

A NEW GENUS, *JOHNSONIMIMA*, AND TWO NEW SPECIES  
BELONGING TO THIS GENUS FROM THE SOLOMON  
ISLANDS (Diptera: Sarcophagidae)

By Rokuro Kano<sup>1</sup> and Hugo de Souza Lopes<sup>2</sup>

*Abstract:* The new genus, *Johnsonimima* and 2 new species, *J. bivittata* and *J. aurescens*, are described from the Solomon Islands.

During our study of sarcophagid flies sent from B. P. Bishop Museum, Honolulu, we found 2 new species. It is considered that these species belong to a new genus as they have only 2 black longitudinal stripes on scutum, and a row of setae on  $R_1$ ,  $R_{4+5}$  and  $M_3 + Cu_1$ , respectively. The new genus is *Johnsonimima* and the 2 new species are *J. bivittata* and *J. aurescens*.

**Johnsonimima** Kano and Lopes, new genus

Type-species: *Johnsonimima bivittata*, new species

Eyes large; only 2 broad black longitudinal vittae present on mesonotum, the median one very faint; preacrostichal bristles only differentiated, postdorsocentral bristles 3;  $R_1$ ,  $R_{4+5}$  and  $M_3 + Cu_1$  with setae on the dorsal surface respectively; at least 3rd abdominal tergite with a pair of long and strong median marginal bristles; sternites I-IV of ♂ with long dense hairs; theca of penis well constituted; lateral plates of paraphallus large and very complicated; ventralia small with 3 lobes; styli of glans long, robust and dentate; median process of glans reduced; ♀ with very long proclinate fronto-orbital bristles, genital tergite entire, sternites with long bristles. First stage larva with strongly curved maxillae, mandibles well individualized, paraclypeal phragma well constituted.

The type-species of this genus resembles superficially the Neotropical genus *Johnsonia* Coquillett by the bivittate mesonotum, the chaetotaxy of thorax, the setose cubital vein and the reduced number of hypopleural and frontal bristles. However, it differs distinctly from *Johnsonia* by the absence of fronto-orbital bristles in male and by the very different constitution of the penis. The second species of the genus, *J. aurescens*, shows more numerous frontal and hypopleural bristles and is a more robust species. This genus is entirely different from any other genus found in the Oriental Region by having hairy  $R_1$  and cubital veins. It differs from the genera with hairy  $R_1$  as follows: (1) from *Chaetoravinia* Townsend, 1917 by the differentiated theca of penis; (2) from *Helicobia* Coquillett, 1895 by the more elongated and pointed lateral plate of paraphallus and by the entire female genital tergite; (3) from *Bellieriomima* Rohdendorf, 1937 by the sclerotized ventralia; and (4) from *Pierretia* Robineau-Desvoidy, 1863 by the well-developed ventralia.

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**Johnsonimima bivittata** Kano and Lopes, new species      Fig. 1-4.

♂. Body length 6.5 mm.

*Head*: Yellowish silver, less intense on occiput and genae; frons about 0.26 of head width; ocellar bristles slender; frontal bristles 7-8, only 1 inserted below base of antennae; parafro-ntalia with several fine hairs; parafacialia with a series of hairs near eye, 4 lower ones strong; antennae dark brown, somewhat reddish on base of 3rd segment, reaching 0.87 of the distance to vibrissae; arista long plumose on basal 2/3; parafacialia about 0.28 of the distance between vibrissae which are very strong and inserted very far from each other; 2 or 3 long bristles present on buccae, near vibrissae; genae with sparse black hairs, 3 or 4 long ones located near vibrissae; back of head with sparse black hairs, having some yellowish hairs around the neck and lower part; palpi brown.

*Thorax*: Silvery and slightly yellowish; only 2 black longitudinal vittae present on mesonotum, the middle one very faint, only visible near scutellum and on scutellum; acrostichal bristles 3 or 4 (very small): 1; dorsocentral bristles 4: 3; hypopleural bristles about 5; sternopleural bristles 3, strong and equidistant; lateral scutellar bristles 2 pairs and long, apical 1 very small and not crossed, preapical 1 absent.

