

The Studies of Flies in Korea

3. On the Flies and Hitherto Unreported Species of Quelpart Island

PARK, Soung Ho

(Neung-Inn High School, Taegu)

韓國產 파리의 研究 (第三報). 濟州島產 韓國未記錄種

朴 星 湖

(大邱·能仁高校)

(Received on Jan. 25, 1964)

摘 要

1. 1963年 8月 6일부터 8月 22일까지 濟州島의 (濟州市, 中文, 翰林, 西歸浦, 高山, 城山浦, 觀音寺, 漢拿山山頂) 各地域에 걸쳐 衛生에 關係되는 파리類, 卽 *Sarcophagidae* (쉬파리), *Muscidae* (집파리), *Anthomyidae* (잡정파리), *Fannidae* (애기집파리), *Scatophagidae* (똥파리) 3000餘個體를 採集하여 整理한 結果 다음과 같은 韓國未記錄 8種이 밝혀졌다.

1. *Sarcophaga erecta* HO, 1934.

5. *Lispe orientalis* WIEDEMANN 1830.

2. *Pyrellia cadaverina* LINNÉ, 1761.

6. *Muscina angustifrons* (LÖU, 1858).

3. *Orthellia latipalis* ZIMIN, 1951.

7. *Ophyra chalcogaster* (WIEDEMANN, 1850).

4. *Morellia simplicissima* ZIMIN, 1951.

8. *Graphomyia rufitibia* STEIN, 1918.

2. 以上으로 韓國產 *Sarcophagidae* 는 31種, *Muscidae* 는 15種, *Anthomyidae* 는 6種이 된다.

INTRODUCTION

Though the examination of the insects on Quelpart Island has long been conducted, that on flies has, to the author's knowledge, been not recorded, except a paper by Okamoto (1924) which reported on the three species of Diptera, i.e., *Musca domestica*, *Lucilia caesar* and *M. corvina*. The first two, *M. domestica* and *L. caesar* are cosmopolitan, and the last one, *M. corvina*, is still unconfirmed as a species name. With the above knowledge, the author, with the use of a collecting net and trap, collected over 3000 individuals in the vicinity of Cheju city, Choongmoon, Harrim, Sukipo, Kosan, Sungsanpo, Kwanum Temple and Mt. Hanla, on Quelpart Island during the period of August 6 through 22, 1963.

On examining them, the author has found the following unreported species: *Sarcophaga erecta* HO, 1934; *Pyrellia cadaverina* (LINNÉ, 1761); *Orthellia latipalis* ZIM., 1951; *Morellia simplicissima* ZIM., 1951; *Lispe orientalis* WIED., 1830; *Muscina angustifrons* (LÖU 1858); *Ophyra chalcogaster* (WIED., 1830); and *Graphomyia rufitibia* STEIN, 1918.

The author describes the above eight species (so much of initial description as is inadequate will be described in detail).

DESCRIPTIONS

1. *Sarcophaga erecta* HO, 1934 (*Bull. Fan. Mem. Inst. Biol.* 5, 35-37)

Male. Body length: 11 mm.

Head: Front about 3/4 width of one eye; frontal vitta black, parafrontals and parafacials golden pollen; frontal bristles 9 or 10 pairs; antennae dark brown, 3rd segment about 3 times as long as 2nd; medinae with silvery pollinose and with numerous black hairs; bucca black, with numerous yellowish hairs; 3 rows of black setae present on postocular part; palpi black.

Thorax: Acrostichals 0+1, dorsocentrals 4 +4, intra-alar bristles 1+3, supra-alar bristles 3, notopleural bristles 4. Wings: Hyaline; r1 bare; r4+5 with 10 short setae located dorsally more than half way from basal node to r-m; ventral side with 4 short setae on the basal node r4+5; section V of costa about the same length as section III; halter dark brown.

