

A New Record of Parasitoid Wasp *Diolcogaster perniciosus* (Hymenoptera: Braconidae) from South Korea

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한국산 미기록 기생벌 *Diolcogaster perniciosus* (벌목: 고치벌과)에 대한 보고

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ABSTRACT: *Diolcogaster perniciosus* (Wilkinson, 1929) belonging to the Microgastrinae is reported for the first time in South Korea. Diagnosis, distribution, and illustration of this species are provided.

Key words: Braconidae, Natural enemy, Taxonomy, Unrecorded species

초록: 고치벌과에 속하는 Microgastrinae 아과의 *Diolcogaster perniciosus* (넓적다리도랑꼬마고치벌)을 한국에서 처음으로 보고한다. 본 종의 재기재, 진단, 분포정보, 그리고 삽화를 제공한다.

검색어: 고치벌과, 천적, 분류, 미기록종

The family Braconidae (Hymenoptera) is a very large taxon with over 20,000 species recorded worldwide (Yu et al., 2016), of which more than 3,000 species have been recorded as subfamily Microgastrinae. Most of their members are solitary koinobiont endoparasitic to Lepidoptera larvae (Aarvik et al., 2017; Fernandez-Triana et al., 2020). The subfamily Microgastrinae is parasitic on its host, specifically by using the virus. The polydnavirus they use prevents the eggs of wasps from being recognized as a dangerous factor when they enter the larvae (Murphy et al., 2008). Some members of this group also play a very important role in biological control (Wharton et al., 1997).

The genus *Diolcogaster* Ashmead, 1900 has 66 species recorded worldwide, and it is known to parasitic lepidopterans. Only three species have been recorded in Korea thus far (*D. abdominalis*, *D. connexa* and *D. extentus*). In this study, *Diolcogaster perniciosus* (Wilkinson, 1929) is reported for the first time from South Korea, which has formerly been described in China (Zeng et al., 2011; Yu et al., 2016). Here, redescription, diagnosis, distribution and illustrations are provided.

Materials and Methods

Materials of the braconid were collected by sweeping, which were preserved in 75% ethyl alcohol for dried specimens. The species studied are deposited in Kunsan National University (KNU). The terminology used for morphological characters

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follows Sharkey and Wharton (1997). For observation and photography, LEICA DMC2900 digital camera and LEICA M205 C microscope (Leica Geosystems AG) were used. Images were stacked by using Helicon software (Helicon Soft).

Systematic Accounts

Family Braconidae Nees Von Esenbeck, 1811

Subfamily Microgastrinae Förster, 1863

Genus *Diolcogaster* Ashmead, 1900

Diolcogaster Ashmead, 1900: 23(1206):1-220.

Zadiolcogaster Viereck, 1913: 46(2031):359-386.

***Diolcogaster perniciosus* (Wilkinson, 1929) 넓적다리도랑꼬마고치벌(신칭) (Fig. 1A - F)**

Microgaster perniciosus Wilkinson, 1929, 77: 122.

Protomicroplitis perniciosus: Nixon, 1965: 248.

Redescription

Morphology. Body Length of body 3.51mm, length of forewing 3.24mm. (Fig. 1A, C).

Head Antennae dark brown (apex of antenna missing); covered with whitish setae (Fig. 1B); scape brown, ocellus dark; length of ocello-ocular line 0.46 times length of eye, frons and face smooth and rough, fronto-clypeal suture distinct, mandible slender and brown, maxillary palp 0.86 times length of head. **Mesosoma** glossy with setae; notaulus and scutellar sulcus absent; mesoscutum and scutellum combine, sternaulus absent, propodium smooth; width of propodium 1.97 times length of propodium; propodeal areola absent; propodium edge with spine (Fig. 1E). **Hind leg** Coxa black and wide; width of hind coxa 1.4 times width of hind femur, tibial spurs long.

Wing Parastigma present; vein (RS+M)b incompletely present;

