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Drosophilidae) in Yunnan, China, with
Descriptions of Eleven New Species

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Synopsis

ZHANG, W. X. 1989 —The genus *Microdrosophila* MALLOCH (Diptera: Drosophilidae) in Yunnan, China, with descriptions of eleven new species. *Proc. Japn. Soc. syst. Zool.*, Tokyo, No. 40: 55-82.

Eleven new species of the genus *Microdrosophila* MALLOCH, *M. (Oxystyloptera) magniflava*, *M. (O.) honoghensis*, *M. (Microdrosophila) conda*, *M. (M.) curvula*, *M. (M.) setulosa*, *M. (M.) dentata*, *M. (M.) luchunensis*, *M. (M.) bipartita*, *M. (M.) spiciferipennis*, *M. (M.) cucullata* and *M. (M.) tabularis*, are described from Yunnan, China, with new distribution records for eight known species. A key to the Chinese species is included.

In his world list of Drosophilidae, WHEELER (1981) enumerated 33 species of the genus *Microdrosophila* MALLOCH 1921, divided into two subgenera: *Microdrosophila* MALLOCH and *Oxystyloptera* DUDA. Since then, five new species were described from Queensland by BOCK (1982), and ten new species from Southeast Asia by OKADA (1985). In the present work eleven new species are added to this genus and eight known species are newly recorded from China. Thus the number of species of this genus attains 59 in total.

Type specimens of the new species are deposited in Kunming Institute of Zoology, Academia Sinica, China.

Descriptions

Microdrosophila (Oxystyloptera) magniflava n. sp.

(Fig. 1A-C)

♂, ♀. Body about 3.0 mm, wing about 2.5 mm in length. Head broader than thorax. Eyes deep purple red, somewhat quadrate, pilose. Antennae with second segment yellow, third pale grey. Arista with seven dorsal and two ventral long branched and a small terminal fork. Palpus yellowish, slender, with three long bristles at tip and a few short setae. Proboscis yellowish white. Ocellar triangle convex, yellow, black at the inner margin of ocelli, nearly reaching the anterior margin of front. Ocellars long. Periorbit large, highly convex, yellow, anteriorly broadened, also reaching the anterior margin of front. Clypeus yellowish. Front about half as broad as head width, a few frontal hairs present.

Face yellow. Carina yellowish brown, high, slender above, wider below. Cheek yellow, about one-third as broad as the greatest diameter of eye. Proclinate orbital five-ninths length of posterior reclinate, outside and anterior to posterior reclinate; anterior reclinate minute, but can be distinguishable from the neighboring hairs, inside and parallel to proclinate orbital. Vibrissa long, stout, other orals short and thin, about one-third length of vibrissa.

Mesonotum and scutellum yellow, humeral plate yellowish brown. Thoracic pleura yellowish white. One humeral, arising from yellow spot. Acrostichal hairs in eight rows. Distance between anterior and posterior dorsocentrals about twelve-thirteenths length of distance between anterior pair. Anterior dorsocentrals about 0.8 length of posteriors. Anterior and posterior scutellars all long, anteriors divergent, posteriors parallel. Sterno-index about 0.7. Legs yellow, preapicals on all legs, apicals prominent on mid and hind legs. Fore femur with three long bristles exteriorly. All tarsal joints with longer hairs. Metatarsus subequal to three succeeding tarsal joints in fore and mid legs, subequal to four succeeding tarsal joints in hind. Claws and pulvilli all long, as long as ultimate tarsal joint. Wing hyaline, tip prominently pointed, second costal incision very deep, about one-fourth as deep as the length of first costal section between two costal breakages, R_{4+5} and M parallel. C-index about 1.7, 4V-index about 3.5, 4C-index about 2.0, 5x-index about 3.0, Ac-index about 2.7, C1-bristles two, subequal; C3-fringe on entire length. Halteres yellow.

Abdominal tergites yellow. ♂: 2-4T only laterally with black narrow band on posterior margin, 5T with a medially interrupted and laterally upward curved posterior black transverse band, 6T entirely black, medially interrupted. In some individuals, abdominal tergites entirely yellow, only 5T with two laterally black spots, 6T with two large black patches. ♀: Abdominal tergites also yellow, all with wide posterior black transverse bands, which are medially interrupted on 2T and 6T.

Periphallic organs (Fig. 1A): Genital arch yellowish white, pubescent, ventrally truncate, with a finger-shaped long process and about a scope of yellow long bristles, those at the anteroventral corner are especially long, about two and half times as long as finger-shaped process. Anal plate yellow, narrow, separated from genital arch, pubescent and hairy, with a long tapering ventrally brownish yellow finger-like projection, which has a few sparsely arranged hairs caudally and anteriorly. Clasper absent.

Phallic organs (Fig. 1R): Aedeagus pale white, yellow at tip.

fused with each other to form a slightly sheath-shaped organ, which is longer than anterior paramere and subapically with two small pointed processes ventrally. Accessory organ of aedeagus gross, orange yellow, with intricate fine feather-like sculpture, tapering at apex, with median deep incision in anterior view, and subapically with a small longitudinal incision in lateral view. Apodeme of aedeagus rod-like, yellowish white. Anterior paramere yellowish brown, flagellate, slightly shorter than aedeagus and with several sensilla arranged in a row along its long axis. Novasternum pale grey, large, deeply notched distally. Vertical rod curved ventrally and contiguous with novasternum at the bottom of the median notch. Egg-guide (Fig. 1C): Lobe yellow, slender, apically with two long hairs and a shorter hair subapically.

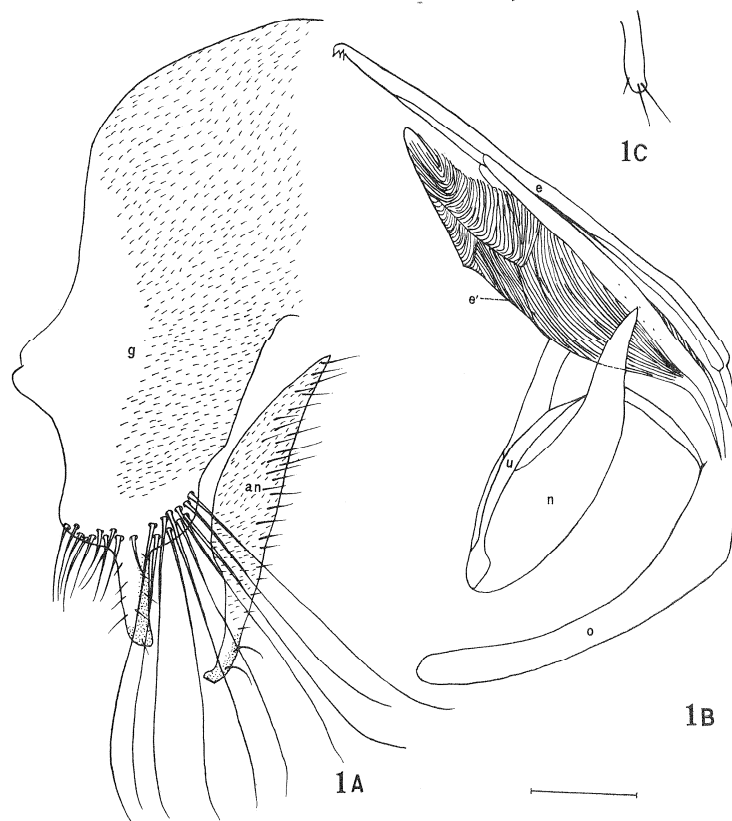


Fig. 1A-C, *Microdrosophila (Oxystyloptera) magniflava* n. sp. A, Periphallial organs; B, phallic organs, lateral view; C, egg-guide. Scale 0.1 mm.

