

A New Record of Thyridid Moth (Lepidoptera, Thyrididae) in Korea

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ABSTRACT

A thyridid species, *Rhodoneura sugitanii* (Matsumura), is newly recorded from the southern part of South Korea. Brief discussions of the diagnostic characters of *Rhodoneura* and the species newly recorded to Korea, *R. sugitanii*, are provided with illustrations of male and female genitalia of *R. sugitanii*.

Key words: *Rhodoneura sugitanii*, Thyrididae, taxonomy, Korean Peninsula

INTRODUCTION

The Thyrididae are small-medium to medium sized moths with 760 species, but about one third of which are unnamed (Munroe, 1982; Heppner, 1991; Robonson et al., 1994; Holloway et al., 2001). The wings are broad and typically reticulated with a similar pattern on both forewing and hindwing. The systematic relationship of Thyrididae with Pyralidae has been frequently mentioned because of the general appearance of their larvae (Common, 1970; Whalley, 1976), but the former is distinguished by the lack of abdominal tympanal organ and the proboscis without basal scaling (Minet, 1983; Scoble, 1992). In addition, the lateral lobes on the first abdominal tergite, the mid-legs not in contact with the substrate, the vestigial vein CuP of hindwing are apomorphies of the family (Holloway et al., 2001).

The Thyrididae are divided into four subfamilies: Charideinae occur in Afrotropical, Thyridinae are pantropical, Striglinae are pantropical, and Siculodinae occur widely in the world (Holloway et

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al., 2001). The monophyly of the former three subfamilies is defined. However, the Siculodinae is not monophyletic since this subfamily includes systematically ambiguous genera (Scoble, 1992).

Biology of thyridid moths is as follows: eggs are upright type and are ribbed; adults are forest dwellers and nocturnal; they rest with very characteristic posture by steeply raising fore part of the body and outstretching the wings; larvae of many species bore in stems or live in rolled or tied leaves, sometimes forming galls; and pupae form oval, silk-lined cell, probably in the leaf litter on the ground (Common, 1990; Scoble, 1992; Holloway et al., 2001).

Park and Byun (1990), in the revision of the Korean Thyrididae, identified four genera and nine species including one new species, *Rhodoneura shini*, and one new subspecies, *Thyris fenestrella seoulensis*. Park (1993) listed six species of Thyrididae from North Korea based on the materials preserved in Hungarian Natural History Museum, Budapest. Up to date, nine species comprising four genera are known in the Korean peninsula.

The purpose of the present work is to report one unrecorded species of *Rhodoneura* from the southwestern part of Korea. Terminology of morphology and genitalia refers to Scoble (1992) and the specimen examined is now preserved in Mokpo National University, Muan-gun, Jeonnam, Korea.

SYSTEMATIC ACCOUNTS

Rhodoneura Guenée, 1858, in Boisduval and Guenée. Hist. nat. Insectes (Spec. gén. Lépid.) 10 (Atlas): Siculides Pl. 1: fig. 8.

= *Oscia* Walker, 1863, J. Proc. Linn. Soc. (Zool.) 7: 73.

Type species. *Rhodoneura pudicula* Guenée, 1858, in Boisduval and Guenée, Hist. nat. Insectes (Spec. gén. Lépid.) 10 (Atlas): Siculides pl. 1: fig. 8 by monotypy.

Diagnosis. Most members of *Rhodoneura* show the yellowish wing color with dark median fascia except *R. sugitanii*, which has the whitish wing. Compared to *Striglina* Guenée, the long uncus, the well developed, loop-forming gnathos arms with a medial projection, the slender membranous valva, the juxta with a pair of large sclerotized processes, and the slender aedeagus without cornutus in male genitalia diagnose the members of *Rhodoneura*. Female genitalia are distinct by the simple ostium bursae, slender ductus bursae and membranous semi-ovate corpus bursae with a slender or stellate signum. The shape of female genitalia of *Rhodoneura* is similar to that of *Striglina*, but the simple, sterigmata and straight ductus bursae of *Rhodoneura* would be distinguishing characters.

**Rhodoneura sugitanii* Matsumura (Fig. 1)

Rhodoneura sugitanii Matsumura, 1921, Thousand Insects Japan (Additam.) 4: 959, pl. 56: 7.

Diagnosis. This species is easily distinguished from the related species of *Rhodoneura* by the whitish ground color and multiple transverse lines forming brown reticulate fascia on both forewing and hindwing. In the male genitalia, the large nipple shaped basal process of juxta and slightly

