

## Six Unrecorded Species of Micro-moths (Lepidoptera) from Korea

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### ABSTRACT

From a result of surveys on the biodiversity monitoring for moths in Korea, six species of micro-moths that were never known from Korea are reported here for the first time from this country. They are: *Udea pseudocrocealis* (South, 1901) of the family Crambidae, which has been known as endemic to Japan; *Epinotia albiguttata* (Oku, 1974) of the family Tortricidae, which was known belonging to *Hikagehamakia* Oku, 1974; and four species of the family Gelechiidae: *Protoparachronistis concolor* Omelko, 1986 and *P. discedens* Omelko, 1986, which were described from Primorsk, Russian Far East; *Thiotricha pancratiastis* Meyrick, 1921, which is known from Isl. Jeju, and *Thiotricha* sp. which is being described in a separate paper. Here we provide images of adults and genitalia for the unrecorded species with a brief diagnosis.

**Keywords:** Lepidoptera, new records, micro-moths, Korean peninsula, taxonomy

### INTRODUCTION

For a faunal study for micro-moths in Korea, authors have tried to identify specimens preserved in various collections, including the Holoce Ecosystem Conservation Research Institution and the 5th author's private collection. This study is aimed to report six unrecorded species of micromoths from Korea: *Udea pseudocrocealis* (South, 1901) of the family Crambidae; *Epinotia albiguttata* (Oku, 1974) of Tortricidae; four species of Gelechiidae, *Protoparachronistis concolor* Omelko, 1986 and *P. discedens* Omelko, 1986, *Thiotricha pancratiastis* Meyrick, 1921, and *Thiotricha* sp. In case of *Udea pseudocrocealis*, larvae were reared at room temperature with *Lespedeza bicolor* Turcz and *Amorpha fruticosa* L. as a host.

### MATERIALS AND METHODS

Material examined are based on specimens collected from various localities in Korea and preserved in 5th author's

private collection; and material in the Holoce Ecosystem Conservation Research Institution, Heongseong, Korea, collected by the second author. Most of specimen were collected by a sweeping-net or light trap, and some of them were collected as larvae feeding on their host plants and reared in natural condition in specially designed glass cages until they emerged. For identification of the species, genitalia of the obtained moths were dissected and examined. The dissected genitalia were stained mainly with chlorazol black and slide-mounted in Euparal.

### SYSTEMATIC ACCOUNTS

Order Lepidoptera Linnaeus, 1758

Family Crambidae Latreille, 1810

Genus *Udea* Guenée, 1845

Type species: *Pyralis ferrugalis* Hübner, 1796.

<sup>1\*</sup>*Udea pseudocrocealis* (South, 1901) (Fig. 1A–D)  
*Pionia pseudocrocealis* South, 1901: 492. Type locality: Fu-

Korean name: <sup>1\*</sup>짜리들명나방 (신칭)