Holotype ♂, Shang-yong, Mengla county, Yunnan Province, ca. 710 m, 27. IX. 1985 (ZHANG).

Allotype ♀, collected together with the holotype.

Paratype, 4♂♂, 3♀♀, collected together with the holotype.

Relationship. Closely resembles *Microdrosophila (Oxystyloptera) matsudairai* OKADA, 1960 from Japan, but differs from it in having long bristles on genital arch, clasper absent, and anterior paramere shorter than aedeagus (as long as aedeagus in *matsudairai*).

***Microdrosophila (Oxystyloptera) tectifrons* (DE MEIJERE)**

(Fig. 2A-C)

Oxystyloptera tectifrons DE MEIJERE, 1914, Tijdschr. Ent., 57: 263 (Java).

Periphallalic organs (Fig. 2A): Genital arch black, pubescent,

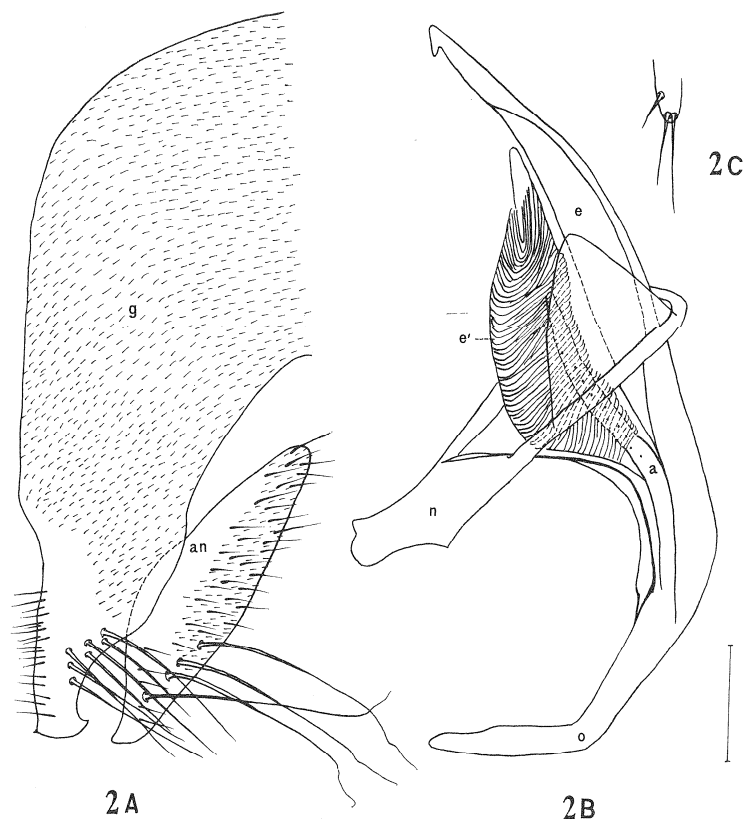


Fig. 2A-C. *Microdrosophila (Oxystyloptera) tectifrons* (DE MEIJERE). A,Periphallalic organs; B, phallic organs, lateral view; C, egg-guide. Scale 0.1 mm.

ventrally one-third pale grey, ventrally exceedingly narrowing like finger, truncate at tip, with five to seven long bristles subapically inside and with many small thin hairs subapically outside. Anal plate pale yellow, elongate oval and narrowing below, with many hairs and three or four longer apically curved bristles. Phallic organs (Fig. 2B): Aedeagus pale white, slender, longer than anterior paramere and curved ventrad apically. Apodeme of aedeagus pale grey, shorter than aedeagus. Accessory organ of aedeagus gross, yellowish brown, with intricate fine feather-like sculpture, apically pointed and basally narrowing. Anterior paramere yellow, flagellate, shorter than the aedeagus and with several sensilla arranged in a row along its long axis. Novasternum pale grey, deeply notched distally, with large hyaline triangle lobe. A curved dark brown vertical rod is projected from the base of aedeagus to be contiguous with novasternum at bottom of median notch. Egg-guide (Fig. 2C): Lobe yellowish, slender, with two long bristles at tip and a shorter bristle at subapical.

Specimens examined. 3♂♂, 4♀♀, Shang-yong, Mengla county, Yunnan province, ca. 710 m, 27. IX. 1985; 1♂, 1♀, Mengla, Yunnan province, 24. IX. 1985 (ZHANG).

Distribution. China (new loc.), Taiwan, Philippines, Java, Irian Jaya, Papua New Guinea.

Relationship. Closely resembles the former species in having gross aedeagus with intricate fine feather-like sculpture, but differs from it in having dark brown body, brown tibia in mid and hind legs and periphallic and phallic organs.

***Microdrosophila (Oxystyloptera) matsudairai* OKADA**

Microdrosophila (Oxystyloptera) matsudairai OKADA, 1960, Kontyû, 28: 213 (Japan).

Specimens examined. 16♂♂, 2♀♀, Mulong, Honghe county, Yunnan province, 14. X. 1985 (ZHANG).

Distribution. China (new loc.), Sri Lanka, Ryukyus, Japan, Korea.

Remarks. OKADA (1960) misinterpreted aedeagus as posterior paramere and feather-like accessory organ of aedeagus as aedeagus for this species.

***Microdrosophila (Oxystyloptera) honoghensis* n. sp.**

(Fig. 3A-C)

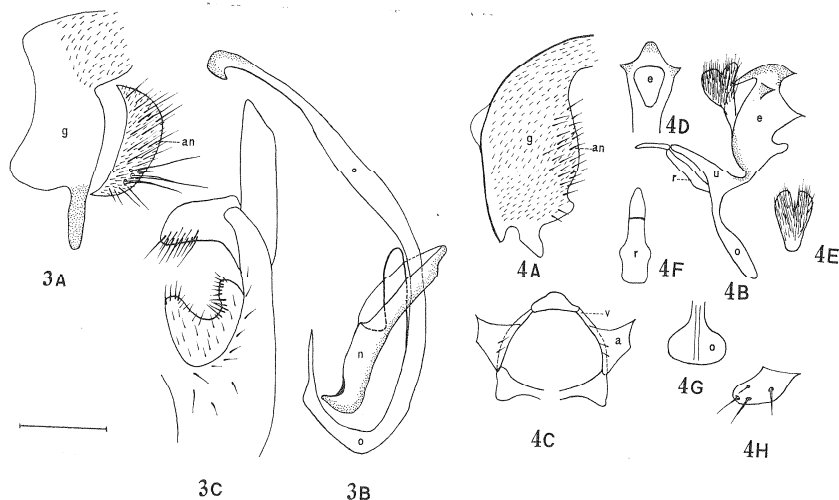
♂. Body about 2.0 mm in length. Head broader than thorax. Eyes purple red, pilose. Antennae with second segment yellowish brown, third pale yellow. Arista with six dorsal and one or two ventral branches

and a moderate fork. Palpus yellow, with two long bristles at tip and a few short setae. Proboscis yellow. Ocellar triangle yellow, slightly convex, black at the inner margin of ocelli. Ocellars long. Periorbit yellow, slightly convex, anteriorly broadened, nearly reaching the anterior margin of frons. Clypeus yellow. Front about half as broad as head width, a few frontal hairs present. Face yellow. Carina yellow, high and slender, wider below. Cheek yellow, about one-fourth as broad as the greatest diameter of eye. Proclinate orbitals about three-fifths length of posterior reclinate, outside and anterior to posterior reclinate; anterior reclinate minute, hardly distinguishable from the neighboring hairs. Vibrissa long, stout, other orals much shorter and thinner.

