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### VI. The Genera *Mycodrosophila* and *Paramycodrosophila*

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**Abstract** Two new species of the genus *Mycodrosophila* OLDENBERG, *M. kitagawai* and *M. ohbai*, and two new species of the genus *Paramycodrosophila* DUDA, *P. okadai* and *P. takadai*, are reported from Burma.

According to the catalogues (WHEELER, 1981, 1986), a total of 27 *Mycodrosophila* species, corresponding to 28.4% of the world total (95 spp.), have been recorded from the Oriental Region. Of the 13 *Paramycodrosophila* species from the world, however, only one, *P. pictula* DE MEIJERE, 1911, has been recorded from the Oriental Region. This paper adds two new species of each genus to the faunal list of Oriental drosophilids.

#### Genus *Mycodrosophila* OLDENBERG

*Mycodrosophila* OLDENBERG, 1941, Arch. Naturg., 80 (A): 4. — WHEELER & TAKADA, 1963, Annls. ent. Soc. Am., 56: 392; 1964, 119; BOCK, 1980, Aust. J. Zool., 28: 262; 1982, *Ibid.*, Suppl. (89): 124. Type species: *Amiota poecilogastra* LOEW, 1874.

**Diagnosis.** Arista plumose, with 1, rarely 2, ventral branches; eye bare; anterior reclinate orbital small, or fine; mesoscutum arched dorsally, giving a "humped-back" appearance, shiny; acrostichal hairs in numerous rows; no prescutellars; anterior dorsocentrals absent or rather short; posterior dorsocentrals sometimes placed rather far from scutellum; scutellum dull and velvety; anterior scutellar much shorter than posterior one. Fungivorous species.

#### Subgenus *Mycodrosophila* OLDENBERG

*Mycodrosophila* s. str.: OKADA, 1986 a, 54: 112.

1) Present address: 554 (c), Nei-bain-da Road, Nan-tha-gone Quarter, Insein Township, Insein Post Office, Yangon Division, (Rangoon), Union of Myanmar (Burma).

*Diagnosis.* Costal lappet more or less well developed; 2nd costal incision deep (OKADA, 1986 a).

✓ *Mycodrosophila (Mycodrosophila) kitagawai* sp. nov.

(Fig. 1)

♂ & ♀. Body length, ♂ ca. 1.6 mm, ♀ ca. 2.2 mm. Thorax length (including scutellum), ♂ ca. 0.7 mm, ♀ ca. 0.9 mm.

Head: Antenna with 2nd segment whitish yellow; 3rd grayish yellow. Arista 4/1. Proclinate orbital ca. 1.2 times as long as posterior reclinate; anterior reclinate short, ca. 1/6 length of posterior reclinate. Frons yellow, anteriorly grayish; lateral portion grayish black, posteriorly broad, anteriorly tapering. Carina narrow. Clypeus gray. Cheek grayish yellow, ca. 1/5 as broad as greatest diameter of eye. Pulpus yellowish white, with many bristles including terminal one. Proboscis yellow.

Thorax: Mesoscutum dark brown and shining. Humeral region paler, with 3 bristles. Faint yellow median stripe on mesoscutum. Thoracic pleura entirely whitish yellow below notopleural region. Anterior dorsocentral short, ca. 1/4

