

## A New Record of *Coleophora virgaureae* (Lepidoptera: Gelechioidea: Coleophoridae) from Korea

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## 한국미기록 *Coleophora virgaureae* (나비목: 불나방상과: 통나방과)의 보고

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**ABSTRACT:** *Coleophora virgaureae* Stainton of Coleophoridae is reported for the first time from Korea, with a description and illustrations of the adult and genitalia are presented based on a single female specimen collected from Mt. Suri, Gyeonggi-do.

**Key words:** *Coleophora*, *Coleophoridae*, New record, Korea

**조 록:** 통나방과의 1종, *Coleophora virgaureae* Stainton의 국내분포를 처음으로 보고한다. 경기도 수리산에서 채집된 암컷 표본을 근거로 본 종의 종 동정에 필요한 성충과 생식기 사진을 함께 기재한다.

**검색어:** *Coleophora*, 통나방과, 미기록종, 한국.

The genus *Coleophora* Hübner, which belongs to the subfamily Coleophorinae (Lepidoptera: Gelechioidea: Coleophoridae), is commonly known as “casebearers”. Larvae construct portable cases and feed on living tissue of various plants, and the pupation takes place in the case (Baldizzone et al., 2006). Constructing behavior and shape of case vary among species, and the related cases are correlated with habitats of host plants.

The family Coleophoridae is subdivided into four subfamilies (Hodges, 1998), with more than 1,340 species worldwide, having a great diversity in the Western Palearctic and Central

Asia (Baldizzone et al., 2006). The family Coleophoridae is distinguished from the allied group of families by the following characteristics: i) hindwing with  $R_s$  and  $M_1$  separate; ii) hindwing with  $M_3$  and  $CuA_1$  shape (e.g. separate, connate or stalked); iii) antennal pecten present; iv) valva divided with the costa developed as a free lobe in male genitalia (Hodges, 1998). The genus *Coleophora* is the largest genus of the family with 1,326 described species (Baldizzone et al., 2006), and it is a single genus in Korea. In Korea, since Park and Baldizzone (1992) had reported 16 species of the genus, Baldizzone and Savenkov (2002) added four species; *C. adpersella* Benander, *C. parki* Baldizzone & Savenkov, *C. sternipennella* (Zetterstedt), and *C. ulmivorella* Oku. Recently, Kim and Park (2009) reviewed the genus *Coleophora* in Korea, reporting 27 species.

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In this study, *C. virgaureae* Stainton is reported for the first time from Korea. External morphology including adult and genitalia of this species are examined and illustrated.

## Materials and Methods

The material examined is deposited in the Korea National Arboretum (KNAE), Pocheon, Korea. Wing patterns, external structures and genital characters were examined, and digital images were made with Image Lab. Ver. 2.2.4.0 by MCM design Ltd. Color standard for the description of adults follows Kornerup and Wanscher (1978), and the terminology for the genitalia follows Razowski (1989).

## Systematic account

Order Lepidoptera Linnaeus, 1758

Family Coleophoridae Hübner, [1825]

Genus *Coleophora* Hübner, 1822, Type species: *Tinea anatipennella* Hübner, 1796.

Genus *Coleophora* was established by Hübner, based on *Tinea anatipennella*. In adult, head smooth-scaled; labial palpi recurved; maxillary palpi minute, 2-segmented. Wings usually very elongated and hindwing spindle-shaped with long fringes. Maculation shades of brown or gray, sometimes mostly white, and unicolorous or with various marking or stripes, but rarely more colorful and with iridescence. Abdomen with paired patches of short, chitinous spines on the dorsal surface of segments fully exposed in *Coleophora*, but concealed by overlying scales in other genera. In some species the dorsal surface of the first abdominal segment may display peg like spines bordering a broad shield.

*Coleophora virgaureae* Stainton, 1857 취통나방 (신칭) (Fig. 1)

*Coleophora virgaureae* Stainton, 1857, Ent. Ann., 1857: 105; Razowski, 1990: 124-125; Roweck and Savenkov, 2002: 201-218. Type locality: Niemcy, Germany.

*Coleophora virgaureella* Doubleday, 1859: 33.

*Coleophora cinerea* Toll, 1953: 103.

**Diagnosis.** This species is similar to *Coleophora cristata* Baldizzone in the superficial and in the genitalia structure, but it clearly differs from the latter by the transtilla is smaller with a sharper point in the dorsal margin; sacculus is broader with the longer and weaker teeth in the dorso-caudal angle; the shorter aedeagus with thinner dorsal process in the male genitalia; ductus bursae longer and thinner; signum rather strong thorn-like, pointed apically in the female genitalia.

**Adult (Fig. 1a, 1b).** Wingspan 12.0-15.0 mm. Head, thorax and abdomen reddish brown. Labial palps white, suffused with reddish scales on outer surface. Antenna entirely white, with the exception of a short tuft of reddish hairs at the base of the first segment. Forewing light ash brown, streaked reddish along the veins, with brown scales in the apical area. Fringes white at apex and light brown at the dorsal costa. Hindwing ash brown.

**Male genitalia.** Unavailable in this study.

**Female genitalia (Fig. 1c).** Papillae analis small, narrow and elongate; apophyses posteriores about twice the length of the apophyses anteriores. Ostium bursae bulb-like on left side, narrow, and opening at the distal margin. The ductus bursae very long, about ten times longer the subgenital plate; in its first part it is covered with tiny conical spines in two bands, the remainder of the ductus bursae is transparent and shows many coils. Corpus bursae membranous; signum thorn-like and very sharp.

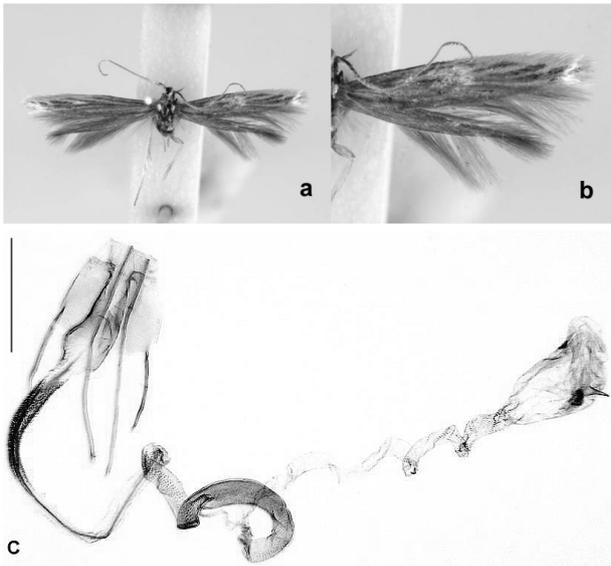
**Material examined.** 1 ♀, Mt. Suri, Gunpo, 7.X.2000 (Bae, Park, Lee & Kim), genitalia slide no. 5231.

**Host plant.** *Aster tripolium* L. and *Solidago virgaurea* L. (Asteraceae) (Emmet, 1996).

**Distribution.** Korea (new record), Japan (Honshu, Shikoku, and Kyushu), Kazakhstan, Caucasus, Siberia eastward to Baikal area, Altai, Europe (except the Balkan Peninsula).

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**Fig. 1.** *Coleophora virgaureae* Stainton. a. adult; b. wing pattern; c. female genitalia (Scale bar: 1.0 mm).

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