Notes on flies of medical importance in Japan (Part XVIII.)
Descriptions of one new genus and three new species of sarcophagid flies from the Ryukyu Islands

By

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During the period from 25 May to 5 June 1962, one of the authors, Rokuro Kano, made a survey of medically important flies on Okinawa Main Island of the Ryukyu Islands. This work resulted in a collection of more than 2,000 fly specimens. Some years before this (December 1952—May 1953), Dr. Tokuichi Shiraki surveyed both agriculturally and medically important flies on the Ryukyu Islands and also collected many fly specimens. The authors examined fly specimens of both surveys in detail, and found one new genus and three new species of sarcophagid flies among them. Regarding the generic names of these species, the authors followed the opinion of Dr. B. B. Rohdendorf and Dr. H. S. Lopes.

DESCRIPTION

Takaraia n. gen.

Upper part of propleuron bare. Acrostichal bristles usually 1+1; postsutural dorsocentral bristles 4 or 5 (usually 5) but foremost one unusually fine. Hind tibia with a row of long hairs curled at their apices on the anteroventral and posteroventral surfaces respectively. Third tergite with a pair of median marginal bristles. First to fourth abdominal sternites with long dense pile. First genital tergite with several marginal bristles. Fifth sternite U-shaped with long hairs ventrally and a brush of robust spines internally. Penis without distinct folded membrane between theca and ventralia. Ventralia very large and robust. Seventh sternite of female slightly concave posteriorly bearing several long bristles on both corners of hind margin. Eighth sternite becoming a small chitinized plate. Signum pigmented, spermatheca strongly sulcate transversally and variable in shape.

Type species: Takaraia yonahaensis, new species

Takaraia yonahaensis n. sp.

Japanese name: Yonaha-nikubae

MALE: Body length 8 to 12 mm.

Head: Frons about seven-twelfths the width of one eye; frontal vitta black; parafrontals and parafacials velvety black to a golden pruinescence under varying light conditions; antennae dark brown, basal two segments appearing almost black, third segment about two and a half times that of the second segment; genae velvety black to dark brown with golden pruinescence which may appear

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silvery under certain incidence of light, with numerous black hairs; genae about one-fourth height of eye; face velvety brown with golden to silvery pruinose under certain incidence of light; facial ridge blackened, with several black setae; frontal bristles 10 to 15, with lower 3 to 5 pairs divergent; 3 rows of postocular setae present; metacephalon with numerous yellowish white hairs; palpi black and slender. (Fig. 1. B)

Thorax: Scutum golden to silvery pruinose, with 3 black longitudinal stripes; acrostichal bristles 0 or 1+1; dorsocentral bristles 5+4 (sometimes 5 but foremost one is fine); intra-alar bristles 1+3, humeral bristles 3; post humeral bristles 2; presutural bristles 1; supra-alar bristles 3; notopleural bristles 4; postalar bristles 2; apicoscutellar and discoscutellar bristles 1 pair each; lateroscutellar bristles two pairs; upper part of propuleuron bare; mesothoracic spiracles with brown pile, lighter at tips. (Fig. 1. A)

Wings: Hyaline; R1 bare; R4+5 with a row of 8 to 15 setae on dorsal surface more than half the distance from the basal node to r-m, ventral surface with several setae on basal node; section III of costa almost same length as section V; section V of costa with short spines along basal half on anterior margin; basicostal scale light brown; epaulet black; squamae white, infuscated towards margin; halter dark brown. (Fig. 1. A)

Legs: Black; fore femur with a row of long bristles and hairs on the ventral surface and a row of long bristles on the dorsal and posterodorsal surfaces; fore tibia with 2 short bristles on the basal part of anterodorsal surface and 1 bristle at one-third the distance from distal end on the posterolateral surface; mid femur with a pair of rows of bristles on the ventral surface, 3 or 4 bristles along middle portion of the anterolateral surface and distal part of the posterolateral surface respectively; mid tibia with 2 bristles at middle of anterolateral surface, 1 bristle on the ventral surface at one-third the distance from distal end, 3 bristles (rarely 4) on posterodorsal surface, and 1 bristle on the posterolateral surface at one-third the distance from distal end; hind femur with two rows of long bristles on the anterodorsal surface, 3 bristles on the distal part of the posterodorsal surface, 1 bristle on the distal part of the anteroventral surface, and numerous long hairs on the ventral surface; hind tibia with a row of bristles on the anterodorsal surface, 2 bristles on the posterodorsal surface (the first a little less than a third tibial length from base and second at less than two thirds the length), 1 bristle on anteroventral surface at one-fifth distance from distal end, a row of long hairs curled at their apices on the anteroventral and posterventral surfaces respectively. (Fig. 1. A)