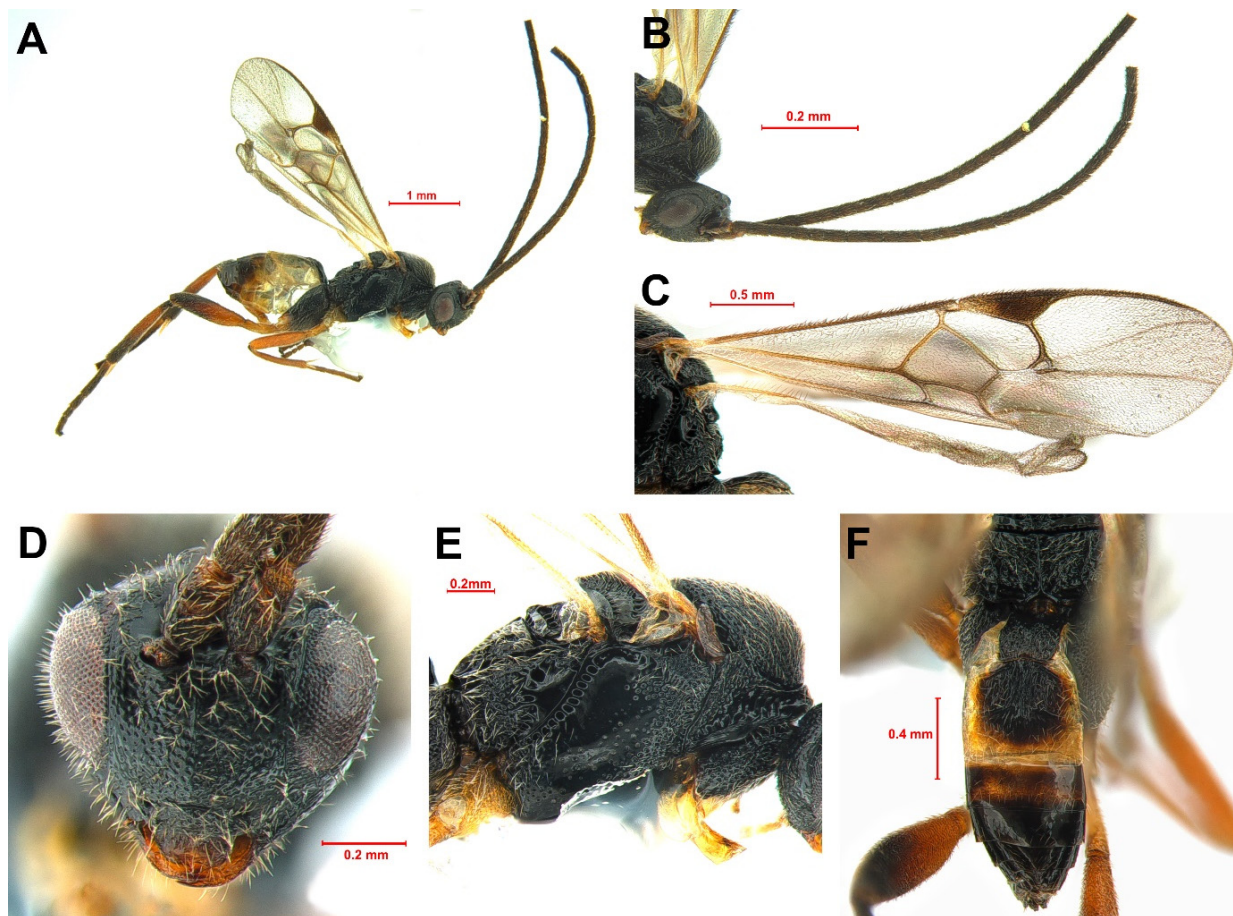


Fig. 1. Habitus of *Diolcogaster perniciosus* (Wilkinson, 1929): A, whole body in lateral view; B, antenna (apical segments broken); C, forewing; D, head; E, mesosoma in lateral view; F, metasoma in dorsal view.

vein 2CUa and 2Cub present; marginal cell incompletely with R1 tip absent (Fig. 1C). **Metasoma** Petiole harden with black, T2 and T3 dorsal hexagonal pattern present (Fig. 1F).

Distribution. South Korea (new), Australia, China, New Zealand (Yu et al., 2016).

Biology. Host: *Nyctemera amica*, *Nyctemera annulata*, *Nyctemera* [*Senecio jacobaea*]; *Spilosoma glatignyi* (Arctiidae) (Yu et al., 2016).

Specimens examined. 1♂, Eocheongdo-ri, Okdo-myeon, Gunsan-si, Jeollabuk-do, South Korea, 24. VI. 2021, Hyojoong Kim (sweeping).

Remarks. This species is characterized by broadness of width of hind femur, dark-to-darkish yellow coloration on hind femora and tibiae, and dorsal hexagonal tergites on both T2 and T3 (Fig. 1A).

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Statements for Authorship position & contribution

Yu, Y.H.: Kunsan National University, Student in Ph.D;
Designed the research, wrote the manuscript and conducted the experiments

Namgung, H.B.: Kunsan National University, Student in Ph.D; Collected and examined specimens

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Kim, H.J.: Kunsan National University, Professor, Ph.D; Examined specimens and designed the research

All authors read and approved the manuscript.

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