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## Some Sarcophagidae (Diptera) from the Bismarck Islands and the Philippines.

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The Sarcophagidae studied in the present paper were collected during the Noona Dan Expedition in the years of 1961—1962 (see Petersen, 1966). The material is a significant representation of the fauna of the Bismarck Islands which were hitherto poorly known.

The most important fact observed is the different degree of variability in the various species inhabiting the Islands. *Parasarcophaga (Pandelleisca) insularis* n. sp. from Lavongai presented a few differences in the structure of the penis when it was compared with another specimen from Dyaul, and a very near species (*lorengauensis* sp. n.) is found in the Island of Manus. On the other hand, the subgenus *Liosarcophaga*, a subgenus near *Pandelleisca*, is represented by the very widespread *P. (L.) misera* Walker and by *P. (L.) rohdendorfi* (Baranov) which demonstrate a low degree of variation in the genitalic characters. *P. (L.) aurifrons* (Macquart) when compared with Australian specimens, shows some differences (fig. 61). There are two additional new species of this subgenus restricted to the Philippines and New Ireland.

The most characteristic genus of the region is *Bezziola* with five species, four of which are new to science. The species of this genus are very similar and characterized especially by the male genitalia, some of them are living together.

Another curious fact is the presence of the big and golden species of *Tricholioproctia*, found only in the Solomon and Bismarck Islands.

The holotypes and allotypes were returned to the Zoological Museum, Copenhagen; some paratypes were incorporated in the collection of the Instituto Oswaldo Cruz.

**Blaesoxipha pachytyli** (Skuse, 1891). (Figs. 1 and 2).*Masicera pachytyli* Skuse, 1891: 251.*Blaesoxipha pachytyli*: Lopes, 1955: 315, figs. 1—6.

This species was described from Australia, being the most common Sarcophagid fly parasite on locusts in that country. The specimens from the Philippines and the Bismarck Archipelago are very similar to specimens from Australia. The slight differences are as follows: the spines of the forcipes superiores are more numerous, the ventralia is a little less chitinized and the lobes of the apical plate of the paraphallus are a little less elongated. It is very interesting that so widespread a species shows so little differences in the male genital characters. The figures published in the present paper are based on a Philippine specimen.

Philippines. — PALAWAN: Brooke's Point, Uring Uring, 1 ♀, 25 August 1961. — TAWI TAWI: Tarawakan, 4 ♂, 1 ♀, 12—14 Nov. 1961.

Bismarck Islands. — NEW IRELAND: Lemkamin, 900 m, 1 ♀, 16 April 1962. — LAVONGAI: Banatam, 2 ♀, 18 and 25 March 1962. — MUSSAU: Boliu, 1 ♂, 3 June 1962. — MANUS: Lombrum, 1 ♀, 29 June 1962.

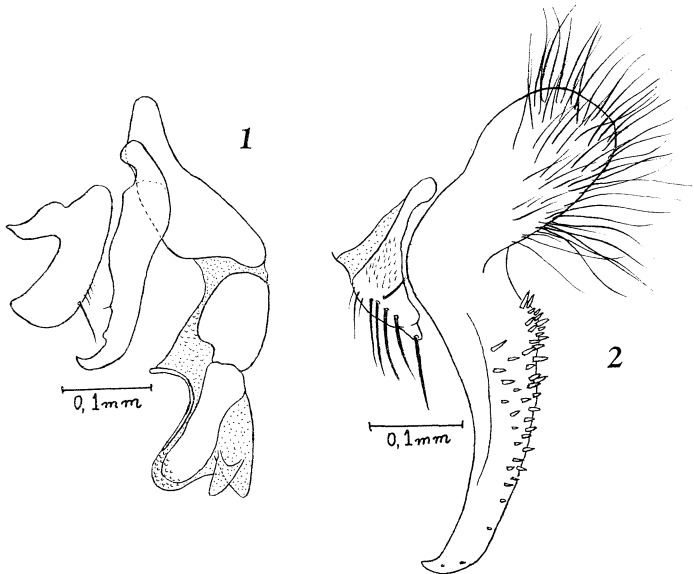
*Blaesoxipha pachytyli* (Skuse).

Fig. 1: penis and internal forcipes; fig. 2: external forcipes.

**Phytosarcophaga australis** (Johnston & Tiegs, 1921).

*Helicobia australis* Johnston & Tiegs, 1921: 50, fig. 24 (Australia).

*Heteronychia australis*: Lopes, 1959: 42.

In a previous paper (Lopes, 1959) I considered this species as belonging to the genus *Heteronychia* Brauer & Bergenstamm, but now I think it is better to include it in *Phytosarcophaga* Rohdendorf, 1937, in spite of some differences in the male genitalia. However, the apical plate of the paraphallus is also long and slender, the styli are very elongate, the ventralia is lacking. The external characters agree also; the  $R_1$  with bristles, the three presutural dorsocentral bristles and the propleura scarcely pilose anteriorly demonstrate great affinity between *australis* (J. & T.) and *destructor* Malloch, the type-species of *Phytosarcophaga*.

Bismarck Islands. — NEW BRITAIN: Valoka, 1 ♀, 7 July 1962. — NEW IRELAND: Danu, Kalili Bay, 1 ♂, 1 ♀, 29 April 1962. — DYAUL: Sumuna, 2 ♀, 9 March 1962. — LAVONGAI: Banatam, 3 ♂, 1 ♀, 18—26 March 1962. — MUSSAU: Talumalaus, 1 ♀, 1 Febr. 1962. — MANUS: Lorengau, 2 ♂, 1 ♀, 23—24 June 1962.

**Phytosarcophaga gressitti** (Hall & Bohart, 1948).

*Sarcophaga gressitti* Hall & Bohart, 1948: 50 (5): 131, pl. 13.

*Phytosarcophaga gressitti*: Lopes, 1958: 21, fig. 3.

Provisionally I maintain this species in the genus *Phytosarcophaga*. However, the presence of more than three postsutural dorsocentral bristles; the penis showing short styli and less elongated apical plate in addition to the constitution of the sternites and a pigmented membrane between the tergites in the female genitalia suggest a new genus related to *Phytosarcophaga*.

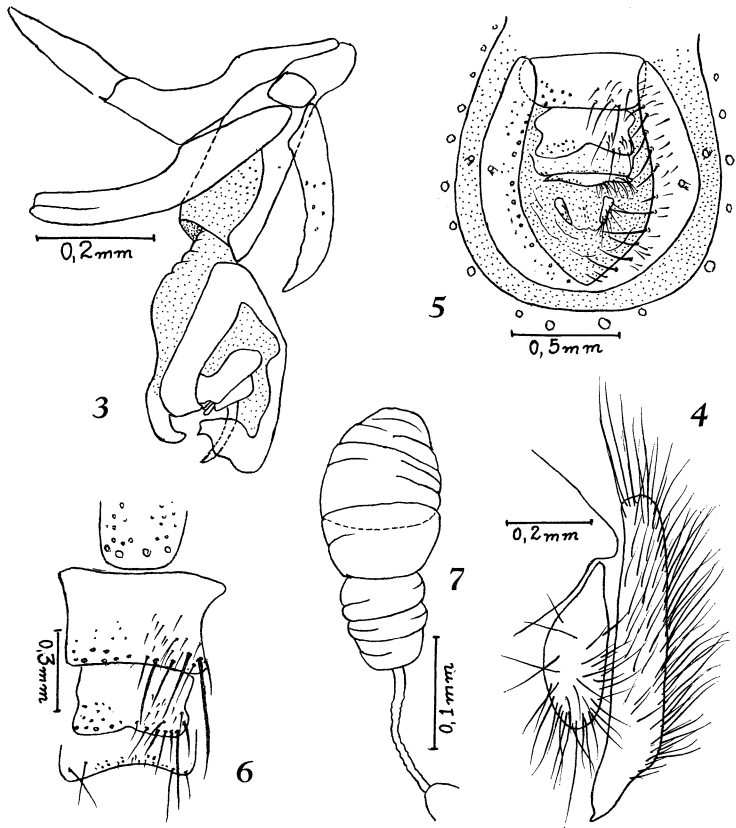
Philippines. — PALAWAN: Brooke's Point, Uring Uring, 2 ♂, 3 ♀, 22 Aug. to 11 Sept. 1961. — BALABAC: Dalawan Bay, 1 ♂, 1 ♀, 8 and 11 Oct. 1961.

Bismarck Islands. — MANUS: Lorengau, 1 ♀, 25 June 1962. — LAVONGAI: Banatam, 1 ♂, 18 March 1962.

**Heteronychia (Pandeleola) simplex** sp. n. (Figs. 3 to 7).

Male: length 6 to 8 mm. Front 0,28 of head width. Head gray, ocellar bristles strong; some small bristles below, in the series of parafacialia; one or two frontal bristles below base of antennae, the latter reaching 0,8 of the distance to vibrissae.

Presutural dorsocentral and acrostichal bristles well developed,



*Heteronychia (P.) simplex* sp. n.

Fig. 3: penis and internal forcipes; fig. 4: external forcipes; fig. 5: female genitalia; fig. 6: female genital sternites; fig. 7: spermatheca.

always 3 dorsocentral postsutural spaced for three. Middle tibia with one, hind tibia with two ventral bristles;  $R_1$  bare,  $R_{4+5}$  with hairs almost to the transverse vein.

Abdomen with a pair of strong median marginal bristles on third segment; sternites II to IV with strong hairs disposed apically. Genital segments black; the first with gray pollen and scarce hairs; the second with dense hairs. Forcipes superiores straight, the apex curved forward; forcipes interiores curved, palpi genitalium long, both without hairs; paraphallus strongly pigmented, apical plate short, incorporated to paraphallus, lateral plate vestigial; ventralia represented by a small chitinized rounded lobe; styli of glans surpassing a little the apical plate.

**F e m a l e :** front about 0,32 of head width. Median marginal bristles of the third abdominal segment small or not differentiated, tergites VI plus VII entire in spite of being narrowed dorsally; the following tergites not represented; sternites VI plus VII with hairs and bristles laterally on hind margin; sternite VIII with hairs and bristly hairs on hind region; sternite IX membranous with small hairs on the posterior margin and two long slender hairs on each side. Spermatheca elongated, well divided in two portions, the proximal one more distinctly striated transversally.

Distinct from any other species included in the subgenus by the form of the male genitalia.

Bismarck Islands. — NEW BRITAIN: Valoka, allotype 1 ♀, 10 July 1962, paratypes 1 ♂, 1 ♀, 7—10 July 1962. — NEW IRELAND: Danu, Kalili Bay, holotype ♂, paratypes 1 ♂, 1 ♀, 3 April 1962. — MUSSAU: Malakata, paratypes 1 ♂, 2 ♀, 9 June 1962.

