Nine Newly Recorded Species of the Family Braconidae (Hymenoptera) in Korea

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ABSTRACT

In the present study, nine species of the family Braconidae are recorded for the first time from Korea: Bassus ussuriensis (Telenga), Amyosoma yanoi (Watanabe), Calcaribracon nipponensis (Watanabe), Doryctes gyljak Telenga, Rhaconotus signipennis (Walker), Allurus lituratus (Haliday), Hellenius dadienshanicus Belokobylskij, Homolobus rufiventralis Maeto, and Aulacocentrum confusum He & Achterberg. Diagnosis and photographs for the species are provided.

Keywords: Braconidae, Hymenoptera, new record, Korea

INTRODUCTION

The family Braconidae Nees, 1811 is a very large group comprising more than 18,000 described species worldwide (Quicke, 2015).

In Korea, a total of 910 species have been recorded to date (Ku et al., 2001; Choi et al., 2012). Recently, several studies on the family Braconidae have been actively conducted by An et al. (2014, 2015a, 2015b, 2015c) and Lee et al. (2016a, 2016b, 2016c, 2016d) with a focus on the subfamily Euphorinae Förster, 1862.

In this paper, nine species of the family Braconidae are recorded for the first time from Korea: Bassus ussuriensis (Telenga), Amyosoma yanoi (Watanabe), Calcaribracon nipponensis (Watanabe), Doryctes gyljak Telenga, Rhaconotus signipennis (Walker), Allurus lituratus (Haliday), Hellenius dadienshanicus Belokobylskij, Homolobus rufiventralis Maeto, and Aulacocentrum confusum He & Achterberg. Diagnosis and photographs for the species are provided.

SYSTEMATIC ACCOUNTS

Order Hymenoptera Linnaeus, 1758
Family Braconidae Nees, 1811
Subfamily Agathidinae Nees, 1811

Genus Bassus Fabricius, 1804

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**calculator** Fabricius, 1798.


**Diagnosis.** Vein r-m of fore wing present; vein 2-CU of hind wing present. Tarsal claws simple, medium-sized and usually with a lobe; fore tibial spur normal, 0.4–0.5 times as long as fore basitarsus. First-third tergites smooth, or partly or completely sculptured. Ovipositor straight, medium-sized to long.

1* Bassus ussuriensis* (Telenga, 1933) (Fig. 1A)

*Microdus ussuriensis* Telenga, 1933: 246.


*Bassus ussuriensis*: Sharkey, 1996: 57–58; Sharkey & Ben-

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Diagnosis. Body length 5.0–8.7 mm. Antenna 33–39-segmented. Temples concave dorsally; gena rounded posteroventrally. Propodeum rugose. Vein SR1 of fore wing straight or weakly curved. Fore tibial spur present; hind tibial with 5–9 spurs. Tarsal claws without basal lobe, claws simple. Ovipositor straight; ovipositor sheath width narrower than apex of hind tibia. Body black; antenna black; legs yellowish brown to dark brown, darker basally.

Distribution. Korea (new record), China (Fujian, Hubei, Jilin, Ningxia), Japan, Russia (Primorsky Krai, Sakhalin Oblast).

Host. Unknown.

Subfamily Braconinae Nees, 1811

Genus Amyosoma Viereck, 1913

Amyosoma Viereck, 1913: 640; Shenefelt, 1978: 1555 (as synonym of Bracon Fabricius, 1804); Mason, 1978: 723 (as synonym of Myosoma Brulle, 1846); Quicke, 1987: 122. Type species (by original designation): Amyosoma chilonis Viereck, 1913 (= Bracon chinensis Szepligeti, 1902).

Diagnosis. Vein 1-SR+M of fore wing usually straight; vein 1-r-m of hind wing more or less curved. Ovipositor as long as hind tibia; length of ovipositor sheath 2.7 times length of first tergite and as long as hind tibia and hind basitarsus combined. Legs slender. Head, antenna, thorax, and legs black; stigma and veins dark brown to black.

Distribution. Korea (new record), China, Japan.

Host. Paranthrene regalis (Butler) (Sesiidae) (Watanabe, 1960).

Genus Calcaribracon Quicke, 1986


Diagnosis. Antenna wider than long. Metasoma shiny although setose near the notauli. Precoxal suture absent. Vein 1-SR+M of fore wing distinctly curved and thickened; vein 2-CU and 2-1A of hind wing well-developed. 1st abdominal tergite long, behind tubercles narrowed to apex or (less often) almost parallel-sided.

