

Morphological Studies on Muscoid Flies of Medical Importance in Japan(IV)

メタデータ	言語: English 出版者: 公開日: 2017-10-03 キーワード: 作成者: Hori, Katsushige, 堀, 克重 メールアドレス: 所属:
URL	https://doi.org/10.24517/00011524

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The Science Reports of the Kanazawa University, Vol. II, No. 1, pp. 75—85, March, 1953.

**Morphological Studies on Muscoid Flies of
Medical Importance in Japan, IV.***

**On Eleven Species of Sarcophaginae (Dipt., Sarcophagidae)
from Japan.**

Katsushige HORI**

(Received September 10, 1952)

(With Nineteen Text-figures)

I. Introduction

The present paper is the second part of a series which the writer expects to describe on various forms of the subfamily Sarcophaginae found in Japan.

In the following lines, ten species of the genus *Sarcophaga* and one species of the genus *Sarcophila* are dealt with.

Before proceeding further, the writer expresses his hearty thanks to Prof. Dr. MUTSUO KATŌ of the Tōhoku University and Dr. HARUJIRO KOBAYASHI of the Kyoto Prefectural Medical University for their kind guidance and encouragement. He is also much indebted to Prof. MASAO KUMANO and some other members of the Zoological Institute, Kanazawa University for their help and encouragement in carrying out this study. Finally, the writer expresses his gratitude to Prof. KAZUYUKI MIYAMURA of the Kanazawa University for his correction of the manuscript.

II. Description of the Species

1. *Sarcophaga erecta* HO.

Male—Head: Front about equal to half an eye-width. Lateral verticals short. Frontals moderately diverging. Frontal stripe well defined, narrower than parafrontalia taken together. Parafacial hairs weak. Antennae black, third segment two and a half times as long as the second. Back of head with three rows of hairs. Palpi black.

Thorax: Whitish-grey. Propleura bare. Acrostichals 0+1. Posterior dorso-centrals 3.

Abdomen: Ground color as in thorax, with the usual tessellation. GS₁ dark grey pollinose, without marginals. GS₂ shining black. Male genitalia as in Fig. 1.

Wings: Costal spine distinct. Section III of costa shorter than section V. Vein r_1 bare. Vein r_{4+5} bristly about half way to the cross-vein.

* Supported by the Grant in Aid for the Miscellaneous Scientific Research from the Department of Education.

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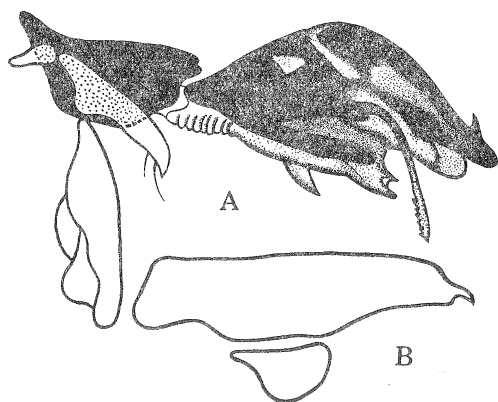


Fig. 1. Male genitalia of *S. erecta*.
A.—Phallosome and one paramere in side view ($\times 30$); B.—Lateral view of anal cercus and distal segment of ninth coxite ($\times 20$).

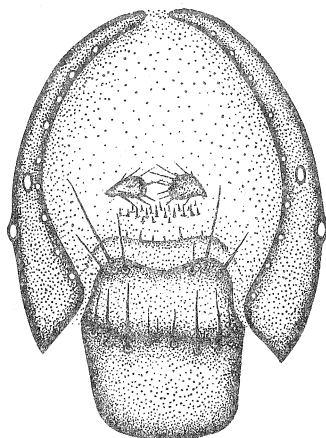


Fig. 2. Female genitalia of *S. erecta* ($\times 30$).

Legs: Mid-femora with a wide-spaced row of bristles, without true fringe. Hind femora and tibiae all bare.

Female: Eyes separated by one-fourth of total width of head. Frontal stripe as wide as one of the parafrontalia, with well-defined edges. Genital segments dark grey. Female genitalia see Fig. 2. Signum wanting.

Length: 6–9mm.

Distribution: China, Japan.

Localities: Mitake, Sendai, Morioka, Kanazawa.

Remarks: This species was generally found sitting on pebbles of hill-streams.