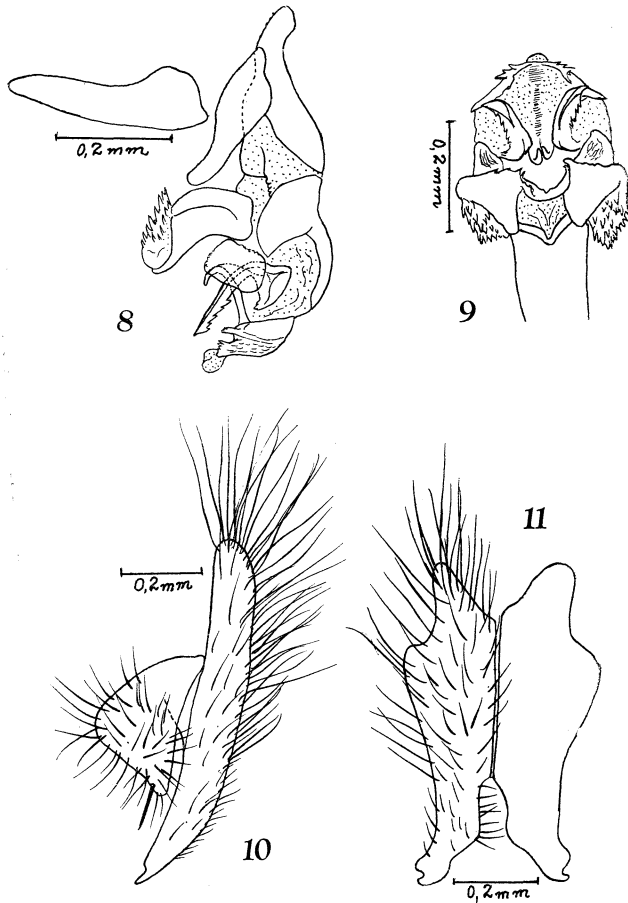
***Johnstonimyia fatua* sp. n.** (Figs. 8 to 11).

**M a l e :** length 8 mm. Head slightly yellowish. Ocellar bristles as developed as the smaller frontal bristles. Hairs of parafacialia long and slender. Gena with black hairs.

Presutural acrostichal bristles well developed; a pair of strong apical scutellar bristles. Middle tibia with a small, and hind tibia with a strong ventral bristle.  $R_1$  bare,  $R_{4+5}$  with hairs on basal half of the distance to cross-vein.

Third abdominal tergite without median marginal bristle. Sternites II to IV with small scarce hairs on the disc buth with long hairs on lateral and posterior margins, second sternite with four bristles on the disc. Forcipes superiores curved and pointed at the apex; when seen from behind, the extremities are strongly divergent; forcipes inferiores almost triangular; internal forcipes without bristles; paraphallus strongly chitinized, apical plate with lateral spinous arms, a membranous rounded apical lobe and a pair of long curved ventral apophyses disposed internally; lateral plates rounded, styli of glans curved dorsally, somewhat slender; ventralia strongly chitinized with spinous apical lobe.

Provisionally, I enclose this species in *Johnstonimyia* on account of the presence of presutural acrostichal bristles and the complex apical plate of paraphallus. However, the styli of glans are more slender than in any other species hitherto considered as belonging to this genus.



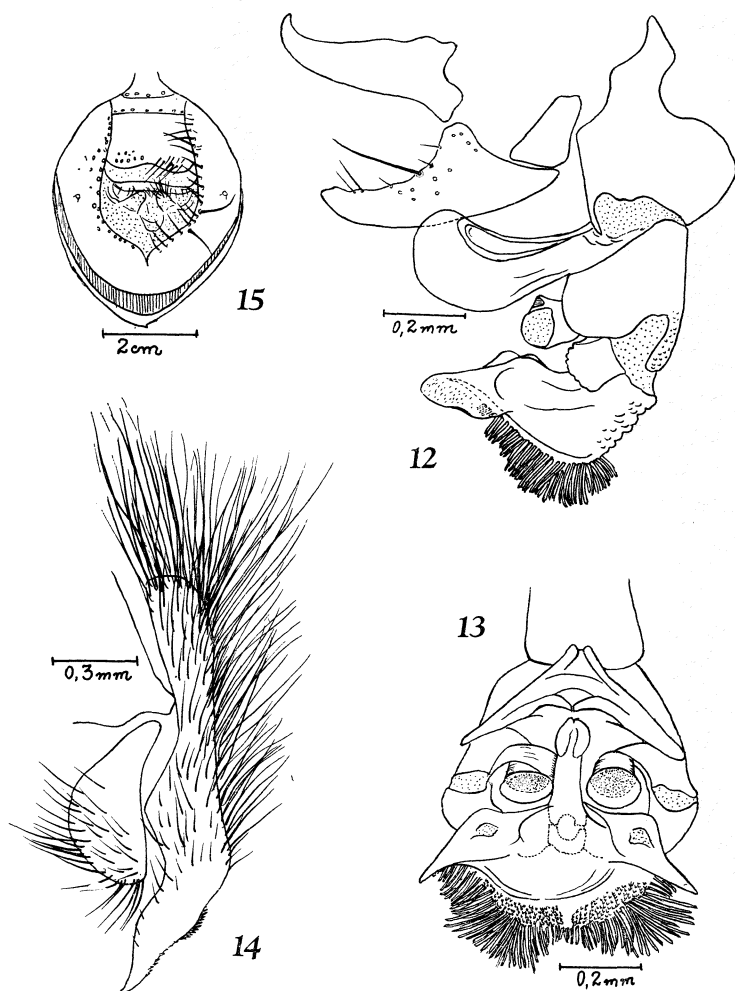
*Johnstonimyia fatua* sp. n.

Fig. 8: penis and internal forcipes; fig. 9: penis, ventral view; fig. 10: external forcipes; fig. 11: forcipes superiores.

Bismarck Islands. — MANUS: Lorengau, holotype ♂, 18 June 1962.

*Johnstonimyia aurescens* sp. n. (Figs. 12 to 15).

Male: length 14 mm. Head golden, ocellar bristles small; front about 0,2 of head width; antenna reaching 0,9 of the distance to vibrissae; third joint gray, second shining black; four to five frontal bristles below the base of antennae; long sparse slender hairs on parafacialia; genae with long black hairs.



*Johnstonimyia aurescens* sp. n.

Fig. 12: penis and internal forcipis; fig. 13: penis, ventral view; fig. 14: external forcipis; fig. 15: female genitalia.

Thorax yellow; presutural acrostichal bristles differentiated from surrounding hairs, last pair stronger; presutural dorsocentral bristles strong; four strong postsutural dorsocentral bristles, the two posterior bristles much longer than the anterior pair; prescutellar acrostichals well differentiated; middle tibia with long villosous hairs and a strong ventral bristle;  $R_{4+5}$  with hairs a little beyond the middle of the distance to cross-vein.

Abdomen golden, second tergite with a broad black vitta; third and fourth with slender median vittae; third tergite without median marginal bristles; sternites I and II with long dense pile; sternites III and IV with short hairs; seventh tergite represented by a series of long bristles near the stigma, eighth tergite elongated, ninth of normal size; forcipes superiores bent forward with small spines near the pointed apex, and covered, especially on basal half, with very long dense hairs; internal forcipes robust, forcipes interiores with a long bristle and some hairs on the anterior face; theca very stout with sinuous posterior margin; paraphallus short, very much chitinous; apical plate very much developed with anterior apophyses and two groups of densely disposed blunt spines; lateral plate short and somewhat membranous; a small chitinous plate between apical and lateral plates; ventralia very much developed, chitinous, showing a pair of acute lateral apophyses; glans elongated, styli very broad and short, united to the lateral plates.

**Female:** length 11 mm. Front 0,27 of head width; ocellar bristles well developed; scutellum without apical bristle; middle tibia with long bristle; tergite VI+VII yellow; sternite VI+VII with marginal bristles, sternite VIII concave posteriorly with two groups of bristles near the hind margin, sternite IX membranous (fig. 15).

The structure of the penis will separate this species from all species included in the genus.

Bismarck Islands. — NEW BRITAIN: Yalom, 1000 m, holotype ♂, 22 May 1962; Komgi, 1000 m, paratype ♀, 14 May 1962.

#### Genus **Bezziola** Lopes, 1958.

There are, among the material examined, five species of this genus, including *B. crinita* (Parker, 1917), probably belonging to an allied new genus. All species have well developed anterior acrostichal bristles and *B. setifacies* sp. n. shows a bristled  $R_1$ .

I considered (1958) as *Bezziola sticklandi* (Hall & Bohart) some specimens from Agriham (N. Mariana Is.), which have bristles on  $R_1$  and show some small differences in the genitalia. Now I understand that there are a lot of species in the genus *Bezziola* showing small differences in the male genitalia and the referred specimens from Agriham should be considered as a new species.

*Sarcosolomonina tulagiensis* Baranov, 1938 was described and



figured as having the penis and palpi genitalium with some features very alike the species included in *Bezziola*. However, the figure of the penis shows a short and stout piece bearing small bristles which I cannot interpret. If *tulagiensis* Bar. proves to be congeneric with the species I include in *Bezziola*, the name *Sarcosolomonina* Baranov, 1938 must substitute *Bezziola* Lopes, 1958.

***Bezziola crinita*** (Parker, 1917). (Figs. 16 to 18).

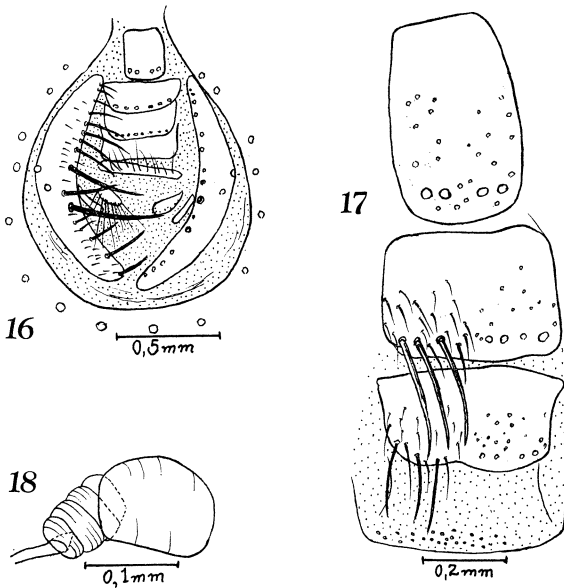
*Sarcophaga crinita* Parker, 1917: 92, fig. 2 (Philippine Is.)