Mesonotum and scutellum yellow. Thoracic pleura yellowish white, with obscure brownish longitudinal stripe above. Only one humeral. Acrostichal hairs in eight rows. Distance between anterior and posterior dorsocentrals about five-sixths distance between anterior pair. Anterior dorsocentrals about 0.72 length of posteriors. Anterior scutellars short and small, parallel, about two-fifths, length of posteriors. Posterior scutellars long, stout, divergent. Sterno-index about 0.44. Legs yellow, pre-apicals on all legs, apicals only on mid leg. Fore femur with about four long bristles outside. Metatarsus subequal to three succeeding tarsal joints in fore leg; subequal to four succeeding tarsal joints in mid and hind legs. Claws and pulvilli long, as long as or longer than ultimate tarsal joint. Wing hyaline, tip prominently pointed, second incision very deep about one-fourth as deep as the length of the first costal section between two costal breakages. R_{4+5} and M slightly divergent at tip. C-index about 1.0, 4V-index about 3.8, 4C-index about 2.8, 5x-index about 5.0, Ac-index about 3.1, C1-bristles two, upper one larger, C3-fringe on entire length. Halteres yellow.

Abdominal tergites brownish, with posterior narrow black transverse band. 6T (Fig. 3C) intricate, apical half branched into two lobes, tip pointed, lobe with small bristles sparsely arranged in a row along inner margin laterally with a slender brown plate bearing one or two small bristles. A U-shaped plate contiguous to base of 6T, with many small bristles. A plate with a row of small bristles present above U-shaped plate.

Periphallic organs (Fig. 3A): Genital arch pale grey, pubescent, convex above, truncate below, with a yellow finger-like process at ventral anterior angle. Anal plate yellowish grey, crescent, separated from genital arch, with many bristles, two or three of them longer. Phallic organs (Fig. 3B): aedeagus yellowish white, slender, tapering at apex, apically curved ventrad. Apodeme of aedeagus pale grey, U-shaped,



Figs. 3-4. 3A-C, *Microdrosophila (Oxystyloptera) honoghensis* n. sp. A, Periphallie organs; B, phallic organs, lateral view; C, 6T. Scale 0.1 mm. 4A-H, *Microdrosophila (Oxystyloptera) conda* n. sp. A, Periphallie organs; B, phallic organs (part), lateral view; C, phallic organs (part), anterior view; D, upper portion of aedeagus, anterior view; E, accessory organ of aedeagus, anterior view; F, vertical rod, anterior view; G, apical apodeme of aedeagus, anterior view; H, egg-guide. Scale 0.1 mm.

tapering at tip. Novasternum narrow, pale grey, not very deeply notched distally. A narrow yellow curved vertical rod projected from the base of aedeagus to be contiguous with novasternum at bottom of median notch. Anterior and posterior parameres absent.

Holotype ♂, Mu-long, Honghe county, Yunnan province, ca. 500 m, 14. X. 1985 (ZHANG).

Relationship. Closely allied to *M. (O.) conica* OKADA, 1985, in having finger-like process of genital arch, but is distinguished from it in having no paramere.

Microdrosophila (Oxystyloptera) nigrispina OKADA

Microdrosophila (Oxystyloptera) nigrispina OKADA, 1985, Internat. J. Ent., 27: 317 (Sri Lanka).

Abdominal tergites orange yellow, with obscure narrow dark band on posterior margin. 6T (Fig. 5A-B) in male, especially misleading as genital arch, yellowish brown, pubescent, truncate below with a few stout bristles. A triangle bristly plate ending a very large and black tooth contiguous below 6T.

Periphallie organs (Fig. 5C): Genital arch pale grey, pubescent, dorsally projected outside, ventrally with a finger-like yellow process on inner margin which has a few small setae on surface. Anal plate pale grey, slender, with many bristles, those on subventral portion longer. Phallic organs (Fig. 5D): Aedeagus yellowish white, slender, dorsal tip yellow, well chitinized, curved ventrad. Apodeme of aedeagus pale grey, foot-shaped. Novasternum pale grey, notched distally. A narrow curved vertical rod, projected from the base of aedeagus contiguous with novasternum at bottom of median notch. Egg-guide: Lobe slender, yellowish white, with one large and one much shorter bristles at tip and two long bristles at subapical portion.

Specimens examined. 64♂♂, 26♀♀, Shang-yong, Mengla county, Yunnan province, 27. IX. 1985; 3♂♂, Mu-long, Honghe county, Yunnan, 14. X. 1985 (ZHANG); 1♂, Mengla, Yunnan, 26. IX. 1985 (ZHANG).

Distribution. China (new loc.), Sri Lanka.

Relationship. This species belongs to the subgenus *Oxystyloptera*, having slender aedeagus and parameres absent, although C3-fringe not on entire length and second incision not very deep. This species is

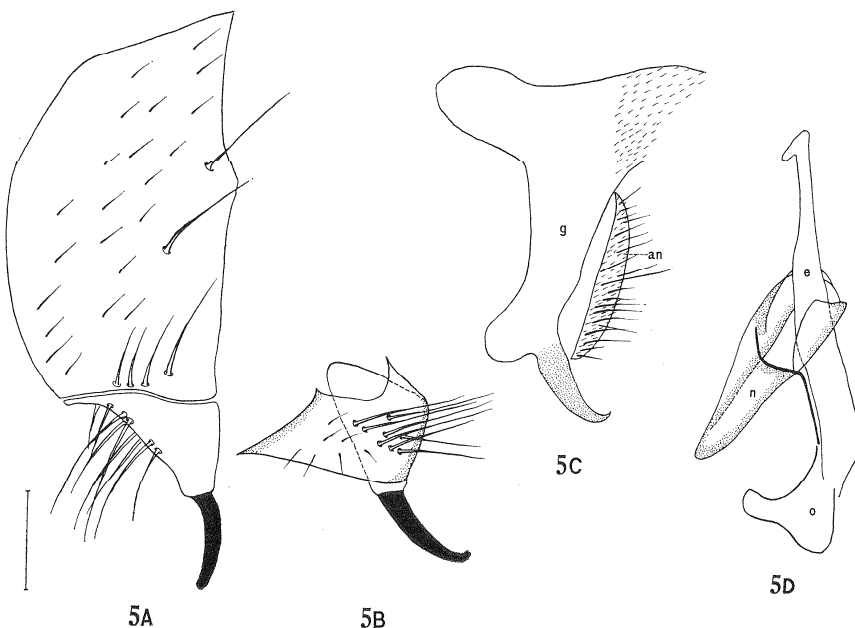


Fig. 5A-D. *Microdrosophila (Oxystyloptera) nigrispina* OKADA. A, 6T; B, 6T (part), ventral view; C, periphallie organs; D, phallic organs, lateral view. Scale 0.1 mm.

characterized by 6T which looks like genital arch.

Remarks. OKADA (1985) misinterpreted male 6T as epandrium (genital arch) and epandrium as cercus, for *M. nigrispina*.

***Microdrosophila (Oxystyloptera) distincta* WHEELER et TAKADA**

Microdrosophila (Oxystyloptera) distincta WHEELER et TAKADA, 1964, Insects of Micronesia, 14: 217 (Caroline Is.)

Specimens examined. 1♂, Jing-hong county, Yunnan, 19. IX. 1985 (ZHANG); 1♂, Mengla county, 27. IX. 1985 (ZHANG); 1♂, Meng-long, Mengla county, 4. X. 1985 (ZHANG); 26♂♂, 12♀♀, Shang-yong, Mengla county, 27. IX. 1985 (ZHANG).

Distribution. China (new loc.), Micronesia.

***Microdrosophila (Microdrosophila) cristata* OKADA**

Microdrosophila (Microdrosophila) cristata OKADA, 1960, Kontyû, 28: 214 (Japan).

Specimens examined. 5♂♂, Kunming, Yunnan, 24. V. 1984; 2♂♂, 5. VIII. 1983; 1♂, 3♀♀, 31. V. 1984 (ZHANG).