*Wings*: Infuscated towards anterior margins, basal parts somewhat yellowish, veins yellowish brown;  $R_1$  setose on basal 1/2,  $R_{4+5}$  with 3 setae beyond the cross vein;  $M_3+Cu_1$  with about 5 setae.

*Legs*: Femora with long hairs, tibiae not villous. Fore tibia with 2 or 3 short bristles on basal part of anterodorsal surface, 1 strong bristle on posterolateral surface; mid tibia with 2 bristles each on anterolateral and posterodorsal surfaces, 1 bristle each on posterolateral and ventral surfaces; hind tibia with 2 bristles on anterodorsal, posterodorsal and anteroventral surfaces, respectively.

*Abdomen*: Bluish gray and with black checkered pattern, 2nd and 3rd tergites each with a pair of long and strong median marginal bristles; 4th and 5th tergites each with a complete row of long marginal bristles; sternites I-IV with long dense black hairs. Cerci nearly straight, well thickened on the subapical parts and pointed at apices; forcipes inferiores almost triangular; internal forcipes slender, curved; penis with well constituted theca, a large membranous and folded region between theca and paraphallus; paraphallus well sclerotized; apical plate with median and lateral projections, rounded apically; lateral plates heavily sclerotized, with 3 apophyses; ventralia small with a median dentate and a pair of lateral apophyses; styli of glans robust, dentate, median process small bilobed.

♀. Body length 7 mm. Two pairs of strong proclinate fronto-orbital bristles present; setae of  $R_1$  and  $R_{4+5}$  occupying the basal 1/2 to 2/3, 4-8 setae present on  $M_3+Cu_1$  vein; no long hairs on ventral surfaces of femora. Wings more yellowish than those of the ♂ on basal parts, veins yellowish brown. Abdominal sternites II to V with 3 or 4 marginal bristles, sternites III and IV very elongated; genital tergite slightly sclerotized, entire, without marginal hairs dorsally; sternite VI+VII almost trapezoidal, bare on basal 3/4, with strong marginal bristles; sternite VIII also trapezoidal with a pair of strong marginal bristles; sternite IX very small with 2 pairs of bristles. Sternites VIII and IX included in large membranous region. Anal segment composed of a narrow sternites and elongated cerci. Spermathecae almost spherical, transversely striated.

Holotype (BISHOP 9471), ♂, Solomon Is., Vella Lavella, Pisisama, 17.XI.1963, P. Shanan. Deposited in Bishop Museum.

Allotype: ♀, same data as holotype.