2. *Sarcophaga caudagalli* BÖTTCHER.

Male—Head: Front about equal to half an eye-width. Lateral verticals present. Frontals diverging. Frontal stripe sharply defined, a little wider than one of the parafrontalia. Parafacial hairs weak. Antennae black, third segment three and a half times as long as the second. Back of head with three rows of hairs. Palpi black.

Thorax: Whitish-grey. Propleura bare. Acrostichals 0+1. Posterior dorso-centrals 3.

Abdomen: Ground color as in thorax, with the usual tessellation. GS_1 brownish-black, without marginals. GS_2 shining black. Male genitalia shown as in Fig. 3.

Wings: Costal spine strong. Section III of costa shorter than section V. Vein r_1 bare. Vein r_{4+5} bristly about half way to the cross-vein.

Legs: Mid-femora without comb and fringe. Mid-tibiae bare. Hind tibiae bare.

Female: Front narrower than an eye-width. Frontal stripe a little wider than one of the parafrontalia, with well-defined edges. Genital segments dark grey. Female genitalia see Fig. 4. Signum is developed.

Length: 6–9 mm.

Distribution: India, Ceylon, Formosa, Japan.

Localities: Tokyo, Terai (Ishikawa Prefecture), Kanazawa.

Remarks: About the occurrence of this species from Japan, the writer already reported in 1950 from Tokyo. This is the second record of this form from Japan.

3. *Sarcophaga misera* WALKER.

Male—Head: Front about equal to three-fifths of an eye-width. No lateral verticals.

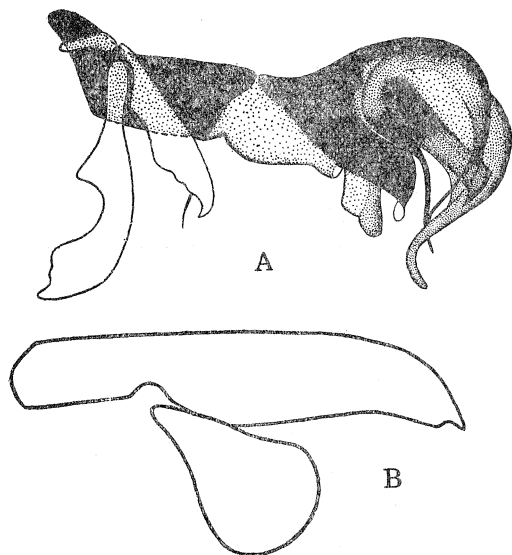


Fig. 3. Male genitalia of *S. caudagalli*.
A.—Phallosome and one paramere in side view ($\times 35$); B.—Lateral view of anal cercus and distal segment of ninth coxite ($\times 35$).

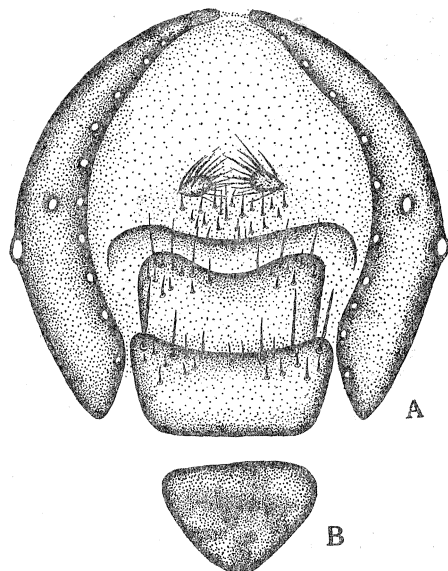


Fig. 4. Female genitalia of *S. caudagalli*.
A.—Ventral view of female genitalia ($\times 30$). B.—Signum ($\times 30$).

Frontals diverging. Frontal stripe sharply defined, wider than parafrontalia taken together. Parafacial hairs weak. Antennae black, third segment two and a half times as long as the second. Back of head with three rows of hairs. Palpi black.

Thorax: Ashy-grey. Propleura bare. Acrostichals 0+1. Posterior dorso-centrals 2~5, of which anterior three weak.

Abdomen: Ground color as in thorax, with the usual tessellation. GS_1 brownish black, without marginals. GS_2 shining black. Male genitalia as in Fig. 5.

Wings: Costal spine weak. Section III of costa about equal to section V+VI. Vein r_1 bare. Vein r_{4+5} bristly about half way to the cross-vein.