Legs: Black; fore femur with a pair of row of long bristles on dorsal surface, and one row of long bristles on ventral surface; mid femur with a pair of rows of short bristles on ventral surface, and a row of bristles on anterolateral surface, 2 bristles on basal part of posterolateral surface; tibia with 3 pairs of long bristles; hind femur with a pair of rows of bristles each on dorsal surface and ventral surface; hind tibia with 2 or 3 bristles.

Abdomen: A pair of median marginal bristles and 4 pairs of lateral marginal bristles on 4th tergite; 1st genital tergite greyish pollen, 2nd genital tergite shiny black, 1st and 2nd genital tergite with numerous black hairs, but without marginal bristles; forceps and genitalia as shown in fig. 1.

Localities: Quelpart Island (Chungmoon).

Distribution: China, Japan (Kyushu, Mitake, Sendai, Morioka, Kanazawa).

Remarks: Found on Quelpart Island for the first time, has much similarity in the phallosome of genitalia to *S. musashinensis*, dwells on decaying animal carcass as to be classified as a sanitary insect.

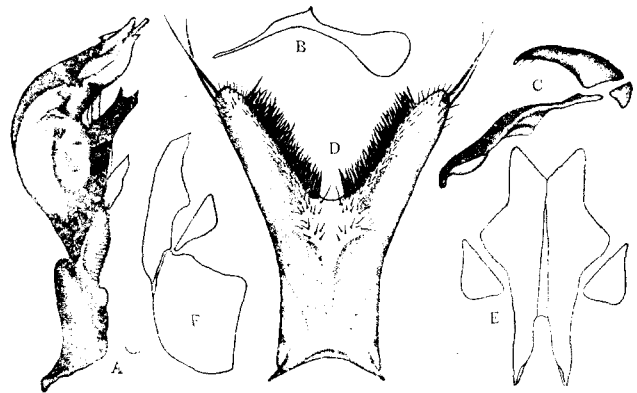


Fig. 1. *S. erecta*

A: Phallosome. B: Ejaculatory apodeme. C: Parameres. D: 5th sternite of male. E: Forceps. F: 1st genital tergite and lateral view of forceps.

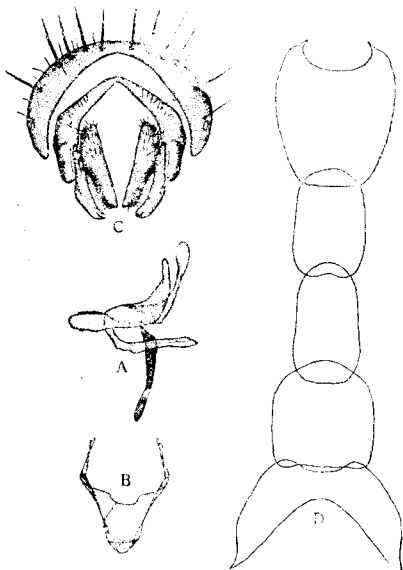


Fig. 2. *Muscina angustifrons*

A: Phallosome and parameres. B: Vinculum.
C: Forceps. D: Male sternites.

2. *Muscina angustifrons* (LÖU, 1858) (Wein. Ent. Mon. 2: 111)

Male. Body length: 7 mm.

Head: Front narrow, frontal vitta black and frontal bristles 9 pairs; parafrontals and parafacials silvery pollen; bucca black with numerous black hairs; antennae black brown, length of 3rd segment with twice that of 2nd; palpi blackish brown with orange part of apex.

Thorax: Scutum black and covered with yellowish white pollen; scutum orange at apex; preacrostichals 3; predorsocentrals and postacrostichals 2, postdorsocentrals 4.

Wings: Hyaline; subcostal sclerite yellowish brown with pile; squamae yellowish white; halter light grey.

Legs: Femur black, but part of apex dark brown; tibiae dark brown; tarsus black brown.

Abdomen: Black and yellowish pollinose; sternite black, genitalia as shown in fig. 2.

Distribution: Japan (Hokkaido, Honshu, Kyushu).

Localities: Quelpart Island, Taegu, Mt. Kaya, Mt. Palgong.

Remarks: Bears resemblance to *Muscina stabulans* in appearance. Dr. Kano once compared this species with *Muscina stabulans* (Bull.