*Sarcophaga kankauensis* Baranov, 1931, fig. 4 (Formosa). S y n. n o v.

*Bezziola kankauensis*: Lopes, 1959: 44, figs. 2—4 (New Britain).

I examined a male specimen collected by the late S. Kiener on August 8, 1958, in Luan Pi, Formosa and I have no doubt that *kankauensis* is a synonym of *crinita*.

I have also two male specimens from Australia (Cairns, N. Queensland, J. F. Illingworth and A. P. Dodd), both with distended genitalia, but lacking the penis. The remaining pieces of the organ agree entirely with the specimens of *crinita* Parker from the



*Bezziola crinita* (Parker).

Fig. 16: female genitalia; fig. 17: female genital sternites; fig. 18: spermatheca.

Philippines and I think it is possible that *Bezziola synia* (Johnston & Hardy, 1923) is merely a synonym of *crinita*.

The male of this species was described in my paper on Australian species (1959) under the name of *kankauensis*.

**F e m a l e :** front about 0,29 of the head width. Genital segments black, tergites VI plus VII composed of two plates; tergite VIII represented by two small plates without bristles (fig. 16). Sternites VI plus VII wider than high, with well developed marginal bristles; sternite VIII somewhat concave on hind margin, with only well differentiated small bristles on the margin; sternite IX entirely membranous with small hairs on the middle of the hind margin (fig. 17). Spermathecae with two well distinct sections, the proximal one transversely striated (fig. 18).

Philippines. — PALAWAN: Brooke's Point, Uring Uring, 2 ♂, 3 ♀, 19 Aug.—20. Sept. 1961. — BALABAC: Dalawan Bay, 3 ♂, 11—12 Oct. 1961.

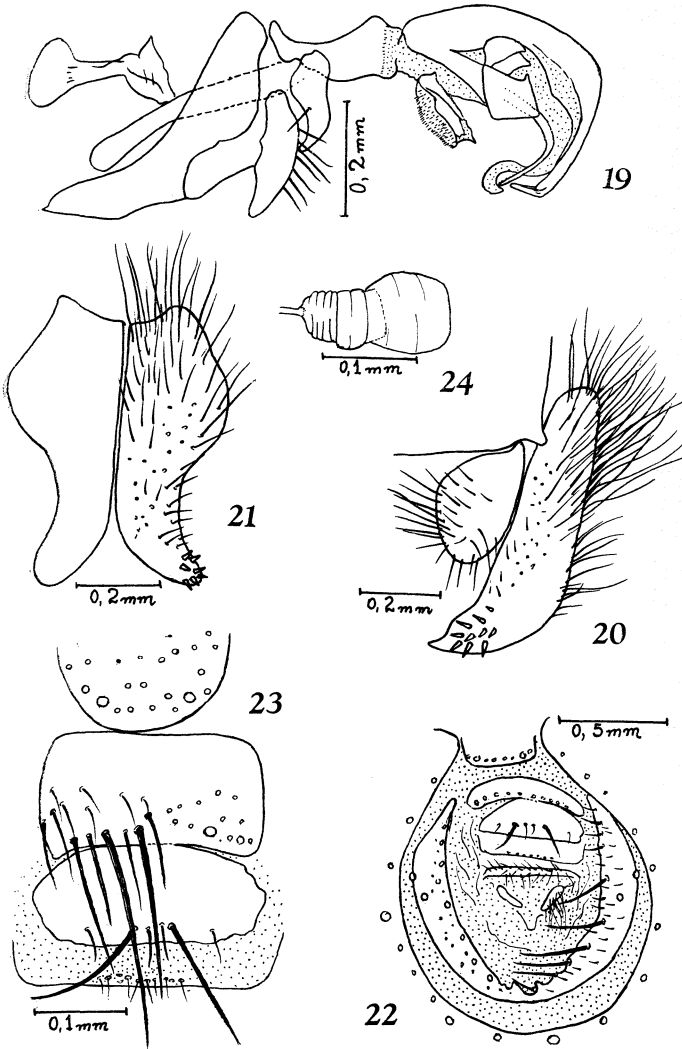
Bismarck Islands. — NEW BRITAIN: Rabaul, 1 ♂, 25 July 1962. — MUSSAU: Talumalaus, 1 ♀, 1 Febr. 1962; Malakata, 1 ♀, 10 June 1962. — MANUS: Lorengau, 1 ♂, 1 ♀, 17—18 June 1962.

***Bezziola setifacies* sp. n.** (Figs. 19 and 20).

**M a l e :** length 6 to 9 mm. Head silvery, slightly yellowish, front about 0,25 of head width. Ocellar bristles developed, outer vertical bristle differentiated from ocular ciliae; parafacialia with a series of bristles, the lower ones very strongly developed. Three frontal bristles below the antennae which reach 0,9 of the distance to vibrissae. Genae with black, long sparse hairs.

Presutural acrostichal and dorsocentral bristles well developed. Middle tibiae with one strong ventral bristle; hind tibia with two ventral bristles and two bristles on anterior face, the lowest one very strongly developed.  $R_1$  bristled on the middle.  $R_{4+5}$  hairy almost to the transverse vein.

Abdomen with a pair of median marginal bristles on third segment which are sometimes very small; sternites II to IV with strong marginal bristles. Genital segments black, with long hairs. Forcipes superiores curved forward, with a lot of spines near the apex (fig. 20); forcipes inferiores rounded; forcipes interiores elongated with a long bristle near the middle; palpi genitalium bearing a series of about six bristles; apical plate of paraphallus



*Bezziola setifacies* sp. n.

Fig. 19: penis and internal forcipes; fig. 20: external forcipes; fig. 21: forcipes superiores, dorsal view; fig. 22: female genitalia; fig. 23: female genital sternites; fig. 24: spermatheca.

united to paraphallus, elongated, bent at the apex; ventralia very small, membranous; styli of glans very elongated. There is a membranous process placed near the apical plate (fig. 19).

**F e m a l e :** front about 0,3 of head width, hairs of the para-

facialia very strong. The preapical bristles of the scutellum and median marginal bristles of third abdominal segment are absent. Tergite VI plus VII entire; no plates representing the tergite VIII. Sternites VI plus VII with long bristles on hind margin; sternite VIII with two long and two small bristles on the center of posterior margin besides a pair of small bristles on the sides; sternite IX membranous, bearing small hairs with large insertion on the hind margin (fig. 22). Spermathecae with the proximal part strongly striated transversally (fig. 24).

This species shows very characteristic small ventralia, not found in any other species of the genus.

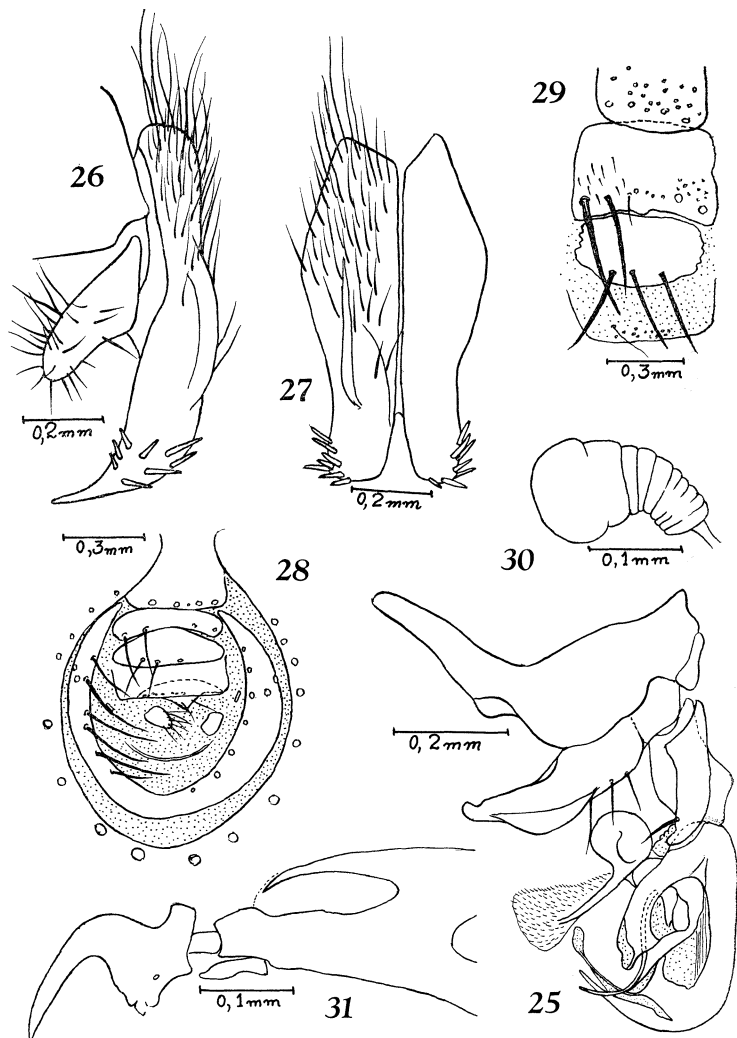
Bismarck Islands. — NEW BRITAIN: Yalom, 1000 m, allotype ♀, 17 May 1962. — NEW IRELAND: Lemkamin, 900 m, holotype ♂, 20 April 1962, paratypes 2 ♂, 11 and 20 April 1962; Danu, Kalili Bay, paratype ♀, 30 April 1962. — LAVONGAI: Banatam, paratype ♀, 24 March 1962.

**Bezziola baranovi** sp. n. (Figs. 25 to 31).

**Male**: length 6,5 to 8 mm. Head silvery to slightly yellowish; front about 0,25 of head width. Antennae reaching 0,9 of the distance to vibrissae. Ocellar bristles moderately developed; a series of bristly hairs on the parafacialia; genae with a few long black hairs.

Presutural acrostichal bristles well differentiated from surrounding hairs, the pair immediately before the suture being especially long; preapical scutellar bristle absent. All tibiae with ventral bristles; middle tibiae with two long anterior bristles, the lower one very much developed.  $R_1$  bare,  $R_{4+5}$  with hairs on basal half to basal two-thirds of the distance to cross-vein.

Third abdominal tergite always with a pair of long median marginal bristles, abdominal sternites II to IV with long dense hairs but without differentiated bristles. Genital segments black, the first with grayish black pollen, the second shining. Forcipes superiores pointed and bent at the apex, with long spines; forcipes inferiores somewhat elongated (figs. 26 and 27); forcipes interiores with a bristle near the apex; palpi genitalium with a longitudinal flap and three bristles on basal half; apical plate of paraphallus united to paraphallus, having a membranous elongated lobe near the apical plate which should be considered the lateral plate;



*Beziola baranovi* sp. n.