Legs: Mid-femora with comb and fringe, mid-tibiae bare. Hind tibiae fringed typically.

Female: Front narrower than an eye-width. Frontal stripe broader than each

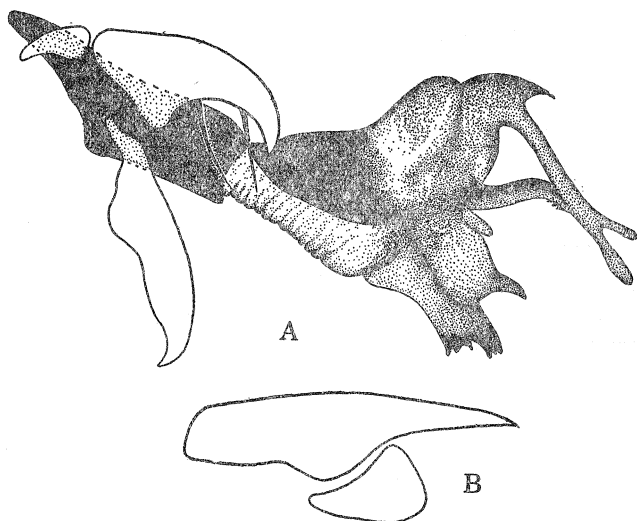


Fig. 5. Male genitalia of *S. misera*.
A.—Phallosome and one paramere in side view ($\times 30$); B.—Lateral view of anal cercus and distal segment of ninth coxite ($\times 20$).

parafrontal, with well-defined edges. Facial hairs weak. Genital segments black. Female genitalia see Fig. 6.

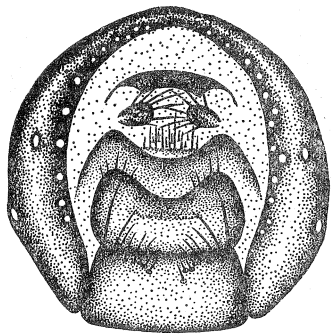


Fig. 6. Female genitalia of *S. misera* ($\times 25$).

Parafacial hairs weak. Antennae black, third segment two and a half times as long as the second. Back of head with three rows of hairs. Palpi black.

Thorax: Whitish-grey. Propleura bare. Acrostichals 0+1. Posterior dorso-centrals 3~5, decreasing in size anteriorly.

Abdomen: Ground color as in thorax, with the usual tessellation. GS_1 brownish-black, without marginals. GS_2 shining black. Male genitalia as in Fig. 7.

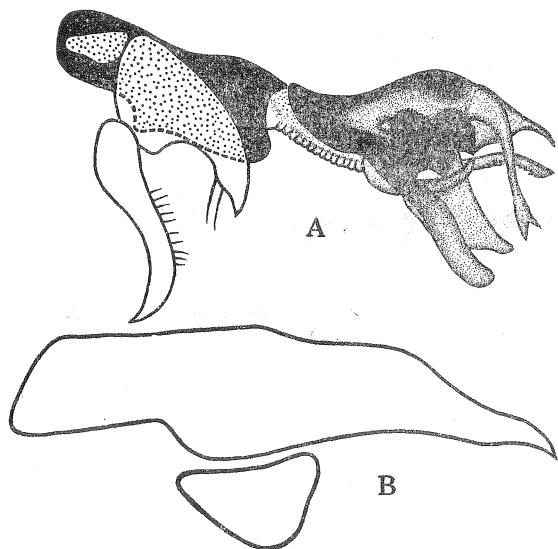


Fig. 7. Male genitalia of *S. tuberosa*.
A.—Phallosome and one paramere in side view ($\times 30$); B.—Lateral view of anal cercus and distal segment of ninth coxite ($\times 30$).

Length: 10–15 mm.

Distribution: Australia, Ceylon, China, India, Malay States, Formosa, Philippine Is., Java, Seychelles, Chagos Is., Solomon Is, Guam, Hawaii, Japan.

Localities: Tokyo, Sendai, Ōita, Yamanaka, Morioka, Kanazawa.

Remarks: This species appears to be widely distributed throughout Japan.

4. *Sarcophaga tuberosa* PANDELLÈ.

Male—Head: Front about equal to half an eye-width. No lateral verticals. Frontals diverging. Frontal stripe sharply defined, wider than one of the parafrontalia.

