INTRODUCTION

The family Noctuidae Latreille, 1809 is the monophyletic group with the trifine (hindwing vein M2 reduced or absent) and quadrifine (hindwing M2 unreduced or only slightly reduced) subfamilies (Zahiri et al., 2013). Unambiguous morphological autapomorphy of the family is not found, but they possess a few morphological characters that generally differ from other families of the Noctuoidea Latreille, 1809, such as Erebidae Leach, [1815], Notodontidae Stephens, 1829 and Nolidae Bruand, 1846; namely, a scaled clypeofrons, relatively short labial palpi, generally narrow forewing, forewing pattern usually reduced or absent on the hindwing, pair of shallow or lack of phragma lobes between the first and second abdominal tergites, medial fusion of the basal abdominal tympanal bullae, and a subapical diamond-shaped plate on the posterior apophyses of the female genitalia (Lafontaine and Fibiger, 2006; Zahiri et al., 2013).

We recently published a total of 1,314 species belonging to the superfamily Noctuoidea, including 649 species of Noctuidae in Korea (Kim et al., 2016). Here, we report three additional noctuid species that recorded from Korea for the first time.

MATERIALS AND METHODS

Adult moths were collected using a UV-light bucket trap (BioQuip, USA) during night or attracted to the UV-light and resting on a white screen hanging between poles. All collected adults were preserved in a freezer and mounted for examination. For slide preparation of male and female genitalia, each specimen was prepared by boiling the abdomen in 10% KOH for approximately 20 min. Scales and tissues were removed, stained with Chlorazol Black, and mounted on slides in Euparal solution. For wingspan measurements, the distance from the tip of the left forewing to the tip of the right forewing was used.

Terminology of adult, including the male and female genitalia, refers to Lafontaine and Fibiger (2006). All materials are deposited in the collection of Insect collection, Department of Environmental Education, Mokpo National University. Abbreviations are as follows: GW, Gangwon-do; and JN, Jeollanam-do.

ABSTRACT

Three species of Noctuidae, *Thysanoplusia daubei* (Boisduval), *Conistra nawae* Matsumura, and *Nyctycia hoenei* (Boursin), are reported for the first time in Korea. *Thysanoplusia daubei* can be distinguished by the dark greenish ground color of the forewings with a whitish, deeply indented antemedial line, a light grayish discal dot and a blackish ground termen on the hindwing. *Conistra nawae* can be distinguished by the dark ochreous forewing with dark reddish dentate antemedial and slanted postmedial line and blackish hindwing with ochreous fringe. *Nyctycia hoenei* can be distinguished by its dark greenish forewing with a large ochreous renal dot on the central fascia and the blackish undulating postmedial line and light blackish hindwing. Adults and genitalia are illustrated and briefly described with their biological and distributional notes.

Keywords: new record, Noctuidae, Lepidoptera, Hadeninae, Noctuinae, Korea

Three New Records of Noctuid Moths (Lepidoptera: Noctuidae) from Korea

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Three New Noctuids from Korea

SYSTEMATIC ACCOUNTS

Order Lepidoptera Linnaeus, 1758
Family Noctuidae Latreille, 1809
Subfamily Plusiinae Boisduval, 1829
Genus Thysanoplusia Ichinose, 1973

1\* Thysanoplusia daubei (Boisduval, 1840) (Figs. 1A, 2A, B)

Plusia daubei Boisduval, 1840: 159. TL: Europe.
Trichoplusia daubei: Beccaloni et al., 2003.
Plusia ciliaris Walker, 1858: 928.

Material examined. 1\*♂, Korea: JN: Wando-gun, Gunwoemyeon, Wando Arboretum, 5 Sep 2015, Kim SS.

Diagnosis. Dark greenish forewings with whitish, deeply indented antemedial line; discal dot light grayish with whitish semi-rounded edge; postmedial line light ochreous, medially weakly projected; terminal line dark brownish, dentate; hindwing with blackish termen. Male genitalia with long, medially bent uncus; slender valva with distally expanded cucullus; slender aedeagus with long spinular cornutus.

Description. Wingspan 28 mm. Antennae filiform, frons short, broad, mixed with whitish and dark grayish hairs. Labial palpi upturned, well projected beyond frons. Body blackish, covered with long light grayish hairs. Forewing: black, basally with creamy transverse line; antemedial line creamy whitish, medially strongly indented and pointed; postmedial line relatively thick, light brownish, medially weakly projected; discal dot large, whitish, anteriorly semi-rounded inward, posteriorly ball-shaped; subterminal line light brownish, dentate; termen whitish with blackish dots. Hindwing: basal yellowish, middle white or yellowish, termen blackish; wing venation distinct with black veins. Male genitalia: Uncus long, slender, medially bent, distally hairy, apex sharply pointed; tegumen large, triangular; vinculum reduced, saccus long, triangular with rounded apex. Valva long, slender, distally expanded; costa long, slender; harpe, long, digitate. Aedeagus long, slender; cornutus one long needle-shaped sclerotized process.

