

ADDITION TO THE FAUNA OF THE FAMILY  
DROSOPHILIDAE OF JAPAN AND ADJACENT  
COUNTRIES (Diptera)

II. Genera *Paramycodrosophila*, *Mycodrosophila*, *Liodrosophila*,  
and *Drosophila*, including a new subgenus *Psilodorha*

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*Paramycodrosophila pictula* (de Meijere)

*Drosophila pictula* de Meijere, 1911. Tijds. Ent. 54 : 412 (Java).

Specimens examined. 1 ♀, Komi, Iriomote, Okinawa, 9 VII 1966 (Okada and Hihara).

Distribution. Okinawa (new record), Taiwan, Java, Sumatra, Nepal, Palau.

♂ *Mycodrosophila erecta* sp. n.  
(Fig. 1 A-E)

*Mycodrosophila* from Kirishimayama, Okada, 1956. Syst. Study : 46 (Japan).

♂. Periphallidic organs (1A) yellow. Genital arch pubescent and hairy, ventrally pointed. Clasper quadrate, projected below genital arch, distally with about seven stout black teeth in a straight row. Anal plate elliptical, pubescent and hairy, separated from genital arch. Phallic organs (1D, E) : Aedeagus yellowish brown, rod-shaped, basally curved ventrally, ending in a broad dilated apodeme, and with short vertical rod. Anterior parameres small, contiguous with vertical rod, with apical sensilla. Ventral fragma pale yellow, broad, basally rounded, distally notched. Ejaculatory apodeme (1B, C) with plate large triangular, apically broadened, stalk as long as plate.

Other features as described by Okada (1956) under the name *Mycodrosophila* sp. from Kirishimayama.

Holotype. ♂, Tsubame-onsen, Niigata Pref., 25 VII 1962 (Okada).

Allotype. ♀, Kirishima-jingu, Kagoshima Pref., 22 IX 1962 (Okada).

Paratypes. 1 ♀, collected together with allotype; 1 ♀, Asakawa, Tokyo, 24 X 1957 (Okada); 5 ♀, Komi and Goza, Iriomote, Okinawa, 10-12 VII 1966 (Okada and Hihara).

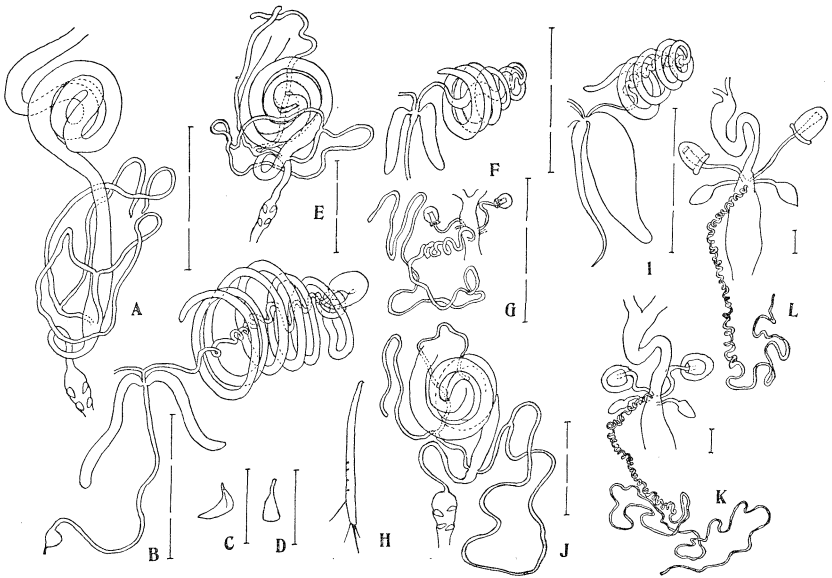


Fig. 2. A-D. *Mycodrosophila planipalpis* Kang, Lee, and Bahung. A. Digestive system ( $\sigma$ ); B.  $\sigma$  internal reproductive organs; C, D. Ejaculatory apodeme. E-G. *Mycodrosophila takachihonis* Okada. E. Digestive system ( $\sigma$ ); F.  $\sigma$  internal reproductive organs; G.  $\varphi$  internal reproductive organs. H-K. *Mycodrosophila shikokuana* Okada. H. Egg-guide; I.  $\sigma$  internal reproductive organs; J. Digestive system ( $\varphi$ ); K.  $\varphi$  internal reproductive organs. L. *Mycodrosophila japonica* Okada,  $\varphi$  internal reproductive organs.

Distribution. Okinawa (new record), Japan (newly recorded from Honshu).

#### *Mycodrosophila shikokuana* Okada

(Fig. 2 H-K)

*Mycodrosophila shikokuana* Okada, 1956. Syst. Study : 45 (Japan).

$\sigma$ ,  $\varphi$ . Mid-intestine (2J) with four coils. Rectal papillae oval, apically pointed. Malpighian tubules with short common stalks and long branches, posterior branches making a complete loop. Testis (2I) with about five outer white and eight inner yellow coils, basally narrowing and independently attached to ejaculatory duct. Paragonia thick, large, banana-shaped. Spermatheca (2K) pale yellowish orange, oval, large. Parovaria elliptical with rather short stem. Ventral receptacle with about forty proximal kinky coils and seven distal small folds ending in a long filament. Egg-guide (2H) slender as in the original description.

Specimens examined. 1  $\sigma$ , 1  $\varphi$ , 8-9 X 1966; 2  $\sigma$ , 2  $\varphi$ , 30 X 1966, Kumotoriyama, Tokyo (Okada and Hihara); 1  $\varphi$ , Kamikawa, Mie Pref., 19 X 1960 (Okada).

index about 0.7. Legs black, yellow at knee joints, tips of tibiae, and tarsi. Pre-apicals on all tibiae, apicals on mid. Wing (3A) hyaline,  $R_{2+3}$  nearly straight,  $R_{4+5}$  and M slightly convergent. Small black spot at the second costal break. C-index 1.5; 4V-index 2.0; 4C-index 1.5; 5x-index 2.0; Ac-index 4.0. Cl-bristle one, small. C3-fringe on basal half. Halteres black, stalk yellowish grey with black patches. Abdominal tergites mostly black, 1T yellowish grey, 2-5T anteriorly narrowly yellow.