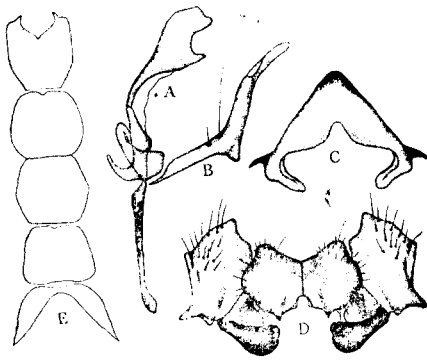


Fig. 3. *Morellia simplicissima*
A: Phallosome. B: Parameres. C: Vinculum.
D: Forceps. E: Male sternites.

Tokyo Med. & Dent. Univ. 3 : 2, 135-141, 1956). Compared with the Japanese bred, it had more dark brown tibia and could be clearly distinguished in genitalia from *Muscina stabulans*.

3. *Morellia simplicissima* ZIMIN, 1951 (*Fauna. SSSR, Muscidae*, 18 : 4, 221)

Male. Body length : 7-8 mm.

Head: Eyes black brown; front narrow, frontal vitta black, frontal bristles 12 or 13 pairs; parafrontals and parafacials greyish white pollen; bucca black, with numerous black hairs; antennae black with greyish pollen, length of 3rd segment about 3 times that of 2nd; palpi black.

Thorax: Scutum black and covered with white pollen on preacrostichal part and intra-alar part, after shiny black; preacrostichals

absent, postacrostichals 2, postdorsocentrals 4 or 5, predorsocentrals 2 or 1.

Wings: Hyaline; halter light greyish white; squamae yellowish white.

Legs: Femur black; dorsal and ventral parts of midfemur absent a row of bristles; tarsi with brown hairs.

Abdomen: Black and greyish pollinose sternites black; genitalia, forceps, 5th sternite as shown in fig. 3.

Distribution: Unknown.

Localities: Quelpart Island, Taegu district.

Remarks: Dwells on the excrement of cows, is commonly found in the fields and mountains, never gathers on decaying animal carcass.

4. *Orthellia (Pyrelliomima) latipalis* ZIMIN, 1951 (*Fauna SSSR, Muscidae*, 18 : 4, 87-90)

Male. Body length: 7-8 mm

Head: Eye characteristic red and contiguous; frontal vitta black, frontal bristles about 17 pairs and weak; parafrontals and parafacials black and with greyish pollen; bucca black and with numerous black hairs; antennae dark brown and a part of apex orange, length of 3rd segment 3 times that of 2nd; palpi black.

Thorax: Scutum green; preacrostichals absent; postacrostichals and predorsocentrals each 2; postdorsocentrals 3; postintra-alar bristles 1.

Wings: Hyaline; basicostal scale dark brown, subcostal sclerite yellowish brown; squamae greyish white; halter yellowish white.

Legs: Black; fore femur and hind femur a row of bristles each on dorsal and ventral surface.

Abdomen: Shiny green and with numerous black weak hairs; sternites and genitalia as shown in fig. 4.

Distribution: Japan (Honshu, Hokkaido).

Localities: Kwanum Temple, Mt. Palgong, Um-moon Temple (Taegu).

Remarks: Similar to *Lucilia*, gathers on human excrement and is a sanitary insect. Similar also to *Lucilia* in appearance except genitalia and forceps which are clearly distinguished, characteristically has very red eyes.

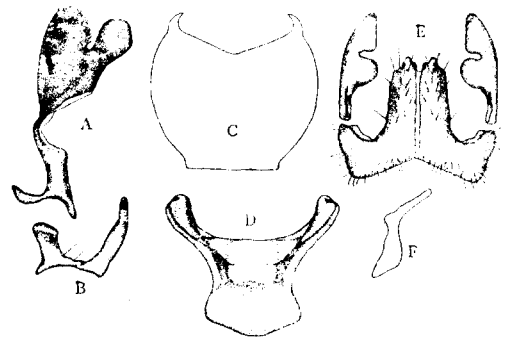


Fig. 4. *Orthellia latipalis*
A: Phallosome. B: Parameres. C: 5th sternite.
D: Vinculum. E: Forceps. F: Ejaculatory apodeme.