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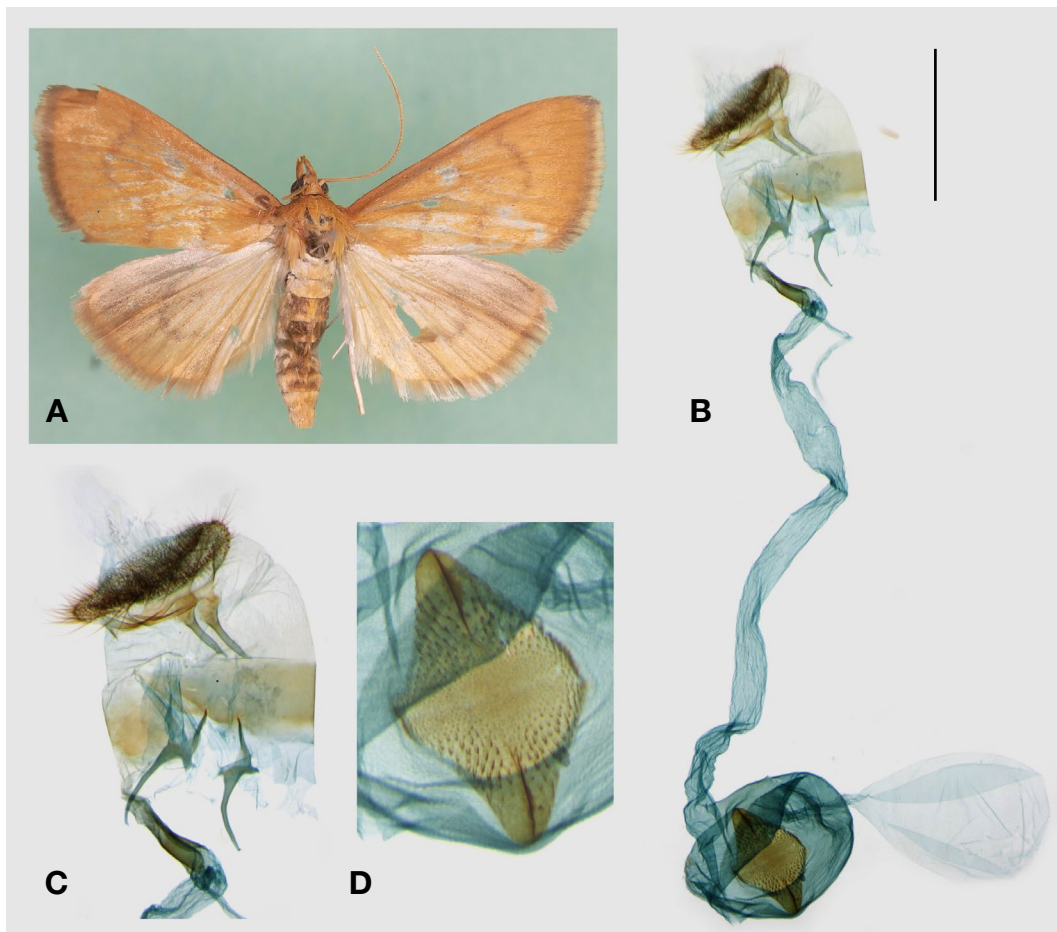
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**Fig. 1.** *Udea pseudocrocealis* (South, 1901): A, Adult; B, Female genitalia; C, Close-up ostium and abdominal sternite 8th; D, Close-up signum. Scale bar: B=1.0 mm.

shiki, Japan.

*Udea pseudocrocealis*; Inoue et al., 1982a: 364; 1982b: 240; Hua, 2005: 27.

**Material examined.** Korea: 2♀♀ larvae (on *Lespedeza bicolor* Turcz), Gangwon Prov.: Youngwol, 10 Jul 2012, leg. Lee KW, but the date of emergence is unknown; 1♀ larva (on *Amorpha fruticosa* L.), Gyeongbuk Prov.: Andong, 10 Oct 2016, leg. Lee KW, gen. slide no. HL-19-32, but the date of emergence is unknown.

**Diagnosis.** Forewing length 12 mm. Forewing ground color is light yellowish orange, and characterized by distinct post-median line; apex obtuse; termen not oblique. Hindwing ground color is pale yellow. Head and thorax are covered with light yellowish orange scales.

**Female genitalia (Fig. 1B–D).** Ductus bursae narrow, very long, more than 4 times the length of corpus bursae. Corpus

bursae rounded; signum large, ovate with triangular expansion anteriorly and posteriorly.

**Host plants.** *Lespedeza bicolor* Turcz and *Amorpha fruticosa* L. are reported for the first time.

**Remarks.** Five species of *Udea* Guenée have been known in Korea. *Udea pseudocrocealis* has been known as endemic to Japan, but it is reported here for the first time from Korea.

**Distribution.** Korea (new record), Japan.

Family Tortricidae Latreille, 1803

Genus *Epinotia* Hübner, [1825]

Type species: *Phalaena (Tortrix) similana* Hübner, 1793.

<sup>1</sup>\**Epinotia albiguttata* (Oku, 1974) (Fig. 2A, B)

*Hikagehamakia albiguttata* Oku, 1974: 15, figs. 4–6; Inoue et al., 1982a: 122; 1982b: 174. Type locality: Honshu, Ja-

Korean name: <sup>1</sup>\*부산애기잎말이나방(신칭)



Fig. 2. *Epinotia albiguttata* (Oku, 1974): A, Adult; B, Head, dorsal view.

pan.

*Epinotia albiguttata*; Nasu, 2013: 242.

**Material examined.** Korea: 1♂ (abdomen missed), Busan: Mt. Geumjeongsan, 35°17'01"N, 129°03'19"E, 6 Jun 2015, leg. Kim JD.

**Diagnosis.** Forewing length 7 mm. Forewing ground color is brownish black with distinct orange-white marks and hindwing color is grayish brown. Head and thorax are covered with brownish black and orange-white scales.

**Remarks.** This species was described in the monotypic genus *Hikagehamakia* Oku, but later on transferred to the genus *Epinotia* Hübner, 1825 by Nasu and Komai (2013).