Periphallic organs (3B): Genital arch pale yellowish grey, pubescent and hairy, dorsally not narrowing, ventrally with heel narrowly projected below. Clasper pale yellowish brown, quadrate, distally with a concaved row of about ten black pointed teeth. Anal plate oval, pubescent and hairy, brownish black, separated from genital arch. Decasternum quadrate, large, brownish black, distally with lateral projections. Phallic organs (3E, F): Aedeagus yellowish brown, rod-shaped, distally dilated dorsoventrally, proximally with broad vertical rod and apodeme. Anterior parameres small, oval, pale, attached on vertical rod, distally with about three sensilla. Ventral fragma deeply notched, hypandria broad, fusiform, pale yellowish grey, with a short submedian spine. Posterior parameres absent. Egg-guide (3M) orange yellow, medially broad, apically rounded, with about sixteen

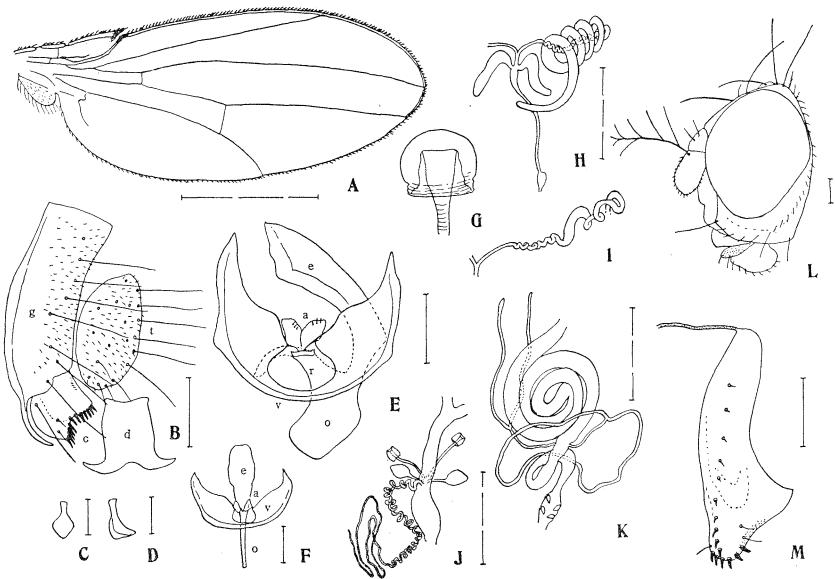


Fig. 3 A-M. *Mycodrosophila atrithorax* sp. n. A. Wing (♂); B. Periphallallic organs; C, D. Ejaculatory apodeme; E. Phallic organs, ventrolateral aspect; F. Phallic organs, ventral aspect; G. Spermatheca; H. ♂ internal reproductive organs; I. Testis (part); J. ♀ internal reproductive organs; K. Digestive system (♂); L. Head (♂); M. Egg-guide.

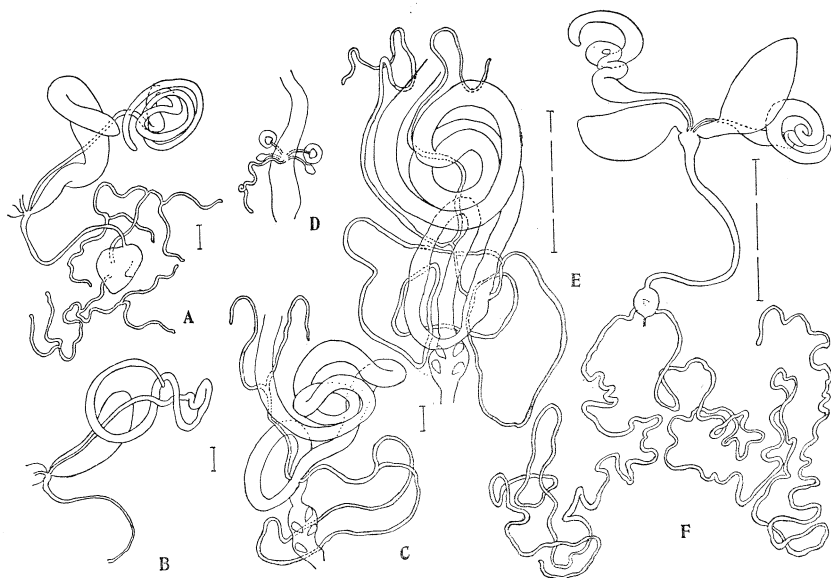


Fig. 4. A. *Liodrosophila rugulosa* (de Meijere), ♂ internal reproductive organs. B, C. *Liodrosophila bicolor* Okada. B. ♂ internal reproductive organs; C. Digestive system (♂). D-F. *Drosophila (Chaetodrosophilella) quadrilineata* de Meijere. D. ♀ internal reproductive organs; E. Digestive system (♂); F. ♂ internal reproductive organs.

Specimen examined. 1♂, Komi, Iriomote, Okinawa, 8 VII 1966 (Okada and Hihara).

Distribution. Japan, Okinawa, S. Korea.

***Drosophila (Dichaetophora) clypeonigra* sp. n.**

(Fig. 5 A-F)

♂. About 1.5 mm in length, greyish brown. Head (5A) oblique to body axis. Eye dark red, with thick piles. Antenna with second joint yellowish grey, bristly, third black. Arista with five dorsal and one ventral rather short branches beside a fine terminal fork. Palpus yellowish grey, with a few setae below. Ocellar triangle black, small, ocellars inserted somewhat outside anterior ocellus. Periorbits mat greyish yellow, anteriorly broadened, not reaching anterior margin. Front flat, dark yellowish grey, anteriorly orange and as broad as length down middle, posteriorly slightly narrower than half head width. Clypeus black, small. Face greyish brown, concaved. Carina undeveloped. Cheek broad, yellowish white, one-fifth as broad as the greatest diameter of eye. Anterior reclinate orbital large, slightly shorter than and outside proclinate. Posterior reclinate orbital longer than proclinate. Vibrissa strong, second oral half as long as vibrissa.