Wings: Costal spine weak. Section III of costa about equal to section V+VI. Vein r_1 bare. Vein r_{4+5} bristly about half way to the cross-vein.

Legs: Mid-femora with comb and fringe, mid-tibiae bare. Hind tibiae fringed typically.

Length: 10–14 mm.

Distribution: Europe, N. Africa, Japan.

Localities: Sendai, Kanazawa.

5. *Sarcophaga harpax* PANDELLÈ.

Male—Head: Front narrow, less than half an eye-width. Lateral verticals weak. Frontals diverging. Frontal stripe sharply defined, parafrontalia together about as wide as this. Parafacial hairs weak. Antennae black, third segment about two and a half times as long as the second.

Back of head usually with two rows of hairs. Palpi black.

Thorax : Pale yellowish-grey. Propleura bare. Acrostichals 0+1. Posterior dorso-centrals 2~5.

Abdomen : Ground color as in thorax, with the usual tessellation. GS_1 brownish-black, without marginals. GS_2 shining black. Male genitalia as in Fig. 8.

Wings : Costal spine present. Section III of costa about equal to section V+VI. Vein r_1 bare. Vein r_{4+5} bristly about half way to the cross-vein.

Legs : Mid-femora with comb and basal fringe. Hind tibiae with fringe.

Female : Eyes separated by one-third total width of head. Frontal stripe broad, parafrontalia together about as wide as frontal stripe. Genital segments black. Female genitalia see Fig. 9. Signum is developed.

Length : 11-15 mm.

Distribution : Europe, Africa, India, Ceylon, Singapore, Philippine Is., Formosa, Guam, Hawaii, N. America, Japan.

Localities : Sendai, Aomori, Kanazawa.

Remarks : About the occurrence of this species from Japan, the writer already reported in 1951.

6. *Sarcophaga brevicornis* Ho.

Male—Head : Front a little more than half an eye-width. Lateral verticals not differentiated. Frontals diverging. Frontal stripe well defined, parafrontalia together hardly twice as wide as this. Parafacial hairs weak. Antennae black, third segment about twice as long as the second. Back of head usually with two distinct rows of hairs. Palpi black.

Thorax : Pale yellowish-grey. Propleura bare. Acrostichals 0 + 1. Posterior

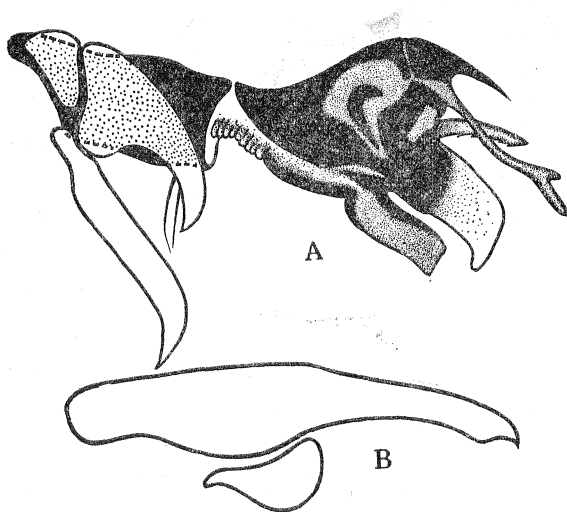


Fig. 8. Male genitalia of *S. harpax*.

A.—Phallosome and one paramere in side view ($\times 30$);
B.—Lateral view of anal cercus and distal segment of ninth coxite ($\times 25$).

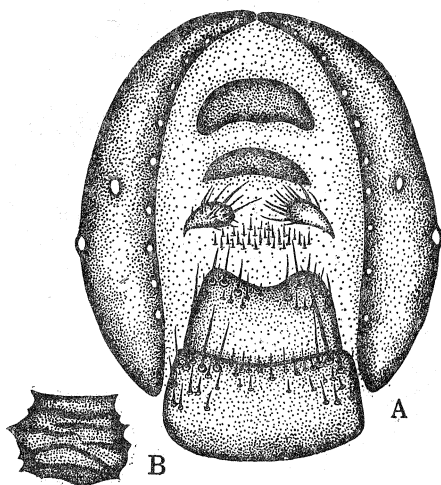


Fig. 9. Female genitalia of *S. harpax*.
A.—Ventral view of female genitalia ($\times 30$); B.—Signum ($\times 30$).

dorso-centrals 4~5.

