



Contents lists available at ScienceDirect

Journal of Asia-Pacific Biodiversity

journal homepage: <http://www.elsevier.com/locate/japb>

Original article

Taxonomic revision of the genus *Aridelus* Marshall (Hymenoptera: Braconidae: Euphorinae) from KoreaHye-Rin Lee^{a,b}, Tae-Ho An^a, Deok-Seo Ku^a, Bong-Kyu Byun^{b,*}^aThe Science Museum of Natural Enemies, Geochang, South Korea^bDepartment of Biological Science & Biotechnology, Hannam University, Daejeon, South Korea

ARTICLE INFO

Article history:

Received 12 April 2017

Received in revised form

7 May 2017

Accepted 13 May 2017

Available online xxx

Keywords:

Aridelus
Braconidae
Hymenoptera
new record
Korea

ABSTRACT

In this paper, a total of six species of genus *Aridelus* Marshall are recognized from Korea. Among them, one species, *Aridelus alternecolatus* He, 1980 is reported for the first time from Korea. All the known species are enumerated with a taxonomic arrangement. Additionally, diagnosis, distribution, and photographs are provided. A key for the species is given.

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Introduction

Aridelus is a cosmopolitan genus of the subfamily Euphorinae. The genus is characterized by an areolate thoracic sculpture and pointed apical flagellomere (Shaw 1985). *Aridelus* comprises 46 species worldwide, including 11 species in the East Palaearctic region (Yu et al 2016).

Aridelus species parasites nymphs and adults in four families of Pentatomoidea: mainly Pentatomidae, rarely Acanthosmidae, Plataspidae, and Scutelleridae (Shaw 1985; Yu et al 2016).

In Korea, five *Aridelus* species have been known to date (Papp 1992; Belokobylskij 2000; Ku et al 2001). In this study, one species, *Aridelus alternecolatus*, is newly reported for the first time from Korea. We provide its diagnosis, distribution, and photographs. A key to the Korean species of genus *Aridelus* is also given. Consequently, a total of six species of the genus *Aridelus* is recorded for the Korean fauna.

Materials and methods

Materials examined in this study were mainly deposited at the Science Museum of Natural Enemies (SMNE), Geochang, Korea. Furthermore, the material from North Korea was examined, which was preserved in the Hungarian National History Museum (HNHM), Budapest, Hungary. The specimens were photographed using Canon 1ds Mark II (MP-E65mm macro lens). Terminology used in this paper follows that of van Achterberg (1993).

Taxonomic accounts

Family Braconidae Nees, 1811

Subfamily Euphorinae Förster, 1862

Genus *Aridelus* Marshall, 1887 노린재살이고치벌속 (신칭)

Aridelus Marshall, 1887: 66; Papp, 1965: 181; Shenefelt, 1969: 11; Shaw, 1985: 309; Chou, 1987: 21. Type species (by monotypy): *Aridelus bucephalus*.

Helorimorpha Schmiedeknecht, 1907: 523; Shenefelt, 1969: 11. Type species (by monotypy): *Helorimorpha egregia*. Syn. by Muesebeck, 1936.

Strictometeorus Cameron, 1909: 9; Shenefelt, 1969: 11. Type species (by monotypy): *Strictometeorus rufus*. Syn. by Muesebeck, 1936.

Erythrometeorus Cameron, 1911: 317; Shenefelt, 1969: 11. Type species (by monotypy): *Erythrometeorus reticulatus*. Syn. by Muesebeck, 1936.

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

<http://dx.doi.org/10.1016/j.japb.2017.05.002>pISSN2287-884X eISSN2287-9544/© 2017 National Science Museum of Korea (NSMK) and Korea National Arboretum (KNA), Publishing Services by Elsevier. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Scipolabia Enderlein, 1920: 220; Shenefelt, 1969: 11. Type species (by original designation): *Scipolabia reticulata*. Syn. by Muesebeck, 1936.

Arideloides Papp, 1974: 443. Type species (by original designation): *Arideloides niger*. Syn. by Shaw, 1985.

Diagnosis. Antenna filiform; apical segment with a spine. Distance between antennal sockets about twice diameter of antennal socket. Mesoscutum reticulate or reticulate-areolate. Metasomal insertion surrounded by strong lamella. Vein 1-SR of fore wing absent or wide and short; vein r-m of fore wing present; vein 1r-m of hind wing short; veins SR and 2-M of hind wing present, darkly pigmented. Ovipositor sheath glabrous and widened.

***Aridelus alternicoloratus* He, 1980** 이색노린재살이고치벌 (신칭) (Figure 1)

Aridelus alternicoloratus He, 1980: 85; Chen & Achterberg, 1997: 14.

Diagnosis. Length of body 4.0–5.0 mm. Frontal carina developed. Vertex and frons with large black spots. Intertentorial line slightly longer at 1.1 times tentorio-ocular line; post ocellar line: ocellar ocular line = 1:3. Length of vein 1-R1 0.5–0.6 times as long as length of pterostigma. Length of first metasomal tergite more than

7 times its width at spiracles. Flagellum dark brown; mesosoma dark brown; metasoma black.