Mesonotum and scutellum yellowish grey, nearly unicolorous. Thoracic pleura paler than mesonotum, with a long broad black stripe above. Two humerals, upper shorter. Acrostichal hairs in four rows. Anterior dorsocentrals two-thirds as long as posteriors, distance between anterior and posterior pairs four-sevenths distance between anterior pair. Anterior scutellars long, divergent, as long as posteriors, which are nearer to each other than to anteriors. Sterno-index about 0.6. Legs yellow, robust, tarsi shaggy, ultimate tarsal joints thick and large, with large claws. Metatarsus longer than succeeding two tarsal joints. Preapicals on mid and hind tibiae, apicals strong on mid. Wing (5B) hyaline. C-index 2.0; 4V-index 2.2; 4C-index 1.8; 5x-index 4.5; Ac-index 2.8. Cl-bristles two, long; C3-fringe on basal three-fifths. Halteres yellow, knob large. Abdominal tergites subshining, pollinose, with broad black medially contiguous black bands, posterior margins narrowly yellow. Abdominal sternites grey.

Periphallalic organs (5F): Genital arch black, pubescent and hairy, narrowly projected anteroventrally. Anal plate pale yellow, small, oval, pubescent and hairy. Clasper large, oval, broader than long, distally with about eight large black teeth. Phallic organs (5C, D): Aedeagus robust, massive, with lateral tubercles, proximally abruptly narrowing, ending in a short flat apodeme. Anterior parameres seemingly fused with hypandria, small, with a few stout sensilla marginally. Ventral fragma semicircular, with deep wide median notch and well developed submedian spines. Ejaculatory apodeme (5E) with slender plate, twice as long as stalk.

Holotype. ♂, Kirishima-jingu, Kagoshima Pref., 19 VIII 1965 (Okada).

Paratype. 1♂, collected together with holotype.

Distribution. Japan.

Relationships. Resembles *D. (Dl.) rotundicornis* Okada from Nepal, but acrostichal hairs in four rows (six in *r.*), C3-fringe more than half (less than half in *r.*), anterior reclinate orbital nearer to proclinate than to posterior reclinate (nearer to posterior reclinate in *r.*)

***Drosophila (Hirtodrosophila) latinokogiri* sp. n.**

(Fig. 5 G-K)

♂. Body about 1.8 mm in length. Eye (5G) dark reddish brown, with thick piles, extensively oblique to body axis. Antenna with second joint orange brown, third brownish black, broad and short. Arista with four dorsal and one ventral branches beside a large terminal fork. Palpus orange brown, with an apical short bristle. Ocellar triangle and periorbits black, subshining. Front velvety brownish black, flat, anteriorly as broad as length down middle, posteriorly slightly broader than half head width. Face flat, greyish white. Carina short, narrow. Cheek yellowish grey, black below, about one-sixth as broad as the greatest diameter of eye. Occiput black. Anterior reclinate orbitals half as long as others, posterior reclinate slightly longer than proclinate, which is inside others, anterior reclinate nearer to proclinate than to posterior reclinate. Vibrissa strong, other orals fine.

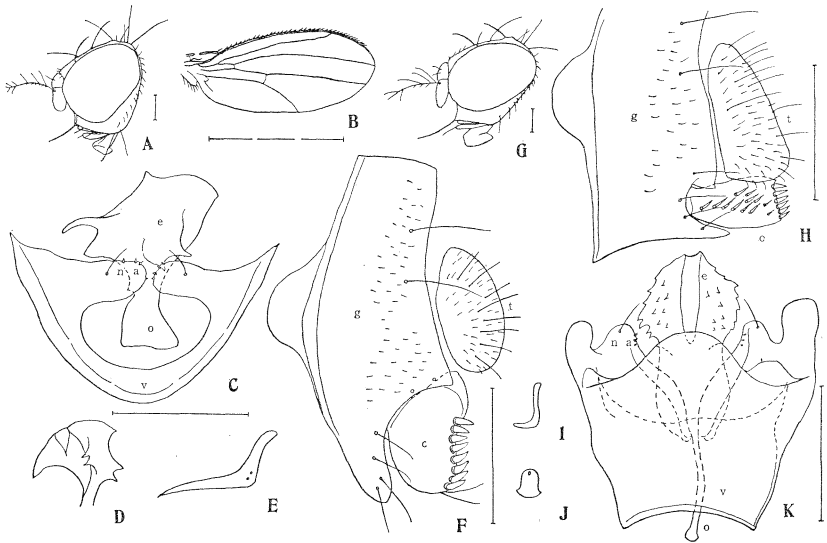


Fig. 5. A-F. *Drosophila (Dichaetophora) clypeonigra* sp. n. ♂. A. Head; B. Wing; C. Phallic organs, ventral aspect; D. Tip of aedeagus, lateral aspect (dextral side dorsal); E. Ejaculatory apodeme; F. Periphallic organs. G-K. *Drosophila (Hirtodrosophila) latinokogiri* sp. n. ♂. G. Head; H. Periphallic organs; I, J. Ejaculatory apodeme; K. Phallic organs, ventral aspect.

Mesonotum deep brown, slightly glossy, laterally paler. Scutellum castaneous brown, somewhat glossy. Thoracic pleura black, paler below. Two strong subequal humerals. Acrostichal hairs in six rows. Anterior scutellars parallel or convergent, 7/10 as long as posteriors, which are nearly equally apart from each other and from anteriors. Sterno-index about 0.5. Legs yellowish brown. Pre-apicals no mid and hind tibiae, apicals on mid. Wings slightly fuscous, crossveins clear,  $R_{2+3}$  nearly straight,  $R_{4+5}$  and M slightly divergent. C-index 1.4; 4V-index 2.8; 4C-index 1.4; 5x-index 2.7; Ac-index 3.4. Cl-bristles two, subequal. C3-fringe on basal three-eighths. Halteres yellowish white. Abdominal tergites glossy black, anal segment yellow.