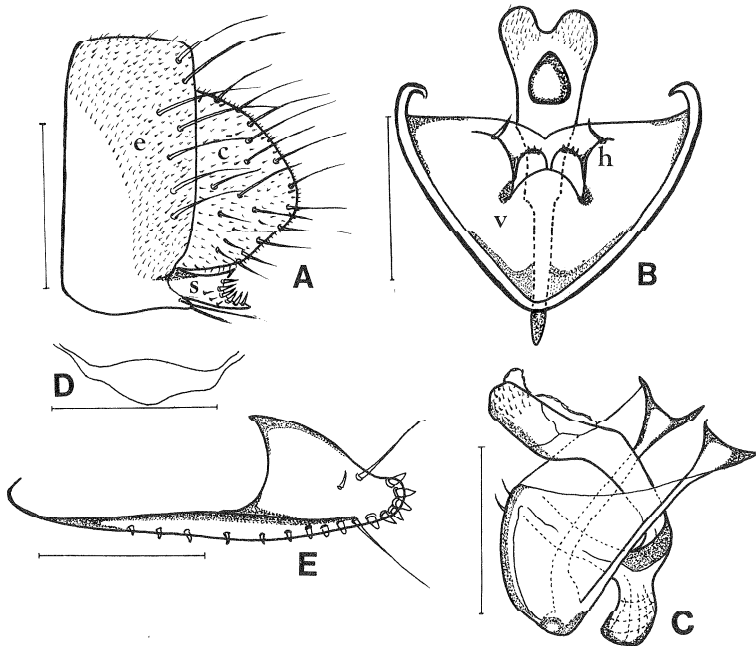


Fig. 1. Male and female genitalia of *Mycodrosophila (Mycodrosophila) kitagawai* sp. nov. A, Periphallitic organs; B, phallic organs (ventral view); C, ditto (lateral view); D, decasternum; E, ovipositor. (Scale-line=0.1 mm.)

length of posterior. Cross distance of dorsocentrals ca. 8 times of length distance. Acrostichal hairs in 8 rows. Scutellum dark brown, posteriorly black. Anterior scutellar ca. 2/5 length of posterior. Distance between posterior scutellars greater than distance between posterior and anterior. Sterno-index ca. 0.5.

Legs yellowish white. Preapical on hind tibia; apicals on fore and mid tibiae, mid tibial one very long and stout. Fore metatarsus as long as 2 succeeding tarsal joints together; mid metatarsus as long as 3 succeeding together; hind metatarsus as long as rest together. Fore leg of male without long bristles. Mid and hind tarsi with row of minute cuneiform bristles on underside.

Wing hyaline, with faint grayish patch below costal lappet. Veins brownish yellow; crossveins clear.  $R_{2+3}$  nearly straight;  $R_{4+5}$  and M distally slightly convergent. Wing indices: C ca. 1.4, 4V ca. 2.0, 4C ca. 1.5, 5x ca. 1.8, Ac ca. 2.3, C3-fringe ca. 0.5. Alura gray. Haltere white.

Abdomen: First tergite with dark grayish brown transverse patch; 2nd to 4th tergites nearly entirely dark grayish brown; 5th tergite with medially and laterally protruded, broad, dark grayish brown caudal band; 6th tergite with grayish brown median patch. Sternites white.

Periphallic organs (Figs. 1 A, D): Epandrium (e) pubescent except antero-ventral portion, broad, somewhat truncate below, slightly constricted at insertion of surstylus, with ca. 7 bristles in upper to middle caudal portion; toe narrow, somewhat pointed apically, with 2 long bristles. Surstylus (s) with ca. 6 strong teeth in concave row on lower distal margin and ca. 3 minute bristles near row of primary teeth. Cercus (c) oval, separate from epandrium, pubescent, with ca. 24 long bristles. Decasternum slightly waved on both anterior and posterior margins (Fig. 1 D).

Phallic organs (Figs. 1 B, C): Aedeagus apically bilobed and pubescent, quadrangular in lateral view; dorsal cavity fringed with minute corrugated ridge; apodeme slightly shorter than aedeagus. One pair of small submedian spines on hypandrium (h); ca. 3 minute bristles on anterior paramere. Ventral fragma (v) triangular.

Ovipositor (Fig. 1 E) apically quadrangular, slightly humping on dorsal margin, with 1 discal tooth, long supra-terminal hair, ca. 6 pointed apical teeth, long sub-terminal hair and ca. 9 marginal teeth.

Holotype ♂, Burma: Mandalay, 31. XII. 1981, ex. *Aphylophorales* fungi (TODA); deposited in the Entomological Institute, Hokkaido University, Sapporo, Japan (EHU). Paratype, Burma: 1 ♀ same data as holotype, except 4. I. 1982; in EHU.

*Distribution.* Burma (Mandalay).

*Relationship.* This species is closely related to *My. amabilis* (DE MEIJERE, 1911), but distinguishable from the latter in having the epandrium narrow and somewhat pointed at toe (broad in *amabilis*, cf. OKADA, 1986 a, b).

*Mycodrosophila (Mycodrosophila) ohbai* sp. nov.

