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Original article

Seven species of Olethreutinae (Lepidoptera: Tortricidae) new to Korea

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ABSTRACT

Seven species of Olethreutinae, namely, *Bactra venosana* (Zeller), *Eudemis brevisetosa* Oku, *Gypsonoma dealbana* (Frölich), *Hedya iophaea* (Meyrick), *Lobesia takahirai* Bae, *Pammene nemorosa* Kuznetsov, and *Phaecedophora fimbriata* Walsingham are reported from Korea for the first time. Photos of adult habitus and genitalia are provided if available.

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Introduction

Olethreutinae is one of three subfamilies within the family Tortricidae (Horak 1998). In contrast to the other two subfamilies, the monophyly of Olethreutinae has been strongly supported by morphological (Horak 1998) and molecular studies (Regier et al 2012). Two synapomorphies define olethreutine moths, namely, the presence of a single whorl of scales on the antennal flagellomeres and the fusion of the phallus to the juxta through the anellus in the male genitalia. Olethreutinae currently includes 4,417 species in 355 genera worldwide (Gilligan et al 2010), including several economically important pest species such as the codling moth (*Cydia pomonella*) and the Oriental fruit moth (*Grapholita molesta*).

The first record of Olethreutinae from Korea was made by Walsingham (1900) who reported 12 species. Park (1983) revised the Korean species list of Tortricidae, including 103 species under Olethreutinae. Since then, many studies (e.g. Bae and Park 1998; Byun 1999; Byun et al 1998; Byun and Kim 2015; Nasu and Byun 2007; Razowski 1999; Sohn 2007) have added 142 species to the subfamily in the country. In this paper, we report seven species of

Olethreutinae new to Korea. Photos of adult habitus and genitalia, if available, are provided (Figures 1–18).

Materials and methods

All the specimens examined here are deposited in the Insect Specimen Room, Department of Plant Medicine, Chungbuk National University, Cheongju, Korea and the National Institute of Biological Resources (NIBR), Incheon, Korea.

Taxonomic accounts

Order Lepidoptera
Family Tortricidae
Subfamily Olethreutinae

Genus *Bactra* Stephens, 1834

Bactra venosana (Zeller, 1847) 향부자속애기잎말이나방(신칭)
(Figures 1, 8, and 14)

Phoxopteris venosana Zeller, 1847: 738. Type locality: Italia (Sicily, Syracuse).

Aphelia venosana: Herrich-Schäffer, 1849: 244.

Bactra truculenta Meyrick, 1909: 586. Type locality: India (North Coorg, Dibidi).

Bactra venosana: Kennel, 1910: 472.

Bactra scythropa Meyrick, 1911: 254. Type locality: Indonesia (Timor, Dili).

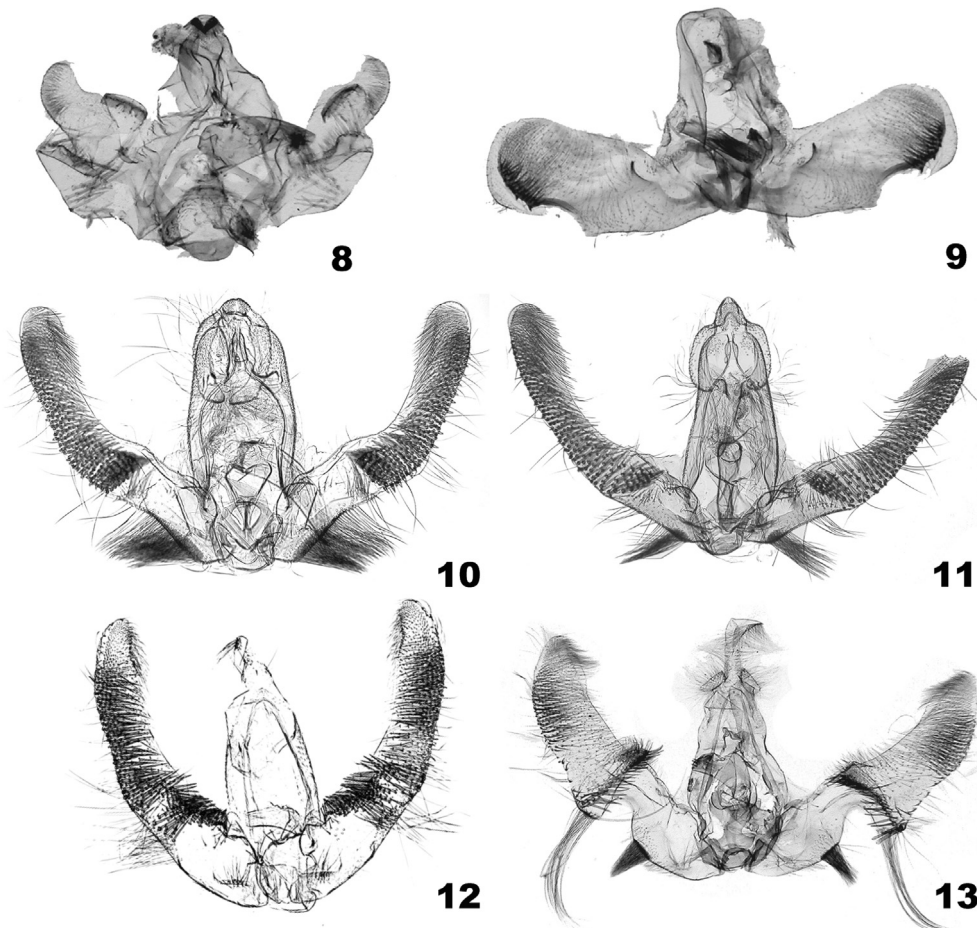
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Figures 1–7. Adults of Korean Tortricidae: 1, *Bactra venosana* (Zeller), male; 2, *Eudemis brevisetososa* Oku, male; 3, *Eudemis lucina* Liu and Bai, male; 4, *Lobesia takahirai* Bae, female; 5, *Phaecedophora fimbriata* Walsingham, male; 6, *Gypsonoma dealbana* (Frölich), male; 7, *Hedyia iophaea* (Meyrick), male.



Figures 8–13. Male genitalia of Korean Tortricidae: 8, *Bactra venosana* (Zeller); 9, *Gypsonoma dealbana* (Frölich); 10, *Eudemis brevisetososa* Oku; 11, *Eudemis lucina* Liu and Bai; 12, *Hedyia iophaea* (Meyrick); 13, *Phaecedophora fimbriata* Walsingham.

Bactra geraropa Meyrick, 1931: 147. Type locality: Taiwan (Taihoku).
Bactra banosii Gozmány, 1960: 416. Type locality: Egypt (Sohag).
Bactra (*Chiloides*) *venosana*: Diakonoff, 1956: 33.

Description. Forewing (Figure 1) length 6.1–7 mm, brownish gray, suffused with dark brown along the costal area, with dark gray suffusion from the distal end of the discal cell, broadened to the outer margin; white markings from the distal end of the discal cell

to apex; costal strigulae gray. Hind wing pale brownish gray, paler in the anal area.

Male genitalia (Figure 8). With small socii; costa of valva roundly concave at distal one-third region; cucullus clavate; valvula long, narrow in basal two third of the region, spatulate, with comb of bristles in distal one-third portions; the saccular margin protruding distally, with strong bristles; vinculum with a denticulate, triangular flap; phallus robust, straight, with spiniform cornuti.

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