Periphallic organs (5H): Genital arch broad, black, pubescent and setigerous, ventrally paler and truncate, deeply concaved at the insertion of clasper. Clasper yellowish brown, longer than broad, distally with a straight row of about six black teeth, discally setigerous. Anal plate oblong, broader below, separated from genital arch, yellowish grey, hairy and pubescent. Phallic organs (5K) brown. Aedeagus large, rhombic in ventral aspect, laterally with numerous pointed tubercles. Anterior parameres apparently fused to hypandria, which are rounded at tips and with short submedian spines. Ventral fragma medioposteriorly projected roundly, proximally truncate. Posterior parameres seemingly absent. Ejaculatory apodeme (5I, J) with elliptical plate and long straight stalk.

Holotype. ♂, Kirishima-onsen, Kagoshima Pref., 19 VIII 1965 (Throckmorton).

Distribution. Japan.

Relationships. Resembles *D. (H.) nigripennis* Kang, Lee, and Bahung from Korea in having mesonotum brown, C-index about 1.5, abdominal tergites black, and ventral fragma anteriorly truncate, but differs in having rounded median process of ventral fragma (incised in *nigripennis*), heel less strongly pointed, teeth row of clasper straight (concaved in *n.*), and aedeagus thicker.

***Drosophila (Psilodorha)* subgen. n.**

Second antennal joint with a long seta reaching beyond tip of third joint. Periorbits anteriorly broadened. Front much broader than long. Prescutellars well developed. Acrostichal hairs in more than ten rows. Distance between anterior and posterior dorsocentrals shorter than distance between anterior pair. Fore femora anteriorly with two rows of long setae. C3-fringe on entire length.

Anal plate separated from genital arch. Claspers in two sets, with a few small teeth. Anterior parameres fused to hypandria, which have submedian hairs.

Resembles the genus *Microdrosophila* in having C3-fringe entire, but differs from it in having well developed prescutellars and anterior dorsocentrals much nearer to posteriors than to each other.

Type. *Drosophila (Psilodorha) ancora* sp. n.

***Drosophila (Psilodorha) ancora* sp. n.**  
(Fig. 6 A-F)

♂. Body about 2.5 mm in length, dark brownish black. Eye (6B) dark reddish brown, with long piles. Antenna dark brown, second joint with two long setae unequal in size. Arista with about eight dorsal and three ventral rather long branches beside a small fork. Palpus large, broad, black, with a few ventral short setae. Ocellar triangle black, much convexed. Frontal triangle not reaching anterior margin of front. Periorbits broad and rounded anteriorly, much narrowing posteriorly. Front dark brownish black, anteriorly twice as broad as length down middle, posteriorly slightly more than half as broad as head width. Clypeus black. Face brownish grey, buccal margin straight and black. Carina broad, high, not reaching buccal margin. Cheek dark brown, about one-sixth as broad as the greatest diameter of eye. Occiput black. Anterior reclinate orbital half as long as others, nearer to proclinate than to posterior reclinate, proclinate inside others. Vibrissa rather fine, other orals as long as vibrissa.

Mesonotum, scutellum, and thoracic pleura uniformly dark brownish black, mat. Two long subequal humerals. Prescutellars half as long as posterior dorsocentrals. Acrostichal hairs in about twelve rows. Anterior dorsocentrals slightly shorter than posteriors, distance between anterior and posterior pairs about two-fifths distance between anterior pair. Anterior scutellars missing, posteriors equally apart

Holotype. ♂, Komi, Iriomote, Okinawa, 10 VII 1966 (Okada and Hihara).

Distribution. Okinawa.

***Drosophila (Scaptodrosophila) brunnea*** de Meijere  
(Fig. 7 A-C)

*Drosophila brunnea* de Meijere, 1911. Tijd. Ent. 54 : 401 (Java).

Periphallic organs (7C) : Genital arch yellowish brown, densely hairy and pubescent, broadened and widely truncate below. Clasper small, quadrate, distally with irregular row of about twelve black short thick bristles, discally with several long hairs. Anal plate elongate elliptical, yellowish brown, hairy and pubescent, separated from genital arch. Phallic organs (7A, B) : Aedeagus pale brown, bifid, slender, gently curved ventrally, dorsally pubescent. Apodeme of aedeagus twice as long as aedeagus, straight. Anterior parameres large, dark brown, laterally flattened, J-shaped, distally truncate, with about eight prominent sensilla discally. Posterior parameres fused to each other, apically dark brown and quadrate. Ventral fragma pale brown, posteromedially convexed. Submedian hairs of hypandria absent.

Specimens examined. 1♂, Yakushima, Kagoshima Pref., 10 VII 1966 (Okadome); 1♀, Komi, Iriomote, Okinawa, 8 VII 1966 (Okada and Hihara).

Distribution. Japan (new record), Nepal, Java, Sumatra, Borneo, Taiwan, Okinawa (new record).

***Drosophila (Scaptodrosophila) puncticeps*** Okada  
(Fig. 7 D-F)

*Drosophila (Paradrosophila) puncticeps* Okada, 1956. Syst. Study : 94 (Japan).

Testis (7D) large, thick, once coiled, rounded at tip. Seminal vesicles thick, basally narrowing to fuse to each other for a short way. Paragonia thick, banana-shaped, proximally narrowing to continue to somewhat swollen apex of ejaculatory duct, which is very short. Ejaculatory bulb large, globular, distally bifid, without caeca. Ejaculatory apodeme (7E, F) brownish black, plate triangular; stalk slender, gently curved, proximally bifid.

Specimens examined. 7♂, 2♀, Asakawa, Tokyo, 10 VIII 1962 (Okada).