(Fig. 2)

The following description is made referring only to the differences from the foregoing species.

♂ & ♀. Body ca. 2.1 mm, thorax ca. 1.0 mm in length.

Head slightly broader than thorax. Second segment of antenna dark brown. Proclinate orbital slightly shorter (ca. 0.9) than posterior reclinate; anterior reclinate ca. 1/5 length of posterior reclinate. Frons triangularly silvery whitish yellow in medial part. Carina broad, relatively prominent. Clypeus, face and cheek dark brown. Cheek ca. 1/9 as broad as greatest diameter of eye. Pulpus dark brown, compressed and paddle shaped, with many bristles.

Thorax: Mesoscutum blackish and shining. Acrostichal hairs in 10 rows. Faint brown stripe running between 2 middle acrostichal rows. Anterior dorsocentral ca. 1/5 length of posterior. Cross distance of dorsocentrals ca. 5 times of length distance. Anterior scutellar ca. 1/2 length of posterior. Episternum and sternoepisternum nearly entirely whitish yellow below notopleural region; pteropleurite grayish yellow; sternopleurite yellowish white.

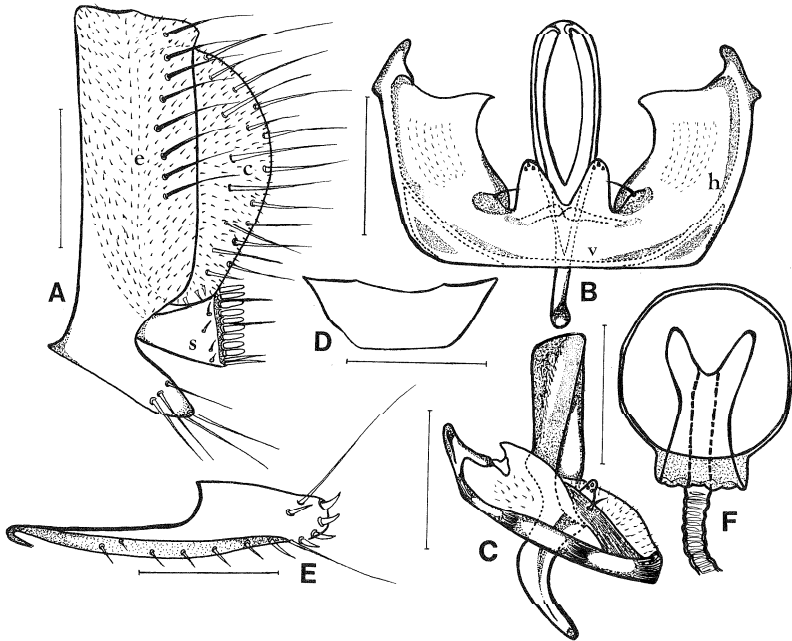


Fig. 2. Male and female genitalia of *Mycodrosophila (Mycodrosophila) ohbai* sp. nov. A, Periphallallic organs; B, phallic organs (ventral view); C, ditto (lateral view); D, decasternum; E, ovipositor; F, spermatheca. (Scale-line=0.1 mm.)

Legs: Fore metatarsus with 2 long, stout bristles (one black, the other brown) at base; hind metatarsus as long as 3 succeeding tarsal joints together.

Wing:  $R_{2+3}$  slightly curved to costa at tip. Wing indices: C ca. 1.3, 4V ca. 2.5, 4C ca. 1.75, 5x ca. 2.2, Ac ca. 3.5, C3-fringe ca. 0.7. Knob of haltere black, with pale grayish white patch; stalk pale grayish white.

Abdomen: First tergite white; 2nd and 5th tergites each with a dark caudal band; 3rd and 4th tergites each with a medially protruded caudal band.

Periphallalic organs (Figs. 2 A, D): Cercus (c) dome-shaped, pubescent, with ca. 18 bristles. Epandrium (e) with ca. 8 bristles in upper part; lower lobe slender, apically somewhat pointed, with ca. 5 or 6 long bristles; heel prominent. Surstylus (s) fin-shaped, with ca. 11 primary teeth in nearly straight row on distal margin, ca. 4 minute bristles on outer surface and ca. 2 long bristles on inner surface; ca. 9 upper primary teeth long, blunt, arranged in comb and ca. 2 lower teeth bristle-like. Decasternum with posterior margin medially concave and sublaterally slightly pointed and anterior margin straight (Fig. 2 D).

