

## Record of *Lispe consanguinea* (Diptera: Muscidae), New to Korea

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### ABSTRACT

Flies of the genus *Lispe* are large, dark gray, and have well-developed palpi. Most *Lispe* species are found in damp sandy and muddy environments, such as borders of marshes, seashore areas, swamps, lakes, ponds, streams, and rice paddy fields. Both adults and larvae are predators of various small aquatic insects. Previously, five species of *Lispe* had been identified in Korea: *L. assimilis* Wiedemann, 1824, *L. litorea* Fallén, 1825, *L. orientalis* Wiedemann, 1824, *L. patellitarsis* Becker, 1914, and *L. tentaculata* (DeGeer, 1776). In this paper, we record a sixth *Lispe* species, *L. consanguinea* Loew, 1858, for the first time in Korea. The diagnosis and illustrations of this species are provided in addition to a key to the Korean *Lispe* species.

**Keywords:** new record, *Lispe consanguinea*, Muscidae, Insecta, Korea

### INTRODUCTION

Flies belonging to the genus *Lispe* Latreille are widely distributed throughout the world, and approximately 150 species are known (Vikhrev, 2020). This genus comprises approximately 52 species throughout the Palaearctic region (Suh et al., 2007; Vikhrev, 2020). The adults are found on the sandy or muddy waterfronts of moist habitats (e.g., near sewage water, mountain streams, ponds, or lakes). The larvae of some species appear to be aquatic, and both adults and larvae are predators of various small aquatic insects (Séguy, 1923; Johannsen, 1935).

Park (1964) is the first to record this genus in Korea with his identification of *Lispe orientalis* Wiedemann. Later he added *L. tentaculata* to the list of Korean fauna (Park, 1975). Meanwhile, Suh et al. (2007, 2009) recorded *L. assimilis* Wiedemann, *L. litorea* Fallén, and, subsequently, *L. patellitarsis* Becker.

In this paper, we report *L. consanguinea* for the first time in Korea. The diagnosis and illustrations of this species are provided in addition to a key to the Korean *Lispe* species.

In order to examine the taxonomic characters of this spe-

cies, distal abdominal or genital segments were removed by using a pair of minute insect pins. Then, the separated abdomen was soaked in a 10% KOH solution in a test tube and heated on hotplate for 20–30 min. For further dissection, the abdomen, softened by the solution, was placed into a petri dish full of distilled water. The genitalia were observed by 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, 2018; Mun and Suh, 2019).