Distribution. Japan, S. Korea.

***Drosophila (Sophophora) asahinai*** Okada  
(Fig. 7 G, H)

*Drosophila (Sophophora) asahinai* Okada, 1964. Kontyû, 32 : 111 (Japan).

♂, ♀. Mid-intestine coiled two and half times. Rectal papillae oval, apically pointed. Malpighian tubules with short common stalks and long branches, pos-



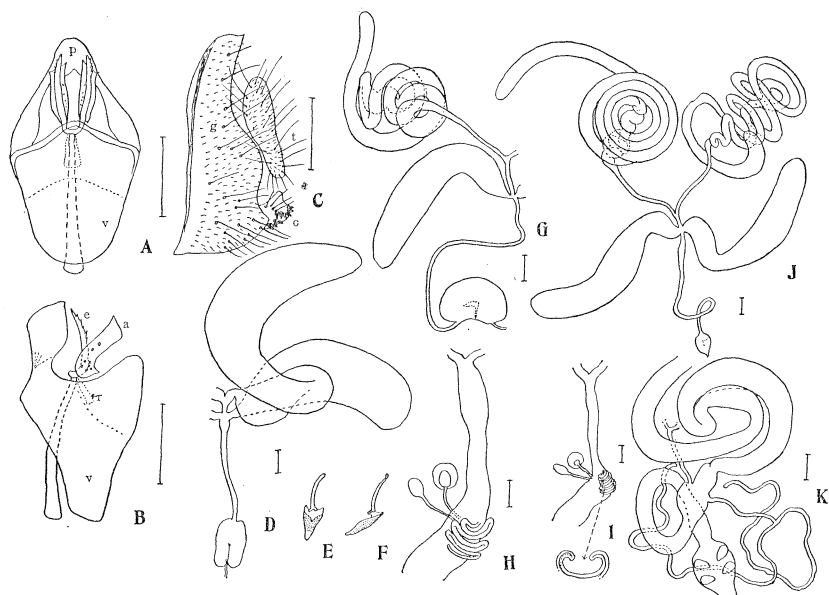


Fig. 7. A-C. *Drosophila (Scaptodrosophila) brunnea* de Meijere. A. Phallic organs, ventral aspect; B. *ibid.*, lateral aspect; C.Periphallic organs. D-F. *Drosophila (Scaptodrosophila) puncticeps* Okada. D. ♂ internal reproductive organs; E, F. Ejaculatory apodeme. G, H. *Drosophila (Sophophora) asahinai* Okada. G. ♂ internal reproductive organs; H. ♀ internal reproductive organs. I-K. *Drosophila (Sophophora) lacteicornis* Okada. I. ♂ internal reproductive organs; J. ♂ internal reproductive organs; K. Digestive system (♂).

terior branches distally free but approached to each other. Testis (7 G) with three outer and two inner thick coils, proximally narrowing to fuse to each other, composing a rather long common duct. Paragonia folded once, thick. Ejaculatory duct rather short, bulb large, oval, without caeca. Spermatheca (7 H) hyaline, oval. Parovaria hyaline, with oval tips which are larger than that of spermathecae. Ventral receptacle with four large tite folds.

Specimens examined. 4♀, Mt. Omoto, Ishigaki, 6, 7 VII 1966; 10♂, 18♀. Komi and Goza, Iriomote, Okinawa, 10-12 VII 1966 (Okada and Hihara).

Distribution. Japan, Okinawa.

#### *Drosophila (Sophophora) lacteicornis* Okada

(Fig. 7 I-K)

*Drosophila (Sophophora) lacteicornis* Okada, 1965, Kontyû, 33 : 347 (Okinawa).

♂, ♀. Mid-intestine (7 K) with two and half coils. Rectal papillae oval, thick. Malpighian tubules with rather short common stalks, posterior branches ending

free. Testis (7J) bright yellow, with about five outer and three inner coils, basally narrowing, making a short common duct. Paragonia thick, folded once. Ejaculatory duct rather short, bulb globular, without caeca. Spermatheca (7I) hyaline, small, flat. Parovaria large, oval, stalk longer than that of spermatheca. Ventral receptacle with about five tite hemispherical folds.

Specimens examined. Mt. Banna, Ishigaki, 5 VII 1966; 4♂, 16♀, Mt. Omoto, and 18♂, 34♀. Komi and Goza, Iriomote, Okinawa, 10-12 VII 1966 (Okada and Hihara).

Distribution. Okinawa.

***Drosophila (Sophophora) pulchrella* Tan, Hsu, and Sheng**

*Drosophila pulchrella* Tan, Hsu, and Sheng, 1949. Univ. Texas Publ., 4920 : 97 (China).

Specimens examined. 1♀, Mt. Gôkwan, Taiwan, 1 VII 1965 (Yamasaki).

Distribution. Taiwan (new record), China, Japan, Nepal.

***Drosophila (Drosophila) daruma* Okada**

*Drosophila (Drosophila) daruma* Okada, 1956. Syst. Study : 155 (Japan).

Specimens examined. 25♂, 14♀, Goza, Iriomote, Okinawa, collected upon fallen pine-apples on a stream-bed (Okada and Hihara).

Distribution. Okinawa (new record), Japan.

***Drosophila (Drosophila) tenuicauda* Okada**

(Fig. 6 G)

*Drosophila (Drosophila) tenuicauda* Okada, 1956. Syst. Study : 141 (Japan).

♂. Abdominal tergites (6 G) glossy yellowish brown, with medially non-interrupted caudal black bands. Beside this form, another form with interrupted caudal bands is found in Japan (Okada, 1956, loc. cit.)

Specimens examined. 2♂, 1♀, Komi, Iriomote, Okinawa, 12 VII 1966 (Okada and Hihara); 1♂, Ambo, Yakushima, Kagoshima Pref., 30 VII 1963 (Okada).

Distribution. Okinawa (new record), Japan (hitherto unknown from Kyushu in Japan), S. Korea.