Paratypes: 1 ♂, same data as holotype; 5 ♀♀, same data as holotype; 1 ♀, Solomon

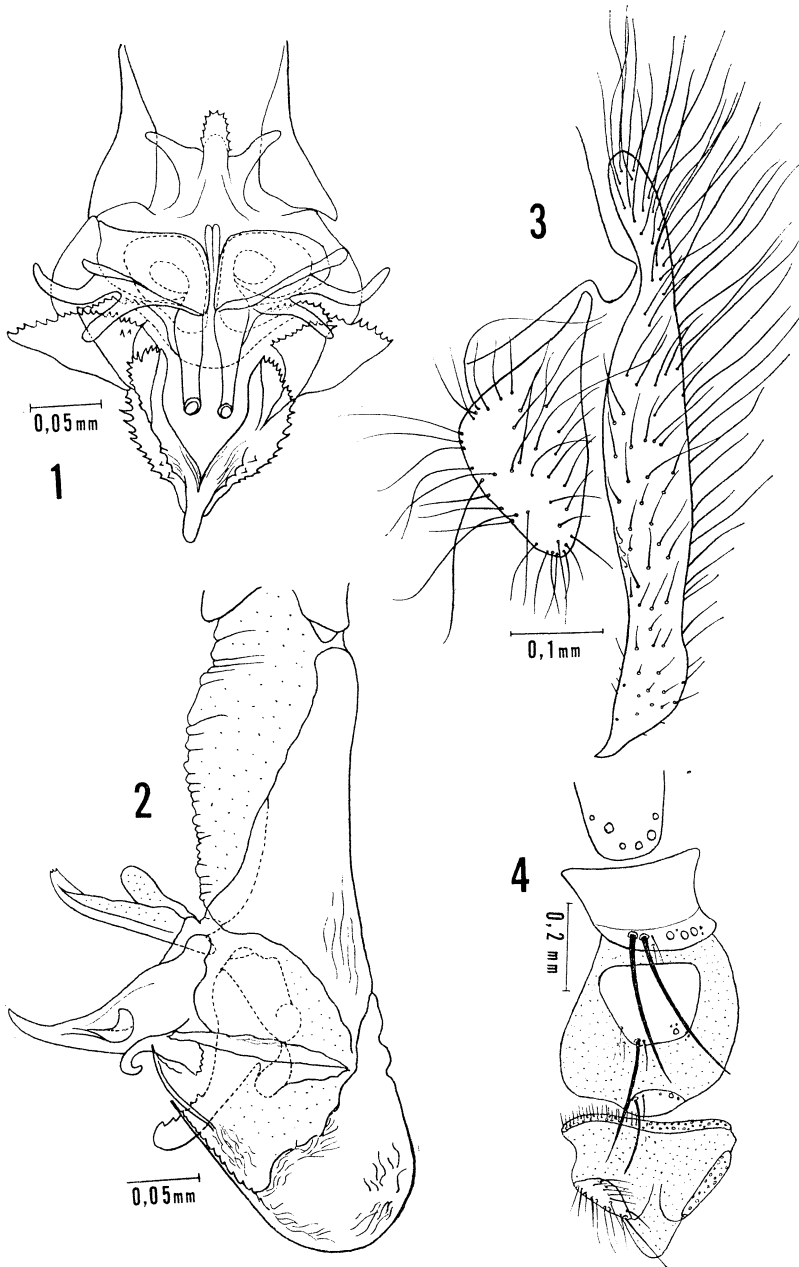


Fig. 1-4. *Johnsonimima bivittata* n. sp.: 1, apex of penis, ventral view; 2, penis, lateral view; 3, external forcipes (cerci); 4, genital sternites and anal segment of ♀.

Is., Guadalcanal, Poha R., 5 m, 2.VII.1956, J. L. Gressitt.

**Johnsonimima aurescens** Kano and Lopes, new species

Fig. 5-11.

♂. Body length 10 mm.

