

A New Record of the Genus *Orchisia* (Diptera: Muscidae) from Korea

Sang Jae Suh^{1,2}, Yong Jung Kwon^{1,2,*}

¹School of Applied Biosciences, Kyungpook National University, Daegu 41566, Korea

²Institute of Plant Medicine, Kyungpook National University, Daegu 41566, Korea

ABSTRACT

The fly genus *Orchisia* Rondani belonging to the tribe Coenosiini of the family Muscidae, known to be distributed throughout old world, is newly recorded in Korean fauna, along with the type species *O. costata* (Meigen, 1826). This genus has been known to include only two species, *O. costata* and *O. subcostata* Cui, Xue et Liu, 1995. These flies can be readily distinguished by the other related taxa of the tribe Coenosiini in having prominent color pattern on wings. The Korean population has been observed on the grass vegetation at marsh area. Photographs of external features and male genitalic characters are provide.

Keywords: *Orchisia*, Muscidae, Diptera, Insecta, Korea

INTRODUCTION

The genus *Orchisia* is a small fly taxon belonging to the tribe Coenosiini of the family Muscidae, known to be distributed throughout old world. This genus was founded by Rondani in 1887 based on the single species *Sapromyza costata* Meigen (*Orchisia costata*). The second constituent species *Orchisia subcostata* was subsequently discovered in Yunnan, China, by Cui et al. (1995). Thus, the above two species have been hitherto recorded worldwide.

The ecology of these species is not well known, but adults of *O. costata* are found in short grasses around marsh, pond, or rice paddies (Shinonaga, 2003). The morphological characteristics of the present genus are as follows: parafrontals bare; two frontal setae inclinate, two orbital setae reclinate; arista short pubescence; basal pair of scutellar setae absent; lower calypter normal in size, projecting beyond upper one. Wings conspicuously brown along anterior margin, elsewhere pale smoky-brown. Hind tibia with 1 well-developed posteroventral preapical seta, and 1 short submedian posterodorsal seta (Shinonaga, 2003; Gregor et al., 2016).

To examine the taxonomic characters, distal abdominal or genital segments were removed with a pair of minute insect

pins. For dissection of genital structures, the removed body parts were cleared with 10% potassium hydroxide (KOH). The genital segments were then mounted in glycerin jelly and observed using either a stereoscopic microscope (Olympus SZX 16; Olympus, Tokyo, Japan) or a compound microscope (Olympus BX50). Photographs of the specimens were taken using an Olympus camera (DP 71) (Suh and Kwon, 2016).

All voucher specimens examined in the present study are deposited in the collection of the School of Applied Biosciences at Kyungpook National University, Daegu, Korea.

The terminology for the morphological characters are in accordance with common usage in dipteris and according to Merz and Haenni (2000).

SYSTEMATIC ACCOUNTS

Order Diptera Linnaeus, 1758

Family Muscidae Latreille, 1802

¹*Genus *Orchisia* Rondani, 1877

Rondani, 1877: 279. Type-species: *Sapromyza costata* Meigen, 1826.

Korean name: ¹*무늬사냥집파리속 (신칭)