Material examined. [South. Korea] 1♂, Mt. Danseok, Bangnae, Geoncheon, Gyeong-Ju, Gyeongbuk Province, 18–19 VIII 2001, light trap (Jung-Suk Park)-coll. SMNE.

Distribution. Korea (new record), China (Guangxi, Guizhou, Jilin, Shaanxi), Russia (Buryatskaya Respublika, Chita Oblast, Primorsky Krai).

Host. Unknown.

***Aridelus egregius* (Schmiedeknecht)** 작은노린재살이고치벌 (신칭) (Figure 2)

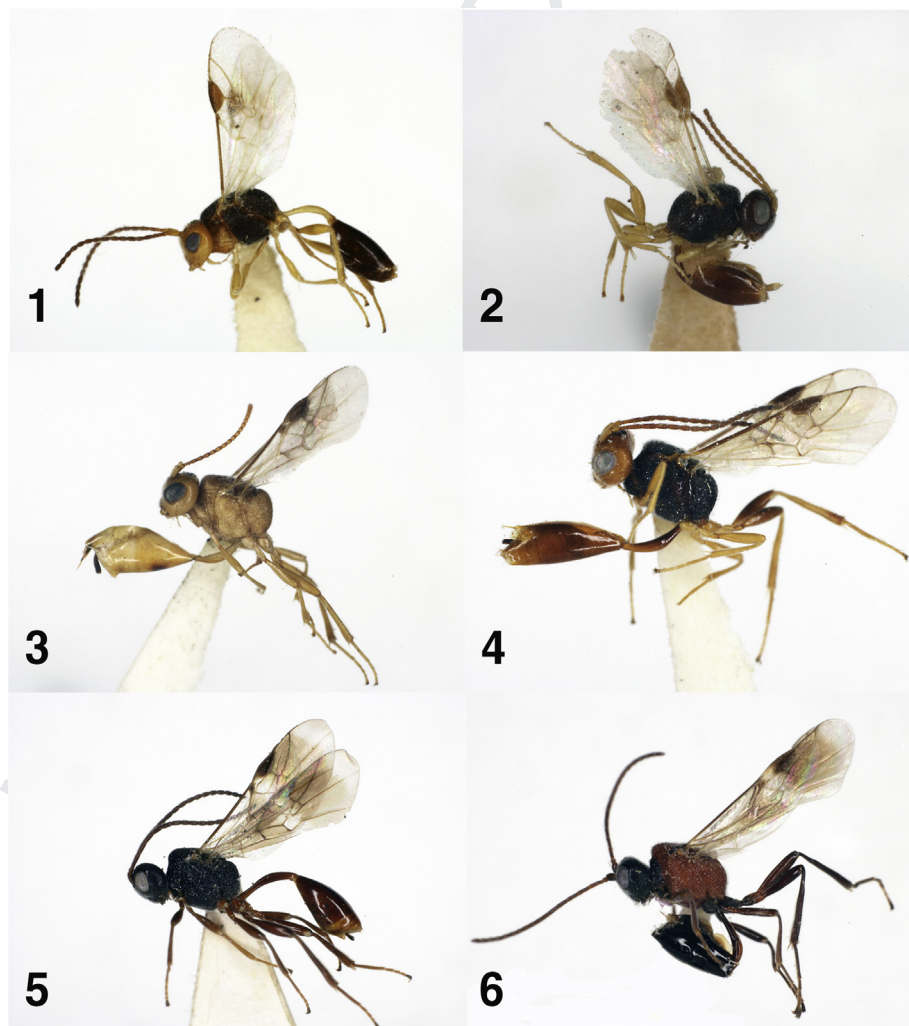
Helorimorpha egregia Schmiedeknecht, 1907: 523.

Aridelus egregia Muesebeck, 1936: 6; Papp, 1965: 200; Papp, 1992: 66.

Aridelus nigricans Chao, 1974: 455. Syn. by Belokobylskij, 2000.

Aridelus destitutus Chou, 1987: 26. Syn. by Belokobylskij, 2000.

Diagnosis. Length of body 3.1–3.6 mm. Occipital carina present laterally, but absent dorsally. Vertex and temple sparsely punctate. Median frontal carina usually weaker, lower and wider. Intertentorial line 2.1–2.8 times tentorio-ocular line. Vein 2-SR+M and vein m-cu postfurcal. Body black; antenna and legs light brown.



Figures 1–6. Adult of *Aridelus*; 1, *Aridelus alternicoloratus* ♀, lateral aspect; 2, *A. egregius* (Schmiedeknecht) ♀, lateral aspect; 3, *A. flavicans* ♀, lateral aspect; 4, *A. rufotestaceus* ♀, lateral aspect; 5, *A. rutilipes* ♀, lateral aspect; 6, *A. ussuriensis* ♀, lateral aspect.

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