

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

A new species and a new record of *Apolygus* China (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 25 February 2016

Received in revised form

29 March 2016

Accepted 7 April 2016

Available online 14 April 2016

Keywords:

Apolygus

Korean Peninsula

Miridae

new record

new species

ABSTRACT

A new species, *Apolygus josifovi* Kim et Jung sp. nov., and a new record, *Apolygus roseofemoralis*, are described and reported for the first time from the Korean Peninsula. Morphological information including descriptions of male genitalia and diagnoses, and a key to the Korean *Apolygus* species are presented with photographs and illustrations.

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 subfamily Mirinae (Hemiptera: Heteroptera: Miridae) is the largest group of plant bugs in the world with more than 4100 described species and 350 genera (Schuh 1995; Schuh 2002–2013; Schwartz 2008). Among them, the genus *Apolygus* China (Heteroptera: Miridae: Mirinae) is one of the most diverse groups (Aukema et al 2013; Kerzhner and Josifov 1999), and has been studied up to a comparatively recent date by some taxonomists in China, Japan, Russia, and Korea (Kerzhner 1988; Seong and Lee 2007; Yasunaga 1992; Yasunaga and Yasunaga 2000; Zheng and Wang 1983).

In this study, a new species of the genus *Apolygus* is described and *Apolygus roseofemoralis* is reported for the first time from the Korean Peninsula. The morphological information such as original description and diagnoses is provided with the photographs and illustrations. A key to the Korean *Apolygus* species is also presented.

Materials and methods

Photographs of examined specimens were taken with a Leica M165C microscope. Measurements were taken using software

program of same microscope. All measurements are given in millimeters (mm). In order to observe male genitalia, the genital segment was detached, and then boiled in 10% KOH solution at 70°C for 5 minutes until it became transparent. After it was placed in distilled water, it was dissected to examine the genitalia. Terminology mainly follows Yasunaga (1991). Depository of a type specimen of a newly recorded species is in the Entomological Laboratory, Faculty of Agriculture, Kyushu University (ELKU), Fukuoka, Japan. Depository of a type specimen and examined specimens from Korea is in the Laboratory of Systematic Entomology, Chungnam National University (CNU), Daejeon, Korea. Distribution with an asterisk means it is a new record in this area.

Taxonomic accounts

Genus *Apolygus* China 1941 무늬고리장님노린재속
Apolygus China, 1941: 60 (as subgenus of *Lygus*; upgraded by Lu and Zheng, 1997: 162; Miyamoto, 1987: 582). Type species: *Lygaeus limbatus* Fallen, 1807.

Diagnosis. Recognized by body, generally greenish and brownish coloration and oval; antennae cylindrical and antennae length not longer than body length; vertex width as long as compound eye width; compound eye reaching to anterior margin of pronotum laterally; scutellum somewhat flattened; spines of hindtibia dark brown; apex of cuneus with dark marking generally (Figure 1);

* 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).

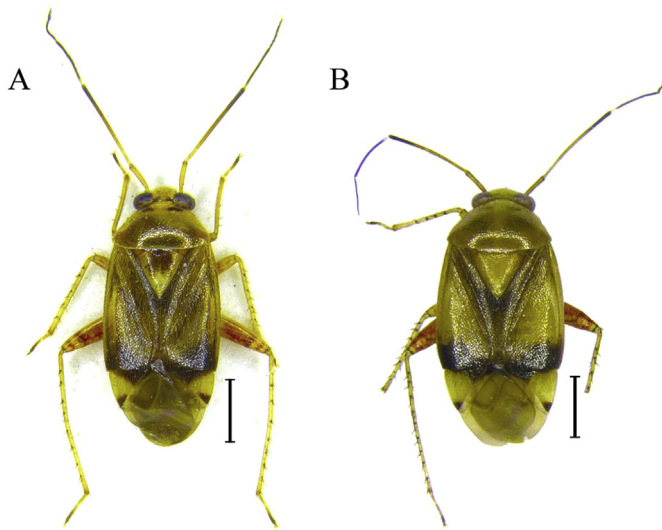


Figure 1. Dorsal habitus of *Apolygus* spp: A, *Apolygus josifovi* Kim et Jung sp. nov. Holotype; B, *Apolygus roseofemoralis*. <scale bar: 1mm>

sensory lobe of left paramere thicker than other parts (Figures 2A, 2E); vesica with sharp sclerites and spicules (Figures 2D and 2H).

***Apolygus josifovi* Kim et Jung sp. nov.** (신칭) 북쪽무늬고리장님노린재
LSID urn:lsid:zoobank.org:act:85BF8F60-53BC-44DF-92D2-2CEF7A510CAD
(Figures 1A and 2A–D)

Type. Holotype: 1♂, Suyang-san (Mt), Haeju-si, Hwanghae-do, North Korea (on original label: Suiang-san bei Hedzu, Korea), 4.vi.1975, M. Josifov-coll. CNU.

Diagnosis. Recognized by body, generally brownish orange; posterior margin of head with a pair of dark markings; callus with a pair of dark brown markings; scutellum with one large dark marking; femur brown tinged with red (Figure 1A); abdomen tinged with red; left paramere curved with long apex of hypophysis and somewhat thick neck (Figure 2A); apex of hypophysis of right paramere coiled and sharp (Figure 2B); vesica without needle-shaped spicule and long wing-shaped sclerite without dentate (Figure 2D).