Abdomen: Black with silvery gray checker pattern; 1 pair of median marginal bristles on the 3rd tergite; several pairs of well developed marginal bristles on the 4th and 5th tergites; 1st genital tergite black covered with grayish pollinosity; 2nd genital tergite shiny black with numerous black hairs; 1st genital tergite with numerous black hairs and several marginal bristles; 5th sternite, forceps and genitalia as shown in Fig. 1. C and D.

FEMALE: Body length 6 to 10 mm.

Characteristics of the female are similar to those of the male except for following: Frons about two-thirds the width of one eye; parafrontals with 2 pairs of reclinate fronto-orbital bristles; apicoscutellar bristles wanting; the row of long hairs on the hind tibia of the male are absent in the female. Genitalia are as shown in Fig. 1. E and F.

Locality: Northern part of Okinawa Main Island of the Ryukyu Islands.

Holotype: Male, Mt. Yonaha, Okinawa Main Island, 31 May 1962, collected by Roku-ro Kano.

Paratypes: 8 males and 4 females with same data as holotype; 2 males, Ryukyu University Forest, 30 May and 1 June 1962, R. Kano; 16 males and 9 females, Mt. Yonaha, Dr. Tokuichi Shiraki (4 males and 2 females, 8 April 1953); 5 males and 3 females, 9 April 1963; 7 males and 4 females, 11 April 1953).

Remarks: This species was found only along mountain paths and mountain streams of Mt. Yonaha and the Ryukyu University Forest, Yona. This is a rare species except in its type locality.
Fig. 1. *Takaraia yonahaensis* n. sp. (Drawing is from the Entomology Division, 406th MGL, APO 343, USA). A: male, B: head of male, C: male terminalia, D: fifth sternite of male, E: female terminalia, F: spermatheca and signum

**Parasarcophaga** (s. str.) *shirakii* n. sp.

Japanese name: Shiraki-nikubae

**MALE**: Body length 7 to 17 mm.

**Head**: Frons about one half the width of one eye; frontal vitta black; parafrontals and parafacials with golden pruinescence; antennae blackish brown, with length of third segment about three times that of second; genae black, of golden pollinosity, with numerous hairs and about two-sevenths the height of one eye; facial ridge with several black bristles; frontal bristles 10 to 15, with lower 3 to 5 pairs divergent; one regular and two irregular rows of postocular setae present; palpi black and slender; metacephalon with numerous yellowish white hairs particularly under certain incidence of light. (Fig. 2, B)

**Thorax**: Scutum with silvery to golden pruinescence and with three black longitudinal stripes; acrostichal bristles 0+1; dorsocentral bristles 5–9+5; intra-alar bristles 0 (occasionally 1 or 2 weak bristles)+2 or 3; humeral bristles 3; posthumeral bristles 2; presutural bristle 1; supra-alar bristles 3; notopleural bristles 4; postalar bristles 2; apicoscutellar and discocutellar bristles 1 pair respectively; laterocutellar bristles 2 pairs; upper part of propleuron bare; mesothoracic spiracles with dense brown pile which is silvery at tips under certain incidence of light. (Fig. 2, A)

**Wings**: Hyaline and infuscated toward base and costa; R1 bare; R4+5 with a row of about 7 to 16 short setae located dorsally and extending more than half way from basal node to r-m; several setae on ventral surface of basal node of R4+5; section III of costa almost same length as section V; section V of costa with short spines on basal half along anterior margin; basicostal scale light brown; epaulet black; squamae white and infuscated toward...
Fig. 2. *Parasarcophaga* (s. str.) *shirakii* n. sp. (Drawing is from the Entomology Division, 406th MGL, APO 343, USA). A: male, B: head of male, C: male terminalia, D: fifth sternite of male, E: female terminalia, F: spermatheca and signum