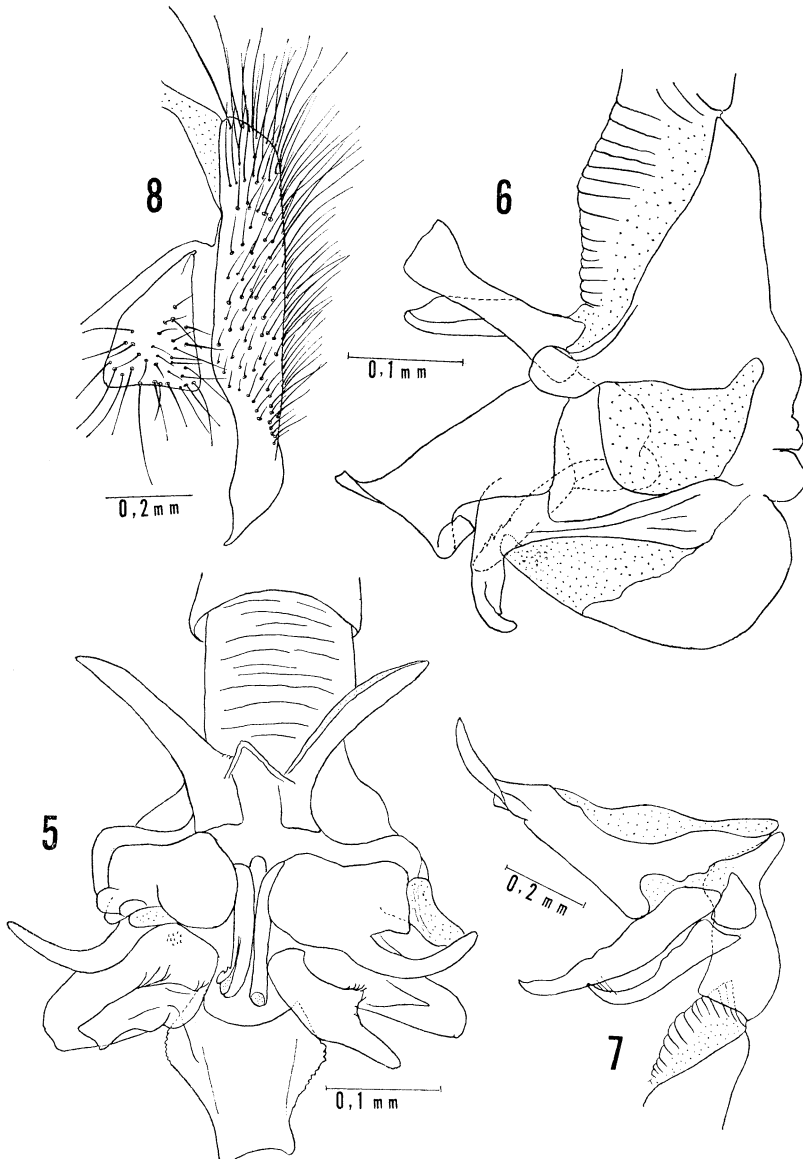


Fig. 5-8. *Johnsonimima aurescens* n. sp.: 5, apex of penis, ventral view; 6, penis, lateral view; 7, internal forcipes, theca and 9th sternite; 8, external forcipes (cerci).

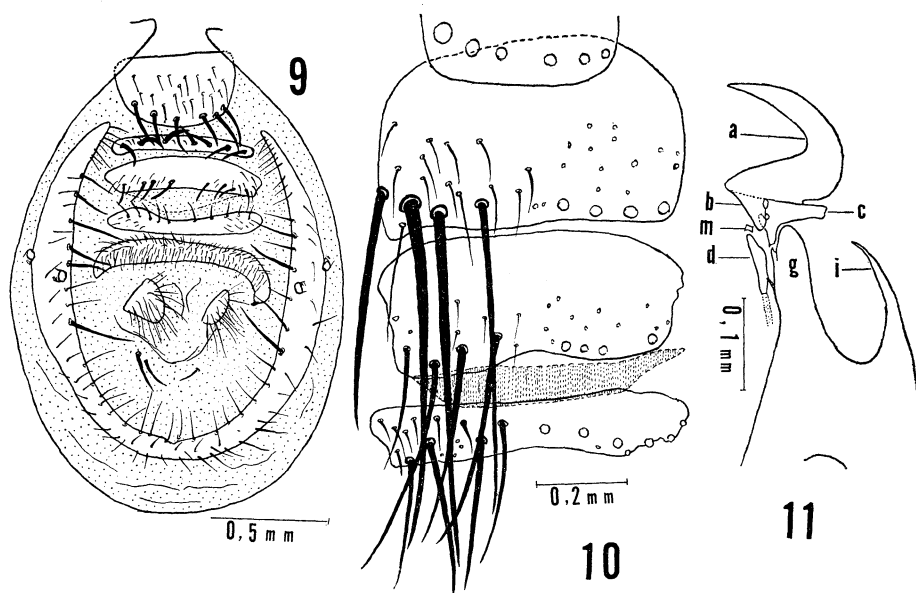


Fig. 9-11. *Johnsonimima aurescens* n. sp.: 9, ♀ genitalia; 10, ♀ genital sternites; 11, cephalopharyngeal sclerite of 1st stage larva (a, maxilla; b, dentate; c, mandibles; d, hypopharyngeal sclerite; g, paraclypeal phragma; i, clypeal arch; m, ventral ring).

**Head:** Goldenly pollinose; front about 0.25 of head width; frontal bristles 8-9, lower 3 located below the base of antenna and divergent; parafacialia with a series of hairs along eyes and lower 3 well developed; back of head with 2 irregular rows of black hairs besides the postocular cilia, remainder of hairs yellowish; genae with black hairs; facialia with sparse hairs on inferior 1/2; antennae gray, reaching 0.85 of distance to vibrissae, the basal segments blackish, the base of 3rd reddish.