Fig. 25: penis and internal forcipis; fig. 26: external forcipis; fig. 27: forcipis superiores, dorsal view; fig. 28: female genitalia; fig. 29: female genital sternites; fig. 30: spermatheca; fig. 31: first stage larva.

ventralia with a chitinous supporter and a long membranous lobe; styli of glans very elongated (fig. 25).

**F e m a l e :** tergites VI plus VII entire, VIII represented by two very small plates (fig. 28); sternites VI plus VII with four long

marginal bristles; sternite VIII very characteristic, entirely bare and flat, except for four median bristles on hind margin (two specimens examined show only three bristles instead of four) (fig. 29). Spermatheca curved, proximal section much wrinkled.

**Larvae I.** Five specimens of first stage larvae were found in a dissected female. The spines in the center of the ventral margin of first thoracic segment are very condensed; the dentate sclerite is incorporated to the mouth hooks, the infrahypostomal sclerite is well differentiated from the hypostomal. However, the most characteristic feature of the larvae is the great development of the posterior arms of the labrum.

Bismarck Islands. — NEW BRITAIN: Valoka, paratype ♂, 5 July 1962. — DYAUL: Sumuna, paratypes 3 ♂, 2 ♀, 6—7 March 1962. — LAVONGAI: Banatam, holotype ♂, 21 March 1962, allotype ♀, 24 March 1962, paratypes 10 ♀, 19—25 March 1962.

This species is very much similar to *Lioproctia paneiana* Baranov described from Guadalcanal, differing mainly by the apical spines of the forcipes superiores and by the shape of the ventralia.

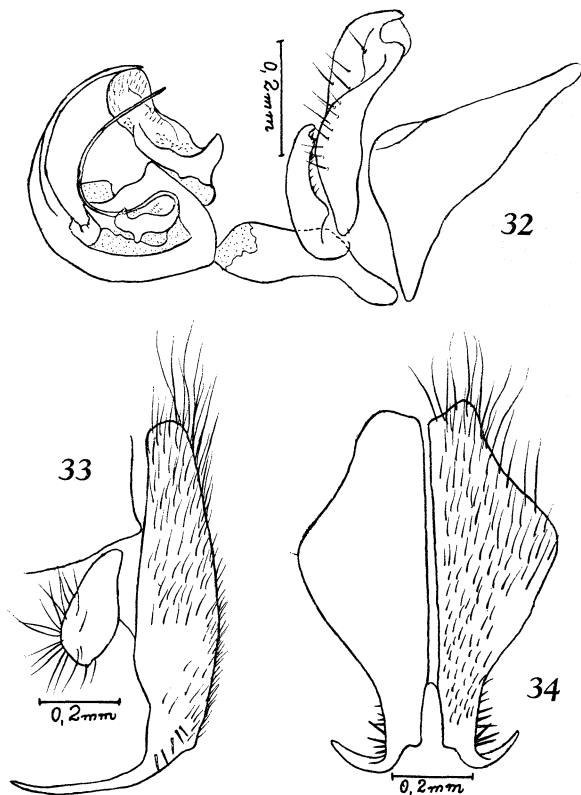
#### **Bezziola sumunensis** sp. n. (Figs. 32 to 34).

**Male:** length 6 to 7 mm. Head slightly yellowish. Front about 0,22 of the head width, hairs of parafacialia well developed; ocellar bristles long; genae with black hairs only on the anterior half; antennae about 0,88 of the distance to vibrissae.

Presutural acrostichal bristles long; scutellum without pre-apical bristle; anterior and middle tibiae with ventral bristles but hind tibiae without ventral bristles. Wings hyaline,  $R_1$  bare,  $R_{4+5}$  with hairs almost to cross-vein.

A pair of long median marginal bristles on third segment of abdomen. Sternites II to IV with hairs which are longer on hind margins, but without differentiated bristles. Genital segments black. Forcipes superiores bent at the apex, bearing long apical apophyses and a few small long spines; forcipes inferiores elongated; forcipes interiores with some small hairs; palpi genitalium with a large external flap and numerous long hairs; apical plate of paraphallus very long and slender; ventralia almost entirely membranous; styli of glans very long and slender.

Somewhat similar to *B. baranovi* sp. n. but with the apical apophyses of the forcipes superiores very much elongated. The



*Beziola sumunensis* sp. n.

Fig. 32: penis and internal forcipes; fig. 33: external forcipes; fig. 34: forcipes superiores, dorsal view.

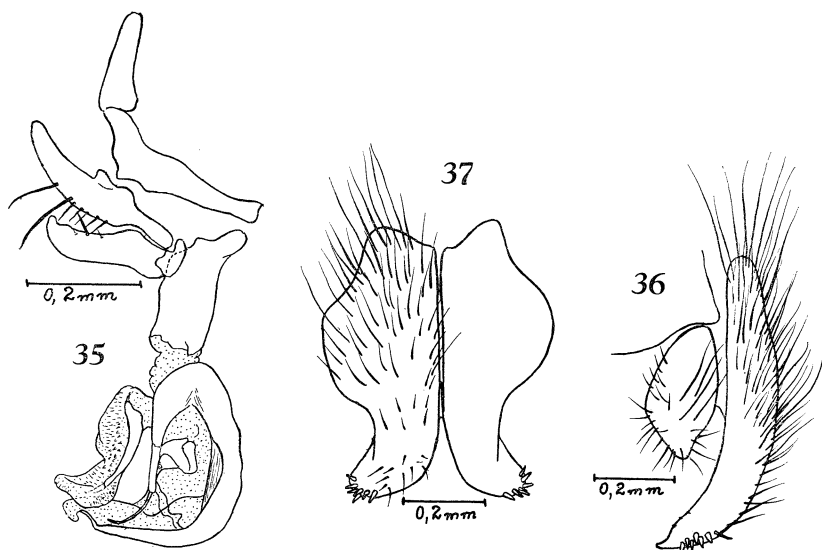
apical plate and styli are also elongated and the penis is very characteristic.

Bismarck Islands. — DY AUL: Sumuna, holotype ♂, 7 March 1962, paratype ♂, 13 March 1962.

***Beziola confusa*** sp. n. (Figs. 35 to 37).

Male: length 7,5 mm. Head silvery, a little yellowish. Front about 0,26 of head width; ocellar bristles moderately long; a series of about seven parafacial bristles which are not very stout. Antennae reaching 0,9 of the distance to vibrissae. Genae with long black sparse hairs.

Presutural acrostichal bristles only differentiated from sur-



*Bezziola confusa* sp. n.

Fig. 35: penis and internal forcipis; fig. 36: external forcipis; fig. 37: forcipis superiores, dorsal view.

rounding hairs. Preapical scutellar bristles present. Only the middle tibia bearing ventral bristles; lowest anterior bristle of the middle tibia exceeding the apex of the tibia.  $R_1$  bare,  $R_{4+5}$  with hairs on the basal three fourth of the distance to transverse vein.

A pair of median marginal bristles on the third abdominal tergite. Sternites II to IV bearing a few marginal bristles. Forcipes superiores with curved dorsal surface, bearing small spines near the apex, which is pointed (fig. 37); forcipes interiores with a robust hair and two more small hairs near the middle; palpi genitalium bearing a series of bristles, the two distal ones more developed; apical plate of paraphallus united to paraphallus, having interiorly a large membranous lobe; ventralia large, entirely membranous, elongated; styli of glans not much elongated.

This species is similar, in the genitalic characters, to *B. carolinensis* Lopes, 1958, differing by the shape of forcipis superiores and by the form of the penis.

Bismarck Islands. — LAVONGAI: Banatam, holotype ♂, 21 March 1962.



Genus **Tricholioproctia** Baranov, 1938.

Among the specimens studied I found five species from the Bismarck Islands. One of them is the type-species *T. antilope* (Boettcher), a very widespread one in the Oriental region, and which has the common "habitus" of *Tricholioproctia*: medium size, and tessellated abdomen. The other four, considered as new species, present the aspect of the species found only in the Islands of Bismarck and Solomon groups; they are of big size, with intense golden pollinosity, the abdomen does not show tessellated markings. One of them (*T. nigriventris* sp. n.) has a shining black abdomen, like *T. magnifica* Baranov. However, these two species are not related on account of the male genitalia. The other three species are entirely golden, like *T. imitatrix* Baranov, but without the black border of the abdominal tergites. The differences in external characters are the presence or absence of parafacial hairs, the colour of genal hairs and the distribution of hairs on the facialia. The fourth abdominal tergite of each species is characteristic, considering the apical brushes of hairs (figs. 40, 43 and 46). All these three species are not closely related, especially *T. longestylata* sp. n. is deviating much from the other species by its very different ventralia, remembering *T. alpha* (Johns. & Tiegs). *T. aureifacies* sp. n. and *T. separata* sp. n. show the ventralia similar to those of *imitatrix* Baranov. It is very curious that the general similarity of the flies does not necessarily imply natural relationship of the species.

**Tricholioproctia antilope** (Boettcher, 1913).

*Sarcophaga antilope* Boettcher, 1913: 380, fig. 3.

*Tricholioproctia antilope*: Lopes, 1954: 237 figs. 1 to 8.

All specimens from Bismarck are intensely yellowish gray pollinose, the males measuring 15 mm of length. The male from the Philippines is grayish pollinose and is only 8 mm in length.

Philippines. — PALAWAN: Brooke's Point, Uring Uring, 1 ♂, 21 Aug. 1961.

Bismarck Islands. — NEW BRITAIN: Rabaul, 1 ♀, 25 July 1962; Bitu Paka, SE of Kokopo, 1 ♂, 10 July 1962. — DUKE OF YORK: Manuan, 1 ♂, 20 July 1962. — NEW IRELAND: Lemkamin. 900 m, 2 ♀, 9 and 12 April 1962. — DYAUL: Sumuna, 2 ♂, 7—8 March 1962. — LAVONGAI: Banatam, 1 ♂, 21 March 1962. — MUSSAU: Talumalaus, 2 ♀, 19 Jan. and 13 Febr. 1962.