**Distribution.** Korea (new record), Japan (Hokkaido, Honshu, Okinawa, Tsushima island).

Family Gelechiidae Stainton, 1854

Genus *Protoparachronistis* Omelko, 1986

Type species: *Protoparachronistis initialis* Omelko, 1986.

<sup>1</sup>\**Protoparachronistis concolor* Omelko, 1986  
(Fig. 3A–D)

*Protoparachronistis concolor* Omelko, 1986: 48; Park & Ponomarenko, 2007: 90. Type locality: Primorsk Territory, Russia.

**Material examined.** Korea: 1♂, Gangwon Prov.: Youngwol, Mt. Gyejoksan, 14 Jul 1998, leg. Lee SM, gen. slide no. CIS-8033.

**Diagnosis.** Forewing length 4 mm. Forewing ground color is pale orange, irregularly scattered with yellowish-brown scales, more densely in distal part. Hindwing ground color is pale orange. Head and thorax are covered with pale orange barley white scales.

**Male genitalia (Fig. 3B–D).** Uncus large, cap-like. Gnathos broadly developed, strongly serrate along apical margin. Cucullus about 2/3 length of tegumen, slightly dilated apically, with dense setae; sacculus with claw-shaped apically, slightly shorter than cucullus. Aedeagus large, stout, strongly bent ventrally.

**Distribution.** Korea (new record), Russian Far East, China, Japan.

**Remarks.** The genus *Protoparachronistis* Omelko, 1986 comprises four species known from Russian Far East. No species has been reported from Korea so far, but two species are newly found from the central part of the Korea peninsula.

<sup>2</sup>\**Protoparachronistis discedens* Omelko, 1986  
(Fig. 3E–G)

*Protoparachronistis discedens* Omelko, 1986: 47; Park & Ponomarenko, 2007: 90. Type locality: Primorsk Territory, Russia.

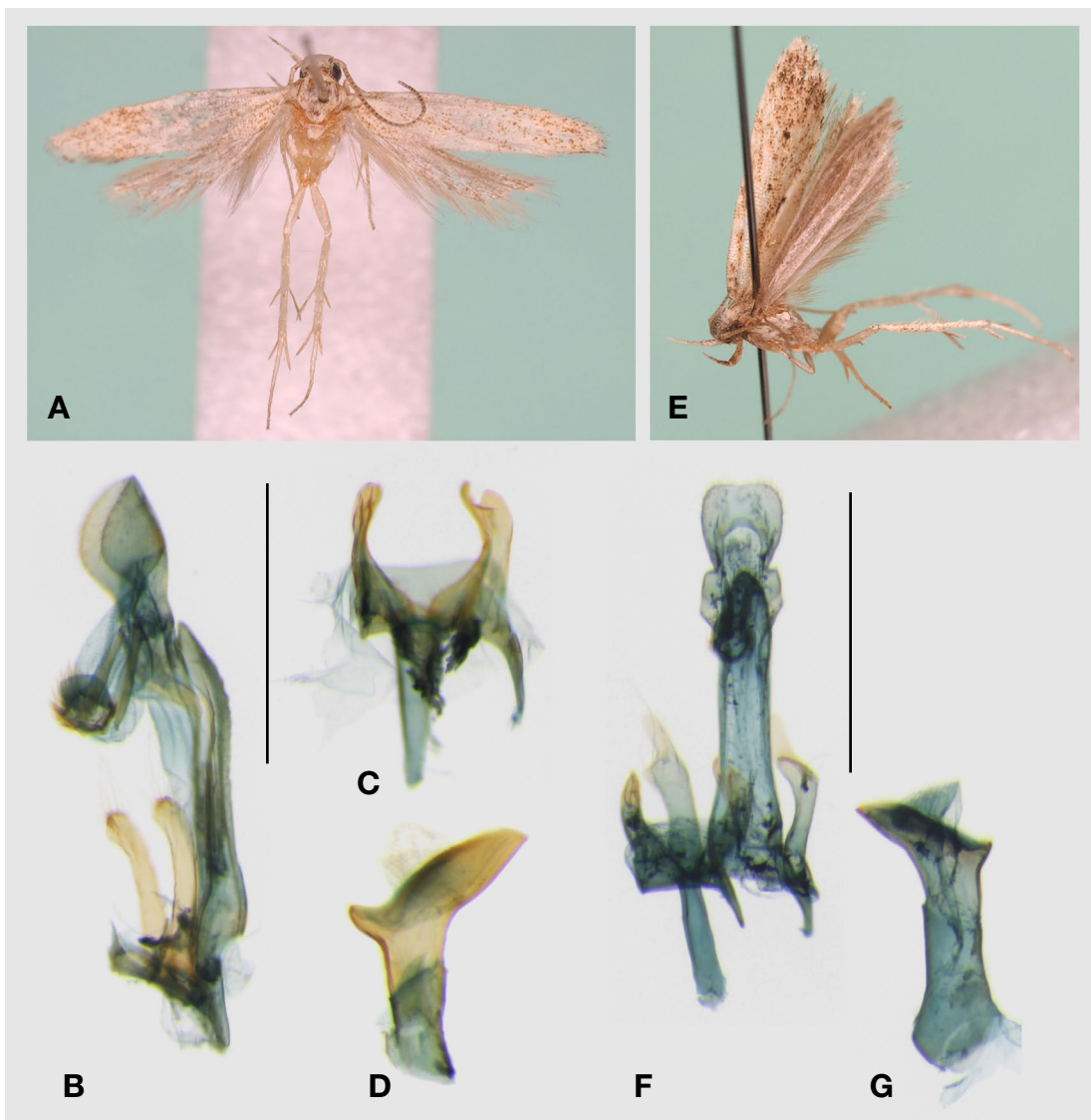
**Material examined.** Korea: 1♂, Gangwon Prov.: Chuncheon, 15 Aug 1992, leg. Park KT, gen. slide no. CIS-8028.