Phallic organs (Figs. 2 B, C): Aedeagus ventrally bilobed, apically not dilated in ventral view, shaped like blade of knife with quadrangular tip in lateral view, with fine spinules on lateral surface; apodeme curved, about half as long as aedeagus. Anterior paramere small, triangular, with several sensilla. Hypandrium (h) alariform, laterally partly pubescent, with 1 pair of small submedian spines near inner margins. Ventral fragma (v) quadrangular, broad.

♀ reproductive organs: Ovipositor (Fig. 2 E) apically quadrangular and blunt, with 1 discal tooth, long supra-terminal hair, ca. 4 blunt apical teeth, long sub-terminal hair and ca. 7 bristle-like marginal teeth. Spermatheca (Fig. 2 F) big; basal part of outer capsule with minute protuberances on surface and corrugated ventral margin; introvert distally deeply concave.

Holotype ♂, Burma: Mandalay, 31. XII. 1981, ex. *Aphyllophorales* fungi (TODA); in EHU. Paratypes, Burma: 1 ♂, 1 ♀, same data as holotype; 1 ♂, Mandalay, 4. I. 1982, ex. *Aphyllophorales* fungi (TODA); in EHU and the collection of senior author (S.W.).

*Distribution.* Burma (Mandalay).

*Relationship.* This species is very close to *M. (M.) gratiosa* (DE MEIJERE, 1911) and *M. (M.) serrata* OKADA, 1986, but distinguishable from these two species in having the pteropleurite grayish brown (thoracic pleura entirely yellow below notopleural region in *gratiosa* and *serrata*), the aedeagus blade-like in shape with quadrangular tip in lateral view (shaped like club and apically slightly dilated) and the epandrium slender below and apically somewhat pointed (broad below and apically round).

### Genus *Paramycodrosophila* DUDA

*Paramycodrosophila* DUDA, 1924, Arch. Naturg., 90 (A): 191. — WHEELER & TAKADA, 1964, 206.

Type species: *Drosophila pictula* DE MEJERE, 1911.

*Upolomyia* MALLOCH, 1934, Insect of Samoa, Pt. 6, Fasc. 8: 280. Type species: *Upolomyia pictifrons* MALLOCH, 1934.

*Diagnosis* (WHEELER & TAKADA, 1964). Second costal incision deep, costal lappet well developed; C-index less than 2.0; carina extremely narrow, antennal bases close together; arista usually with single ventral branch; 3rd antennal segment large; no prescutellars; anterior reclinate orbital large, close to proclinate, either beside it or slightly anterior to it; oral bristles other than vibrissa small; usually with 1 distinct bristly hair on outer side of hind tibia ca. 1/3 from base; mesoscutum dull, usually with complex color pattern. Fungivorous species.

✓ *Paramycodrosophila okadai* sp. nov.

(Fig. 3)

♂. Body length ca. 2.1 mm. Thorax length ca. 0.9 mm.

Head: Eye bare. Arista 7/1. Antenna with 2nd segment pale yellow, 3rd grayish yellow, compressed, shaped like mango. Proclinate orbital slightly above anterior reclinate, both situated on dark protuberance; proclinate ca. 5/6 length of anterior reclinate; anterior reclinate ca. 6/7 length of posterior reclinate. Frons