Distribution. Kunming (new loc.), Taiwan, Japan, Korea.

***Microdrosophila (Microdrosophila) conda* n. sp.**

(Fig. 4A-H)

♂, ♀. Body about 1.8 mm in length. Head broader than thorax. Eyes purple red, somewhat quadrate, pilose. Antennae with second segment brownish yellow, third pale yellow. Arista with eight dorsal and three ventral long branches and a small terminal fork. Palpus black, slender with two long bristles at tip and a few short setae. Proboscis yellow. Ocellar triangle slightly convex, yellow, black at the inner margin of ocelli. Periorbit large, convex, yellowish, anteriorly broadened, reaching anterior margin of front. Clypeus yellow. Front about three-fifths as broad as head width, a few frontal hairs present. Face yellow. Carina yellow, slender. Cheek yellow, about one-fifth as broad as the greatest diameter of eye. Proclinate orbitals about four-fifths length of posterior reclinate, outside and anterior to posterior reclinate; anterior reclinate minute, hardly distinguishable from the neighboring hairs. Vibrissa long, stout, other orals short and thin.

Mesonotum and scutellum yellow. Thoracic pleura yellowish white, with a blackish longitudinal stripe above. Humeral plate brown, only one humeral. Acrostichal hairs in six rows. Distance between anterior and posterior dorsocentrals about seven-ninths distance between anterior

pair; anterior dorsocentrals about 0.67 length of posteriors. Anterior scutellars short and thin, parallel, about one-third length of posteriors; posterior scutellars long, divergent. Sterno-index about 0.44. Legs yellow, preapicals on all legs, apicals only prominent on mid leg. Fore femur with four or five long bristles exteriorly. Metatarsus subequal to three succeeding tarsal joints in fore and mid legs, subequal to four succeeding tarsal joint in hind leg. Claws and pulvilli all long, as long as ultimate tarsal joint. Wing hyaline, tip slightly pointed, second incision not very deep. R_{4+5} and M parallel. C-index about 1.0, 4V-index about 4.1, 4C-index about 3.6, 5x-index about 4.6, Ac-index about 4.1, C1-bristles two, subequal. C3-fringe on basal five-sixths. Halteres yellow.

Abdominal tergites yellow, with narrow posterior transverse dark brown band, darker in female.

Periphallie organs (Fig. 4A): Genital arch pale grey, pubescent, dorsally narrow, ventrally with a small projection, lateral margin more chitinized. Anal plate fused to genital arch, with many small bristles. Phallic organs (Fig. 4B-G): Aedeagus robust, orange apically prominently pointed, subapically with two lateral processes and two dorsal processes, ventrally with a apically forked shaggy accessory organ and basally narrowing to continue to a rod-shaped yellow ventral recurved process. Apodeme of aedeagus pale grey, rod-shaped. Anterior parameres small, irregularly quadrate, with about two or three sensilla; contiguous with looped ventral fragma. Vertical rod yellow, thin, with a piece of transparent plate at tip. Egg-guide (Fig. 4H): Lobe pale grey, small, triangle, with about three or four stout setae.

Holotype ♂, Meng-long, Mengla county, Yunnan, 3. X. 1985 (ZHANG).

Allotype ♀, collected together with the holotype.

Paratype, 23 ♂♂, 3 ♀♀, Meng-long, collected together with the holotype; 1 ♂, Menghai county, Yunnan, 15. IX. 1985 (ZHANG); 27 ♂♂, Shang-yong, Mengla county, Yunnan, 27. IX. 1985 (ZHANG).

Relationship. Similar to *M. (M.) nigrohalterata* OKADA, 1966 in having aedeagus robust, orange with several complicated triangular processes, but differs from it in the shape of triangular processes, especially forked shaggy accessory organ and in having and body yellow.

Microdrosophila (Microdrosophila) maculata OKADA

Microdrosophila (Microdrosophila) maculata OKADA, 1960, Kontyû, 28: 217 (Japan).

Specimens examined. 38 ♂♂, 31 ♀♀, Shang-yong, Mengla county, Yunnan, 27. IX. 1985 (ZHANG).

Distribution. China (new loc.), Japan.

Microdrosophila (Microdrosophila) pleurolineata

WHEELER et TAKADA

Microdrosophila (Microdrosophila) pleurolineata WHEELER et TAKADA 1964, *Insects of Micronesia*, 14: 217 (S. Mariana Is. and Caroline Is.)

Specimens examined. 2♂♂, Mengla, Yunnan, 27. IX. 1985 (ZHANG).

Distribution. China (new loc.) Japan, Ryukyus, Hong Kong, Malaysia, Sri Lanka, India, Micronesia, Fiji, Papua New Guinea, Australia.

***Microdrosophila (Microdrosophila) curvula* n. sp.**

(Fig. 6A-I)

♂. Body about 1.8 mm in length. Head broader than thorax. Eyes deep purple red, pilose. Antennae with second segment brown, third pale grey. Arista with seven dorsal and three ventral branches and a moderate terminal fork. Palpus black, with two long bristles at tip and a long bristles at subapical portion and a few short setae. Proboscis yellow, with a pair of long recurved hair and a pair of straight hair at anterior tip. Ocellar triangle convex, black inside ocelli, ocellars long. Periorbit slightly convex, large, brownish yellow, anteriorly broadened, nearly reaching the anterior margin of front. Clypeus yellow. Front about three-sevenths as broad as head width, with a few frontal hairs. Face yellow. Carina yellow, slender above, wider below. Cheek yellow, about one-fourth as broad as the greatest diameter of eye. Proclinate orbital about five-ninths length of posterior reclinate, outside and anterior to posterior reclinate; anterior reclinate minute, hardly distinguishable from the neighboring hairs. Vibrissa long, stout and black, other orals short and thin, yellow.

Mesonotum and scutellum brownish yellow. Thoracic pleura yellowish, with broad black longitudinal stripe above. Humeral plate brown, only one humeral. Acrostichal hairs in eight rows. Distance between anterior and posterior dorsocentrals about five-sixths distance between anterior pair. Anterior dorsocentrals about 0.7 length of posteriors. Anterior scutellars short, parallel; posteriors long, stout and divergent. Sterno-index about 0.4. Legs all yellow, femora apically and tibia proximally brownish; preapicals on all legs, apicals prominent on mid leg. Fore femur with three or four long bristles exteriorly. Metatarsus subequal to three succeeding tarsal joints in fore and mid legs; subequal to four succeeding tarsal joints in hind. Claws and pulvilli not very

long, shorter than ultimate tarsal joint. Wing hyaline, tip slightly pointed, second incision not very deep. R_{4+5} and M parallel. C-index about 1.0, 4V-index about 3.6, 4C-index about 3.3, 5x-index about 4.0, Ac-index about 4.7, C1-bristles two, subequal. C3-fringe on basal ten-elevenths. Halteres brownish.

Abdominal tergites dark brown, with black transverse band. 6T (Fig. 6C) entirely dark brown, elongated at lateral sides, brownish yellow, with many sparse bristles and with a small process on distal angle; 6S yellow, laterally with a bristly irregular plate, with a long forked plate at middle.

