

# First Record of the Genus *Oedoparena* (Diptera: Dryomyzidae) from Korea with a Key to the World Species

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## ABSTRACT

In this paper, we record *Oedoparena* Curran, 1934, a previously unreported genus discovered on the west coast of Korea, for the first time in Korea, along with a newly recorded species, *Oedoparena minor* Suwa, 1981. Until now, this genus comprised only three species worldwide, all distributed exclusively along the cool, maritime coasts of the Northern Pacific, from Far East Asia to North America. Furthermore, most larvae of this genus are known to be predators of barnacles in the intertidal zone. We provide photographs of external features, illustrations of male genitalic structures, and a diagnosis of the newly recorded species, along with a key for worldwide species.

**Keywords:** *Oedoparena minor*, barnacles, intertidal zone, South Korea

## INTRODUCTION

The genus *Oedoparena* Curran, 1934 is a small taxon of acalyptrate flies belonging to the family Dryomyzidae, 1862. This genus comprises only three species: *O. glauca* (Coquillett, 1900), *O. minor* Suwa, 1981, and *O. nigrifrons* Mathis et Steyskal, 1980 (Mathis and Steyskal, 1980; Mathis and Sueyoshi, 2011) worldwide to date. These species are distributed along the North Pacific coast, including Far East Asia from Hokkaido to the Kurils, and North America from Alaska to California (Mathis and Steyskal, 1980; Mathis and Sueyoshi, 2011; Ozerov and Krivosheina, 2021).

Most larvae are known predators of barnacles in the intertidal zone (Burger et al., 1980; Suwa, 1981; Mathis and Sueyoshi, 2011; Ozerov and Krivosheina, 2021). The adults are usually found on or near barnacle beds, where they lay their eggs in the operculum of feeding barnacles (Burger et al., 1980). During the larval stage, they feed on several barnacles, forming pupae in empty barnacle tests (Burger et al., 1980; Suwa, 1981).

The authors report the discovery of the genus *Oedoparena*

Curran, 1934, on the west coast of Korea for the first time, along with a newly recorded species, *Oedoparena minor* Suwa, 1981. Photographs of external features, illustrations of male genitalic structures, and a diagnosis of the newly recorded species, along with a key for worldwide species, are provided.

## MATERIALS AND METHODS

Morphological characteristics of adults and genitals were observed under a stereoscopic microscope (Olympus SZX 16, Japan) and a compound microscope (Olympus BX50). Photographs were taken using the Michrome 16 CMOS camera (Tucsen, Fujian, China), and a series of images were mounted using Helicon Focus (HeliconSoft, Kharkiv, Ukraine). All voucher specimens examined in this study are deposited in the collection of Department of Plant Medicine at Kyungpook National University (KNU), Daegu, Korea.

Morphological terminology for external features and male terminalia are referred from Cumming and Wood (2017).

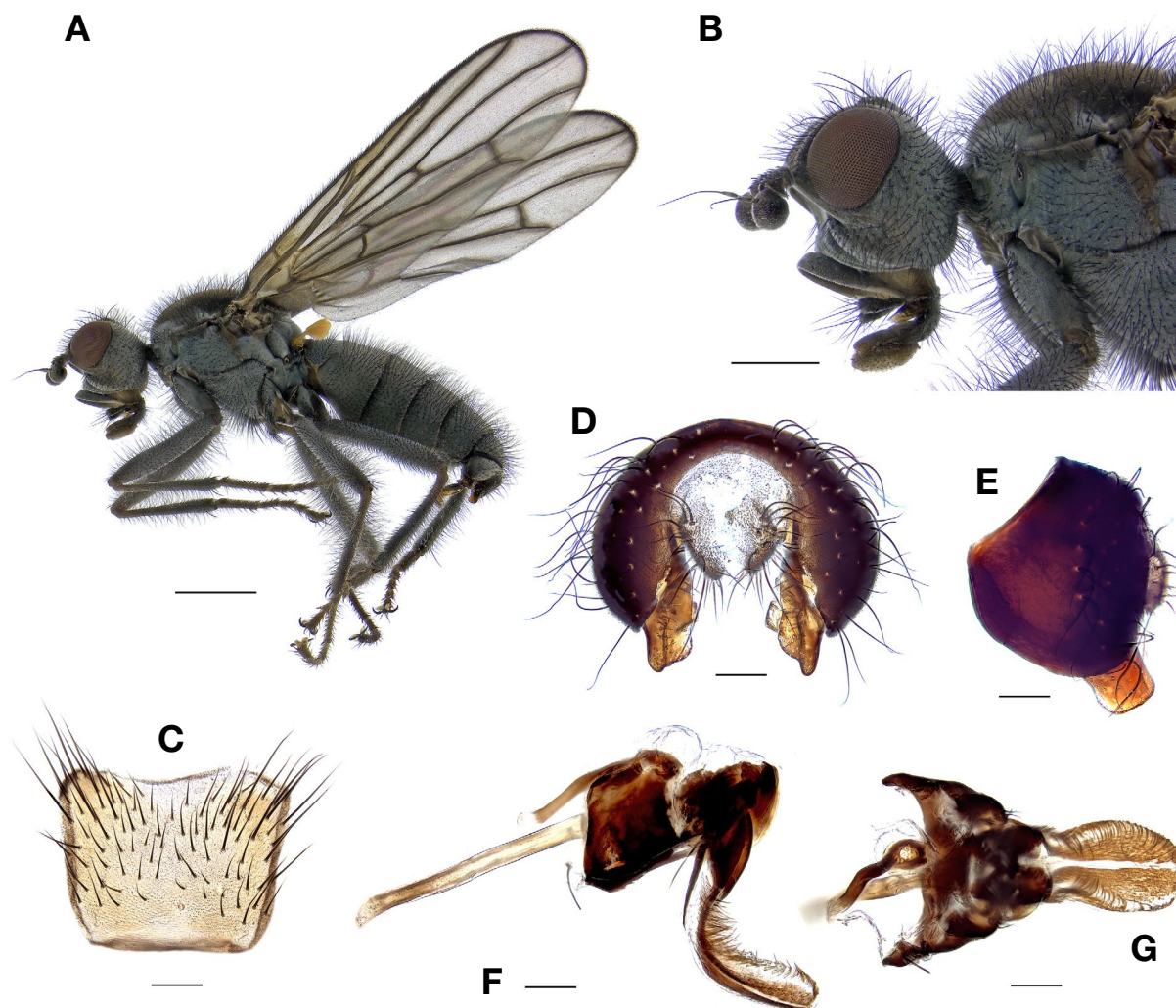
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**Fig. 1.** *Oedoparena minor* Suwa, 1981, male. A, Habitus, lateral view; B, Head, lateral view; C, Fifth sternite, dorsal view; D, Terminalia, dorsal view; E, Terminalia, lateral view; F, Aedeagus, lateral view; G, Aedeagus, dorsal view. Scale bars: A=1.0 mm, B=0.5 mm, C-G=0.1 mm.