Legs: Black; fore femur with a row of long bristles and fairly numerous hairs on ventral surface, a row of bristles on the dorsal and another on the posterodorsal surfaces (posterodorsal row is sometimes weak); fore tibia with 2 or 3 (rarely 4) short bristles on basal part of anterodorsal surface and 1 bristle on posterolateral surface one-third distance from distal end; mid femur with numerous long hairs on ventral surface, a row of bristles on anteroventral surface, a row of short bristles on distal one-fourth of posterodorsal surface, several bristles on the middle of the anterolateral surface. 2 or 3 bristles on the distal posterodorsal surface; mid tibia with 1 bristle on the anterolateral surface two-fifths distance from distal end, 1 bristle on the posterolateral surface one-third distance from distal end, 3 fairly long bristles and several short bristles along posterodorsal surface, 1 bristle on ventral surface one-third distance from distal end, a row of fairly long hairs on posteroventral surface; hind femur with numerous long hairs curled at their apices on the ventral surface, a row of bristles on the anteroventral surface, a pair of rows of bristles on the anterodorsal surface, 3 bristles on distal part of the posterodorsal surface; hind tibia with numerous long hairs curled at their apices on the anterodorsal and posteroventral surfaces, a row of bristles on the anterodorsal surface, 2 bristles on the posterodorsal surface and 1 bristle on distal part of the anteroventral surface. (Fig. 2. A)

Abdomen: Black and silvery gray (sometimes golden under certain incidence of light) checkered pattern; median marginal bristles on 3rd tergite absent; several pairs of marginal bristles well developed on 4th and 5th tergites; 1st genital tergite black with grayish pollen; 2nd genital tergite shiny black; 1st and 2nd genital tergites with numerous long black margin; halter dark brown. (Fig. 2. A)
hairs, but without marginal bristles; forceps, fifth sternite and genitalia as shown in Fig. 2. C and D.

**FEMALE:** Body length 9 to 13 mm.

**Head:** Characteristics of head similar to those of the male, but frons about three-fourths the width of one eye; 2 reclinate fronto-orbital bristles present; outer vertical bristles well developed.

**Thorax:** Apicoscutellar bristles wanting. Remainder of thoracic characters essentially similar to those of the male.

**Wings:** As in male.

**Legs:** Mid femur, mid tibia, hind femur and hind tibia without long hairs.

**Abdomen:** Essentially as in male. Genitalia shown in Fig. 2. E and F.

**Locality:** Northern part of Okinawa Main Island of the Ryukyu Islands.

**Holotype:** Male taken at Ryukyu University Forest, Yona; 30 May 1962; collected by Kuroko Kano.

**Paratypes:** 33 males and 8 females, same data as holotype; 8 males from Ryukyu University Forest, 27 May 1962, R. Kano; 13 males and 1 female, Mt. Yonaha, 31 May 1962, R. Kano; 35 males and 4 females, Gajanokobanta, 2 June 1962, R. Kano; 11 males and 2 females, Gogayama, 2 June 1962, R. Kano.

**Remarks:** This species is fairly common in the mountain stream areas of northern Okinawa Main Island, especially so in the Ryukyu University Forest, Yona, Mt. Yonaha and Gajanokobanta.

*P. shirakii* is closely related to *P. magensi* morphologically as well as ecologically. They differ in the shape of the forceps, phallosome and female terminalia shown in Fig. 2. C, E and F. The specific name is dedicated to Dr. Tokuichi Shiraki in whose collections this species appears.

**Pierretia (Bellieriomima) pseudosubulata n. sp.**

**Japanese name:** Okinawa-hime-nikubae

**Male:** Body length 7 to 10 mm.

**Head:** Frons about half the width of one eye; fronto vitta black; parafrontals and parafacials with golden pruinescence; antennae dark brown, length of the 3rd segment about two and a half times that of the second; genae black with golden pruinescence anteriorly and silvery posteriorly under certain incidence of light; genae about three-eighths the height of one eye and with numerous black hairs; face brown, with golden to silvery pruinescence depending upon the incidence of light; facial ridge black with several black setae; frontal bristles 8 to 11, usually 10, with lower three pairs divergent; metacephalon with numerous yellowish white hairs; 3 rows of postocular setae present; palpi black and slender. (Fig. 3. B)