**Tricholioproctia longestylata** sp. n. (Figs. 38 to 40).

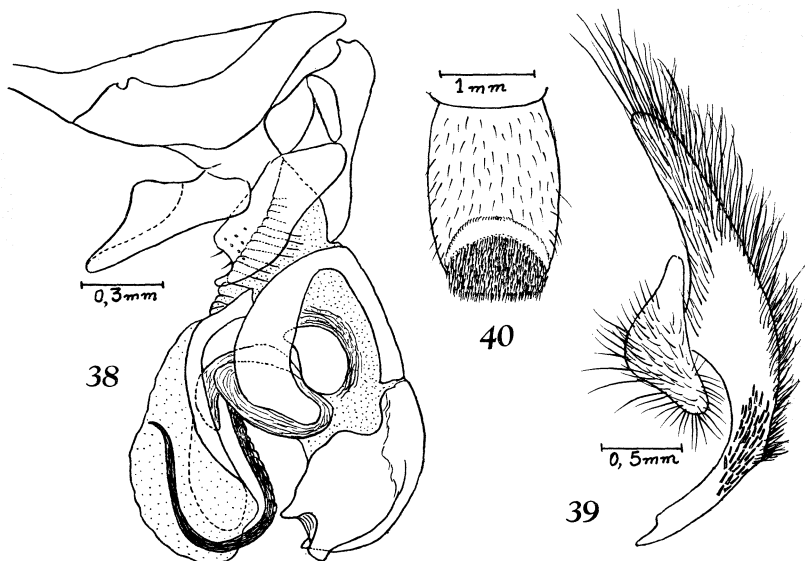
**Male**: length 17 to 21 mm. Head intensely golden pollinose, front about 0,21 of head width; ocellar bristles long and slender; three to four frontal bristles below base of antennae; antennae reaching 0,88 of the distance to vibrissae; erect black hairs on lower two-thirds of facialia; parafacialia with a series of black hairs near eye, the lower ones long; back of head with some black hairs above besides the postocular cilia; genae with black hairs, sometimes limited to the region near the eyes; the remainder hairs are golden; third antennal joint gray, a little reddish; palpi black.

Mesonotum and upper part of pleura intensely golden, the vittae black; presutural acrostichal bristles only differentiated from surrounding hairs, the pair immediately before suture more elongated; presutural dorsocentral bristles well differentiated; legs black, femora and tibiae long villous.

Abdomen intensely golden, under side gray; base and a median broad vitta on second tergite, a broad median vitta on third, a small narrow median vitta on fourth and a very narrow median vitta on fifth tergite intensely black; a pair of median marginal bristles on third tergite; abdominal sternites first to third with long, dense hairs, fourth sternite with short hairs and a brush of dense black hairs occupying an elevated area on entire hind margin of the sternite (fig. 40). Genital segments black, the first with yellow pollinosity, the second shining. Forcipes superiores strongly curved forward, with small spines near the apex; internal forcipes robust, palpi genitalium with an external flap; apical plate of paraphallus rounded at the apex; ventralia very large, not much chitinized, styli of glans long and curved.

**Female**: length 12 to 18 mm. Front about 0,26 of head width; ocellar bristles well developed; middle tibiae with strong preapical ventral bristle; abdominal sternites V and VI plus VII with two series of strong marginal bristles; sternite VIII depressed on middle with lateral groups of strong hairs; tergite VI plus VII entire, well chitinized on middle, with strong and numerous marginal bristles.

By the structure of the ventralia the most related known species is *T. alpha* (J. & T.), from which the present species differs mainly by the form of the apical plate and the structure of the forcipes superiores. Specimens from New Britain are somewhat less intensely golden than the flies from New Ireland.



*Tricholioproctia longistylata* sp. n.

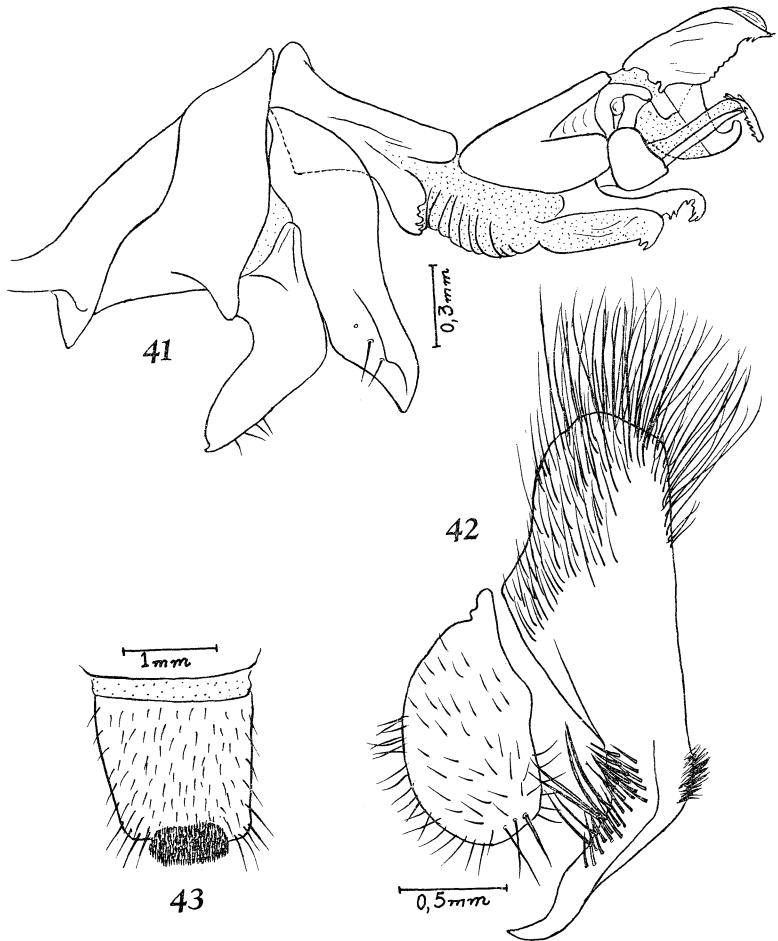
Fig. 38: penis and internal forcipes; fig. 39: external forcipes; fig. 40: fourth abdominal sternite.

Bismarck Islands. — NEW IRELAND: Lemkamin, 900 m, holotype ♂, 17 April 1962, allotype ♀, 21 April 1962, paratypes 3 ♂, 3 ♀, 9—21 April 1962. — NEW BRITAIN: Yalom, 1000 m, paratypes 1 ♂, 2 ♀, 14—22 May 1962.

*Tricholioproctia aureifacies* sp. n. (Figs. 41 to 43).

Male: length 18 to 21 mm. Differs from *longistylata* sp. n. as follows: front about 0,24 of head width; antennae reaching 0,85 of distance to vibrissae, third article reddish with gray pollen; palpi red; facialia with hairs only on the lower half; parafacialia without hairs; genae with yellow pile, having sometimes a few black hairs.

Third abdominal tergite with weak marginal bristles. Abdominal sternites I and II with long dense hairs, III and IV with short hairs, the latter with a brush of dense hairs limited to the middle of the hind margin. Forcipes superiores strongly bent forward, with apically curved and long strong bristles near the apex; internal forcipes both with hairs near apex; apical plate of paraphallus narrow; ventralia very much chitinized with two spined points;



*Tricholioproctia aureifacies* sp. n.

Fig. 41: penis and internal forcipes; fig. 42: external forcipes; fig. 43: fourth abdominal sternite.

styli of glans strong, easily visible because of the weak development of the plates of paraphallus.

Female: length: 20 mm, front about 0,25 of head width. Third abdominal tergite without median marginal bristles.

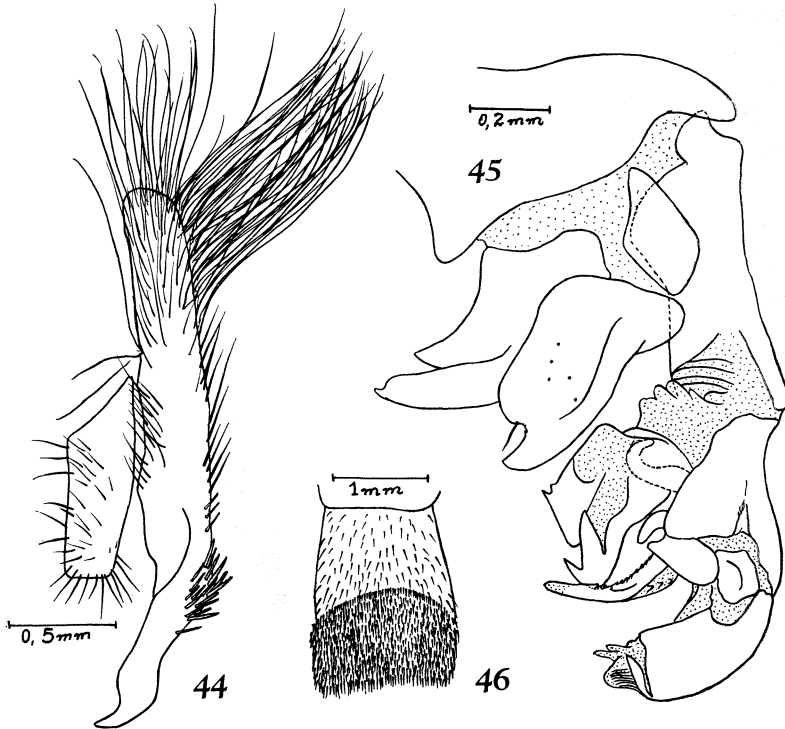
This species is similar, by the male genitalia, to *T. impatiens* (Walker), but differs mainly by the aspect of the forcipes superiores and structure of the ventralia.

Bismarck Islands. — NEW IRELAND: Lemkamin, holotype ♂,

17 April 1962, allotype ♀, 20 April 1962, paratypes 2 ♂, 17—20 April 1962.

***Tricholioproctia separata* sp. n.** (Figs. 44 to 46).

**Male:** length 18 mm. Differs from *T. longestylata* sp. n. as follows: body less golden pollinose; front about 0,21 of head width, ocellar bristles small; genae almost entirely covered with black hairs; an almost complete row of black hairs on occiput, besides the postocular cilia; lower hairs of parafacialia well developed; presutural acrostichal and dorsocentral bristles well developed. Median marginal bristles of third abdominal tergite weak; fourth sternite with a large brush of hairs occupying almost the apical half of the sclerite. Forcipes superiores little curved forward, the apex with a curved point, numerous spines before the



*Tricholioproctia separata* sp. n.

Fig. 44: penis and internal forcipes; fig. 45: external forcipes; fig. 46: fourth abdominal sternite.

extremity; forcipes inferiores almost quadrangular, elongated, palpi genitalium with two points; apical plate of paraphallus with membranous apex; ventralia large, with chitinous recurved apophyses; styli short and stout.

This species is near *aureifacies* sp. n., differing mainly by the characters of male genitalia.

Bismarck Islands. — NEW IRELAND: Lemkamin, 900 m, holotype ♂, 20 April 1962. Moreover, two females from NEW BRITAIN: Yalom, 1000 m, 21—22 May 1962, which are doubtfully referred to the present species.