**Diagnosis.** Forewing length 4.5 mm. The forewing is broader than the preceding species. Forewing ground color is pale orange densely covered with dark-brown scales. Hindwing color is same as forewing. The forewing color pattern and markings of the Korean specimens more or less differ from the type species, but the male genitalia are well accordant with those of the type species.

**Male genitalia (Fig. 3F, G).** Uncus and gnathos similar to those of *P. concolor*. Distal part of cucullus elongated, spatulate. The male genitalia can be distinguished from those of the preceding species by the more elongated, spatulate distal part of cucullus.

**Distribution.** Korea (new record), Russian Far East, Japan.

Korean name: <sup>1</sup>\*극동에뿔나방 (신칭), <sup>2</sup>\*춘천에뿔나방 (신칭)



**Fig. 3.** *Protoparachronistis concolor* Omelko, 1986 (A-D): A, Adult; B, Part of male genitalia, lateral view; C, Valva, ventral view; D, Aedeagus. *Protoparachronistis discedens* Omelko, 1986 (E-G): E, Adult; F, Male genitalia, ventral view; G, Aedeagus. Scale bars: B-D, F, G=0.5 mm.

Genus *Thiotricha* Meyrick, 1886

Type species: *Thiotricha thorybodes* Meyrick, 1886.

<sup>1</sup>\**Thiotricha pancratiastis* Meyrick, 1921 (Fig. 4A-D)

*Thiotricha pancratiastis* Meyrick, 1921: 426; Clarke, 1969: 464; Sakamaki, 2013: 297. Type locality: Assam, N. India.

**Material examined.** Korea: 1♀, Jeju: Sanghyo, 7 Aug 2012, light trap, leg. Park KT, gen. slide no. CIS-6597; 1♀, Han-nam, 25 Aug 2014, light trap, leg. Park KT; 1♀, Sounheul, 25

Aug 2014, light trap, leg. Park KT, gen. slide no. CIS-6674.