5. *Pyrellia cadaverina* (LINNE, 1761) (*Fauna suec. ed. 2*, 451)

Male. Body length: 4-5 mm.

Head: Eyes contiguous; frontal vitta black; frontal bristles poor weak; parafrontals and parafacials greyish white pollen; bucca black and numerous black hairs; antennae blackish brown, length of 3rd segment about 2 times that of 2nd; palpi black.

Thorax: Scutum shiny bluish green; preacrostichals absent; postacrostichals 2; predorsocentrals 3, postdorsocentrals 4.

Wings: Hyaline; subcostal sclerite yellow; lower squamae lobe dark brown; halter yellowish white.

Abdomen: Shiny green and with numerous black weak hairs; sternite and genitalia as shown in fig. 5.

Distribution: Europe, Japan (Hokkaido, Honshu).

Localities: Chungmoon, Kwanum Temple.

Remarks: Distributed widely over tropical region in the Orient, is said to be virus-carrying (Medical Insect, p. 916), gathers on flowers as well as decaying animal carcass, human and horse excrement.

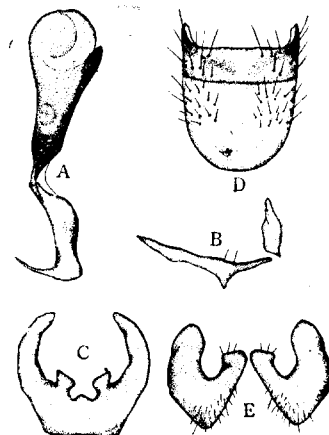


Fig. 5. *Pyrellia cadaverina*
A: Phallosome. B: Parameres.
C: Vinculum. D: 5th sternite.
E: Forceps.

6. *Lispe orientalis* WIEDEMANN, 1830 (*Auss. Zweiflug. Inst.* 2, 444)

Male. Body length: 6-7 mm.

Head: Fronts similar as wide as one eye; frontal vitta black with brown pollen; frontal bristles 7 or 8 pairs; parafrontals and parafacials black with yellowish pollen; bucca black and numerous black hairs and with yellowish pollen; antennae black with dark brown pollen, length of 3rd segment about 2.5 times that of 2nd; palpi yellow with greyish pollen and shape as in fig. 6.

Thorax: Scutum dark brown with yellowish pollinose; preacrostichals absent, predorsocentrals 1 or 2, postdorsocentrals 4. Wings: Hyaline, basicostal scale yellow, squamae yellowish white.

Legs: black; femur with greyish pollinose, fore and hind femurs a row of bristles each on dorsal and ventral surface. Abdomen: Brown color as in thorax with greyish pollen checkered; genitalia, sternite and forceps as shown in fig. 6.

Distribution: Unknown.

Localities: Chungmoon, Sukipo, Kwanum Temple, Mt. Palgong, Mt. Kaya.

Remarks: Dwells outdoors in foul water or filthy damp places.

7. *Graphomyia rufitibia* STEIN, 1918
(*Ann. Hist. - Nat. Hung.* 16, 147)

Female. Body length: 7-8 mm.

Head: Front about 2/3 the width of one eye; frontal vitta black, parafrontal and parafacial with golden pollen; frontal bristles 8 pairs; antennae black, with greyish pollen; length of 3rd segment about 3 times that of 2nd; bucca and metacephalon with numerous black weak hairs; palpi dark brown and with orange pollen on apex.