24 Calcaribracon (Arostrobracon) nipponensis (Watanabe, 1937) (Fig. 1C)


Diagnosis. Body length 6.0–8.0 mm. Antenna 54-segmented. Vein 3-CU1 of fore wing expanded and produces as a spur into the first subdiscal cell; vein 1-SR+M of fore wing curved inwardly; vein cu-a of fore wing interstitial or marginally anterfurcal; marginal cell of the hind wing sessile; submarginal cell of hind wing 2 times as long as high. Ovipositor as long as the hind femur; ovipositor sheath stout. Head and thorax yellowish red; antenna, metasoma black; stigma dark brown.

Distribution. Korea (new record), China, Japan.

Host. Paranthrene regale (Watanabe, 1960), Similipepsis takizawai (Sesiidae) (Maeto, 1992).

Subfamily Doryctinae Förster, 1863

Genus Doryctes Haliday, 1836

Korean name: 18 포도유리나방살이고치벌 (신칭), 24 포도유리나방살이며느리발톱고치벌 (신칭)
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**Rogas (Doryctes)** Haliday, 1836: 40, 43.


**Diagnosis.** Vein m-cu of fore wing always more or less antefurcal; marginal cell usually not shortened. Mesonotum weakly gently and roundly elevated above pronotum. 1st metasomal tertige not petiolate, usually wide and short. Hind coxa with tubercle. Ovipositor sheath shorter than metasoma.

*19 Doryctes gyjak* Shestakov, 1940 (Fig. 1D)

**Doryctes gyjak** Shestakov, 1940: 4; Telenga, 1941: 393; Shenefelt & Marsh, 1976: 1283; Belokobylskij et al., 2012: 51.

**Doryctes strigosus**: Chen & Shi, 2004: 20 (Syn. by Belokobylskij & Maeto, 2009).

**Material examined.** Korea: 1 ♂, Daap-myeon, Dosa-ri, Neuraengigol, Mt. Jjotbisan, 23 Jun 1998, MT Ah TH-coll. SMNE.

**Distribution.** Korea (new record), China, Russia (Far East), Kazakhstan.

**Host.** Unknown.

Genus *Rhaconotus* Ruthe, 1854


**Diagnosis.** Vein M+CU of hind wing equal to vein 1-M. First tergite 1.6–1.2 times as long as pterostigma. Ventrally metasoma more or less distinctly S-shaped. Hind coxa 1.4–1.5 times longer than wide. 2nd tergite with short basal area. Ovipositor short; ovipositor sheath 0.40–0.55 times as long as metasoma. Head brownish yellow or light reddish brown; legs yellow or reddish yellow.

**Distribution.** Korea (new record), China, Japan, Russia (Far East), Vietnam, India, Sri Lanka.

**Host.** *Chilo auricilius*, *Scirpophaga incertulas* (Crambidae) (Rao et al., 1968).

Subfamily Euphorinae Förster, 1863

Genus *Allurus* Förster, 1863

**Allurus** Förster, 1863: 254. Type species (by monotypy): *Ancylus muricatus* Haliday.

**Diagnosis.** Vein M+CU1 of fore wing largely reduced and unsclerotized; vein 1-SR+M of fore wing present; marginal cell longer than pterostigma. 1st metasomal tergite sessile. 4th metasomal sternite of female with pair of teeth. Hind coxa with ventro-lateral tooth apically; tarsal claws bifurcate.

**38 Allurus lituratus** (Haliday, 1835) (Fig. 1F)

**Leiophron (Ancylus) lituratus** Haliday, 1835: 461.


**Diagnosis.** Body length 2.2–3.2 mm. Antenna 19–31-segmented, 1.2–1.3 times longer than body. Vein r of fore wing distinct obtuse angle with vein 3-SR; vein 1-SR+M of fore wing more or less distinctly S-shaped. Hind coxa 1.4–1.5 times longer than wide. 2nd tergite with short basal area. Ovipositor short; ovipositor sheath 0.40–0.55 times as long as metasoma. Head brownish yellow or light reddish brown; legs yellow or reddish yellow.

Korean name: 19길작고치벌 (신칭), 28포충나방살이고치벌 (신칭), 38들바구미성충살이고치벌 (신칭)

at level of apex of second tergite without teeth, only at level of fourth tergite pair of small or moderately-sized teeth present, but frequently reduced or absent. Ovipositor sheath comparatively convex and in dorsal view roundly narrowed apically.