***Drosophila (Drosophila) funebris* (Fabricius)**

*Musca funebris* Fabricius, 1787. Mant. Ins. 2 : 345 (Europe).

Specimen examined. 1♀, Kuzakai, Iwate Pref., 5 VII 1958.

Distribution. In Japan hitherto known only from Hokkaido.

*Drosophila* (*Chaetodrosophilella*) *quadrilineata* de Meijere  
(Fig. 4 D-F)

*Drosophila quadrilineata* de Meijere, 1911. Tijds. Ent. 54 : 396 (Java).

♂, ♀. Mid-intestine (4E) with four coils. Rectal papillae oval, apically pointed. Malpighian tubules with common stalks very long and distally thick, branches short, posterior branches making a complete loop. Testis (4F) yellow, with one or two outer and one or two inner small coils. Seminal vesicle very thick and long, basally narrowing to fuse to a short common duct. Paragonia large, oval, basally narrowing and curved. Ejaculatory duct rather short, bulb globular, with a pair of extraordinarily long irregularly coiled caeca. Spermatheca (4D) pale yellow, hemispherical. Parovaria with knob oval, larger than spermatheca, stalk as long as that of spermatheca. Ventral receptacle short, with about three loose folds.

Specimens examined. 37♂, 15♀, Komi, Iriomote, Okinawa, 8-12 VII 1966 (Okada and Hihara); 1♀, Fanan River, Ishigaki, Okinawa, 24 VII 1953 (Kano).

Distribution. Okinawa (new record), Java, Philippines, Viet-Nam, Solomon Is., Admiral Is., Mariana Is.

*Drosophila* (*Lordiphosa*) *collinella* sp. n.

*Scaptomyza apicalis*, Okada, 1956. Syst. Study : 69 (nec Hardy, 1849. Proc. Berwick. nat. Club, 2 : 362, misidentified).

♂, ♀. Body about 2.5mm in length, yellowish brown. Arista with about five dorsal and three ventral branches beside small fork. Palpus black. Humerals two, lower longer. Median sternopleurals as long as or slightly longer than anterior one. ♂ fore metatarsus ventrally with thick hair-tuft. Clasper large, not pointed below, with small marginal teeth. Anterior parameres elongate, not sinuated in lateral aspect. Other features as described by Okada (1956, loc. cit.)

Holotype. ♂, Okutsu, Okayama Pref., 21 X 1959 (Okada)

Allotype. ♂, collected together with holotype.

Distribution. Japan, Korea.

Relationships. Closely allied with *D. (L.) acuminata* Collin from Europe, similar in having black palpi, banded abdominal tergites, rod-shaped anterior parameres, and in slender apodeme of aedeagus, but differs from *acuminata* in having ♂ clasper larger and rounded below (small and pointed in *a.*), and anterior parameres straight in lateral aspect (sinuated in *a.*)\*

\* Close similarity of the present species with *acuminata* Collin was already pointed out by Basden in his private information and also by Hackman (1959. Acta Zool. Fennica, 97 : 67).

Relationships. Resembles *M. shikokuana* Okada from Japan in thoracic and abdominal ornamentation, but differs in having posterior crossveins clear, genital arch less pointed below, aedeagus simpler, and egg-guide broader.

Distribution. Japan, Okinawa.

***Mycodrosophila biceps* Kang, Lee, and Bahung**  
(Fig. 1 F-I)

*Mycodrosophila biceps* Kang, Lee, and Bahung, 1966. Kor. J. Zool. 9: 26 (Korea).

♂, ♀. Median incision of black bands on 2-3 T broader than in the original form from Korea. Scutellum usually pale at least at meson. Two humerals. Other features including wings (II), and male and female genitalia (1F-H) strikingly coincident with that of the latter.

Specimens examined. 4♂, 1♀, Meguro, Tokyo, 15 VIII 1964; 4♂, Asakawa, Tokyo, 4-10 VIII 1962; 1♂, Kashi-onsen, Fukushima Pref., 20 IX 1967; 2♀, Nopporo, Hokkaido, 9 VIII 1966 (Okada); 1♂, Nukabira, Hokkaido, 12-14 VIII 1966 (Carson);

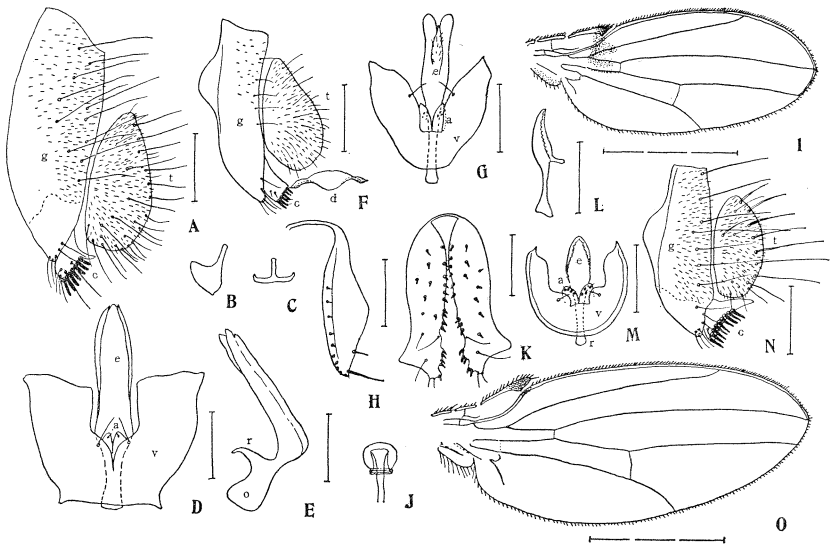


Fig. 1. A-E. *Mycodrosophila erecta* sp. n. ♂. A. Peripheral organs; B, C. Ejaculatory apodeme; D. Phallic organs, ventral aspect; E. Aedeagus, lateral aspect. F-I. *Mycodrosophila biceps* Kang, Lee, and Bahung. F. Peripheral organs; G. Phallic organs, ventral aspect; H. Egg-guide; I. Wing (♂). J-O. *Mycodrosophila planipalpis* Kang, Lee, and Bahung. J. Spermatheca; K. Egg-guide; L. Aedeagus, lateral aspect; M. Phallic organs, ventral aspect; N. Peripheral organs; O. Wing (♂).