Abdomen : Ground color as in thorax, with the usual tessellation. GS₁ brownish-black, without marginals. GS₂ shining black. Male genitalia as in Fig. 10.

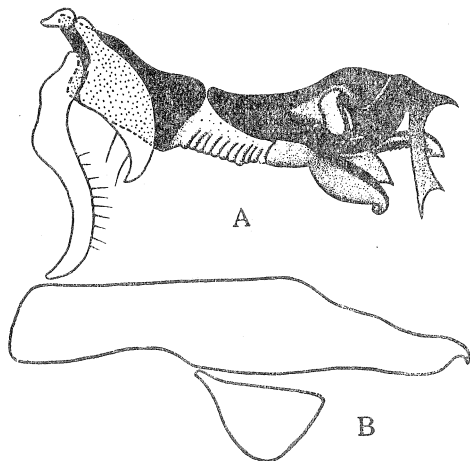


Fig. 10. Male genitalia of *S. brevicornis*. A.—Phallosome and one paramere in side view ($\times 30$); B.—Lateral view of anal cercus and distal segment of ninth coxite ($\times 30$).

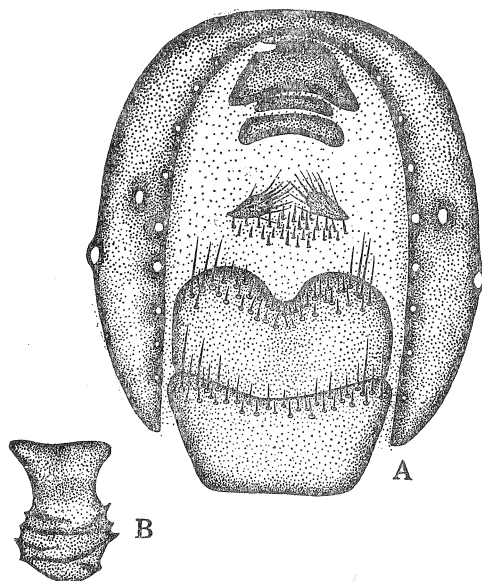


Fig. 11. Female genitalia of *S. brevicornis*. A.—Ventral view of female genitalia ($\times 30$); B.—Signum ($\times 30$).

Thorax : Whitish-grey. Propleura bare. Acrostichals 0+1. Posterior dorso-centrals 2~5, of which the anterior three weak.

Abdomen : Ground color as in thorax, with the usual tessellation. GS₁ brownish-black,

Wings : Costal spine present. Section III of costa longer than section V. Vein r_1 bare. Vein r_{4+5} bristly from half to two-thirds way to the cross-vein.

Legs : Mid-femora with comb and fringe. Hind tibiae with single posterior fringe.

Female : Eyes separated by one-third total width of head. Frontal stripe rather broad, parafrontalia together about as wide as frontal stripe. Facial hairs weak. Genital segments black. Female genitalia see Fig. 11. Signum is developed.

Length : 7-11 mm.

Distribution : Peiping, Hainan Is., Malay Peninsula, Japan.

Localities : Fukanuma (Miyagi Prefecture), Kanaiwa (Ishikawa Prefecture).

Remarks : This interesting species was first described by Ho in 1934, basing upon the male specimens obtained from Peiping, China. About the occurrence of this form from Japan, the writer already reported in 1951. This species is most often found on the carcasses on the beach.

7. *Sarcophaga polystylata* Ho.

Male—Head : Front equal to half an eye-width. No lateral verticals. Frontals diverging. Frontal stripe sharply defined, wider than one of the parafrontalia. Parafacial hairs weak. Antennae black, third segment equal to twice the length of the second. Back of head with three rows of hairs, but the innermost row irregular. Palpi black.

without marginals. GS_2 shining black. Male genitalia as in Fig. 12.

Wings: Costal spine weak. Section III of costa about equal to the length of section V+VI. Vein r_1 bare. Vein r_{4+5} bristly for a short distance.

Legs: Mid-femora with comb and fringe, mid-tibiae bare. Hind tibiae fringed typically.

Length: 10-15 mm.

Distribution: China, Japan.

Localities: Sendai, Aomori, Kanazawa.

8. *Sarcophaga scoparia*

PANDELLÉ.

Male—Head: Front about equal to half an eye-width. Lateral verticals not differentiated. Frontals diverging. Frontal stripe sharply defined, parafrontalia together about as broad. Parafacial hairs weak. Antennae black, third segment two and a half times the second. Back of head usually with four rows of hairs, but the innermost row irregular. Palpi black.