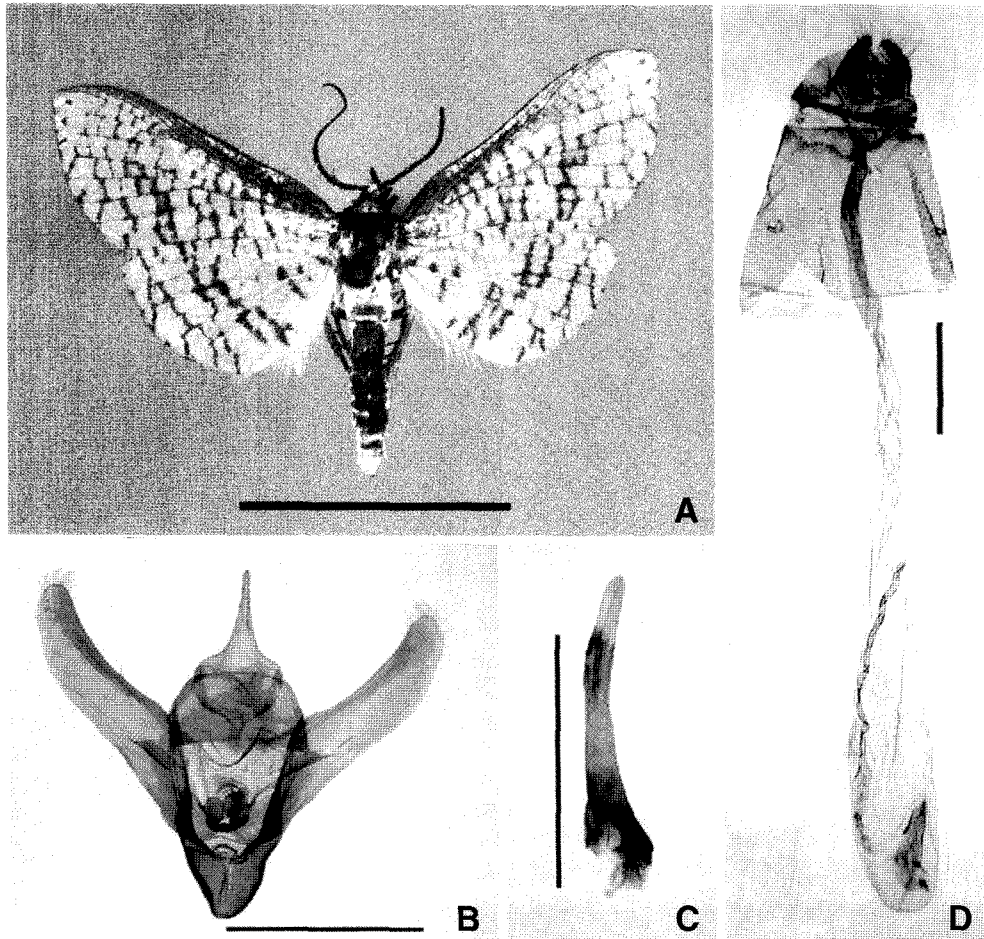


Fig. 1. *Rhodoneura sugitanii*. A, male dorsal body; B, male genitalia; C, aedeagus; D, female genitalia. Scale bar = 10 mm (A), 1 mm (B-D).

upturned valva are distinguishing characters. The female genitalia is distinct by the V-shaped antrum of ostium bursae, long slender ductus bursae and club-shaped corpus bursae without a signum. The lack of signum of corpus bursae in *R. sugitanii* is similar to *R. vittula*, but the relatively thinner ductus bursae is a distinguishing character. The other species of *Rhodoneura* (*R. erecta* (Leech), *R. pallida* (Butler), *R. shini* Park and Byun) in Korea are easily distinguished from *R. sugitanii* by the presence of signum of corpus bursae in the female genitalia.

Description. Wingspan 20–22 mm (Fig. 1A). Male antennae filiform; frons simple intermixed with white and greyish scales; labial palp long, upturned with minute third segment. Legs basally white; tibia and tarsus intermixed with white and brown scales. Wings ground color white; forewing with multiple brownish transverse lines from basal to termen; hindwing multiple transverse lines, medially about three lines forming a reticulate band. Abdomen dorsally greyish, distally white; tympanal organ absent. Male genitalia (Fig. 1B–C). Uncus long, tapering; gnathos arms unite

medially to form a semi-round loop and the medial tip projected; juxta membranous, basally with a pair of large nipple shaped processes; saccus deep and tapering. Valva membranous, slender, distally upwardly bent; harpe present. Aedeagus slender tapering, distal half weakly sclerotized; vesica slender, without a cornutus. Female genitalia (Fig. 1D). Papillae anales semi-rounded, not projected; sterigmata simple without sclerotized process; ostium bursae V-shaped with thin sclerotized antrum; ductus bursae slender; corpus bursae long club-shaped, without a signum.

Material examined. [JN] 3♂ Mt. Duryun, Haenam, 126° 37'E, 34° 28'N, 12 Jul. 2004 (coll. MNU); 2♂ Mt. Seungdal, Muan, 5 Jul. 2004 (coll. MNU); [JJ] 1♀ Mt. Halla, Namjeju, 15 Aug. 2003 (coll. MNU).

Biology. Adults are flying in July and August in Korea. In Japan this species was collected not in great numbers during June and July (Inoue et al., 1982).

Distribution. Korea, Japan, China.

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한국산 창나방과 (나비목)의 1미기록종 보고

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요 약

한국 남부지역에서 채집된 나방을 동정, 분류한 결과 창나방과 *Rhodoneura* 속의 1미기록종인 *R. sugitanii* Matsumura를 새로 발견하여 보고한다. *Rhodoneura*속 및 *R. sugitanii*의 분류학적 특징을 간략히 기술, 논의하고 암컷 및 수컷생식기를 도해하였다.