**Thorax:** Golden; acrostichal bristles 2 (poorly developed): 1 (very small); dorsocentral bristles 4 (2 posterior ones strong): 3 (all strong); preapical scutellar bristles well developed, apical 1 very small.

**Wings:** Slightly infuscated, base yellow, veins yellow on base, light brown on apical 2/3.  $R_1$ ,  $R_{4+5}$  and  $M_3+Cu_1$  setose.

**Legs:** Middle and hind femora with very long sparse hairs on ventral surface; middle and hind tibiae with ventral bristles. Fore tibia with 2 or 3 short bristles on anterodorsal surface, 1 bristle on posteroventral surface; mid tibia with 3 bristles on anterodorsal surface, a row of bristles (2 of them strong) on posterodorsal surface, 1 bristle each on anteroventral and posteroventral surfaces; hind tibia with a row of bristles each on anterodorsal and posterodorsal surfaces, 3 bristles on anteroventral surface, and without long hairs.

**Abdomen:** Gray pollinose, the black parts shining; 3rd tergite with a pair of strong median marginal bristles, 4th and 5th with rows of strong marginal bristles. Sternites with long, dense, black hairs; genital segments black, the 1st with some gray pollinosity, the 2nd shining. Cerci almost straight on hind margin, the apex enlarged and pointed; forcipes inferiores triangular with long hairs; internal forcipes slender and long, forcipes interiores with some hairs on the subapical part; theca heavily sclerotized, a large membranous region present between theca and paraphallus; apical plate large and membranous anteriorly; lateral plate composed of 3 pairs

of apophyses; ventralia showing a median and 2 lateral apophyses; median process of glans reduced; styli elongated with preapical dentation.

♀. Body length 10-11.5 mm. Head intensely golden; front about 0.26 of head width; ocellar bristles small; frontal bristles 8-10, 2 superior ones reclinate, 3-4 inferior ones located below base of antenna; apical scutellar bristles absent; 1-8 bristles on cubital vein, rarely none; abdominal sternites II-IV with strong marginal bristles; genital tergite black, entire, strongly sclerotized with hairs but not bristles dorsally; sternites VI + VII to IX strongly sclerotized, broad with very strong marginal bristles; anal tergite represented by a few hairs on the membrane; anal sternite large, covered with hairs; vaginal plate broad and short, pigmented; spermathecae elliptical, finely striated, ducts slender.

*First stage larva*: Body length 3.4 mm. Spines of 1st thoracic segment very numerous, occupying all ventral surface, heavily pigmented in middle of this region, dorsal surface without spines; maxillae strongly curved; dentate small, partially incorporated with base of maxillae; mandibles well individualized; ventral ring small but well pigmented; hypopharyngeal sclerite elongated, joined to paraclypeal phragma by a slender bridge; clypeal arch well developed. The 1st stage larva of this species showing well individualized mandibles which are found only in the Palearctic species *Sarcophaga carnaria* L., and in *Protodexia* sp. from Brasil, among the known 1st stage larvae.

Holotype (BISHOP 9472), ♂, Solomon Is., New Georgia group, New Georgia I., Munda, 1-30 m, 20.VII.1959, J. L. Gressitt.

Allotype: ♀, Solomon Is., Vella Lavella, Kow, 30 m, 28.VI.1963. Holotype and allotype in the collection of B. P. Bishop Museum.

Paratypes: 2 ♀♀, Bougainville, F. N. Ratcliffe, 2.IV.1945; 2 ♀♀, Solomon Is., Guadalcanal, Paripao, 22.V.1960, C. W. O'Brien; 1 ♀, Solomon Is., Vella Lavella, Ulo Crater, 10 m, XII.1963; 2 ♀♀, Solomon Is., Choiseul I., Kolombangara R., 80 m, 20.III.1964, P. Shanahan; 1 ♀, Solomon Is., Choiseul I., Malangona, 10 m, 8.III.1964, P. Shanahan.

*Remarks*: This species differs from the type-species by the large body, golden head and thorax, the absence of median marginal bristles on 2nd abdominal tergite, larger and more sclerotized genital sternites of female and especially some features of the penis.

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