

HOSTED BY



ELSEVIER

Contents lists available at ScienceDirect

Journal of Asia-Pacific Biodiversity

journal homepage: <http://www.elsevier.com/locate/japb>Journal of
Asia-Pacific
Biodiversity

Original article

Taxonomic review of the genus *Stenotus* Jakovlev (Hemiptera: Heteroptera: Miridae) from the Korean Peninsula

Junggon Kim, Sunghoon Jung*

Laboratory of Systematic Entomology, Department of Applied Biology, College of Agriculture and Life Sciences, Chungnam National University, Daejeon, South Korea

ARTICLE INFO

Article history:

Received 15 December 2015

Received in revised form

26 December 2015

Accepted 30 December 2015

Available online 8 January 2016

Keywords:

Heteroptera

Miridae

Stenotus

new record

Korean Peninsula

ABSTRACT

A genus *Stenotus* Jakovlev (Hemiptera: Heteroptera: Miridae) is reviewed taxonomically from the Korean Peninsula with a new record *Stenotus binotatus* (Fabricius 1794). Morphological information, such as descriptions of male and female genitalia, of the Korean species with photographs and illustrations, and a key to the Korean species are provided.

Copyright © 2016, National Science Museum of Korea (NSMK) and Korea National Arboretum (KNA). Production and hosting by Elsevier. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

The family Miridae (Hemiptera: Heteroptera: Cimicomorpha), also called plant bugs, is the largest group of Heteroptera in the world (Schuh and Slater 1995), and contains major insect pests (Wheeler 2000a) and predatory groups which can be used as biological control agents (Wheeler 2000b). The genus *Stenotus* Jakovlev comprises, to date, 53 extant species in the world (Schuh 2002–2013). These *Stenotus* species are known as insect pests in some countries, because most of them use the plant Family Poaceae like grasses and wheat as host plants (Wheeler 2001). Among them, *Stenotus binotatus* (Fabricius, 1794) is most famous for insect pests of alfalfa, apple and wheat (Braumah et al 1982; Swallow and Cressey 1987; Wheeler 2001), and was introduced to some regions (e.g. tropical Africa) (Kerzhner and Josifov 1999). Among them, 11 species are known in the Palearctic Region and only one species is recorded from the Korean Peninsula (Kerzhner and Josifov 1999): *Stenotus rubrovittatus* (Matsumura 1913). In this paper, a new record of *S. binotatus* is reported from the Korean Peninsula, and the genus *Stenotus* is reviewed taxonomically with

the first descriptions and illustrations of male and female genitalia and *S. rubrovittatus*. A key to the Korean species is also provided.

Materials and methods

Photographs of specimens examined were taken by a Leica M165C microscope (Germany). Measurements were taken using the software program of the same microscope. All measurements are given in millimeters (mm). To observe male and female genitalia, a genital segment of each specimen was detached, and then soaked and boiled in 10% KOH solution at 70°C at 3–5 minutes until it became transparent. After it was placed in distilled water, it was dissected to examine genitalia. Terminology follows mainly Yasunaga (1991), Braimah et al (1982), and Yasunaga and Schwartz (2007). The depository of the specimens is the Laboratory of Systematic Entomology, Chungnam National University, Daejeon, Korea. An asterisk (*) means its additional distribution and host plant.

Taxonomic accounts

Genus *Stenotus* Jakovlev 홍색얼룩장님노린재속

Oncognathus Fieber, 1858: 303. Junior homonym of *Oncognathus* Lacordaire, 1854, Coleoptera; syn. Reuter, 1896: 122. Type species by monotypy: *Lygaeus binotatus* Fabricius, 1794.

Stenotus Jakovlev, 1877: 288. Type species by monotypy: *Stenotus sareptanus* Jakovlev, 1877.

* Corresponding author. Tel.: +82 42 821 5767; fax: +82 42 823 8679.

E-mail address: jung@cnu.ac.kr (S. Jung).

Peer review under responsibility of National Science Museum of Korea (NSMK) and Korea National Arboretum (KNA).

Umslopogas Kirkaldy, 1902: 254. Syn. Poppius, 1910: 36; Reuter, 1910: 160.
Zulaimena Kirkaldy, 1902: 256. Syn. Poppius, 1910: 36; Reuter, 1910: 160.
Korasiocapsus Kirkaldy, 1902: 260. Syn. Reuter, 1907: 10.
Makua Kirkaldy, 1902: 282. Syn. Poppius, 1912: 60.
Nymannus Distant, 1904: 195. Syn. Carvalho, 1981: 5.
Tancredus Distant, 1904: 430. Syn. Poppius, 1911: 16.
Indoelium Kirkaldy, 1906: 138. Syn. Distant, 1911: 240.

Diagnosis. Differs from other representatives of Mirini as follows: first segment of hind tarsi 1.5–2 times as long as second segment (Figure 1F); male genitalia membranous with sclerites (Figures 2C, 2D, 3C, and 3D).

Key to the species of Korean *Stenotus*

1. Antennae yellowish green, first antennal segment with erect dark setae, collar with dark setae, pronotum with a pair of dark spot, hemelytra with longitudinal dark brown stripe, femur yellowish green, vein yellowish green, apex of hypophysis of left paramere somewhat blunt, vesica of male membranous with six sclerites, genitalia of female with distinct sclerotized rings.....*S. binotatus*.
- Antennae reddish brown, first antennal segment without any setae, collar without any setae, pronotum without any spot,

hemelytra with longitudinal reddish brown stripe, femur reddish brown, vein reddish brown, apex of hypophysis of left paramere sharp, vesica of male membranous with three sclerites, genitalia of female with small and thin sclerotized rings *S. rubrovittatus*.