Periphallalic organs (Fig. 6A-B): Genital arch dark brown, pubescent, dorsally narrow, ventrally with a finger-like long orange process, apically curved caudally, subapically with a row of irregular small hairs. The finger-like process with a piece of serrated crescent orange plate. Anal plate fused to genital arch, pale yellow, slender, with sparse small bristles. Phallic organs (Fig. 6E-I): Aedeagus brown, rod-shaped in anterior view, crescent in lateral view; tip pointed, with many small warts on anterior surface submedially; basally much narrowing to

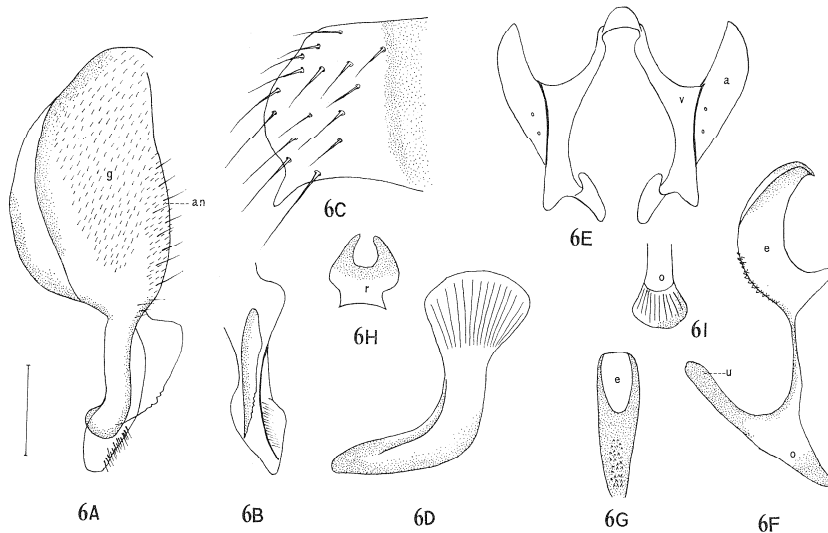


Fig. 6A-I. *Microdrosophila* (*Microdrosophila*) *curvula* n. sp. A, Periphallalic organs; B, finger-like process of genital arch, anterior view; C, 6T (part); D, ejaculatory apodeme; E, phallic organs (part), anterior view; F, phallic organs (part), lateral view; G, aedeagus (part), anterior view; H, vertical rod, anterior view; I, apical apodeme of aedeagus, anterior view. Scale 0.1 mm.

continue to a dark brown apically truncate ventral recurved process. Apodeme of aedeagus pale grey, triangular in lateral view; apically black, slightly oblate in frontal view. Anterior parameres elongate, tip pointed, brownish, with two sensillae, basally contiguous with brownish looped ventral fragma which anteculicates with aedeagus; vertical rod distally broadened, brown. Ejaculatory apodeme (Fig. 6D): very large, foot-shaped, with plate long oval, black, yellow at middle; stem brown, tip widened as long as plate.

Holotype ♂, Shang-yong, Mengla county, Yunnan, 27. IX. 1985 (ZHANG).

Paratype, 1♂, collected together with the holotype.

Relationship. Allied to the new species *setulosa* in having body brownish yellow, but differs from it in having aedeagus concaved above and with many warts on its proximal anterior surface, genital arch with finger-like apically curved process, ejaculatory apodeme especially large and black, and anal plate completely fused with genital arch.

***Microdrosophila (Microdrosophila) setulosa* n. sp.**

(Fig. 7A-C)

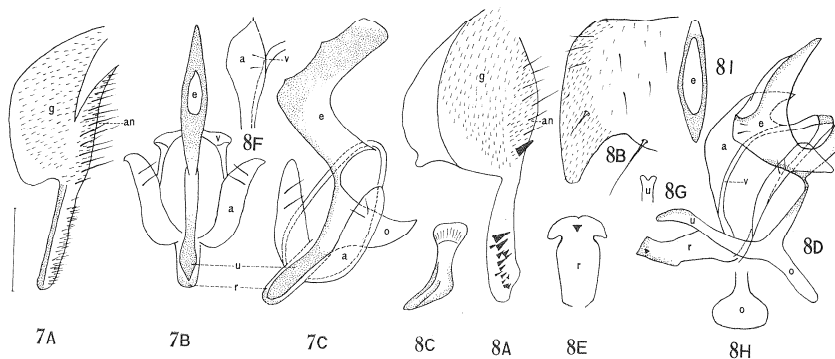
♂. Body about 1.5 mm in length. Head broader than thorax. Eyes deep purple red. Antennae with second segment brownish, 3rd pale white. Arista with seven or eight dorsal and three ventral branches and a moderate terminal fork. Palpus black, slender, with two long bristles at tip and a few short setae. Proboscis yellowish. Ocellar triangle convex, yellow, black inside ocelli, ocellars long. Periorbit yellow, convex, anteriorly broadened, nearly reaching the anterior margin of front. Clypeus yellow. Front about half as broad as head width, a few frontal hairs present. Face yellow. Carina also yellow, not very high narrow. Cheek yellow, about one-seventh as broad as the greatest diameter of eye. Proclinate orbital about five-eighths length of posterior reclinate, outside and anterior to posterior reclinate; anterior reclinate minute, hardly distinguishable from neighboring hairs. Vibrissa long and stout.

Mesonotum and scutellum brownish yellow. Thoracic pleura yellowish, with a broad longitudinal stripe above. Only one humeral. Acrostichal hairs in six rows. Distance between anterior and posterior dorso-centrals about eight-elevenths distance between anterior pair; anterior dorsocentrals about 0.7 length of posteriors. Anterior scutellars short, convergent and about one-fourth length of posteriors; posterior scutellars long, slightly divergent. Sterno-index about 0.5. Legs yellow, preapicals

on all legs, apicals prominent on mid leg. Fore femora with about four long bristles exteriorly. Metatarsus subequal to three succeeding tarsal joints in fore leg subequal to four succeeding tarsal joints in hind and hind legs. Claws and pulvilli not very long, shorter than ultimate tarsal joint, longer in fore leg. Wing hyaline, tip slightly pointed, second incision not very deep. R_{4+5} and M parallel. C-index about 1.0, 4V-index about 4.5, 4C-index about 3.4, 5x-index about 4.6, Ac-index about 4.5, C1-bristles two, subequal. C3-fringe on basal eight-ninths. Halteres proximally yellowish brown, apically dark brown.

Abdominal tergites brown, with posterior black transverse band.

Periphallic organs (Fig. 7A): Genital arch pale yellow, pubescent, slender, two genital arches dorsally contiguous by membrane; truncate ventrally, with a long finger-like process which has many upward small setae on its anterior caudal margin. Anal plate pale grey, pubescent, with many small bristles, dorsal half separated from and ventral half fused with genital arch, finger-like process of genital arch nearly as long as anal plate, more chitinized and yellow outside. Phallic organs (Fig. 7B-C): Aedeagus brown, narrow at tip and laterally with incision at mid-way, broad, ventrally curved at middle; basally much narrowing to continue to a brown rod-shaped ventral recurved process. Apodeme of aedeagus triangular in lateral view. Anterior paramere oblong, with two long sensilla, pubescent above, basally contiguous with looped ventral



Figs. 7-8. 7A-C, *Microdrosophila (Microdrosophila) setulosa* n. sp. A,Periphallial organs; B, phallic organs, anterior view; C, phallic organs, lateral view. Scale 0.1 mm. 8A-I, *Microdrosophila (Microdrosophila) dentata* n. sp. A,Periphallial organs; B, 6T (part); C, ejaculatory apodeme; D, phallic organs, lateral view; E, vertical rod, anterior view; F, anterior paramere, anterior view; G, tip of ventral recurved process, anterior view; H, apodeme of aedeagus, anterior view; I, aedeagus (part), anterior view. Scale 0.1 mm.

fragma which articulates with aedeagus. Vertical rod thin, pale grey.

Holotype ♂, Shang-yong, Mengla county, Yunnan, 27. IX. 1985 (ZHANG).

Paratype, 5♂♂, collected together with the holotype.

Relationship. Similar to *Microdrosophila (Microdrosophila) submarginata* OKADA, 1965, in having finger-like process of genital arch, but differs from it in having black palpus, brownish body, no longitudinal stripes on mesonotum and in different aedeagus.