## SYSTEMATIC ACCOUNTS

Order Diptera Linnaeus, 1758  
 Superfamily Sciomyzoidea Fallén, 1820  
 Family Dryomyzidae Schiner, 1862

### <sup>1</sup>\*Genus *Oedoparena* Curran, 1934

*Oedoparena* Curran, 1934: 382. Type species: *Oedoparena glauca* Coquillett, 1934.

**Diagnosis.** Body dark bluish-gray in ground color; outer vertical setae absent or reduced; clypeus well developed and tilted upward; acrostichals indistinguishable from other setulae on the scutum; 4–5 postsutural dorsocentral setae pres-

ent; postpronotals absent; proepisternum and anepisternum densely setose with fine setae; wing tinged brown without dark markings; vein R1 bare on the dorsal surface (Mathis and Steyskal, 1980; Mathis and Sueyoshi, 2011; Ozerov and Krivosheina, 2021).

### <sup>2</sup>\**Oedoparena minor* Suwa, 1981 (Fig. 1)

*Oedoparena minor* Suwa, 1981: 30. Type locality: Japan, Hokkaido, Otarushi, Asari beach.

**Material examined.** 30♂21♀, Korea: Jeollabuk-do, Gunsan-si, Bieungdo, 35.939521°N, 126.526944°E, 21 Apr 2023, Suh SJ Coll. (KNU).

**Diagnosis.** Male. Body black in ground color (Fig. 1A).

Korean name: <sup>1</sup>\*따개비대모파리속 (신칭), <sup>2</sup>\*따개비대모파리 (신칭)

Head dichoptic; frontal vitta and fronto-orbital plate dull brown dusted; 1 ocellar, 1 postocellar, 1 inner vertical setae present; outer vertical seta absent; fronto-orbits with 2–3 fronto-orbital setae and numerous additional setulae; antennal segments mostly unicolorous, black; postpedicel circular in profile, lacking anterodorsal angulation; arista bare, shiny basally, stylet-like; face mostly gray to whitish-gray dusted, distinctly concave; gena bluish-gray dusted; palpus black; clypeus well developed (Fig. 1B). Thorax. Mesonotum mostly blackish brown to bluish brown dusted, with postpronotals distinctly gray to whitish-gray dusted; acrostichal setae indistinguishable from the other setulae on the scutum; dorsocentral setae 1–2 + 4–5, presutural and a few anterior postsutural setae fine and indistinguishable from the other setulae; postpronotals and intra-alar setae absent; 1 notopleural, 2 supra-alar, and 2 postalar setae present; proepisternum densely setose, 1–2 proepimeral setae; anepisternum and katepisternum densely setose; anepimeron bare, excluding 1–2 setae anterodorsally; scutellum with two pairs of setae. Legs black, bluish gray dusted; fore tibia with preapical dorsal and ventral setae; mid tibia with a ring of apical setae; hind tibia with a long preapical dorsal setula. Wing slightly brown tinged, darkened along veins; veins black to dark brown; calypter brown, marginal fringes black; halteres pale yellow at the knob (Fig. 1A). Abdomen black, brownish gray dusted, with no strong setae; sternite 5 short and transverse (Fig. 1C); surstylus subrectangular (Fig. 1D, E); distiphallus angulate, dorsal surface conspicuously setulose (Fig. 1F, G).

Female. Resembles the male except for the following characteristics: ground setulae shorter in male; dorsocentrals, including the presutural one, more distinct in male.

Body length: male 4.1–6.2 mm, female 4.1–5.6 mm.

Wing length: male 4.1–5.7 mm, female 4.0–5.3 mm.

**Distribution.** Korea (new record), Japan (Hokkaido), Russia (Kuril Islands).

**Key to the species of the world *Oedoparena***

- 1. Postpedicel with anterodorsal angulation in profile; proepisternum and anepimeron bare ..... *nigrifrons* Mathis et Steyskal
- Postpedicel circular in profile, lacking anterodorsal angulation; proepisternum densely setose; anepimeron with anterodorsal setae ..... 2
- 2. Anepimeron usually 3–5 setae; scutellum at least with 3 pairs of setae; male hypopygium with ventromedial processes more strongly crooked..... *glauca* (Coquillett)
- Anepimeron usually 1–2 setae; scutellum with usually 2

pairs of setae; male hypopygium with ventromedial process not strongly crooked ..... *minor* Suwa

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**CONFLICTS OF INTEREST**

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

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