

A Review of the Genus *Nacoleia* (Lepidoptera, Crambidae) from Korea, with Two Newly Recorded Species

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한국산 *Nacoleia* 속의 분류학적 정리(나비목, 포충나방과)

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ABSTRACT: A total of six species of the genus *Nacoleia* is recognized from Korea. Among them, two species, *Nacoleia inouei* Yamanaka, 1980 and *Nacoleia satsumalis* South, 1901 are reported for the first time from Korea. All the known species were enumerated with their available information including the collecting localities, the distributional ranges and host plants.

Key words: Taxonomy, Lepidoptera, Crambidae, New record, Korea

초 록: 본 연구를 통해 한국산 *Nacoleia*屬은 6종으로 정리된다. 이 중 2종(*Nacoleia inouei* Yamanaka, 1980 및 *Nacoleia satsumalis* South, 1901)은 우리나라에서는 처음으로 보고된다. 본 고에서는 한국산 *Nacoleia*속의 기록종을 중심으로 분류학적으로 정리함과 동시에 한국미기록 2종에 대하여 외부형태 및 생식기특징을 도해하고, 채집지기록 및 국내외 분포정보 등을 제시하였다.

검색어: 분류, 나비목, 포충나방과, 미기록종, 한국

Genus *Nacoleia* belongs to the subfamily Pyraustinae of the family Crambidae, with more than 400 described species in the world (Bae et al., 2008). A total of 4 species have been recorded from Korea to date (Bae et al., 2008; Byun et al., 2009). During the course of the recent survey, we found two newly recorded species of the genus *Nacoleia*. In this study, we reviewed the genus with two newly recorded species.

The aim of the present study is to update our knowledge of the fauna of the genus *Nacoleia* in Korea with recently collected materials. All the examined material for each species is enumerated with their localities and available information.

Also the checklist of the genus *Nacoleia* in Korea is provided.

Materials and methods

Material examined for this study was deposited in the entomological collection of Hannam University, Daejeon, Korea (EHNU). All available genitalia were dissected and made on slide glass with Euparal mountant for identification of the species. The color standard for the description of adults was based on the Methuen Handbook of Colour (Kornerup and Wanscher, 1978). Abbreviation used in this study is as follows: TL-type locality, GS-genitalia slide number.

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Taxonomic accounts

Order Lepidoptera Linnaeus, 1758 나비목
Family Crambidae Latreille, 1810 포충나방과
Subfamily Pyraustinae 들명나방아과

Genus *Nacoleia* Walker, 1859

=*Semioceros* Meyrick, 1884

=*Aplomastix* Warren, 1890

=*Metasiodes* Meyrick, 1894

=*Orthocona* Warren, 1896

***Nacoleia chrysorycta* (Meyrick, 1884)** 흰무늬애기들명나방 (Fig. 1)

Semioceros chrysorycta Meyrick, 1884: 320. TL: Australia.

Nacoleia contingens Moore, 1885: 273. TL: Sri Lanka.

Adult. Wingspan 17 mm. Ground color of forewing and

hindwing orange with distinct blackish antemedial and postmedial lines and patterns. Termen of hindwing with protruded area medially.

Distribution. Korea, China, Japan, Taiwan, Myanmar, Sri Lanka, Australia.

Remarks. Adults fly from June to July (Bae et al., 2008).

***Nacoleia commixta* (Butler, 1879)** 얼룩애기들명나방 (Fig. 2)

Samea commixta Butler, 1879: 453. TL: Japan

Nacoleia costisignalis Moore, 1885: 273. TL: Sri Lanka.

Adult. Wingspan 17 mm. Forewing and hindwing with ground color yellowish brown; postmedial line black.

Distribution. Korea, China, Japan, Taiwan, Nepal, India, Sri Lanka.

Remarks. Adults appear from May to August. It is distributed countrywide in Korea. This species is superficially similar to



Figs. 1-6. Adults of the genus *Nacoleia*: 1, *N. chrysorycta* (Meyrick, 1884); 2, *N. commixta* (Butler, 1879); 3, *N. inouei* Yamanaka, 1980; 4, *N. satsumalis* South, 1901; 5, *N. sibirialis* (Milliere, 1879); 6, *N. tampiusalis* (Walker, 1859).

N. sibirialis, but it can be distinguished by the light color of the wing (Bae et al., 2008).

***Nacoleia inouei* Yamanaka, 1980** 가검은애기들명나방(신칭)
(Figs. 3, 7, 8)

Nacoleia inouei Yamanaka, 1980, Tinea 10: 323, Figs 1, 6, 7.

Adult (fig. 3). Wingspan 12 mm. Forewing with ground color pale creamy yellow; a blackish gray scales along the costa, reaching to 3/4 of the costa, two small blackish spots presented near apex; antemedial, medial and postmedial line blackish gray. Costa straight, with somewhat rounded apex. Cilia pale creamy yellow, dark gray near tornus. Hindwing with same ground color as forewing, a blackish gray area developed outer 1/3; antemedial and postmedial line blackish gray, the latter with outward convex near middle part. Cilia pale yellow, mixed with grayish color basally.