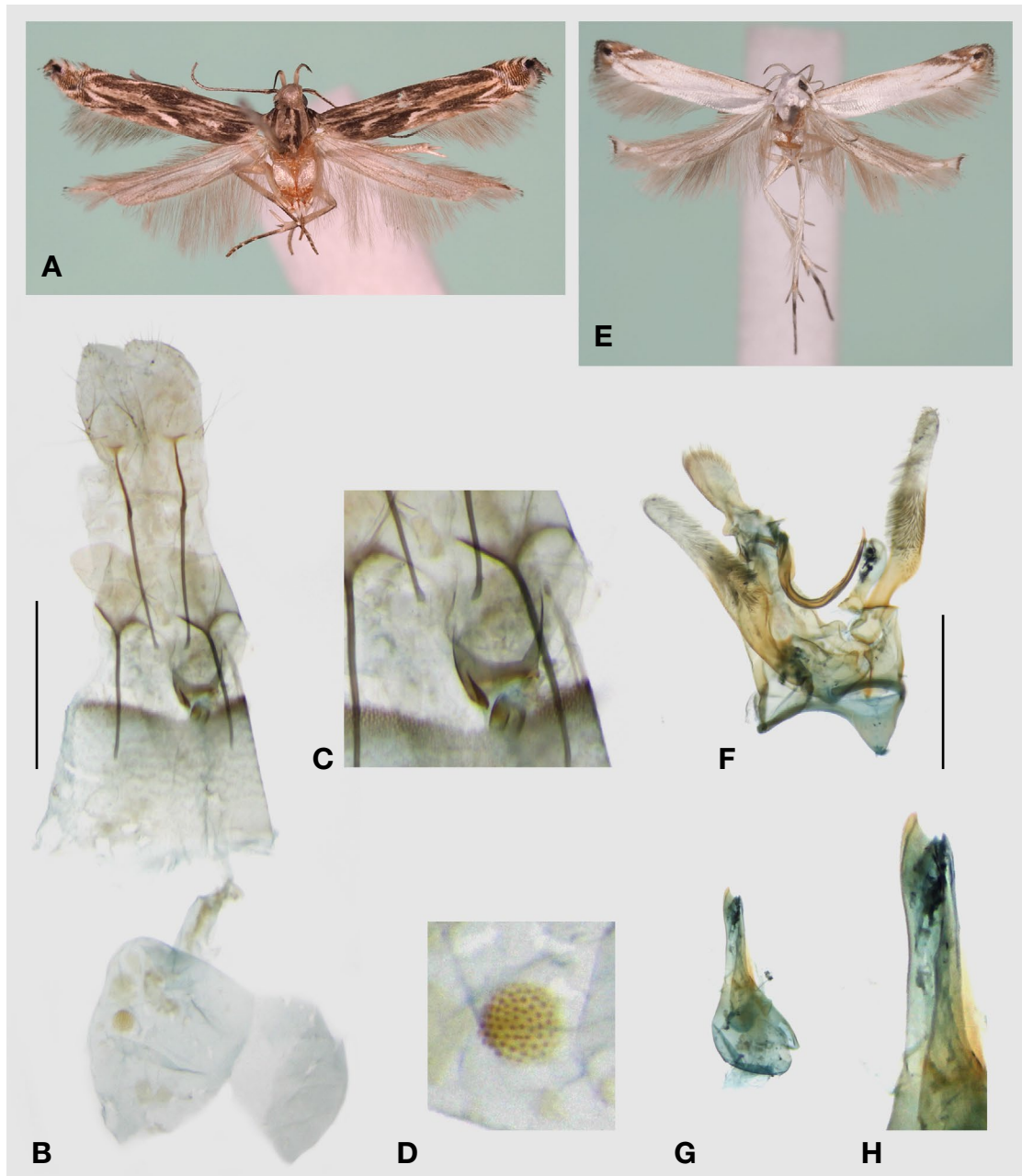
**Diagnosis.** Forewing length 5 mm. The species can be distinguished by the dark fuscous ground color of the forewing with irregular, transversal white lines.

**Female genitalia (Fig. 4B-D).** Characterized by the corpus bursae with rounded signum.

**Remarks.** This species was described from Assam, N. India, based on a single male, but the type has no abdomen.

**Distribution.** Korea (new record), India, Taiwan, Japan.

Korean name: <sup>1</sup>\*제주빛줄빨나방 (신칭)



**Fig. 4.** *Thiotricha pancratiastis* Meyrick, 1921 (A-D): A, Adult; B, Female genitalia; C, Close-up ostium; D, Close-up signum. *Thiotricha* sp. (E-H): E, Adult; F, Male genitalia; G, Aedeagus; H, Close-up distal part of aedeagus. Scale bars: B, F, G=0.5 mm.

<sup>1</sup>\**Thiotricha* sp. (Fig. 4E-H)

**Material examined.** Korea: 1♂, Jeonnam Prov.: Mt. Jirisan, 23 Jul 1985, Park KT, gen. slide no. CIS-8052.

**Diagnosis.** Forewing length 4.5 mm. This species can be distinguished from any known species of the genus by the

yellowish-white ground color of the forewing with yellowish-brown fascia anterior-distally and a black spot at apex. Only a single male was found. The species might be an undescribed species, being described in a separate paper by a different author.

**Male genitalia (Fig. 4F-H).** Characterized by the valva

Korean name: <sup>1</sup>\*지리산빛줄빨나방 (신칭)

broadly expanded at middle and narrowed in basal 1/4.

**Distribution.** Korea (new record).

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## CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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