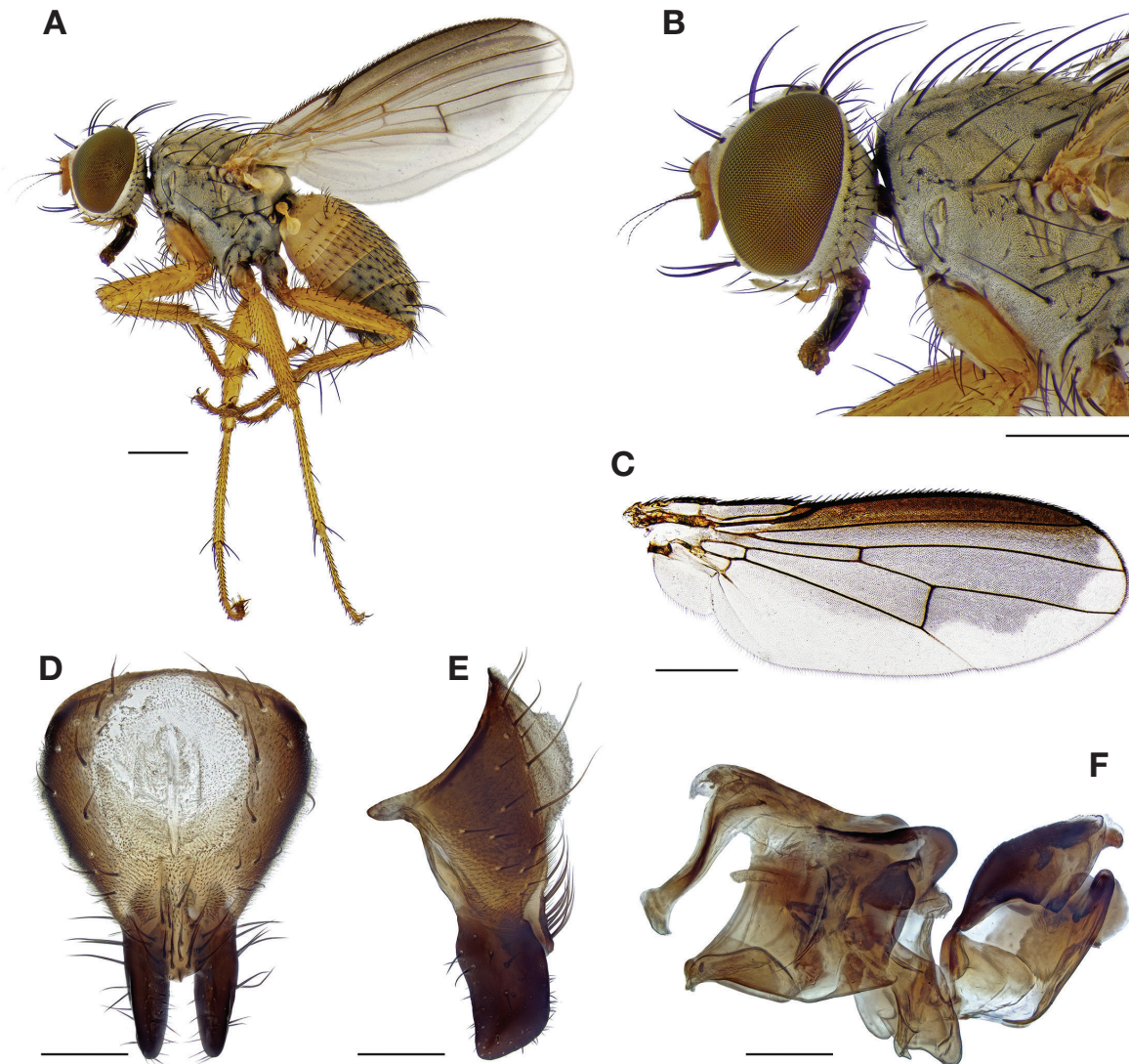


Fig. 1. *Orchisia costata* (Meigen, 1826), male. A, Habitus; B, Head; C, Wing; D, Hypopygium, dorsal view; E, Ditto, lateral view; F, Phallosome, lateral view. Scale bars: A-C=0.5 mm, D-F=0.1 mm.

Diagnosis. Parafrontals bare; 2 reclinate orbital setae and 2 inclinate frontal setae present; arista short pubescence; acrostichal setae weak; dorsocentral setae 1 + 3; basal scutellar setae absent; lower calypter slightly longer than upper one; wing conspicuously darkened along the costal margin; hind tibia with 1 posteroventral preapical seta, and 1 short submedian posterodorsal seta.

¹**Orchisia costata* (Meigen, 1826)

Sapromyza costata Meigen, 1826: 266. Type locality: Unknown.

Coenosia pictipennis Loew, 1858: 10. Type locality: Italy.

Orchisia costata: Xue and Cho, 1996: 936; Shinohaga, 2003: 305; Gregor et al., 2016: 133.

Head yellow in ground color; vertex darkened. Frontal vitta orange to brown, increasingly darker towards vertex. Frontal-orbital plate darkened with grayish pollen; 2 reclinate orbital setae, the upper slightly less than half of the lower; 2 inclinate frontal setae, the upper very weak and much less than half of the lower. Parafacialia and cheek yellow with grayish pollen. Antennae yellow; 3rd segment slightly darkened; arista short pubescence. Palpus yellow. Prementum dark (Fig. 1A, B).

Korean name: ¹*무늬사냥집파리 (신칭)

Thorax black in ground color with gray pollen. Mesonotum without remarkable vittae; acrostichal setae 0 + 0, irregular rows of small setae; dorsocentral setae 2 + 3, the first one very small; 2 postpronotal setae, and 1 posthumeral seta present; prealar seta absent; notopleuron and meron without accessory setulae; 2 proepisternal and 2 proepimeral setae present. Scutellum without discal seta.

Legs yellow. Fore femur with a row of posterodorsal and posteroventral setae; fore tibia with 1 anterodorsal and 1 posterodorsal apical setae, and without posterial seta. Mid femur 1 anterodorsal, 1–2 posteroventral, and 1 preapical posterodorsal setae; mid tibia with 1 posterodorsal seta. Hind femur with 1 row of anterodorsal and anteroventral setae, 1 posteroventral seta; hind tibia with 3 anterodorsal setae, 1 anteroventral, 1 subapical dorsal, 1 weak submedian posterodorsal setae, and 1 posteroventral preapical seta.

Wings conspicuously darkened along costal margin, elsewhere pale smoky-brown (Fig. 1C). Crossvein *r-m* beyond middle of discal cell; calypter yellow; halter yellow to orange.

Abdomen yellow in ground color with grayish pollen, often yellowish at base laterally; narrow pale median vitta present; 4–6th tergites with one pair of small round spots. Male cercal plate spatulate. Surstylus slender and swordlike; rectangular in lateral view (Fig. 1D–F).

Body length: Male, 3.2–3.3 mm; female, 3.3–3.8 mm.

Wing length: Male, 3.0–3.1 mm; female, 3.0–3.4 mm.

Material examined. Korea: 4♂5♀, Gyeongsangbuk-do: Chilgok-gun, Yakhmok-myeon, Gwanho-ri, 6 Sep 2015, Suh SJ; 1♂, Chilgok-gun, Buksam-myeon, Deoksan-ri, 6 Sep 2015, Suh SJ; 2♂, Jeju-do: Seoguipo-si, Seoheung-dong, Oedolgae, 5 Apr 2016, Suh SJ.

Distribution. Korea (new record), China, Japan, Europe, Afrotropical, Oriental, and Australian region.

Remarks. This species differs from *Orchisia subcostata* Cui, Xue et Liu, 1995 in having the brown frons, spatulate cercal plate and stout surstylus (cf. Cui et al., 1995). *Orchisia costata* is widely distributed, including Palearctic, Afrotrop-

ical, Oriental, and Australian region, while *O. subcostata* is recorded only at Yunnan in southern China.

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