***Microdrosophila (Microdrosophila) dentata* n. sp.**

(Fig. 8A-I)

♂. Body about 1.8 mm in length. Head broader than thorax. Eyes deep purple red, pilose. Antennae with 2nd segment brown, third yellowish grey. Arista with seven dorsal and three ventral branches and a moderate terminal fork. Palpus black, with three long bristles. Proboscis yellow, with two pairs of thin hairs at tip. Ocellar triangle slightly convex, yellow, brown inside of ocelli, ocellars long. Periorbit also slightly convex, yellow, anteriorly broadened, nearly reaching the anterior margin of front. Clypeus yellow. Front about half as broad as head width, with a few frontal hairs. Face yellow. Carina not very high, slender. Cheek yellow, about two-sevenths as broad as the greatest diameter of eye. Proclinate orbital about four-ninths length of posterior reclinate, outside and anterior to posterior reclinate; anterior reclinate minute, hardly distinguishable from neighboring hairs. Vibrissa long, stout and black.

Mesonotum and scutellum brownish yellow. Thoracic pleura yellowish, with broad black longitudinal stripe above. Humeral plate brown, only one humeral. Acrostichal hairs in eight row. Distance between anterior and posterior dorsocentrals about seven-elevenths distance between anterior pair. Anterior dorsocentrals about 0.8 length of posteriors. Anterior scutellars short and thin, parallel; posterior scutellars long, stout and divergent. Sterno-index about 0.5. Legs yellow, perapicals on all legs, apicals prominent on mid leg. Fore femur with three or four long bristles exteriorly. Metatarsus subequal to three succeeding tarsal joints in fore leg; subequal to four succeeding tarsal joints in mid and hind legs. Claws and pulvilli shorter than the ultimate tarsal joint. Wing hyaline, tip slightly pointed, second incision not very deep R_{4+5} and M parallel. C-index about 1.0, 4V-index about 3.9, 4C-index about 3.0, 5x-index about 4.3, Ac-index about 4.5, C1-bristles two, subequal. C3-fringe on basal eight-ninths. Halteres pale yellow.

Abdominal tergites deep black, with posterior black transverse

band. 6T (Fig. 8B): black, with a few bristles and pubescent laterally protruded, pointed on postero-ventrally.

Periphallalic organs (Fig. 8A): Genital arch dark brown, pubescent, outer margin broadened, distally with a long finger-like yellow process which has black teeth irregularly arranged. Anal plate pale yellow, completely fused with genital arch, with about ten sparsely bristles and one or two stout black teeth below. Phallic organs (Fig. 8D-I): Aedeagus yellowish, crescent in lateral view, basally narrowing to continue to a yellow, elongate, apically bifid ventral recurved process. Apodeme of aedeagus pale grey, triangular in lateral view tip oblate in anterior view. Anterior parameres yellow, large, tip pointed, with about two long sensillae medially, basally contiguous with yellow looped ventral fragma which articulates with aedeagus. Vertical rod pale yellow, apicomediaally with a small curved outward process, subapicomediaally with a small process. Ejaculatory apodeme (Fig. 8C) much smaller than in the *Microdrosophila (Microdrosophila) curvula* n. sp., brownish, with plate oval, stem apically widened, as long as plate.

Holotype ♂, Shang-yong, Mengla county, Yunnan, 30. IX. 1985 (ZHANG).

Relationship. Resembles *Microdrosophila (Microdrosophila) curvula* n. sp. in general colour patterns of mesonotum, thoracic pleura and abdomen, but differs from it in the structure of male genitalia, ventral finger-like process of genital arch apically not curved and with upcurved teeth, aedeagus without warts.

***Microdrosophila (Microdrosophila) luchunensis* n. sp.**

(Fig. 9A-D)

♂. Body about 2.0 mm in length. Head broader than thorax. Eyes deep purple red, pilose. Antennae with second segment brownish yellow, third yellowish grey. Arista with seven dorsal and three ventral branches and a moderate terminal fork. Palpus black, with two long black stout bristles and three thin bristles. Proboscis yellow, with two pairs of long black recurved hairs. Ocellar triangle yellow, convex, black at the inner margin of ocelli, ocellars long. Periorbit yellow, convex, anteriorly broadened, nearly reaching anterior margin of front. Clypeus yellow. Front about half as broad as head width, with a few frontal hairs. Face yellow. Carina high and slender. Check yellow, about one-fourth as broad as the greatest diameter of eye. Proclinate orbital half length of posterior reclinate, outside and anterior to posterior reclinate; anterior reclinate minute, hardly distinguishable from neighboring hairs.

Vibrissa long, black and stout, other orals short, yellow and thin. Occiput with broad bands laterally.

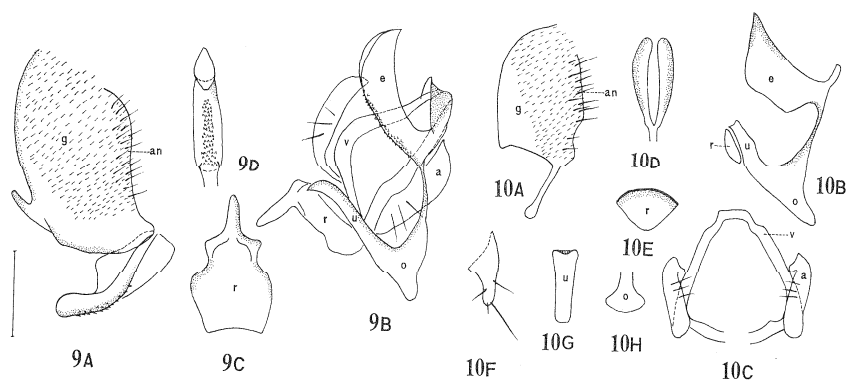
Mesonotum brownish yellow, with three black longitudinal stripes, one between dorsocentrals, broad, extending from before the level of suture to posterior margin of scutellum; one outside of dorsocentrals, extending from the level of suture to posterior margin of mesonotum. Humeral plate brown. Scutellum yellow, with broad black stripes from mesonotum. Thoracic pleura yellowish white, with broad black longitudinal stripe above sternopleura. Hemeral one. Acrostichal hairs in eight rows. Distance between anterior and posterior dorsocentrals about five-sixths distance between anterior pair; anterior dorsocentrals about 0.53 length of posteriors. Anterior scutellars short, divergent about two-fifths length of posteriors; posterior scutellars long, stout and divergent. Sterno-index about 0.42. Legs yellow, brown on distal half of femora and proximal half of tibiae on mid and hind legs, darker on femora. Preapicals on all legs, apicals prominent on mid leg. Fore femur with four or five long bristles exteriorly. Metatarsus subequal to three succeeding tarsal joints in fore leg; subequal to four succeeding tarsal joints in mid and hind legs. Claws and pulvilli not very long. Wing hyaline, tip slightly pointed, second incision not very deep, R_{4+5} and M parallel. C-index about 1.2, 4V-index about 4.3, 4C-index about 2.9, 5x-index about 4.2, Ac-index about 4.0, C1-bristles two, subequal. C3-fringe on basal seven-eighths. Halteres brown.

Abdominal tergites dark brown, with broad black posterior transverse bands.

Periphallic organs (Fig. 9A): Genital arch dark brown, pubescent genital arch ventrally truncate with a yellow finger-like process which has many small yellow spinules on caudal margin. Anal plate fused to genital arch, slender, fusiform, yellow, with many bristles. Phallic organs (Fig. 9B-D): Aedeagus brownish, crescent above with many small warts on its anterior surface; tip slightly pointed in anterior view; basally narrowing to continue to brownish apically pointed outwardly curved ventral recurved process. Apodeme of aedeagus pale yellow, triangular in lateral view. Anterior parameres brownish, elongate oval, tip pointed, with about three long sensilla, basally contiguous with brown looped ventral fragma which articulates with aedeagus. Vertical rod pale grey, wide plate, submedially constricted, apicomediaally with an elongate thin projection.