Male genitalia. As shown in Fig. 7.

Female genitalia. As shown in Fig. 8.

Material examined. 1♂, 1♀, Tamra Univ., Seoguipo-city, Jeju, 5.IX.2012 (S.S.Kim), genitalia slide no. 4054; 1♀, Umeori (Geoncheon), Sannaemyeon, Geongju Prov. Gyeongbuk, 16.VII.2012 (S.S. Kim), genitalia slide no. 4055-coll. EHNU.

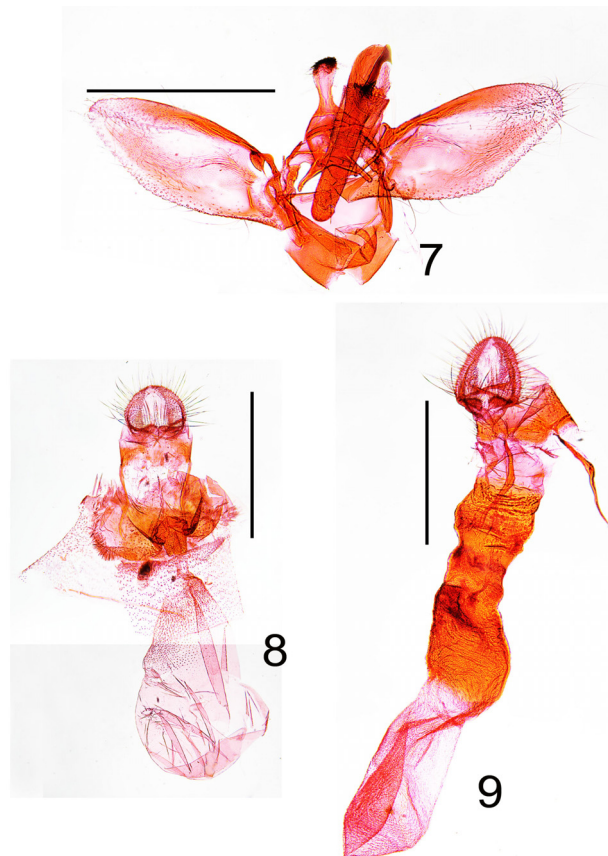
Distribution. Korea (new record), Japan.

Remarks. Adults fly on August in Japan (Inoue, 1982).

***Nacoleia satsumalis* South, 1901** 원무늬애기들명나방(신칭)
(Figs. 4, 9)

Nacoleia satsumalis South, 1901: 461.

Adult (Fig. 4). Wingspan 16 mm. Forewing with ground color pale yellow; costa nearly straight, with slightly narrowed apex; a blackish basal line running from 1/5 of costa to 1/4 of dorsum; two ring-like pattern presented on costa; one ring-like pattern on the outer side of basal line; two short lines from the below of costal ring-like pattern at middle; a blackish line originated from 5/6 of costa towards dorsum then, abruptly curved to inside, running to under the cell, then curved again to 3/4 of dorsum; rather dark grayish along the termen. Cilia dark gray mixed with light yellow, rather darkened basally. Hindwing pale yellow; antemedial and postmedial lines grayish black; distal 1/3 of hindwing slightly dark gray. Cilia same as that of



Figs. 7-9. Male and female genitalia: 7 male genitalia of *Nacoleia inouei* Yamanaka; 8, female genitalia of *Nacoleia inouei*; 9, female genitalia of *Nacoleia satsumalis* South <scale bars: 1 mm>.

forewing.

Male genitalia. Unknown.

Female genitalia. As shown in Fig. 9.

Material examined. 1♀, Bangdongyaksu, Mt. Bangtae, Inje, 21.VIII.2012 (S.S.Kim), genitalia slide no. 4056-coll. EHNU.

Distribution. Korea (new record), Japan.

***Nacoleia sibirialis* (Milliere, 1879)** 가루뿌린들명나방 (Fig. 5)

Stenia sibirialis Milliere, 1879: 139. TL: Russia (Askold Is.).

Agrotera(!) fenestralis Christoph, 1881: 39. TL: Russia (Amur).

Nacoleia maculalis South, 1901: 462.

Adult. Wingspan 15-18mm. Forewing and hindwing with patterns complicated, light yellow on the inner side of postmedial line.

Distribution. Korea, China, Japan, Russia.

Remarks. Adults fly from May to October (Bae et al., 2008). In “Microlepidoptera of Korea” (Park, 1983), this species was listed as *Nacoleia maculalis* South.

***Nacoleia tampiusalis* (Walker, 1859)** 노랑애기들명나방 (Fig. 6)

Botys tampiusalis Walker, 1859: 704. TL: Malaysia (Sarawak).

Adult. Wingspan 15-17mm. Forewing and hindwing light grayish yellow. Hindwing with postmedial line slightly black, terminal area without blackish brown.

Distribution. Korea, China, Japan, Nepal, Indonesia.

Remarks. This species can be found countrywide in Korea including Jeju island (Bae et al., 2008).

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