Thorax: Whitish-grey. Propleura bare. Acrostichals 0+1. Posterior dorso-centrals 4.

Abdomen: Ground color as in thorax, with the usual tessellation. GS_1 shining black, without marginals. GS_2 shining black. Male genitalia as in Fig. 13.

Wings: Costal spine absent. Section III of costa a little shorter than section V+VI. Vein r_1 bare. Vein r_{4+5} bristly about half way to the cross-vein.

Legs: Mid-femora with comb and fringe, mid-tibiae with fringe. Hind tibiae fringed typically.

Length: 11-15 mm.

Distribution: Europe, N. America, Japan, Turkestan.

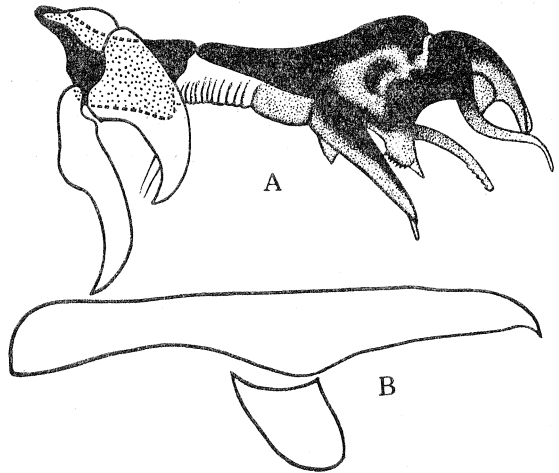


Fig. 12. Male genitalia of *S. polystylata*.
A.—Phallosome and one paramere in side view ($\times 30$);
B.—Lateral view of anal cercus and distal segment of ninth coxite ($\times 30$).

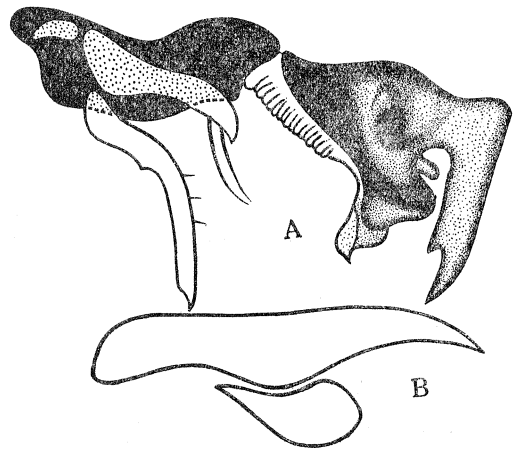


Fig. 13. Male genitalia of *S. scoparia*.
A.—Phallosome and one paramere in side view ($\times 30$);
B.—Lateral view of anal cercus and distal segment of ninth coxite ($\times 25$).

Localities : Kanazawa.

Remarks : Only two specimens in the writer's collection are assigned to this species. This is the second record of this species from Japan.

9. *Sarcophaga antilope* BÖTTCHER.

Male—Head : Front about equal to half an eye-width. No lateral verticals. Frontals diverging. Frontal stripe sharply defined, parafrontalia together about as broad. Parafacial hairs weak. Antennae black, third segment thrice the length of the second. Back of head with three rows of hairs, but the innermost row irregular. Palpi black.

Thorax : Clear grey. Propleura hairy. Acrostichals 2~5+1. Posterior dorso-centrals 4.

Abdomen : Ground color as in thorax, with the usual tessellation. GS_1 red, without marginals. GS_2 shining red. Male genitalia as in Fig. 14.

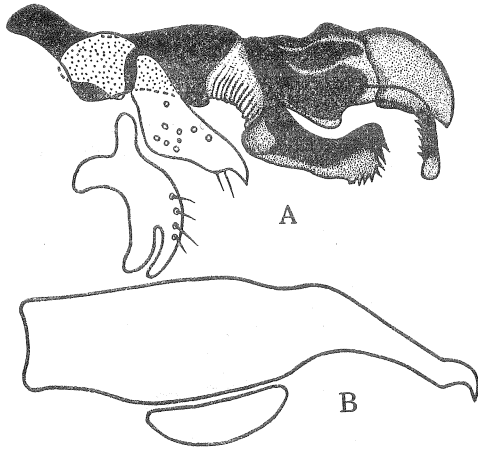


Fig. 14. Male genitalia of *S. antilope*.
A.—Phallosome and one paramere in side view ($\times 30$); B.—Lateral view of anal cercus and distal segment of ninth coxite ($\times 30$).