Holotype ♂, Luchun county, Yunnan, 9. X. 1985 (ZHANG).

Relationship. Resembles *Microdrosophila (Microdrosophila) curvula* n. sp. in having finger-like process of genital arch and aedeagus with



Figs. 9-10. 9A-D, *Microdrosophila (Microdrosophila) luchunensis* n. sp. A, Periphallial organs; B, phallic organs, lateral view; C, vertical rod, anterior view; D, aedeagus (part), anterior view. Scale 0.1 mm. 10A-H, *Microdrosophila (Microdrosophila) bipartita* n. sp. A, Periphallial organs; B, phallic organs (part), lateral view; C, phallic organs (part), anterior view; D, aedeagus (part), anterior view; E, vertical rod, anterior view; F, egg-guide; G, ventral recurved process, anterior view; H, apodeme of aedeagus, anterior view. Scale 0.1 mm.

warts, but differs from it in having three longitudinal stripes on mesonotum, in the shape of extended plate of finger-like process and in having small spinula on distal margin of finger-like process.

***Microdrosophila (Microdrosophila) bipartita* n. sp.**

(Fig. 10A-H)

♂, ♀. Body about 1.8 mm in length. Head broader than thorax. Eyes deep purple red, pilose. Antennae with second segment brown, third yellowish white. Arista with seven or eight dorsal and three ventral branches and a small terminal fork. Palpus yellow, with two long bristles and two shorter bristles. Proboscis yellow, with a pair of long recurved black hairs. Ocellar triangle slightly convex, yellow, black at inner margin of ocelli, brown inside of ocelli, ocellars long. Periorbit yellow, slightly convex, anteriorly broadened, nearly reaching the anterior margin of front. Clypeus yellow. Front about half as broad as head width, with a few frontal hairs. Face yellow. Carina slender and not very high. Cheek yellow, about one-fourth as broad as the greatest diameter of eye. Proclinate orbital four-sevenths lengths of posterior reclinate, outside and anterior to posterior reclinate; anterior reclinate minute, hardly distinguishable from neighboring hairs. Vibrissa long, stout and black.

Mesonotum yellow, with two obscure short black stripes between dorsocentrals, only reaching behind anterior dorsocentrals and with one black stripe only reaching suture, outside dorsocentrals. Scutellum yellow. Thoracic pleura yellowish with a black longitudinal stripe above. One humeral. Acrostichal hairs in six rows, distance between anterior and posterior dorsocentrals about three-fourths distance between anterior pair. Anterior dorsocentrals about 0.81 length of posteriors. Anterior scutellars short and thin, parallel, about one-third length of posterior; posteriors long and stout, divergent. Sterno-index about 0.5. Legs yellow, preapicals on all legs, apicals prominent on mid. Fore femura with four or five long bristles exteriorly. Metatarsus subequal to three succeeding tarsal joints in fore and mid legs; subequal to four succeeding tarsal joints in hind. Claws and pulvilli not very long, shorter or subequal to ultimate tarsal joint. Wing hyaline, tip slightly pointed, second incision not very deep. R_{4+5} and M parallel. C-index about 1.2, 4V-index about 4.1, 4C-index about 2.9, 5x-index about 4.4, Ac-index about 4.0, C1-bristles two, subequal, C3-fringe on basal four-fifths. Halteres yellow.

Abdominal tergites yellow, black only on each lateral margin, with middle interrupted brownish transverse band on each tergite.

Periphallial organs (Fig. 10A): Genital arch pale grey, pubescent, toe with a finger-like thin projection. Anal plate fused to genital arch, with many lower sparse bristles. Phallic organs (Fig. 10B-E, G, H): Aedeagus yellow, deeply incised in anterior view; crescent in lateral view; basally narrowing to continue to ventrally slightly curved ventral recurved process. Apodeme of aedeagus pale grey, triangular in lateral view, apically oblate in frontal view. Anterior parameres slender, apically curved inward, with about three long sensilla; basally contiguous with slightly broad looped ventral fragma which articulates with aedeagus. Vertical rod fan-shaped, upper margin sclerotized. Egg-guide (Fig. 10F): Lobe yellowish, small, irregularly triangle, apically with long bristle and one small seta, subapicolaterally with two small bristles.

♂ Holotype ♂, Mu-long, Honghe county, Yunnan, ca. 500 m, 14. X. 1985 (ZHANG).

Allotype ♀, collected together with the holotype.

Paratype, 2♂♂, 1♀, collected together with the holotype; 1♂, Menglong, Mengla county, Yunnan, 3. X. 1985 (ZHANG).

Relationship. Resembles *Microdrosophila (Microdrosophila) elongata* OKADA, 1965, in having finger-like projection on toe and mesonotum longitudinally striped, but differs from it in having longitudinal stripes

on mesonotum inside dorsocentrals only extending behind anterior dorso-centrals; black only on lateral margin of each abdominal tergite, brownish middle interrupted band on each tergite, aedeagus deeply incised in anterior view and vertical rod fan-shaped.

Microdrosophila (Microdrosophila) spiciferipennis n. sp

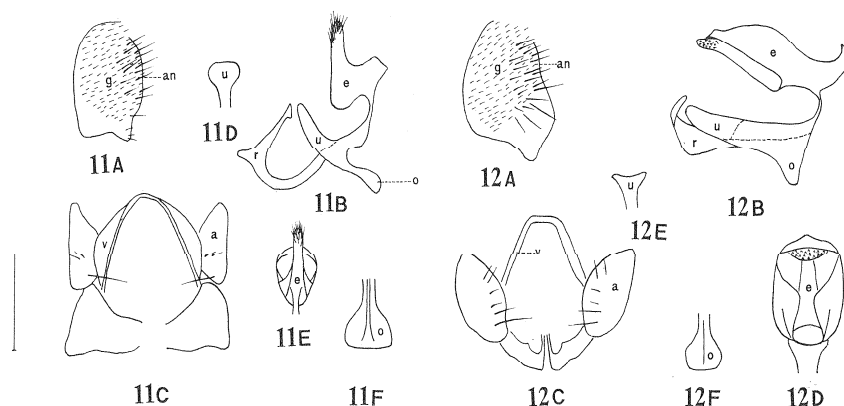
(Fig. 11A-F)

♂. Body about 1.5 mm in length. Head broader than thorax. Eye deep purple red, pilose. Antennae with second segment brown, third pale grey. Arista with seven dorsal and three ventral branches and a small terminal fork. Palpus yellow, with about three long bristles. Proboscis yellow, with a pair of long recurved black hair and a pair of straight black hair. Ocellar triangle yellow, slightly convex, black at the inner margin of ocelli, ocellars long. Periorbit yellow, also slightly convex, anteriorly broadened, nearly reaching the anterior margin of front. Clypeus yellow. Front about half as broad as head width, with a few frontal hairs. Face yellow. Carina yellow, slender and lower. Cheek yellow, about one-fourth as broad as the greatest diameter of eye. Proclinate orbital about four-sevenths length of posterior reclinate, outside and anterior to posterior reclinate; anterior reclinate minute, distinguishable from neighboring hairs. Vibrissa long and stout.