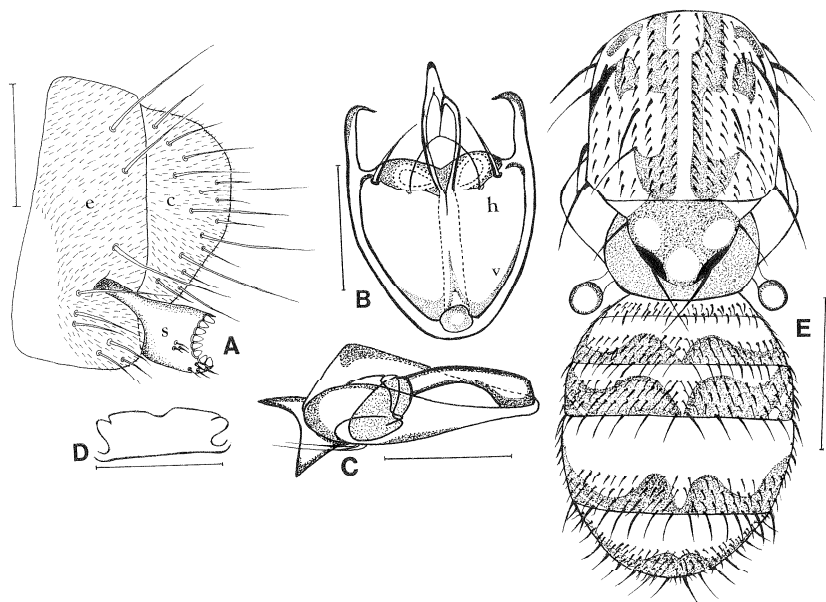


Fig. 3. Male and female genitalia of *Paramycodrosophila okadai* sp. nov. A, Periphallal organs; B, phallic organs (ventral view); C, ditto (lateral view); D, decasternum; E, dorsal view of thorax and abdomen. (Scale-line=0.1 mm in A-D, 0.5 mm in E.)

yellow. Ocellar triangle dark. Pulpus grayish brown, with 1 terminal bristle. Proboscis yellow.

Thorax yellow, with brown markings as shown in Fig. 3 E. Acrostichal hairs in 6 rows. Humerals 3. Anterior dorsocentral ca. 1/3 length of posterior. Cross distance of dorsocentrals ca. 2 times of length distance. Anterior scutellar ca. 9/10 length of posterior. Distance between posterior scutellars greater than distance between posterior and anterior. Thoracic pleura with 2 grayish brown stripes anteriorly parallel, fused to each other at wing base and extending to postnotum; sternoepisternum entirely grayish brown. Sterno-index ca. 0.5.

Legs pale yellow, with grayish brown bands distally on fore coxa, basally and medially on fore femur, basally on fore tibia, submedially on mid femur and tibia, and basally and submedially on hind tibia. Preapical on hind tibia; apicals on fore and mid tibiae, mid tibial one long and stout. Bristle on outer side of hind tibia as long as preapical. Mid and hind tarsi with row of minute cuneiform bristles on underside.

Wing hyaline. Costal lappet broad, black, apically pointed. Faint brown patch present below costal lappet. Veins brown; crossveins clear.  $R_{2+3}$  slightly curved to costa at tip;  $R_{4+5}$  and M nearly parallel. Wing indices: C ca. 1.3, 4V ca. 2.3, 4C ca. 1.7, 5x ca. 2.0, Ac ca. 4.1, C3-fringe ca. 0.6. Alura gray. Haltere white.

Abdomen (Fig. 3 E): Tergites pale yellow; 2nd to 4th tergites with medially and sublaterally interrupted, brown, caudal band; 5th tergite with medially continuous, wavy caudal band. Sternites white.

Periphallic organs (Figs. 3 A, D): Epandrium (e) pubescent except anteroventral portion, broad especially below, broadly round on caudoventral margin, with ca. 2 bristles in upper part, ca. 1 in middle part and ca. 6 in lower part. Surstylus (s) quadrangular in lateral view, with ca. 8 short, blunt teeth in concave row on entire distal margin, ca. 3 minute bristles on middle outer surface and ca. 4 on caudoventral margin. Cercus (c) separate from epandrium, large, pubescent, with ca. 14 long bristles. Decasternum broad; posterior margin straight, anterior margin laterally lobular with median shallow furrow (Fig. 3 D).

Phallic organs (Figs. 3 B, C): Aedeagus apically bifurcated into 2 acute projections in lateral view (Fig. 3 C), dorsal projection narrow, ventral one broad; apodeme shorter than aedeagus. Anterior paramere fused to hypandrium. Hypandrium (h) with large semicircular flap medially and 1 pair of submedian spines laterally.

Holotype ♂, Burma: Pyin Oo Lwin, 6. I. 1982, by sweeping on under surface of fallen tree trunks (TODA); in EHU.

*Distribution.* Burma (Pyin Oo Lwin).

