

# A New Record of Parasitic Wasp, *Opius crenuliferus* (Hymenoptera: Braconidae: Opiinae), from South Korea

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## ABSTRACT

The genus *Opius* Wesmael, 1835 (Hymenoptera: Braconidae: Opiinae) generally parasitizes larvae of Agromyzidae, Anthomyiidae, Drosophilidae, Tephritidae, Ephydriidae and Cecidomyiidae, of which 32 species are recorded in South Korea. In China, seven new species of the genus *Opius* have been known. Among them, *Opius crenuliferus* Li & van Achterberg, 2013 is reported for the first time in South Korea. Specimen was collected by sweeping in West Daeshin-dong, Busan, Korea. In this study, description, and diagnostic illustration of *O. crenuliferus* are provided.

**Keywords:** Ichneumonoidea, koinobiont, morphological identification, natural enemy, parasitoid

## INTRODUCTION

The subfamily Opiinae Blanchard, 1845 (Hymenoptera: Braconidae) is one of the largest parasitic wasp groups in the family Braconidae, comprising approximately 2,000 valid species in 39 genera worldwide (Yu et al., 2016). Opiinae members are mostly koinobiont endoparasitoids of dipterans (Wharton, 1997), which are well known as agricultural pests such as Tephritidae (Shaw and Huddleston, 1991; Yu et al., 2016) and Agromyzidae (Belokobylskij et al., 2004; Yu et al., 2016). Therefore, some members of this subfamily are renowned as being beneficial for biological control (Wharton, 1997; Ovruski et al., 2000).

To date, in the genus *Opius* Wesmael, 1835, 32 species have been recorded in South Korea (NIBR, 2022). As a result of taxonomic survey on Opiinae from South Korea, *Opius crenuliferus* is newly discovered from South Korea. Because there is no biological information of the species *Opius crenuliferus* up to date (Li et al., 2013), it would be important for finding host record in South Korea. Diagnosis, description, and illustrations are provided.

The specimen examined was collected by sweeping in Busan, South Korea on March 27, 2020, which was preserved in 80% ethyl alcohol. This specimen is deposited in Kunsan National University (KSNU).

We referred van Achterberg (1990) for identification of

the subfamily Opiinae, Li et al. (2013) for identification of the genus and species, and Yu et al. (2016) for references to the Opiinae. We used LEICA DMC2900 digital camera and LEICA M205 C microscope (Leica Geosystems AG, Wetzlar, Germany) for observation and photography in this study. Captured raw images were stacked using LAS V4.11 (Leica Geosystems AG) and HeliconFocus 7 (Helicon Soft, Kharkiv, Ukraine). Illustrations were edited using Adobe Photoshop CS6. Terminology used for morphological characters followed van Achterberg (1993).

## SYSTEMATIC ACCOUNTS

Order Hymenoptera Linnæus, 1758  
Family Braconidae Nees, 1811  
Subfamily Opiinae Blanchard, 1845  
Genus *Opius* Wesmael, 1835

<sup>1</sup>\**Opius crenuliferus* Li and van Achterberg, 2013  
(Fig. 1A–E)

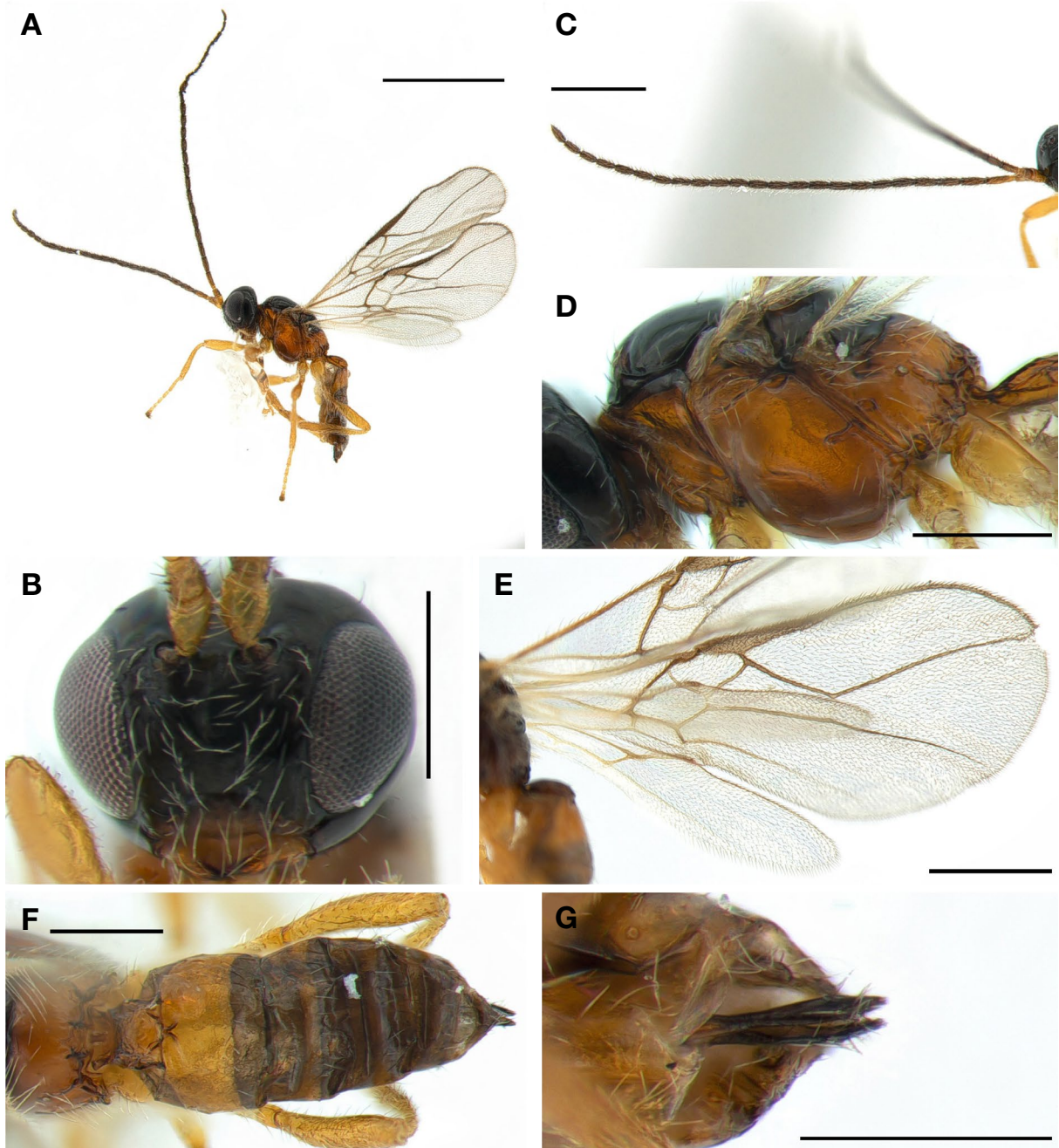
*Opius crenuliferus* Li and van Achterberg, 2013: 80–83.