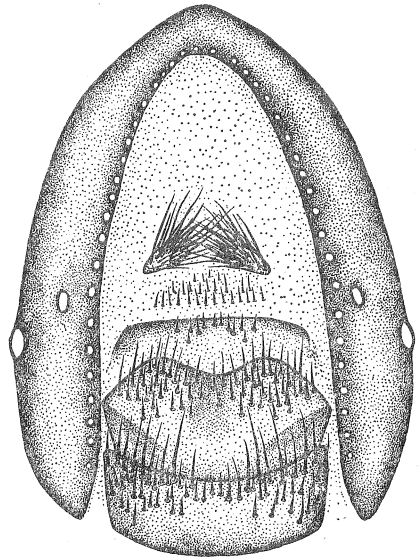


Fig. 15. Female genitalia of *S. antilope* ($\times 25$).

Wings : Costal spine indistinct. Section III of costa a little longer than section V+VI. Vein r_1 bare. Vein r_{4+5} bristly about half way to the cross-vein.

Legs : Mid-femora with a wide-spaced row of bristles, with no true fringe. Hind tibiae fringed.

Female : Eyes separated by two-sevenths of the total width of head. Frontal stripe wider than each parafrontal, with well-defined edges. Facial hairs weak. Genital segments reddish. Female genitalia see Fig. 15. Signum wanting.

Length : 9–15 mm.

Distribution : India, Ceylon, Formosa, Java.

Localities : Mt. Iō. (Ishikawa Prefecture).

10. *Sarcophaga Schutzei* KRAMER.

Male—Head: Front narrow, less than half an eye-width. Lateral verticals not differentiated. Frontals diverging. Frontal stripe sharply defined, parafrontalia together nearly as wide. Parafrontalia and parafacialia covered with many hairs. Parafacial hairs weak. Antennae black, third segment three times the length of the second. Back of head with three rows of hairs, the innermost row rather irregular. Palpi black.

Thorax: Dark grey. Propleura hairy. Acrostichals 0+1. Posterior dorso-centrals usually 4.

Abdomen: Ground color as in thorax, with the usual tessellation. GS_1 dark brown, grey pollinose, without marginals. GS_2 shining black. Male genitalia as in Fig. 16.

Wings: Costal spine indistinct. Section III of costa shorter than section V+VI. Vein r_1 bare. Vein r_{4+5} bristly for more than two-thirds the distance from basal node to the cross-vein.

Legs: Mid-femora with comb and fringe. Hind tibiae fringed typically.

Female: Eyes separated by one-third the total width of head. Frontal stripe wider than each parafrontal, well-defined edges. Hairs on parafrontalia and parafacialia well developed. Genital segments black. Female genitalia see Fig. 17. Signum wanting.

Length: 11–15 mm.

Distribution: Germany, Triest, Slovakia, Ukraine, Japan.

Localities: Aomori, Kanazawa.

Remarks: This species is an uncommon form which appears to be principally confined to hilly regions. About the occurrence of this species from Japan, the writer already reported in 1951.

11. *Sarcophila cinerea* (FABRICIUS).

Male—Head: Front very broad, half as wide again as an eye. Front protruded anteriorly. Lateral verticals well developed. Frontal stripe silvery-white, narrowing anteriorly. Frontals bristly parallel, not more than six. Parafrontalia and parafacialia silvery-white, with a row of soft white hairs. Antennae brownish-black, third segment two and a half times the length of the second. Arista pubescent only on basal half. Back of head

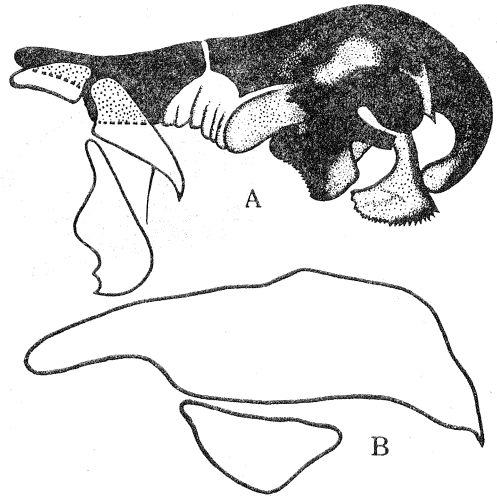


Fig. 16. Male genitalia of *S. Schutzzei*.
A.—Phallosome and one paramere in side view ($\times 30$); B.—Lateral view of anal cercus and distal segment of ninth coxite ($\times 25$).