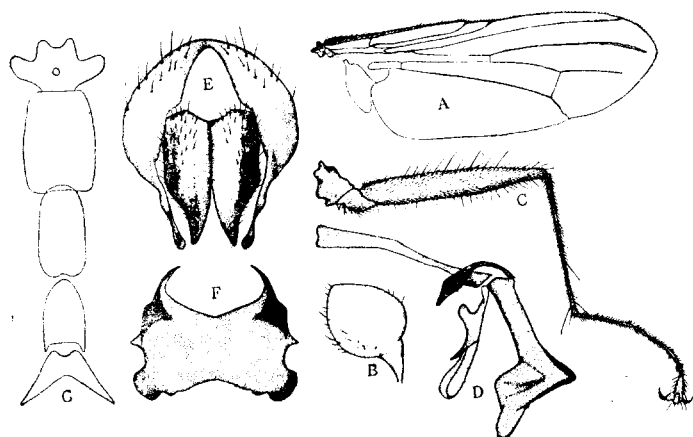


Fig. 6. *Lispe orientalis*
A: Wing of male. B: Palpi of male. C: Hind femur of male.
D: Phallosome and parameres. E: Forceps. F: 5th sternite.
G: Sternites of male.

Thorax: Scutum with golden pollen and 4 black stripes on prescutum and scutum, one black stripe on central part of scutum and posterior scutum; preacrostichals absent, postacrostichals 1; predorsocentrals 2, postdorsocentrals 5. Wings: Hyaline; subcostal sclerite yellow, squamae yellowish white; halter almost similar to squamae.

Legs: Black and with greyish pollen on femur, fore femur a pair of rows of bristles on dorsal surface and 4 or 5 bristles, a pair of rows of bristles on dorsal surface and 4 or 5 bristles on posterior part of ventral surface; mid femur a row of bristles on lateral and ventral surfaces, a row of bristles absent on dorsal surface; hind femur a row of bristles on ventral and dorsocentral surface; hind and mid tibia brown, fore tibia weak hairs on posterior part and dark brown.

Abdomen: Black and golden pollen checkered pattern, almost similar to *Graphomyia maculata*; female genital segments as shown in fig. 7.

Distribution: Eastern China (Chusan Island, Wenchow), Japan (Honshu, Kyushu).

Localities: Sukipo.

Remarks: Bears resemblance to *Graphomyia maculata*, is distinguishable in genitalia. The author failed to collect its male. Also dwells on animal excrement and grasses.

8. *Ophyra chalcogaster* (WIEDEMANN, 1830) (*Auss. Zw. Ins.* 2, 427)

Male. Body length: 5-6 mm.

Head: Eyes almost contiguous; lunule part silvery pollinose; frontal bristles 7 pairs; antennae brown, length of 3rd segment 2 times that of 2nd; bucca and metacephalon shiny black with black hairs; palpi black.

Thorax: Black, prescutum absent black hairs, preacrostichals 3; postacrostichals indistinct; predorsocentrals 3, postdorsocentrals 4 or 5.

Abdomen: Black; numerous long hairs on each tergites (*Ophyra nigra* and *O. leucostoma* short black hairs).

Legs: *Ophyra nigra*, *O. leucostoma* and *O. chalcogaster* legs as shown in fig. 8.

Distribution: Formosa, Asia, Japan.

Localities: Sukipo.

Remarks: Similar in appearance to *O. nigra* and *O. leucostoma*, generally dwells on decaying plants. The above three species have characteristics in tibia and can be compared as shown in fig. 8.

CONCLUSIONS

Other species also found on the Island include:

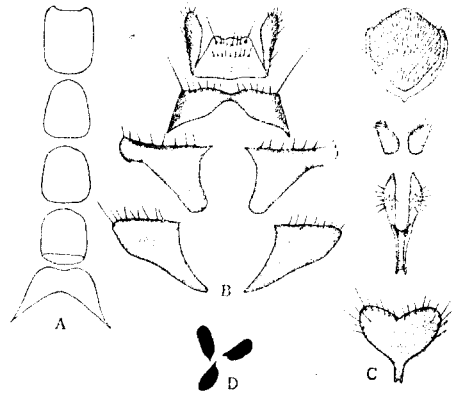


Fig. 7. *Graphomyia ruftibia*
A: Sternites of female. B: Tergites of ovipositor. C: Sternites of ovipositor. D: Spermatheca.