**Material examined.** South Korea, 1♀ (KSNU): Busan, West Daeshin-dong, 35°07'46.6"N, 129°00'37.5"E, 27 May 2020, Hyojoong Kim leg.

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**Fig. 1.** Habitus of *Opius crenuliferus* van Achterberg & Li, 2013: A, Whole body in lateral view; B, Head in frontal view; C, Antenna; D, Mesosoma in dorsal view; E, Wings; F, Metasoma in dorsal view; G, Ovipositor in ventral view. Scale bars: A=1.0 mm, B, D, F, G=0.25 mm, C, E=0.5 mm.

**Diagnosis.** Oblique groove of pronotum largely crenulate, hypoclypeal depression present, medio-posterior mesoscutal depression absent, vein CU1b, r of fore wing short.

**Distribution.** South Korea (new, Busan), China (Shandong, Hunan).

**Description.** Total length of body 1.80 mm (Fig. 1A), total

length of fore wing 1.90 mm.

Head (Fig. 1B, C): Length 0.64 times as long as its height in frontal view. Antenna 1.30 times as long as fore wing with 25 segments; third segment 1.13 times as long as fourth segment. Face glabrous, smooth and covered with yellow setae, slightly elevated medially. Width of clypeus 1.98 times as

long as its maximum height; clypeus glabrous and smooth but medio-ventral margin slightly convex. Hypoclypeal depression present. Malar suture present. Mandible abruptly widened basally.

Mesosoma (Fig. 1D): Length 1.50 times as long as its height in lateral view. Pronope obsolescent present. Mesoscutum glabrous and smooth with few yellowish setae. Notauli absent on disc of mesoscutum except a pair of short deep impressions anteriorly. Medio-posterior depression of mesoscutum absent. Anterior oblique groove of pronotum largely crenulate. Epicnemial area smooth. Precoxal sulcus weakly impressed medially. Metapleuron mainly smooth. Scutellum slightly convex; scutellar sulcus narrow and crenulate. Propodeum glabrous and smooth, except for short medio-posteriorly oblique carinae.

Wing (Fig. 1E): Covered with brown setae overall. Pterostigma of fore wing long triangular and length 6.45 as long as times its maximum width. Vein r of fore wing short and medium sized. 1-M straight; SR1 slightly curved; m-cu postfurcal; r: 3-SR: SR1 = 2: 13: 29; CU1b short; first subdiscal cell opened.

Legs: Hind femur 0.67 times as long as hind tibia with setae.

Metasoma (Fig. 1F, G): Metasoma largely glabrous. Length of first tergite 2.25 times as long as its basal width; first tergite convex medially and rugose. Second tergite slightly granulate and following tergites smooth. Second suture absent. Length of ovipositor 0.86 times as long as ovipositor sheath.

**Colour (Fig. 1A).** Dark-brown except for head, mesonotum, wing, leg and some of tergites. Head except for clypeus and mandible and mesonotum, black. Leg and scape of antenna yellowish-brown. Pterostigma, veins and some of tergites, brown.

**Biology.** Unknown.

**Remarks.** *Opius crenuliferus* was discovered in a sunny spot in the broadleaf dominated mountains. This species runs in the key by Chen and Weng (2005) to *Opius clusilis*, but *O. crenuliferus* differs by having the pronope obsolescent.

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## CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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