*Relationship.* This species somewhat resembles *P. pictula* (DE MEIJERE, 1911) in the external morphology and the shape of epandrium, but is very characteristic in having the vertically bifurcated tip of aedeagus.



✓ *Paramycodrosophila takadai* sp. nov.

(Fig. 4)

The following description is made referring only to the differences from the foregoing species.

♂. Body length ca. 1.9 mm.

Head: Proclinate and anterior reclinate orbitals ca. 2/3 length of posterior reclinate.

Thorax: Mesoscutum yellow, with brown markings as shown in Fig. 4 E. Scutellum grayish yellow with dark spots at bases of scutellars. Anterior dorsocentral ca. 1/2 length of posterior. Cross distance of dorsocentrals ca. 2.5 times of length distance. Anterior scutellar as long as posterior; posteriors equidistant from each other and to anterior.

Wing: Anterior crossvein clouded. Wing indices: C ca. 1.4, 4V ca. 2.3, 4C ca. 1.7, 5x ca. 1.6, Ac ca. 4.4, C3-fringe ca. 0.6.

Abdomen: Tergites pale yellow, with dark brown color pattern as shown in Fig. 4 E.

Periphallic organs (Figs. 4 A, D): Epandrium (e) with anterior and posterior margins nearly parallel, lobular ventral part, ca. 3 long bristles in upper part, ca. 1 in middle part and ca. 4 in lower part; heel prominent. Surstylus (s) with ca. 6 stout teeth in nearly straight row on distal margin. ca. 2 minute bristles on outer surface and tuft of small bristles at caudoventral corner. Cercus (c) with ca. 18

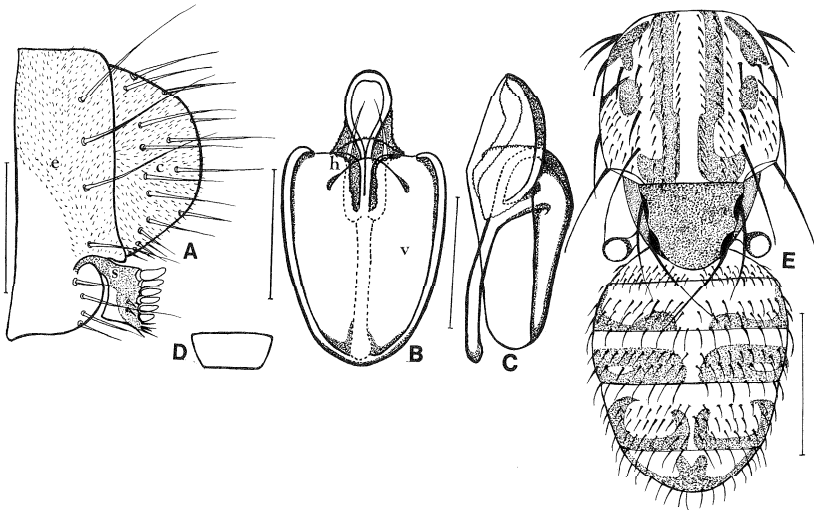


Fig. 4. Male and female genitalia of *Paramycodrosophila takadai* sp. nov. A, Periphallic organs; B, phallic organs (ventral view); C, ditto (lateral view); D, decasternum; E, dorsal view of thorax and abdomen. (Scale-line=0.1 mm in A-D, 0.5 mm in E.)

bristles. Decasternum trapezoid (Fig. 4 D).

Phallic organs (Figs. 4 B, C): Aedeagus spoon-like shaped, submedially with lateral expansion ridged by serrate margin; apodeme as long as aedeagus. Hypan-drium (h) with moderate median flap and 1 pair of submedian spines at apices of lateral lobes. Ventral fragma (v) somewhat oblong.

Holotype ♂, Burma: Mandalay, 31. XII. 1981, ex *Aphylophorales* fungi (TODA); in EHU.

*Distribution.* Burma (Mandalay).

*Relationship.* This species is certainly related to an unnamed species, *Paramycodrosophila* species a, described by WHEELER and TAKADA (1964) from Caroline Is., but clearly distinguishable from the latter by the femora with grayish brown bands (almost entirely brown in the latter species) and the detailed structure of male genitalia.

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