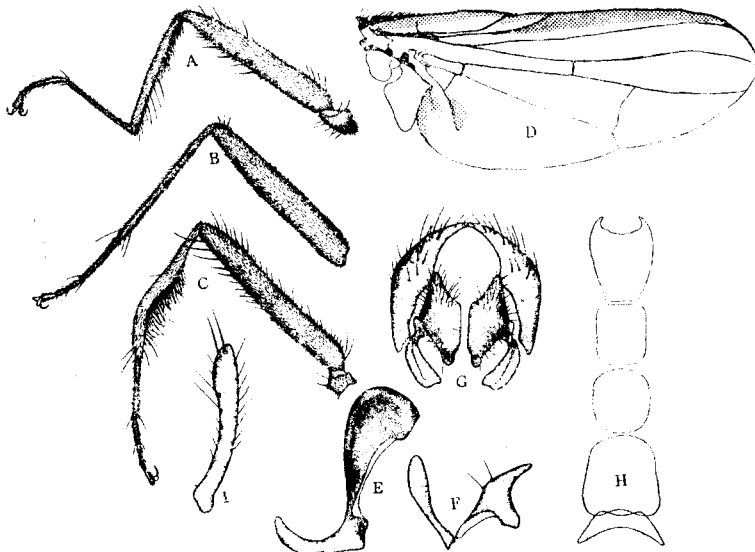


Fig. 8. *Ophyra chalcogaster*
A: Hind femur of *O. chalcogaster*. B: Hind femur of *O. nigra*. C: Hind femur of *O. leucostoma*. D: Wing of *O. chalcogaster*. E: Phallosome. F: Parameres. G: Forceps. H: Sternites. I: Antennae of male.

Sarcophagidae

1. *Sarcophaga melanura* MEIG., 1826. 2. *S. striata* (FAB., 1794). 3. *S. misera* WALK., 1849. 4. *S. tuberosa* PAND., 1896. 5. *S. similis* PAND., 1891. 6. *S. pigni* HO, 1934. 7. *S. ugamskii* (ROHD., 1937). 8. *S. peregrina* R.-D., 1830. 9. *S. brevicornis* HO, 1934. 10. *S. albiceps* MEIG., 1826. 11. *S. kanoi* PÄRK, 1962. *12. *S. erecta* HO, 1934. 13. *S. harpax* PAND., 1896.

Calliphoridae

1. *Calliphora vomitoria* (LINNÉ, 1758). 2. *Aldrichina grahami* (ALDRICH., 1930). 3. *Lucilia illustris* (MEIG., 1826) 4. *L. porphyrina* (WALK., 1826) 5. *L. papuensis* (MACQ., 1842). 6. *Phaenicia sericata* (MEIG., 1857).

Muscidae

1. *Musca hervina* VILL., 1922. 2. *M. convexifrons* (FAB., 1826). 3. *Muscina stabulans* (FAB., 1823). *4. *M. angustifrons* (LÖU, 1858). *5. *Pyrellia cadaverina* (LINNÉ, 1761). *6. *Orthellia latipalis* ZIMIN, 1951. 7. *Stomoxys calcitrans* (LINNÉ, 1758). *8. *Morellia simplicissima* ZIMIN, 1951. *9. *Lispe orientalis* WIEDEMANN, 1830. *10. *Graphomyia rufitibia* STEIN, 1918.

Anthomyidae

- *1. *Ophyra chalcogaster* (WIEDEMANN, 1830). 2. *O. nigra* (WIED., 1830). 3. *O. leucostoma* (WIED., 1817).

Fannidae

1. *Fannia canicularis* (LINNÉ, 1761).

Scatophagidae

1. *Scopoeuma stercorarium* (LINNÉ, 1763).

With the addition of the above reported six species, Korean *Muscidae* now amounts to fifteen species in all. *Anthomyidae*, now to six with the addition of one, and *Sarcophagidae* to 31 with the addition of one.

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* mark indicates unreported species in Korea.