Description. Male: Body elongated and oval, length 4.22.

Coloration. Almost brownish orange. Head: brown, posterior margin of head with a pair of dark markings; compound eyes dark brown; antennae generally dark brown; first antennal segment pale brown except for its apex; basal part of second antennal segment pale brown; base of third antennal segment pale brown; tylus entirely dark brown; each lorum with reddish marking; rostrum generally brownish orange; base of first rostral segment with dark marking; apical part of fourth rostral segment dark brown. Thorax: pronotum almost brown, anterior part of pronotum somewhat pale; callus with a pair of dark brown markings; scutellum with one large dark marking in middle; hemelytra generally brown; inner part of clavus dark brown; anterior part of corium dark brown, posterior part of corium dark brown ranged from inner part to outer margin transversely; paracuneus dark brown; cuneus pale brown, apex of cuneus dark brown with reddish marking; membrane grayish; legs almost brownish orange; apical part of forefemur and midfemur tinged with red; half apical part of hind femur tinged with red, apical part with indistinct dark ring; apex of tibia slightly darker; third tarsal segment dark brown. Abdomen: orange brown tinged with red generally. Surface and vestiture: body covered with pubescence; head covered with

somewhat sparsely short pubescences; first antennal segment with short suberect setae; pronotum with punctures and covered with pubescences except for anterior part; scutellum and hemelytra with punctures and covered with long pubescences; tibia with dark spines originated on dark spot.

Structure: Head: ocelli absent; vertex width shorter than length of first antennal segment, vertex width as long as width of compound eye; compound eye touching to anterior margin of pronotum laterally; antennae cylindrical; first antennal segment thicker than others; proportion of first to fourth antennal segments 0.49:1.46:0.74:0.51; rostrum not exceeding hindcoxae; proportion of first to fourth rostral segments 0.35:0.38:0.37:0.44. Thorax: pronotum trapezoid, posterior margin of pronotum slightly rounded; scutellum equilateral; mesoscutum depressed; lateral margin of hemelytra rounded; cuneal fracture well developed; membrane with two cells; legs generally slender; hind femur somewhat thick; tibia slender; tarsus with three segments. Abdomen: rounded, reaching to apex of cuneus. Genitalia: genital segment rounded with asymmetric parameres (Figures 2A–C); left paramere with sparse setae, hypophysis rounded with sharp process at apex, sensory lobe somewhat large, neck somewhat wide and short (Figure 2A); right paramere thick with setae, hypophysis long and its apex sharp and coiled (Figure 2B–C); vesica membranous with five sclerites; median sclerite somewhat thick, ventral sclerite thin and short, wing-shaped sclerite elongated and rounded without dentate structures, sublateral sclerite with spinules in half part, lateral sclerite sharp (Figure 2D).

Female: Unknown.

Measurements (in mm). Male ($n = 1$) body length, tylus-apex of membrane: 4.22; head length, excluding collar: 0.23; head width, including compound eyes: 1.01; vertex width: 0.33; first antennal segment length: 0.49; second antennal segment length: 1.46; third antennal segment length: 0.74; fourth antennal segment length: 0.51; total antennal length: 3.20; first rostral segment length: 0.35; second rostral segment length: 0.38; third rostral segment length: 0.37; fourth rostral segment length: 0.44; total rostral length: 1.54; mesal pronotal length: 0.68; basal pronotal maximal width (straight): 1.54; anterior scutellum width: 0.79; mesal scutellum length: 0.97; outer embolial margin length (straight): 2.01; outer cuneal margin length (straight): 0.63; maximal width across hemelytron: 0.94; foreleg (femur: tibia: tarsus): 1.00:1.11:0.44; midleg (femur: tibia: tarsus): 1.07:1.34:0.53; hindleg (femur: tibia: tarsus): 1.62:2.33:0.63.

Host. Unknown.

Distribution. Korea (North)*.

Remarks. This species is similar to Japanese congener *A. insulicola* in appearance, but it can be distinguished by lack of distinct dark rings in apical part of hind femur, wing-shaped sclerite long and somewhat narrow and sublateral sclerite with spinules in half part and lateral sclerite not curved (see Yasunaga 1992 for *A. insulicola* in detail). This species is a northern species, unlike *A. insulicola* which has southern distribution.

Etymology. Named after M. Josifov as a heteropteran taxonomist for the fauna of North Korea who collected this new species; a noun in genitive case.

***Apolygus roseofemoralis* (Yasunaga, 1992)** 붉은다리장님노린재 (신칭)

(Figures 1B and 2E–H)

Lycogoris (*Apolygus*) *roseofemoralis* Yasunaga, 1992: 295.

Diagnosis. Recognized by body, brown tinged with greenish dorsally, ventral side of body greenish; apex of second antennal segment pale brown; two-thirds apical part of hind femur tinged with reddish (Figure 1B); neck of left paramere somewhat long and narrow (Figure 2E); apex of hypophysis of right paramere blunt

Download English Version:

<https://daneshyari.com/en/article/4394932>

Download Persian Version:

<https://daneshyari.com/article/4394932>

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