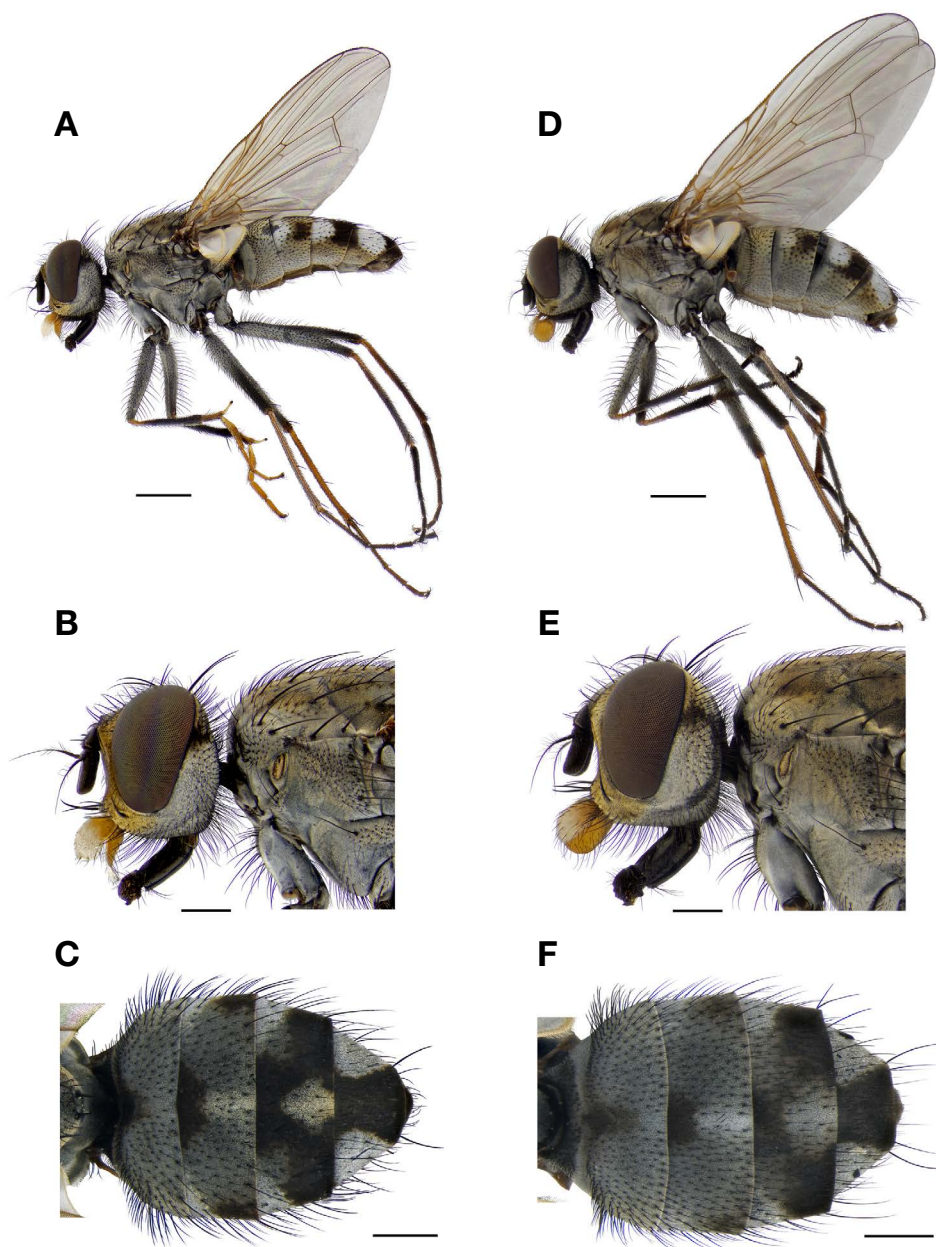
All specimens examined in the present study have been deposited in the collection of the School of Applied Biosciences at Kyungpook National University, Daegu, Korea.

### SYSTEMATIC ACCOUNTS

Order Diptera Linnaeus, 1758  
Family Muscidae, Latreille, 1802  
Genus *Lispe* Latreille 1796

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**Fig. 1.** *Lispe consanguinea* Loew, 1858. A, Male, habitus; B, Male, head; C, Male abdomen; D, Female, habitus; E, Female, head; F, Female, abdomen. Scale bars: A, D=1 mm, B, C, E, F=0.5 mm.

<sup>1</sup>\**Lispe consanguinea* Loew, 1858 (Figs. 1, 2)

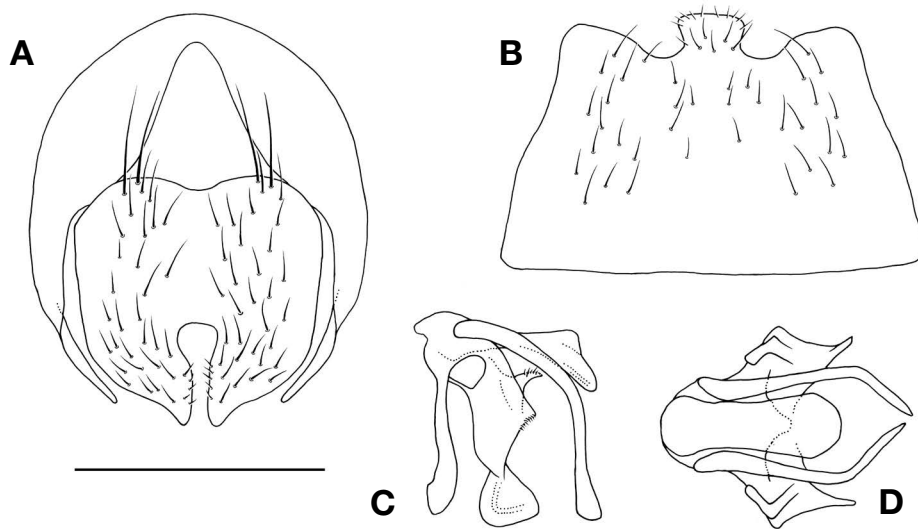
*Lispe consanguinea* Loew, 1858: 8 (type locality: Germany and Sweden).