1♂, Hikosan, Fukuoka Pref., 23 X 1961 (Okada).

Distribution, Japan (new record), S. Korea.

***Mycodrosophila planipalpis* Kang, Lee, and Bahung**  
(Fig. 1 J-O; 2 A-D)

*Mycodrosophila planipalpis* Kang, Lee, and Bahung, 1966. Kor. J. Zool. 9 : 27 (Korea).

♂, ♀. Front black, anteromedially dark orange, silvery shining, anteriorly broader than length down middle, posteriorly half head width. Anterior reclinate orbital 1/3 as long as posterior reclinate, slightly nearer to posteriors than to proclinate. Humerus pale yellowish brown, with two subequal humerals (three in the original form). Sterno-index about 0.8 (0.3 in the original form). Preapicals on all tibiae, weak on mid (only on hind in the original form).

Mid-intestine (2A) coiled thrice. Rectal papillae oval, pointed. Malpighian tubules distally white, stalk short, posterior branches fused to be a complete loop. Testis (2B) with about ten inner and eight outer slender coils, basally narrow and fused with each other for a short way. Paragonia slender, white. Ejaculatory bulb globular. Ejaculatory apodeme (2C, D) with short stalk and distally dilated triangular plate. Spermatheca (1J) glossy brown, globular, with stalk deeply intromittent, distally swollen. Parovaria with small oval tip and slender stalk. Ventral receptacle loosely and irregularly coiled several times. Other features including wing (1O) and male and female genitalia (1K-N) strikingly coincident with that of original form.

Specimens examined. 1♀, Todoroki, 13 II 1957 (Matsudaira); 1♂, 1♀, Dōryu-san, Kanagawa Pref., 14 XI 1966 (Okada).

Distribution. Japan (new record), S. Korea.

♂ ***Mycodrosophila takachihonis* Okada**  
(Fig. 2 E-G)

*Mycodrosophila takachihonis* Okada, 1956. Syst. Study : 47 (Japan).

♂, ♀. Mid-intestine coiled three and half times. Rectal papillae elongate oval. Malpighian tubules with short common stalks and long branches, posterior branches making a complete loop. Testis (2F) bright orange, with five outer and three inner coils, basally narrowing and fused to each other for a short way. Paragonia simple banana-shaped. Ejaculatory duct rather short, ejaculatory bulb small, globular. Spermatheca (2G) deep purplish black, oval, basally constricted, with duct intromittent half way bulb. Ventral receptacle in about ten loose coils and about two distal large folds.

Specimens examined. 2♂, 2♀, Kumotoriyama, Tokyo, 30 IX 1967 (Hihara); 1♀, Kamikawa, Mie Pref., 19 X 1960 (Okada); 3♂, Kirishima-onsen, Kagoshima Pref., 19-21 VIII 1965 (Okada); 1♀, Komi, Iriomote, Okinawa, 19 VII 1966 (Okada and Hihara).

Distribution. Japan (hitherto known only from Shikoku, newly recorded from Honshu).

***Mycodrosophila japonica* Okada**

(Fig. 2L)

*Mycodrosophila japonica* Okada, 1966. Syst. Study : 44 (Japan).

♀. Mid-intestine coiled about three times. Rectal papillae slender, more than twice as long as broad. Malpighian tubules with common stalks short, branches yellow and apical half whitish, posterior branches making a complete loop. Spermatheca (2L) pale yellowish brown, shining gold, elongate oval, basally constricted, with stem deeply intromittent. Parovaria elliptical, with short stem. Ventral receptacle with about twenty-five proximal kinky coils and about eight distal small folds.

Specimens examined. 1♀, Kirishima-onsen, Kagoshima Pref., 30 X 1963 (Okada).

Distribution. Japan (newly recorded from Kyushu), S. Korea.

***Mycodrosophila splendida* Okada**

*Mycodrosophila splendida* Okada, 1956. Syst. Study : 48 (Japan).

Specimens examined. 10♂, 4♀, Goza, Iriomote, Okinawa, 5♂, 5♀, Komi, Iriomote, Okinawa, 9-10 VII 1966 (Okada and Hihara).

Distribution. Okinawa (new record), Japan, S. Korea.

***Mycodrosophila atrithorax* sp. n.**

(Fig. 3 A-M)

♂, ♀. Body about 2.5 mm in length, generally black. Eye (3L) dark reddish black, bare. Antenna with second joint black, third greyish brown. Arista with four dorsal and one ventral branches beside a moderate fork. Palpus black, with about two long ventral setae. Ocellar triangle black. Periorbits black, slightly pollinose, anteriorly broader. Front brownish black, mat, medioanteriorly yellowish grey. Clypeus mat black. Face greyish brown, buccal margin black. Carina large, broad, high, much broadened below. Cheek greyish brown, about one-fourth as broad as the greatest diameter of eye. Occiput black. Anterior reclinate orbital minute, nearly equally distant from proclinate and from posterior reclinate; proclinate inside others. Vibrissa large, other orals fine.

Mesonotum glossy black, much convexed. Scutellum mat black, surface granulose. Thoracic pleura somewhat paler than mesonotum, yellowish grey at wing bases. Humerals two, subequal. Acrostichal hairs in about ten irregular rows. Dorsocentrals one pair. Anterior scutellars divergent or parallel, half as long as posteriors; posteriors divergent, nearer to anteriors than to each other. Sterno-

black marginal teeth and two slender upper discal setae. Basal isthmus slender, black,  $1/3$  as long as lobe.