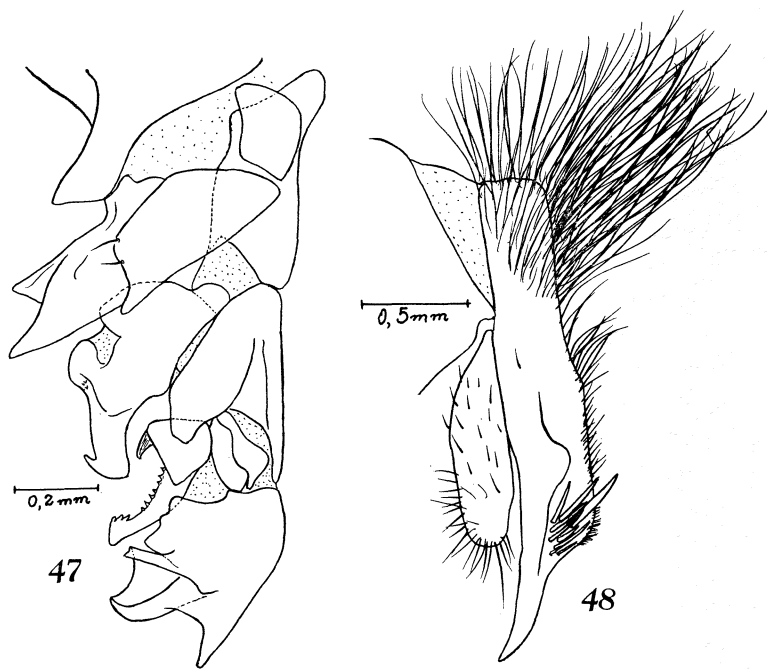
***Tricholioproctia nigriventris* sp. n.** (Figs. 47 and 48).

Male: length 15 to 19 mm. Differs from *T. longistylata* sp. n. by the head and thorax less golden pollinose, the abdomen almost entirely black and the wings more infuscated along the veins. Front about 0,2 of width; ocellar bristles small; antennae reaching 0,88 of distance to vibrissae, third joint gray; facialia with hairs on lower half, the lower hairs long; genae with black hairs; hairs on lower parafacialia black and long; two or three series of black hairs on occiput besides postocular cilia. Presutural acrostichal bristles well developed; villosity of middle tibiae reduced, a ventral bristle present; dorsum of abdomen shining black, a pair of rounded gray spots near the hind margin of second tergite and a pair of triangular spots near the anterior margin of third tergite; lateral and ventral sides of abdomen with tessellated gray marks; no median marginal bristles on third tergite; fourth sternite with a large brush of hairs occupying all hind margin. Forcipes superiores almost straight, only the apical part curved; some spines near the apex, one of them greatly developed; forcipes inferiores very elongated; internal forcipes stout, palpi genitalium with double extremity; apical plate of paraphallus with two apical apophyses, ventralia heavily chitinized, with a curved distal point; styli of glans short and robust.

This species shows the male genitalia very similar to those of *T. flavinervis* (S. White), from which it differs by details of the apical plate and the ventralia.

*T. magnifica* Baranov from Solomon Is. has a similar colored abdomen, but the genitalia are entirely different.

Bismarck Islands. — MANUS: Lorengau, holotype ♂, 21 June 1962, paratypes 3 ♂, 16—21 June 1962.



*Tricholioproctia nigriventris* sp. n.

Fig. 47: penis and internal forcipis; fig. 48: external forcipis.

**Boettcherisca atypica** (Baranov, 1934).

*Athysia atypica* Baranov, 1934: 183, fig. 1.

*Boettcherisca atypica*: Lopes, 1961: 81.

Bismarck Islands. — NEW IRELAND: Danu, Kalili Bay, 3 ♂, 30 April 1962. — MANUS: Lorengau, 2 ♂, 1 ♀, 17—23 June 1962.

**Boettcherisca karnyi** (Hardy, 1927).

*Sarcophaga karnyi* Hardy, 1927: 454, fig. 7.

*Boettcherisca karnyi*: Lopes, 1961: 78, figs. 37—43.

Philippines. — TAWI TAWI: Tarawakan, 1 ♂, 1 ♀, 24 Oct. and 9 Nov. 1961.

**Seniorwhitea orientalis** (Parker, 1917).

*Sarcophaga orientalis* Parker, 1917: 94, fig. 3.

*Seniorwhitea orientalis*: Lopes, 1964: 165, figs. 11 to 22.

Philippines. — PALAWAN: Brooke's Point, Uring Uring, 10 ♂,

20 ♀, 15 Aug.—21 Sept. 1961. — BALABAC: Dalawan Bay, 3 ♀, 10—13 Oct. 1961.

**Phalacrodiscus dahlianus** Enderlein, 1928.

*Phalacrodiscus dahlianus* Enderlein, 1928: 18.

*Phalacrodiscus dahlianus*: Townsend, 1938: 54.

Bismarck Islands. — NEW BRITAIN: Rabaul, 1 ♂, 25 July 1962. — NEW IRELAND: Danu, Kalili Bay, 1 ♂, 1 ♀, 29 April 1962. — DYAUL: Sumuna, 4 ♂, 1 ♀, 5—13 March 1962.

**Parasarcophaga** subgenus **Pandelleisca** Rohdendorf, 1937.

Provisionally I enclose the following species in this subgenus, based on the features of the glans and the lateral arms of the apical plate of paraphallus. The glans is formed by a median bubble which has a pair of long, anterior processes easily visible, exceeding the lateral plates in side view. A similar structure is found in the American species *Wohlfartiopsis johnsoni* (Aldrich) (see Roback 1954, figs. 82, 84).

However, the species recorded here show the external plate joining the apical and lateral plates of the paraphallus. Heretofore, I never found a similar plate in the species of *Parasarcophaga*.

Probably *S. banksi* Senior-White described from the Philippines belong to this subgenus.

**Parasarcophaga (Pandelleisca) lorengauensis** sp. n.

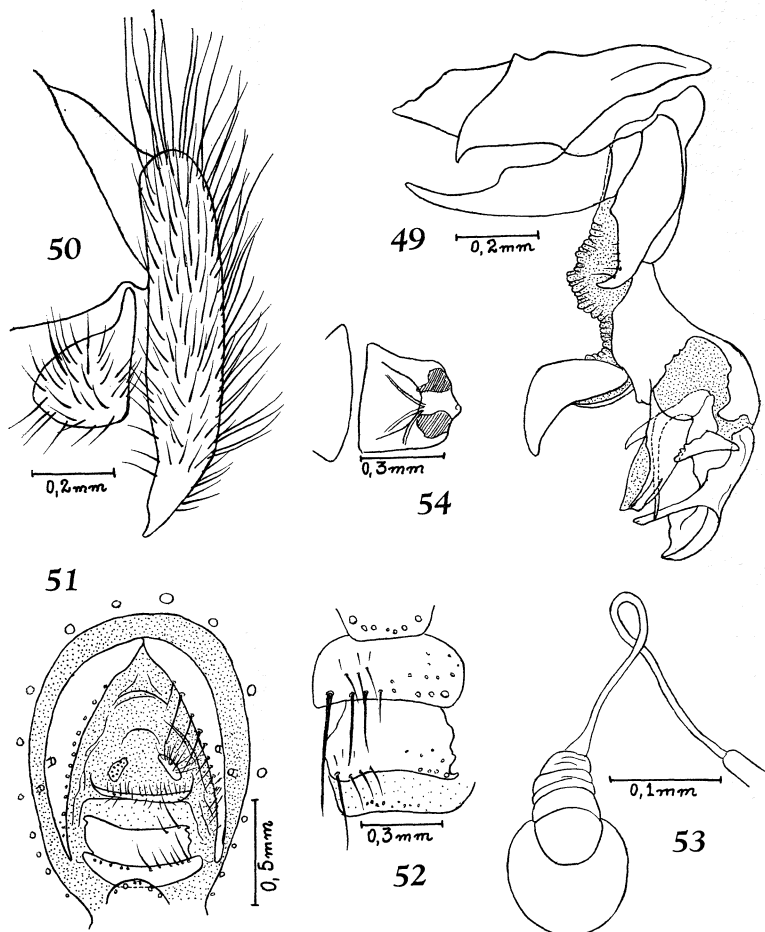
(Figs. 49 to 54).

Male: length 7,5 to 8 mm. Front about 0,2 of head width. Head slightly yellowish, ocellar bristles moderately developed. Parafacialia with hairs and small bristles inferiorly, three frontal bristles below the base of antennae, the latter reaching 0,84 of the distance to vibrissae.

Presutural dorsocentral bristles developed, but presutural acrostichals not differentiated, four or five postsutural dorsocentrals, but only the two posterior ones well developed; ventral bristles on middle and hind tibiae present. R<sup>4+5</sup> with hairs on two-thirds of the distance to cross-vein.

Abdomen with a pair of strong bristles on third tergite; sternites II to IV with long hairs which are very robust on the hind





*Parasarcophaga (P.) lorengauensis* sp. n.

Fig. 49: penis and internal forcipes; fig. 50: external forcipes; fig. 51: female genitalia; fig. 52: female genital sternites; fig. 53: spermatheca; fig. 54: signum.

margins. Forcipes superiores robust, gently curved forward, with pointed extremity; forcipes inferiores triangular; internal forcipes strong, forcipes interiores with small bristles near the apex; membranous region between theca and penis very much developed; paraphallus well chitinized, apical plate with a pair of arms attached to the apical half; lateral plate large, occupying the ventral side of the penis; a small triangular and dentate plate joining the apical and lateral plates; glans with a pair of ventral

apophyses; styli long and slender; ventralia composed of two well chitinized curved plates.

**F e m a l e :** front about 0,3 of head width; tergite VI plus VII dorsally incised; sternite VI plus VII with short hairs on hind margin; sternite VIII distally concave, with a long hair and some small ones on each side on posterior margin; sternite IX membranous with a little pile on the center of hind margin. Signum well chitinized, spermathecae showing a smooth rounded distal segment and a corrugated proximal one.

This species and the following, differ from the other species of the subgenus *Pandelleisca* by the presence of the small plate joining the apical and lateral plates of paraphallus.

Bismarck Islands. — MANUS: Lorengau, holotype ♂, 20 June 1962, allotype ♀, 24 June 1962, paratype ♂, 20 June 1962.

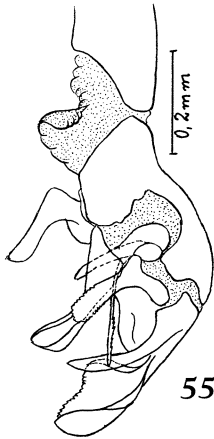
**Parasarcophaga (Pandelleisca) insularis** n. sp. (Figs. 55 to 58).