**Material examined.** 13♂♂11♀♀, Korea: Gangwon-do: Hwacheon-gun, Gandong-myeon, Bangcheon-ri, Lake Paroho, 1 Jul 2014, Suh SJ; 1♂, Lake Soyangho, Chuncheon-si,

Buksan-myeon, Chugok-ri, 1 Jul 2014, Suh SJ; 10♂♂10♀♀, Chungcheongbuk-do: Cheongju-si, Ochang-eup, Yongdu-ri, 30 Sep 2017, Suh SJ; 1♂1♀, Gyeongsangbuk-do: Gyeongju-si, Yangnam-myeon, Suryeom-ri, 6 Jun 2020, Suh SJ.

**Description.** Male: Head: Frontal vitta velvety black; frontal triangle narrow with sparse golden pollinosity, reaching to the lunule; parafrofrontalia and parafacialia with golden pollen and

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**Fig. 2.** *Lispe consanguinea* Loew, 1858, male. A, Hypopygium, dorsal view; B, Fifth sternite, ventral view; C, Gonocoxal lobe, gonostylus and phallus, lateral view; D, Ditto, dorsal view. Scale bar: A–D=0.5 mm.

several short setulae, 4 inclinate frontal setae and 2 reclinate upper orbital setae present; face and gena with golden pollen. Antenna black; arista plumose. Palpus very large, whitish-yellow to brownish-yellow; haustellum black (Fig. 1A, B).

Thorax: Ground color with grayish-brown pollen; scutum with 3 dark brown vittae; dorsocentral setae 2+4, intra-alar setae 0+2, prealar seta hair-like; basal and apical scutellar setae strong. Katepisternum with 3 setae, the posterior lower one short.

Legs: Ground color black and tinged gray; the patella of fore tibia brown; fore tarsus light brown with a finger-like protuberance on the apex of basitarsus; mid and hind tibiae yellow to yellow-brown; mid and hind tarsi brown to dark brown; fore femur with a row of posterodorsal and posteroventral setae; midfemur with several anteroventral setae on basal part; hind femur with a row of anterodorsal setae, thin row of anteroventral setae on basal 1/3, a row of posteroventral setae on distal 1/3; fore tibia without setae; midtibia with 1 posterodorsal seta on the middle; hind tibia with 1 anterodorsal and 1 fine posterodorsal setae.

Wing: Slightly hyaline; R1 and R4+5 bare; m-m straight. Calypters white with light brown margin. Halteres reddish brown.

Abdomen: Ground color black with grayish dust; 2nd tergite light gray lacking marks; 3rd tergite with black and whitish pattern; 4th tergite black with 2 whitish anterolateral marks and 1 posteromedian spot; and 5th tergite with 2 whitish lateral marks (Fig. 1C).

Female: Palpi smaller than the male; all tarsi brownish-black to black; fore basitarsus without finger-like protuber-

ance (Fig. 1A, B, C).

Body length: male: 5.2–6.3 mm; female: 5.4–6.8 mm.

Wing length: male: 4.5–5.0 mm; female: 4.8–5.4 mm.

**Distribution.** Korea (new record: Central, South), Japan (Honshu), China (Heilongjiang, Jilin, Liaoning, Inner Mongolia, Hebei, Beijing, Shanxi, Shaanxi, Shandong), Austria, Bulgaria, Czech, Finland, France, Germany, Great Britain, Greece, Hungary, Iran, Italy, Netherlands, Pakistan, Poland, Romania, Russia, Spain, Sweden.

**Remarks.** This newly recorded species, *Lispe consanguinea*, is externally similar to *L. tentaculata* because it also possesses a finger-like protuberance on its fore basitarsus. However, it can be distinguished by its yellow to yellow-brownish mid and hind tibiae.

**Key to the Korean *Lispe* species**

1. Hind basitarsus with scoop-shaped process.....  
..... *patellitarsis* Becker
- Hind basitarsus without scoop-shaped process..... 2
2. Midtibia with anterodorsal seta..... *litorea* Fallén
- Midtibia without anterodorsal seta..... 3
3. Hind tibia with anteroventral seta..... *assimilis* Wiedemann
- Hind tibia without anteroventral seta..... 4
4. Fore basitarsus without a finger-like protuberance.....  
..... *orientalis* Wiedemann
- Fore basitarsus with a finger-like protuberance..... 5
5. Mid and hind tibiae mostly yellow to yellowish-brown.....  
..... *consanguinea* Loew
- Mid and hind tibiae entirely black..... *tentaculata* (DeGeer)

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## CONFLICTS OF INTEREST

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

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