**Distribution.** Korea (new record), China, Russia, Iran, Kazakhstan, Europe.

**Host.** Sitona crinitus, Sitona inops, Sitona lineatus (Meyer, 1934), Sitona lepidus (Curculionidae) (Goldson et al., 2004).

Subfamily Helconinae Förster, 1863

Genus *Hellenius* Tobias, 1982


**Diagnosis.** Frons near eyes narrowly depressed. Medial carina of propodeum short and indistinct. Vein CUlb of fore wing somewhat inclivous, slightly curved, interstitial or slightly postfurcal; vein 1-CU1 of fore wing very short; vein 1-SR of hind wing rather long, 0.40–0.65 times as long as vein 2-SR. Hind femur stout, 5.5–6.0 times as long as wide. Ovipositor sheath rather short, 0.1–0.14 times as long as fore wing. Body blackish to blackish brown.

**Distribution.** Korea (new record), China, Japan, Russia (Primorsky krai).

**Host.** Unknown.

Subfamily Macrocentrinae Förster, 1863

Genus *Aulacocentrum* Brues, 1922


**Diagnosis.** Vein SC+R1 of hind wing abruptly bent towards anterior wing margin; vein SR of hind wing strongly to moderately curved. 1st metasomal tergite with transverse striation and slender, laterope of first tergite absent or shallow, not or weakly differentiated from glymma. Length of ovipositor sheath 1.1–1.6 times fore wing.


3* Aulacocentrum confusum He & van Achterberg, 1994 (Fig. 1I)

*Aulacocentrum confusum* He & van Achterberg, 1994: 162; Chen et al., 2005: 525. Type species (by original designation): *Aulacocentrum pedicellatum* Brues, 1922.

**Material examined.** Korea: 2♀, GG: Osan-si, Sucheong, Forestry experiment station, 28 Jun 1999, LT Lee HG; 1♀, same locality, 1 Jul 1999, LT Lee HG-coll. SMNE.

**Diagnosis.** Body length 10.3 mm. Antenna 41-segmented. Vein SC+R of Hind wing present of absent; vein r of hind wing variable; SC+R1 of hind wing straight to curved. Claws very variable, simple and with a ventral lamella or enlarged lamella.

**Length of ovipositor sheath** 0.04–0.79 times fore wing.

28* Homolobus (Homolobus) rufiventralis Maeto, 1982 (Fig. 1H)


**Diagnosis.** Body length 5.5–7.5 mm. Antenna 41–45-segmented. Vein cu-a of fore wing somewhat inclivous, slightly curved, interstitial or slightly postfurcal; vein 1-CU1 of fore wing very short; vein 1-SR of hind wing rather long, 0.40–0.65 times as long as vein 2-SR. Hind femur stout, 5.5–6.0 times as long as wide. Ovipositor sheath rather short, 0.1–0.14 times as long as fore wing. Body blackish to blackish brown.

**Distribution.** Korea (new record), China, Japan, Russia.

**Host.** Unknown.

Subfamily Helconinae Förster, 1863

Genus *Hellenius* Tobias, 1982


**Diagnosis.** Frons near eyes narrowly depressed. Medial carina of propodeum short and indistinct. Vein CUlb of fore wing present; vein SRI curved basally; vein m-cu strongly antefurcal. Hind coxae with a basal transverse and a longitudinal carina.

18* Hellenius (Eohellenius) dadianshanicus Belokobylskij, 1998 (Fig. 1G)


**Material examined.** Korea: 1♀, GW: Taebaek-si, Mt. Hambaeksan, 20 Jun–12 Aug 1999, MT Ku DS-coll. SMNE.

**Diagnosis.** Body length 3.6–4.0 mm. Antenna 31-segmented. Vein m-cu of fore wing 1.3 times longer than vein 2-SR+M; vein cu-a of fore wing with a small crack in the back; second submarginal cell of fore wing short, its length 1.2–1.3 times as long as width. 1st abdominal tergite rugose, with distinct spiracles basally. Length of first tergite 1.4–1.6 times more than apical width. Body and antenna black.

**Distribution.** Korea (new record), Russia (Far East).

**Host.** Unknown.

Subfamily Helconinae Förster, 1863

Genus *Aulacocentrum* Brues, 1922


without distinct longitudinal rugae basally. Length of ovipositor sheath 1.2 times for wing. Head black; legs, mesosoma and metasoma reddish-yellow.

**Distribution.** Korea (new record), China.

**Host.** *Algedonia coecesalis, Diaphania pyloalis* (Pyralidae), *Ostrinia furnacalis* (Crambidae) (He & Achterberg, 1994).

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