**M a l e :** length 8 to 9 mm. Front about 0,22 of head width. Head slightly yellowish; ocellar bristles moderate; parafacialia with bristled hairs below. Antenna reaching 0,88 of the distance to vibrissae.

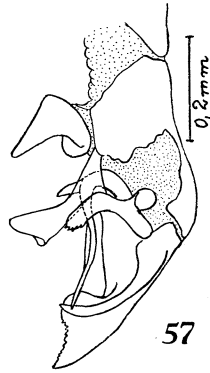
Chaetotaxy of mesonotum, legs and abdomen, hairs of sternites as in *P. lorengauensis* n. sp. The differences in the male genitalia are as follows: apophysis of the apical plate inserted near base, lateral plate of paraphallus more chitinized, ventralia small, plate joining apical and lateral plates much more developed.

There are small differences between the flies from Lavongai (New Hannover) and from the Island of Dyaul. The paratype from Dyaul shows the head silvery, hairs of parafacialia and ocellar bristles smaller than those of the holotype. In the penis also there are small differences in the form of the apical plate and of the ventralia. Probably the populations of the two islands have been isolated for a long time (Petersen, 1966 p. 288) and it is possible that speciation is beginning.

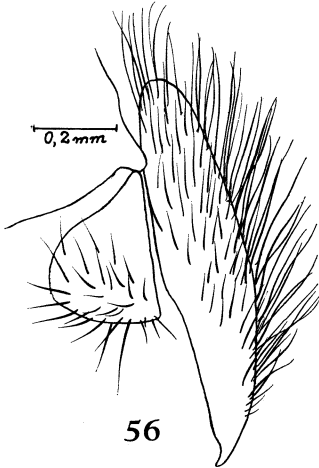
Bismarck Islands. — LAVONGAI: Banatam, holotype ♂, 23 March 1962. — DYAUL: Sumuna, paratype ♂, 9 March 1962. There are also three females, two from Lavongai and one from Dyaul which should belong to this species.



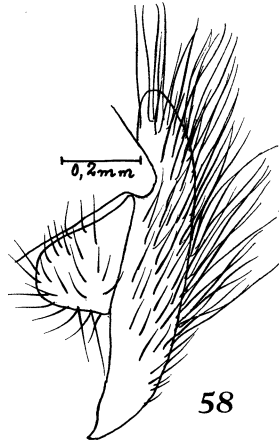
55



57



56



58

*Parasarcofaga (P.) insularis* sp. n.

Fig. 55: penis (Lavongai); fig. 56: external forcipal region (Lavongai);  
fig. 57: penis (Dyaul); fig. 58: external forcipal region (Dyaul).

***Parasarcofaga (s. str.) albiceps* (Meigen, 1826).**

*Sarcophaga albiceps* Meigen, 1826: 22,8.

*Thyrsoenema albiceps*, Baranov, 1936: 103, 104.

*Parasarcofaga (s. str.) albiceps*: Rohdendorf, 1937: 193, 199, 437,  
figs. 271, 276, 277.

Baranov, 1936, recorded this species from Solomon and Bismarck Isls. Specimens from Philippines I have examined are

gray, at most with slightly yellowish pollen, whereas the flies from Bismarck Isls. show entirely yellowish pollen, especially the females.

Philippines. — PALAWAN: Brooke's Point, Uring Uring, 1 ♀, 22 Aug. 1961; Pinigisan, 600 m, 1 ♀, 19 Sept. 1961; Tagembung, 1150 m, 1 ♀, 15 Sept. 1961. — BALABAC: Dalawan Bay, 19 ♂, 5 ♀, 8—13 Oct. 1961. — TAWI TAWI: Tarawakan, 2 ♂, 3 ♀, 10—13 Nov. 1961.

Bismarck Islands. — NEW BRITAIN: Valoka, 1 ♀, 13 July 1962; Yalom, 1000 m, 2 ♂, 4 ♀, 13—23 May 1962. — NEW IRELAND: Danu, Kalili Bay, 2 ♂, 1 ♀, 30 April 1962; Lemkamin, 900 m, 11 ♂, 6 ♀, 6—23 April 1962. — DYAUL: Sumuna, 1 ♀, 7 March 1962. — LAVONGAI: Banatam, 2 ♂, 6 ♀, 21—25 March 1962. — MANUS: Lorengau, 1 ♂, 8 ♀, 16—19 June 1962; Lombrum, 1 ♀, 29 June 1962.

**Parasarcophaga (s. str.) orchidea** (Boettcher, 1913).

*Sarcophaga orchidea* Boettcher, 1913: 375, fig. 1.

*Parasarcophaga (s. str.) orchidea*: Lopes, 1959: 58, figs. 56—59.

Philippines. — PALAWAN: Brooke's Point, Uring Uring, 1 ♂, 34 ♀, 19 Aug.—23 Sept. 1961. — BALABAC: Dalawan Bay, 4 ♀, 9—11 Oct. 1961. — TAWI TAWI: Lapid Lapid, 1 ♂, 23 Nov. 1961; Tarawakan, 5 ♀, 24 Oct.—13. Nov. 1961.

Bismarck Islands. — NEW BRITAIN: Valoka, 3 ♂, 13 ♀, 3—12 July 1962; Yalom, 1000 m, 9 ♂, 16 ♀, 8—23 May 1962. — NEW IRELAND: Danu, Kalili Bay, 2 ♀, 29—30 April 1962; Lemkamin, 900 m, 3 ♂, 11 ♀, 13—23 April 1962; Island near Kavieng, 1 ♀, 13 June 1962. — DYAUL: Sumuna, 9 ♀, 4—9 March 1962; Kollipine, 2 ♀, 12 March 1962. — LAVONGAI: Banatam, 11 ♂, 19 ♀, 17—26 March 1962. — MUSSAU: Talumalaus, 1 ♀, 5 February 1962; Boliu, 1 ♂, 1 ♀, 3 June 1962; Malakata, 1 ♂, 1 ♀, 9 June 1962. — MANUS: Lorengau, 2 ♀, 18—19 June 1962. — LUF (Hermit Islands): 7 ♂, 3 ♀, 26 June 1962.

**Parasarcophaga (s. str.) knabi** (Parker, 1917).

*Sarcophaga knabi* Parker, 1917: 96, fig. 4.

*Parasarcophaga (s. str.) knabi*: Lopes, 1958: 36, fig. 9.

Philippines. — PALAWAN: Brooke's Point, Uring, Uring, 18 ♂,

52 ♀, 15 Aug.—23 Sept. 1961. — BALABAC: Dalawan Bay, 2 ♂, 1 ♀, 10—13 Oct. 1961. — TAWI TAWI: Tarawakan, 4 ♀, 8—16 Nov. 1961. — MINDANAO: Sapamoro, Curuan District, 1 ♂, 1 ♀, 21 Dec. 1961.

Bismarck Islands. — NEW BRITAIN: Valoka, 2 ♂, 3 ♀, 4—8 July 1962; Rabaul, 1 ♀, 25 July 1962. — DUKE OF YORK: Manuan, 1 ♀, 18 July 1962. — NEW IRELAND: Danu, Kalili Bay, 1 ♂, 1 ♀, 29 April 1962; Lemkamin, 900 m, 21 ♂, 30 ♀, 6—21 April 1962. — DYAUL: Sumuna, 2 ♂, 1 ♀, 4—9 March 1962. — LAVONGAI: Banatam, 6 ♂, 26 ♀, 17—25 March 1962.

**Parasarcophaga (Liosarcophaga) misera** (Walker, 1849).

*Sarcophaga misera* Walker, 1849: 829.

*Parasarcophaga (Liosarcophaga) misera*: Lopes, 1959: 60, figs. 60-64.

Philippines. — PALAWAN: Brooke's Point, Uring Uring, 1 ♀, 23 Sept. 1961. — BALABAC: Dalawan Bay, 2 ♂, 9 Oct. 1961.

Bismarck Islands. — NEW BRITAIN: Bita Paka, SE of Kokopo, 1 ♂, 10 July 1962. — DYAUL: Sumuna, 1 ♀, 6 March 1962. — LAVONGAI: Banatam, 1 ♀, 19 March 1962. — MANUS: Lorengau, 4 ♂, 1 ♀, 23—25 June 1962.

**Parasarcophaga (Liosarcophaga) rohdendorfi** Baranov, 1938.

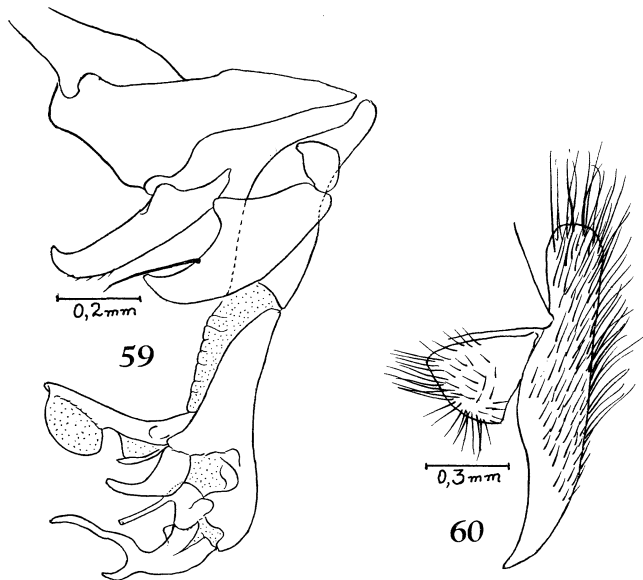
*Parasarcophaga rohdendorfi* Baranov, 1938: 172, fig. 1 (Solomon Is.).

Bismarck Islands. — NEW BRITAIN: Valoka, 4 ♂, 2 ♀, 7—12 July 1962; Bita Paka SE of Kokopo, 1 ♂, 10 July 1962; Rabaul, 2 ♀, 25 July 1962. — DUKE OF YORK: Manuan, 2 ♂, 2 ♀, 19—20 July 1962. — NEW IRELAND: Danu, Kalili Bay, 1 ♀, 30 April 1962. — DYAUL: Sumuna, 3 ♂, 2 ♀, 4—9 March 1962; Kollepine 1 ♂, 12 March 1962. — LAVONGAI: Banatam, 2 ♂, 5 ♀, 19—22 March 1962. — MUSSAU: Malakata, 6 ♂, 4 ♀, 1 February and 3—10 June 1962. — MANUS: Lorengau, 4 ♂, 2 ♀, 20—29 June 1962.

**Parasarcophaga (Liosarcophaga) promiscua** n. sp.

(Figs. 59 and 60).