***Stenotus binotatus* (Fabricius, 1794)** 두점박이장님노린재(신칭)
 (Figures 1A–C, 1F–H, and 2A–F)

Lygaeus binotatus Fabricius, 1794: 172.

Cimex paykulli Turton, 1802: 609.

Stenotus sareptanus Jakovlev, 1877: 289. Syn. Reuter, 1885: 159.

Diagnosis. Differs from other species of *Stenotus* by generally yellowish green body, generally yellowish green antennae (Figures 1A and 1B), densely covered with erect dark setae on the first antennal segment (Figure 1G), some dark erect setae on collar (Figure 1H), a pair of dark spots on the pronotum, longitudinal dark brown line on hemelytra, generally yellowish green legs, yellowish green vein (Figures 1A and 1B) and left paramere with large sensory lobe (Figure 2A).

Redescription. MALE: Body elongate–oval, length 6.12–6.13.

Coloration: yellow to yellowish green and dark brown. Head: generally yellow to yellowish green; compound eyes dark brown; antennae generally brown, first antennal segment yellowish brown; tylus dark brown; rostrum generally yellowish green, third rostral segment brown, fourth rostral segment dark brown. Thorax: pronotum generally yellowish green, with a pair of spots on

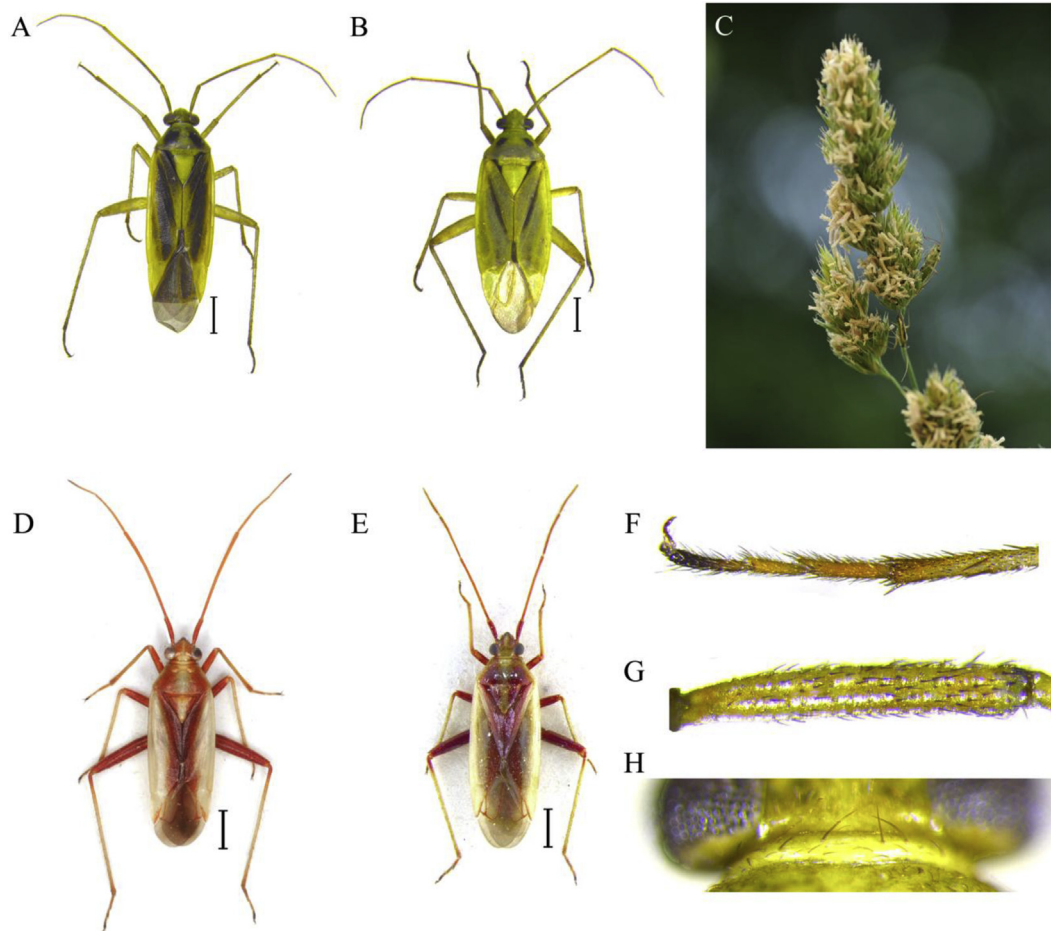


Figure 1. Diagnostic characters and host plant of Korean *Stenotus* species. A, B, F, G, H, *Stenotus binotatus*; D, E, *Stenotus rubrovittatus*; C, host plant of *S. binotatus*. A, Male; B, female; C, adults on host plant [*Dactylis glomerata* (Linnaeus, 1753) (Poaceae; Orchard grass)]; D, male; E, female; F, tarsus; G, setae of first antennal segment; H, setae on collar. <scale bar: 1 mm>

Download English Version:

<https://daneshyari.com/en/article/4394970>

Download Persian Version:

<https://daneshyari.com/article/4394970>

[Daneshyari.com](https://daneshyari.com)