**Thorax:** Scutum silvery pruinose under certain incidence of light, with three black longitudinal stripes; acrostichal bristles 3–5 (usually 5)+1; dorsocentral bristles 5 (3rd and 5th bristles much longer than others)+3; intra-alar bristles 1 (sometimes weak or absent) +3; humeral bristles 3; posthumeral bristles 2 (rarely 3); presutural bristle 1 + supra-alar bristles 3; notopleural bristles 4; postalar bristles 2; apicoscutellar and discocutellar bristles 1 pair each; laterocutellar bristles 2 pairs; upper part of propleuron bare; mesothoracic spiracles with brown pile. (Fig. 3. A)

**Wings:** Hyaline; R₁ with about 5 setae on the basal half of the dorsal surface; R₄₊₅ with 8 to 10 setae on dorsal surface extending more than half way from basal node toward r-m; several setae on ventral surface of basal node of R₄₊₅; section III of costa almost same length as section V; section V of costa with short spines on basal half along anterior margin; basicostal scale light brown; epaulet black; squamae white, infuscated toward margin; halter brown. (Fig. 3. A)

**Legs:** Black; fore femur with a row of long bristles and hairs along the ventral surface and a row of bristles on both the dorsal and posterodorsal surfaces; fore tibia with 2 short bristles on basal part of the anterodorsal surface and 1 bristle approximately three-fifths the distance from base on the posterolateral surface; mid femur with two rows of bristles on ventral surface, 2 or 3 bristles on the basal part of the anterolateral and on distal part of the posterolateral surfaces respectively; mid tibia with 1 bristle at middle of the anterolateral surface, 1 bristle on the ventral surface
one third length from apex, 3 bristles on the posterodorsal surface, and 1 bristle on the posteralateral surface one-third distance from apex; hind femur with a row of bristles along the anterodorsal surface; several bristles on the middle part of the anterolateral surface, 1 to 3 bristles on distal part of posterodorsal surface, 1 or 2 bristles on the distal part of the posterolateral surface, a row of long bristles along the anterolateral surface, a row of long bristles along anteroventral surface; hind tibia with a row of bristles along anterodorsal surface, 2 bristles on mid portion of posterodorsal surface, 1 bristle on anteroventral surface one-fourth distance from apex, a row of long hairs along anteroventral and posteroventral surfaces respectively. (Fig. 3. A)

**Abdomen**: Black with silvery gray chequered pattern; median marginal bristles on 3rd tergite absent; 1 pair of median marginal bristles and several pairs of well developed lateral marginal bristles on 4th and 5th tergites; 1st genital tergite black with grayish pruinescence and 2nd genital tergite shiny black; 1st and 2nd genital tergites with numerous long black hairs, several marginal bristles on 1st genital tergite; 5th sternite, forceps and genitalia as shown in Fig. 3. C and D.

**FEMALE**: Body length about 7 mm.

The characteristics of the female are similar to those of the male except as follows: Frons about three-fourths the width of one eye, parafrontals with 2 pairs of reclinate fronto-orbital bristles, apicoscutellar bristles absent as is a row of long hairs on the hind tibia. Genitalia as in Fig. 3. E and F.

**Locality**: Okinawa Main Island of the Ryukyu Islands.
Holotype: Male, Gajanokobanta, Okinawa Main Island, 3 June 1962, collected by Roku-ro Kano.

Paratypes: All paratypes were collected from the main island of Okinawa: 13 males and 3 females, same data as holotype, R. Kano; 2 males, Gajanokobanta, 1 June 1962, R. Kano; 1 male, Gogayama, 2 June 1962, R. Kano; 1 male and 1 female, Katsuyama, 19 March 1953, Dr. Tokuichi Shiraki; 1 male, Nakagusuku, 23 April 1953, Dr. T. Shiraki; 1 male and 3 females, Katsuyama, 22 March 1953, Dr. T. Shiraki; 1 male, Mt. Yonaha, 9 April 1953, Dr. T. Shiraki; 1 male and 1 female, Ginama, 24 March 1953, Dr. T. Shiraki.

Remarks: This species was found along mountain streams throughout Okinawa Main Island, especially in the northern part. However, it is not common in collections. P. pseudosubulata is closely related to P. subulata and P. takahasii, but differs from them in the shape of the phallosome and female genitalia as shown in Fig. 3. C, E and F, respectively.

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LITERATURE