti of the Korean yponomeutids. Examination of genitalia is necessary for satisfactory identification of the two species. The large, elongate complex of vinculum and saccus, two rows of teeth on aedeagus and stouter ductus bursae are some of such diagnostic characteristics for *T. anas*, whereas *N. vera* has short vinculum, no tooth on aedeagus and slender ductus bursae.

Male genitalia (Fig. 2D) - Socius stout, falcate. Valva crepidoform, densely setose; costa very slender except base; sacculus emarginated at the middle, with a dentiform process at distal end and with a lobate, setose projection basally. Vinculum elongate, V-shaped, with stout saccus. Aedeagus slender, slightly curved at basal third, with two rows of teeth after middle; spinules of cornuti on distal half of aedeagus.

Material examined. [USNM] 2♂, Mt. Suli-bong, Dongoeri, Jindo-eup, Is. Jin-do (N34°28′37.8″ E126°18′04″, Alt. 183 m), Jeonnam Prov., 29 VI 2004 (JC Sohn, HJ Park, SC Nam & YE Han), genitalia slide no. SJC-369.

Distribution. Korea and Japan.

Host plants. Fagaceae-*Castanopsis cuspidate*, *Quercus glauca* and *Q. serrata* (Moriuti, 1977).

[1]*은판집나방 (신칭)

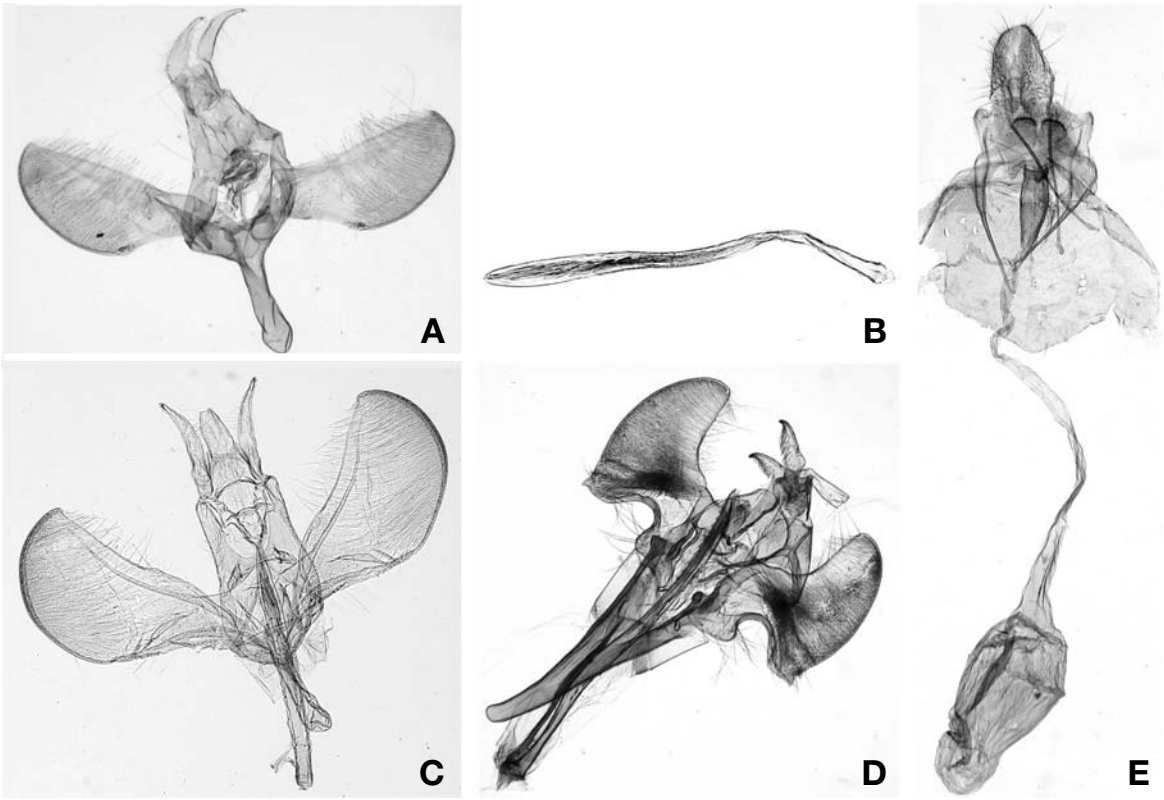

Fig. 2. Genitalia: A-B. *Euhyponomeutoides trachydeltus* (Meyrick), male; C. *Yponomeuta anatolicus* (Stringer), male; D. *Thecobathra anas* (Stringer), male; E. *Euhyponomeutoides trachydeltus* (Meyrick), female.

[1]***Yponomeuta anatolicus* (Stringer)**

Hyponomeuta anatolica Stringer, 1930: 419 [TL: Fushiki, Honshu, Japan].
Hyponomeuta anatolicus: Issiki, 1932: 1487.
Yponomeuta anatolica: Inoue, 1954: 37, no. 163.
Yponomeuta anatolicus: Friese, 1962: 311, f. 8, 29.

Diagnosis (Fig. 1C). Wingspan 17-21 mm (n=3). This species is easily distinguished from other grayish congeners by the bigger dots which are scattered rather sparsely. It is hard to distinguish a few of confusing species by their male genitalia. However, a close examination of the shape of socius and the length of aedeagus may reveal the characteristics useful to separate *Y. anatolicus* from others.

Male genitalia (Fig. 2C) - Typical as other *Yponomeuta* except of socius robust on basal 1/3, slender on distal 1/3; valva with a broad, shallow mound above sacculus; aedeagus short, stout, with 5-6 strong spines of cornuti on the distal 1/2.

Material examined. [USNM] 3♂, Mt. Suli-bong, Dongoe-ri, Jindo-eup, Is. Jin-do (N34° 28′37.8″ E126° 18′04″, Alt. 183 m), Jeonnam Prov., 29 VI 2004 (JC Sohn, HJ Park, SC Nam & YE Han), genitalia slide no. SJC-370.

Distribution. Korea, Japan, China and Russian Far East.

Host plant. Celastraceae-*Euonymus* sp. (Moriuti, 1977).

Remark. Gershenson (1993) first reported the occurrence of *Y. anatolicus* in the Korean Peninsula, based on two female specimens without detailed collecting data. We herein reconfirm including Korea in the distribution range of the species.

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