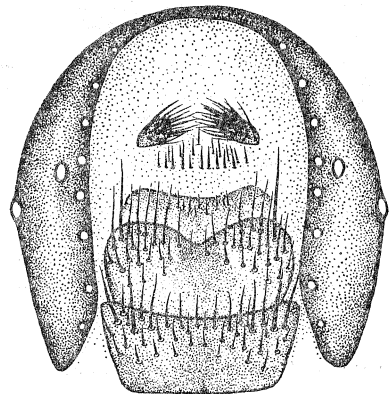


Fig. 17. Female genitalia of
S. Schutzzei ($\times 25$).

with only one row of hairs. Palpi yellow.

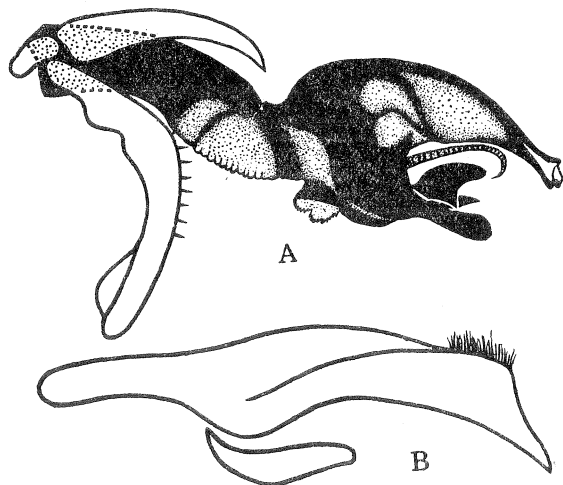


Fig. 18. Male genitalia of *S. cinerea*.
A.—Phallosome and one paramere in side view ($\times 30$); B.—Lateral view of anal cercus and distal segment of ninth coxite ($\times 30$).

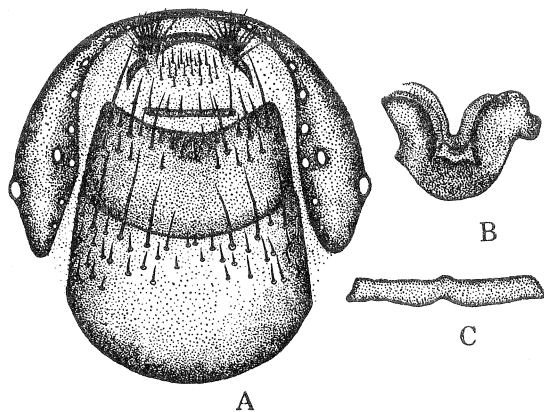


Fig. 19. Female genitalia of *S. cinerea*.
A.—Ventral view of female genitalia ($\times 25$); B.—Signum ($\times 20$); C.—Seventh tergite ($\times 20$).

occurrence of this species in Japan.

Thorax: Silvery-grey with indistinct dark stripes. Acrostichals 0+1. Posterior dorso-centrals 2~4, the anterior two very weak. No apicals on scutellum.

Abdomen: Ashen-grey, with indefinite tessellate pattern. GS_1 ashen-grey, without marginals. GS_2 ashen-grey. Male genitalia as in Fig. 18.

Wings: Costal spine strong. Section III of costa equal to section V. Vein r_1 bare. Vein r_{4+5} bristly about half way to the cross-vein.

Legs: Darkish-grey, no male sexual ornamentation.

Female: Eyes separated by one-quarter of the total width of head. Lateral verticals present, exterior fronto-orbitals three, the upper reclinate, the two lower proclinate. No apicals on scutellum. Female genitalia as in Fig. 19. Seventh tergite (it appears so) and signum present.

Length: 6-9 mm.

Distribution: India, Ceylon, Thailand.

Localities: Fukagawa (Tokyo), Fukanuma (Miyagi Prefecture), Kanaiwa (Isikawa Prefecture).

Remarks: This form seems to be found only at the sea-shore. This is the first record dealing with the

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