Male: length 9 to 12 mm. Head slightly yellowish, occiput and posterior part of genae silvery; front about 0,23 of head width; ocellar bristles poorly developed; three to four frontal bristles inserted below base of antennae; antennae reaching 0,84



*Parasarcophaga (P.) promiscua* sp. n.

Fig. 59: penis and internal forcipes; fig. 60: external forcipes.

of the distance to vibrissae; a series of long hairs on parafacialia; back of head with two sometimes incomplete series of black hairs besides the postocular cilia.

Thorax silvery; prescutellar acrostichal bristles present. Presuturaldorsocentral bristles differentiated; sometimes 4 to 5 hairs above, on the propleura; tibiae without long villosity, strong ventral bristle on hind pair;  $R_{4+5}$  with hairs on basal half of the distance to cross-vein.

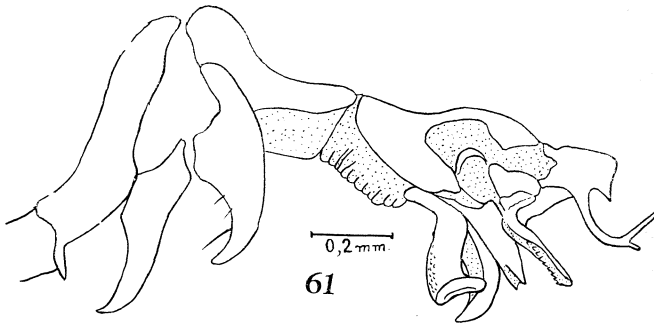
Abdomen silvery; sternites II to IV with small sparse hairs; genital segments black, the first with silvery, and posteriorly yellowish pollinosity, the second shining; forcipes superiores robust and slightly curved forward; forcipes inferiores almost triangular; internal forcipes black and strong; the forcipes interiores with a long bristle near apex; paraphallus well chitinized, apical plate with two arms, the proximal one very long, lateral plate well pigmented; ventralia long with a membranous rounded apical lobe; styli of glans slender.

F e m a l e : front about 0,28 of head width. Propleura rarely

with one or two small hairs above; genital tergite excised on the middle, dorsally without hairs on a small region; sternite VIII posteriorly concave, with group of hairs laterally on hind margin, sternite IX membranous.

This species is very similar to *P. (L.) walshi* Ho, 1938 and *P. (L.) pingiana* Hsieh, 1958, differing mainly in the shape of the apical plates and the ventralia.

Philippines. — PALAWAN: Brooke's Point, Uring Uring, paratypes 1 ♂, 2 ♀, 25—31 Aug. and 10 Sept. 1961. — BALABAC: Dalawan Bay, paratypes, 1 ♂, 3 ♀, 8—12 Oct. 1961. — TAWI TAWI: Tarawakan, holotype ♂, 12 Nov. 1961, allotype ♀, 5 Nov. 1961, paratypes 1 ♂, 2 ♀, 25 Oct.—12 Nov. 1961.



*Parasarcophaga (L.) aurifrons* (Macquart).

Fig. 61: penis and internal forcipes.

***Parasarcophaga (Liosarcophaga) aurifrons* (Macquart, 1845).**

*Sarcophaga aurifrons* Macquart, 1845: 191.

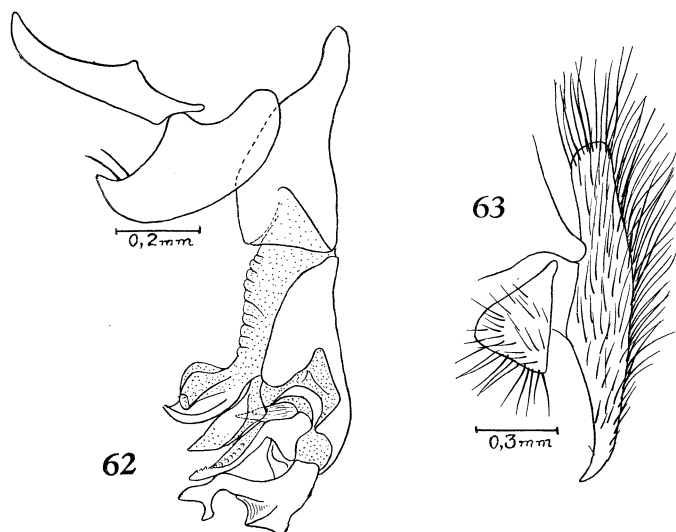
*Parasarcophaga (L.) aurifrons*: Lopes, 1959; 62, figs. 70—77.

I present a drawing representing the penis of *aurifrons* from Lavongai (fig. 61), in which small differences in the ventralia appear when compared with specimens from Australia.

Bismarck Islands. — LAVONGAI: Banatam, 1 ♂, 23 March 1962.

***Parasarcophaga (Liosarcophaga) juncta* sp. n. (Figs. 62 and 63).**

Male: length 9 to 11 mm. Body yellow, head golden yellowish; front about 0,2 of the head width; two or three bristles below



*Parasarcophaga (L.) juncta* sp. n.

Fig. 62: penis and internal forcipes; fig. 63: external forcipes.

base of antennae; parafacialia with long hairs, the inferior ones strong; hairs of facialia occupying a little more than inferior half; two series of black hairs on the occiput besides the postocular cilia.

Thorax with well contrasting longitudinal vittae; prescutellar acrostichal bristle absent; ventral bristle on middle and hind tibiae;  $R_{4+5}$  with hairs on the basal two-thirds of the distance to cross-vein.

Abdomen more intensely yellow on the last two segments; sternites II to IV with sparse hairs, which are more elongated on the margin of the sclerites. Forcipes superiores curved forward, internal forcipes robust the anterior with bristles near the apex; penis with the apical plate robust, with short bifid anterior arms; ventralia short and stout.

This species is similar to *aurifrons* Macquart, differing mainly by the shape of the apical plate and the internal forcipes.

Bismarck Islands. — NEW IRELAND: Lemkamin, 900 m, holotype ♂, 11 April 1962, paratypes 2 ♂, 22 April 1962.



### Summary.

Thirty-one species are recorded from the southern Philippines and various islands in the Bismarck Archipelago. Taxonomic, distributional and other notes are given. One species from the Philippines is new to science (genus: *Parasarcophaga* (*Liosarcophaga*)), but especially the collection from the Bismarck Islands is significant. It contains fourteen new species in the following genera: *Heteronychia* (*Pandeleola*), 1 sp.; *Johnstonimyia*, 2 spp.; *Bezziola*, 4 spp.; *Tricholioproctia*, 4 spp.; *Parasarcophaga* (*Pandelleisca*), 2 spp., and *P.* (*Liosarcophaga*), 1 sp.

### Bibliography.

- Baranov, N., 1931: Neue orientalische Sarcophaginae (Diptera). — *Konowia* 10: 110—115, 6 figs.
- , 1934: Zur Kenntnis der Raupenfliegenfauna der Solomon Inseln (Diptera, Tachinidae). — *Stylops* 3: 181—184, 2 figs.
- , 1936: Weitere Beiträge zur Kenntnis der parasitären Raupenfliegen (Tachinidae-Larvaevoridae) von der Solomon und Neubritanien. — *Ann. Mag. Nat. Hist.* (10) 17: 97—113, 2 figs.
- , 1938: Weiteres über die Tachiniden (s. l.) der Solomon Inseln. — *Vetrin. Arch. Zagreb* 8: 170—174, 3 figs.
- Boettcher, G., 1913: H. Sauters Formosa Ausbeute. Neue Sarcophaga Arten. — *Ann. Mus. Nat. Hung.* 11: 374—281, 3 figs.
- Enderlein, G., 1928: Klassifikation der Sarcophagiden. Sarcophagiden Studien I. — *Arch. Klass. Phyl. Ent.* 1 (1): 1—56, 7 figs.
- Hall, D. G. & Bohart, G. E., 1948: The Sarcophagidae of Guam. — *Proc. Ent. Soc. Wash.* 50 (5): 127—135, pl. 13.
- Hardy, G. H., 1927: Notes on Australian and exotic flies. — *Proc. Linn. Soc. N. S. Wales* 52: 447—459, 11 figs.
- Johnston, T. H. & Tieggs, O. W., 1921. New and little known Sarcophagidae flies from South-Easter Queensland. — *Proc. Roy. Soc. Queensl.* 33: 46—90, 26 figs.
- Lopes, H. S., 1954. Contribution to the knowledge of the Australian Sarcophagid flies belonging to the genus *Tricholioproctia* Baranov, 1938 (Diptera). — *Ann. Acad. Bras. Cienc.* 26 (2): 237—276, 163 figs.
- , 1955: Australian species of the genus *Blaesoxipha* Loew, 1861 (Diptera, Sarcophagidae). — *Rev. Bras. Biol.* 15 (3): 315—320, 10 figs.
- , 1958: Insects of Micronesia, Honolulu 13 (2): 15—49, 14 figs.
- , 1959: A revision of Australian Sarcophagidae (Diptera). — *Stud. Entom., Petropolis* (n. ser.) 2: 33—67, 94 figs.
- , 1961: A contribution to the knowledge of the genus *Boettcherisca* Rohdendorf, 1937 (Diptera, Sarcophagidae). — *Mem. Inst. Oswaldo Cruz* 59 (1): 69—82, 56 figs.

- M a c q u a r t, J., 1845: Diptères Exotiques Supplement 1. — Mem. Soc. Sc. Lille 1944: 133—364, 20 pls.
- M e i g e n, W., 1826: Systematische Beschreibung der bekannten europäischen zweiflügeligen Insecten, Aachen et Hamn 5: VII+412 pp., pls. 42—54.
- P a r k e r, R., 1917: New flies of the genus *Sarcophaga* from Guam and the Philippines. — Proc. U.S. Nat. Mus. 54: 89—97, 5 figs.
- P e t e r s e n, B ø r g e, 1966: The Noona Dan Expedition 1961—62. Insects and other land arthropods. — Ent. Meddr. 34: 283—304.
- R o b a c k, S. S., 1954: The evolution and taxonomy of the Sarcophaginae (Diptera, Sarcophagidae). — Illin. Biol. Monogr. 23 (3/4): 1—181, 34 pls.
- S k u s e, F. in O l l i f f, A. S. 1891: Entomological Notes: the fly parasite of the Plague Locust in N. S. W. — Agric. Gaz. N. S. W. R.: 255—257.
- T o w n s e n d, C. H. T., 1938: Manual of Myiology 6: 1—242.
- W a l k e r, F., 1849: Catalogue of the specimens of Dipterous Insects in the collection of the British Museum, London. Part 4: 688—1172.
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