Distribution. Korea, Japan, China, Asia (south, west), Europe (south), Africa (north, east).

Remarks. This species is externally similar to Ctenoplusia albostriata (Bremer and Grey, 1853) in the long whitish indented antemedial line of the forewing, but can be distin-
guished by the medially bent and distally tapered shape of
the antemedial line and the straight and light grayish post­
medial line of the forewing. Larva feeds on *Sonchus* L.,
*Chondrilla* L., *Cichorium* L. (Asteraceae), and *Mentha* L.  
(Lamiaceae) (Goater et al., 2003).

**Subfamily Noctuinae Latreille, 1809**

**Genus *Conistra* Hübner, 1821**

**1 Conistra nawae Matsumura, 1926**  
(Figs. 1B, 2C, D, 3A)


**Material examined.** Korea: 1♂1♀, JN: Wando-gun, Gun­woe-myeon, Wando Arboretum, 2 Dec 2015, Kim SS; 1♀,  
JN: Wando-gun, Gunwoe-myeon, Wando Arboretum, 2 Nov  
2015, Kim SS.

**Diagnosis.** Dark ochreous forewings with ochreous fringe;
antemedial line dark reddish, dentate; postmedial line slant­
ed; hindwing blackish; large black discal dot on both fore­
and hindwings. Male genitalia with long, medially bent
uncus; medially bent valva with hook-shaped distal process;  
digitate harpe; one long spinular cornutus of aedeagus. Fe­
male genitalia with long, broad antrum; medially bent duc­
tus bursae; large, snow-man shaped corpus bursae with one
long signa patch and two short signa patches.

**Description.** Wingspan 39–40 mm. Antennae filiform, ver­
tex, frons densely covered with long reddish hairs, labial
palpi long, upturned, well projected beyond frons. Body
densely covered with light reddish hairs. Forewing: dark
ochreous, basal part with costally blackish dentate line;
ante- and medial lines dark ochreous, parallel lines, medially
projected; postmedial line relatively thick, reddish, slanted;
discal dot black on medial line; central fascia costally with
one large reddish round or rectangular dot; termen with se­
ries of reddish dots; underside reddish with black discal dot
Three New Noctuids from Korea

Genus Nyctycia Hampson, 1906

1º Nyctycia hoenei (Boursin) (Figs. 1C, 2E, F, 3B)
Isopolia hoenei Boursin, 1958: 45. TL: Japan.

Material examined. 1♂, 1♀, Korea: JN: Wando, Gunwoemyeon, Wando Arboretum, 5 Nov 2015, Kim SS.

Diagnosis. Dark greenish forewing with one large ochreous renal dot on central fascia; postmedial line blackish, undulating; hindwing light blackish. Male genitalia with tapered uncus; broad tegumen; juxta with one pair of linear bands; valva with distal spear-shaped process; aedeagus with two short spinular cornuti. Female genitalia with broad antrum; ductus bursae triangular, sclerotized; corpus bursae large, ovate with four long linear signa patches.

Description. Wingspan 26–29 mm. Antennae pectinate with short pectinations, frons densely covered with light grayish hairs, labial palpi upturned, slightly projected beyond frons. Body densely covered with long grayish hairs. Forewing: dark greenish, basal part with blackish dentate line; antemedial line blackish, slanted; postmedial line black, costally strongly projected outward; central fascia tapered from costa to dorsum, anteriorly large blackish round dot, posteriorly large whitish renal dot; subtermen with light blackish band; underside with light grayish slanted postmedial line. Hindwing: dark grayish; underside with one large blackish discal dot and postmedial line. Male genitalia: Uncus strongly tapered, apex truncated, hairy; tegumen broad; juxta with one pair of linear sclerotized bands; saccus short, apex pointed. Valva tapered, basally sclerotized, distally membranous; costa medially weakly projected, distally with one spear-shaped process. Aedeagus rod-shaped, cornutus one long spinular process. Female genitalia: Papillae anales simple, not projected; apophyses posteriores almost the same length of apophyses anteriores; lamella postvaginalis large, rectangular; antrum broad, long; ductus bursae long, medially narrowed and bent, strongly sclerotized; corpus bursae large, snowman-like, one long signa patch and two short lateral signa patches.

Distribution. Korea, Japan.

Remarks. This species is similar to Conistra fletcheri Sugi, 1958, but can be distinguished by the slanted postmedial line of the forewing and the blackish hindwing.

Seven species of Conistra are distributed throughout South Korea, including the newly recorded C. nawae (Han et al., 2008; Kim et al., 2016). Species of Conistra on the Korean Peninsula feed on diverse plant families including Aceraceae, Fagaceae, Rosaceae, Betulaceae, and Tiliaceae (Park et al., 2006).

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