Mid-intestine (3K) with four coils. Rectal papillae pointed oval. Malpighian tubules with short common stalks, posterior branches making a complete loop. Testis (3H, I) bright yellow, with about six outer and six inner coils, basally with short common duct. Paragonia basally curved. Ejaculatory duct rather short, with bulb small, rounded. Ejaculatory apodeme (3C, D) with rhombic curved plate and short stalk. Spermatheca (3J) glossy orange, transparent, globular, basally constricted, with stalk deeply intromittent, terminally much dilated. Parovaria with large rounded tip and short stalk. Ventral receptacle with about twenty proximal kinky coils and about three distal large folds.

Holotype. ♂, Kumotoriyama, Tokyo, 8 X 1966 (Okada and Hihara).

Allotype. ♀, collected together with holotype.

Paratypes. 2♂, 9♀, collected together with holotype.

Distribution. Japan.

Relationships. Resembles *M. nigrithorax* Malloch from Samoa in having entirely black thorax, black legs, and black palpi, but differs in having no clouds below second costal break, knobs of halteres black (yellow in *nigrithorax*), 5x-index larger (1.5 in *n.*), and anterior reclinate orbital as long as posteriors (half in *n.*).

#### ***Liodrosophila rugulosa* (de Meijere)**

(Fig. 4 A)

*Camilla rugulosa* de Meijere, 1914. Tijds. Ent. 57 : 269 (Java).

♂. Testis (4A) white, with about two outer and one inner coils. Paragonia thick, twice folded. Ejaculatory duct rather short, with bulb large, globular, having a pair of slender twice dichotomous caeca.

Specimens examined. 2♂, 2♀. Komi, Iriomote, Okinawa, 8 VII 1966 (Okada and Hihara).

Distribution. Java, Okinawa.

#### ***Liodrosophila bicolor* Okada**

(Fig. 4 B, C)

*Liodrosophila bicolor* Okada, 1956. Syst. Study : 59 (Japan).

♂. Mid-intestine (4C) coiled thrice. Rectal papillae pointed elliptical. Malpighian tubules with common ducts rather long, posterior branches making a complete loop. Testis (4B) hyaline, with about three outer slender and one inner coils. Paragonia banana-shaped, distally rounded. Ejaculatory duct rather short, bulb huge, globular, with a pair of very long filiform caeca.

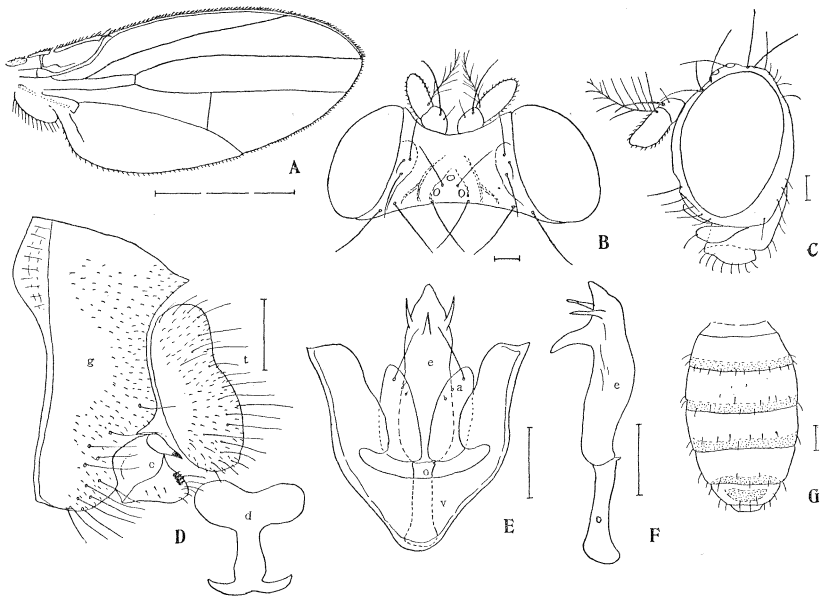


Fig. 6. A-F. *Drosophila (Psilodorha) ancora* sp. n. A. Wing (♂); B, C. Head (♂); D. Periphallitic organs; E. Phallic organs, ventral aspect; F. Aedeagus, lateral aspect; G. *Drosophila (Drosophila) tenuicauda* Okada, Abdomen (♂).

from anteriors and from each other. Sterno-index about 0.9. Legs black, thick, tarsi and mid tibiae paler, fore femora anteriorly with two rows of stout hairs, fore tarsi with recurved hairs. Preapicals weak on all tibiae, apicals on fore and mid tibiae. Wing (6A) fuscous, veins dark;  $R_{2+3}$  nearly straight,  $R_{4+5}$  and M parallel. Wing tip slightly pointed, with  $R_{4+5}$  ending slightly before the tip. C-index 2.0; 4V-index 2.0; 4C-index 1.2; 5x-index 1.2; Ac-index 2.4. Cl-bristles two, subequal; C3-fringe on entire length. Halteres reddish brown. Abdominal tergites dark brownish black, anterior margin narrowly pale.

Periphallitic organs (6D) dark brownish black. Genital arch broad above, pubescent and hairy below, toe rounded, heel rectangular. Primary clasper large triangular, distally with a row of small black teeth above. Secondary clasper above primary one, conical, apically with a black pointed tooth. Anal plate oblong, separated from genital arch, pubescent and hairy. Decasternum large, T-shaped.

Phallic organs (6E, F): Aedeagus reddish brown, rod-shaped, subapically with a large ventromedian and a pair of smaller lateral processes directed ventrally. Anterior parameres completely fused to hypandria, with a few sensilla distally. Hypandria pale orange brown, large oval, subapically with strong submedian spines. Ventral fragma triangular, deeply notched, pale orange brown. Apodeme of aedeagus rod-shaped.



*Drosophila bicolor* de Meijere

*Drosophila bicolor* de Meijere, 1911. Tijd. Ent. 54 : 399 (Java).

Specimen examined. 1 ♀, Banna, Ishigaki, Okinawa.

Distribution. Okinawa (new record), Java.

Remarks. Glossy black abdomen contrasting with orange brown thorax is the character easily identifiable to belong to the present species.