Mesonotum and scutellum yellowish brown. Thoracic pleura yellowish, with broad black longitudinal stripe above. Humeral plate brownish black, humeral only one. Acrostichal hairs in six rows. Distance between anterior and posterior dorso-centrals about seven ninths distance between anterior pair. Anterior scutellars short and thin; posterior scutellars long and stout, divergent. Sterno-index about 0.43. Legs yellow, preapicals on all legs, apicals prominent on mid leg. Fore femur with four or five long bristles exteriorly. Metatarsus subequal to three succeeding tarsal joints in fore and mid legs; subequal to four succeeding tarsal joints in hind. Claws and pulvilli as long as ultimate tarsal joint. Wing hyaline, tip slightly pointed, second incision not very deep, R_{4+5} and M parallel. C-index about 1.0, 4V-index about 4.3, 4C-index about 3.1, 5x-index about 4.3, Ac-index about 4.2, C1-bristles two, nearly subequal. C3-fringe on basal four-fifths. Halteres pale white.

Abdominal tergites with nearly entire brown transverse band.

Peripheral organs (Fig. 11A): Genital arch pale grey, pubescent, ventral margin truncate, toe slightly projected. Anal plate fused to genital arch, with many bristles. Phallic organs (Fig. 11B-F): Aedeagus pale grey, rod-shaped above, apically hairy, widened below; basally narrowing and contiguous with apically broadened ventral re-



Figs. 11-12. 11A-F, *Microdrosophila (Microdrosophila) spiciferipennis* n. sp. A, Periphallallic organs; B, phallic organs, lateral view; C, phallic organs (part), anterior view; D, ventral recurved process, anterior view; E, aedeagus (part), anterior view; F, apodeme of aedeagus, anterior view. Scale 0.1 mm. 12A-F, *Microdrosophila (Microdrosophila) cucullata* n. sp. A, Periphallallic organs; B, phallic organs; B, phallic organs (part), lateral view; C, phallic organs (part), anterior view; D, aedeagus (part), anterior view; E, ventral recurved process, anterior view; F, apodeme of aedeagus, anterior view. Scale 0.1 mm.

curved process. Apodeme of aedeagus slightly triangular in lateral view, apically large and oblate in frontal view. Anterior parameres oval, pale grey, with about three sensilla, basally contiguous with looped broadened ventral fragma which articulates with aedeagus.

Holotype ♂, Shang-yong, Mengla county, Yunnan, 27. IX. 1985 (ZHANG).

Paratype, 34♂♂, collected together with the holotype, 1♂, Mengla, 26. IX. 1985 (ZHANG).

Relationship. Allied to *Microdrosophila (Microdrosophila) nigripalis* OKADA, 1966, in the pattern of genitalia, genital arch having no finger-like process and aedeagus having no complicated process, but differs from it in having palpus and halteres yellow, aedeagus rod-shaped and basally widened and hirsute.

***Microdrosophila (Microdrosophila) cucullata* n. sp.**

(Fig. 12A-F)

♂, ♀. Body about 1.8 mm in length. Head broader than thorax. Eyes deep purple red, pilose. Antennae with second segment yellowish brown, third pale yellow. Arista with seven dorsal and three ventral

branches and a small terminal fork. Palpus yellowish brown, with a few long and short bristles and setae at tip. Proboscis yellow, with a pair of long recurved black hairs at anterior tip. Ocellar triangle yellow, slightly convex, black at the inner margin of ocelli, ocellars long. Periorbit yellow, slightly convex, anteriorly broadened, nearly reaching the anterior margin of front. Clypeus yellow. Front about half as broad as head width, with a few frontal hairs. Face yellow. Carina yellow, slender. Cheek yellow, about one-fourth as broad as the greatest diameter of eye. Proclinate orbitals about three-fifths length of posterior reclinate, outside and anterior to posterior reclinate; anterior reclinate minute, but distinguishable from neighboring hairs. Vibrissa long and stout.

Mesonotum brownish yellow. Scutellum brown, paler at tip. Thoracic pleura yellowish, with broad black stripe above. Only one humeral. Acrostichal hairs in six rows. Distance between anterior and posterior dorsocentrals about three-fourths distance between anterior pair. Anterior scutellars short and thin, parallel; posteriors long and stout, divergent. Serno-index about 0.43. Legs yellow, preapicals on all legs, apicals prominent on mid leg. Fore femur with four or five long bristles exteriorly. Metatarsus subequal to three succeeding tarsal joints in fore leg; subequal to four succeeding tarsal joints in mid and hind legs. Claws and pulvilli not very long, shorter than ultimate tarsal joint. Wing hyaline, tip slightly pointed, second incision not very deep. R_{4+5} and M parallel. C-index about 0.65, 4V-index about 4.1, 4C-index about 3.7, 5x index about 3.6, Ac-index about 4.5, C1-bristles two, subequal. C3-fringe on basal ten-thirteenths. Halteres white.

Abdominal tergites with nearly entire brown band.

Periphallallic organs (Fig. 12A): Genital arch pale grey, pubescent, toe slightly projected below. Anal plate fused to genital arch, with many bristles. Phallic organs (Fig. 12B-F): Aedeagus yellowish, wide, pocket-shaped in dorsal view, concaved above, apically with many small warts; basally narrowing to continue to a yellow oblong ventral recurved process. Apodeme of aedeagus pale grey, triangular in lateral view. Anterior paramere yellowish, pubescent above, oval, with about six sensilla, basally contiguous with narrow ventral fragma which articulates with aedeagus. Vertical rod pale grey, tip with a yellow process curved toward ventral recurved process.

Holotype ♂, Shang-yong, Mengla county, Yunnan, 27. IX. 1985 (ZHANG).

Paratype, 2♂♂, collected together with the holotype.

Relationship. Allied to the foregoing species in patterns of me-

sonotum, thoracic pleura and abdomen, but differs from it in having aedeagus pocket-shaped and ventral recurved process apicolaterally widened and pointed.

Microdrosophila (Microdrosophila) tabularis n. sp.

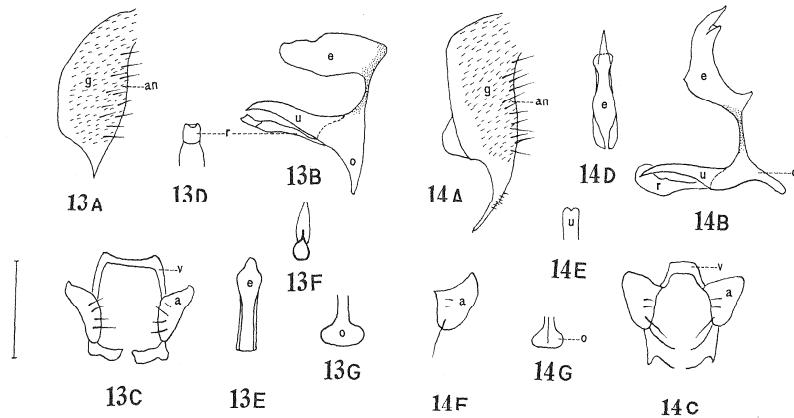
(Fig. 13A-G)

♂. Body about 1.2 mm in length. Head broader than thorax. Eyes purple red, pilose. Antennae with second segment brown, third yellowish white. Arista with seven or eight dorsal and three ventral branches and a small terminal fork. Palpus yellow, with two long bristles and a few short setae. Proboscis yellow, with a pair of long curved black hairs on anterior tip. Ocellar triangle slightly convex, yellow, black at the inner margin of ocelli, ocellars long. Periorbit yellow, slightly convex, anteriorly broadened, nearly reaching the anterior margin of front. Clypeus yellow. Front about half as broad as head width, with a few frontal hairs. Face yellow. Carina slender, not very high. Cheek yellow, about one-fourth as broad as the greatest diameter of eye. Proclinate orbital about two-thirds length of posterior reclinate, outside and anterior to posterior reclinate; anterior reclinate minute, hardly distinguishable from neighboring hairs. Vibrissa long, stout and black.

Mesonotum and scutellum yellow. Thoracic pleura yellowish white, with a black longitudinal stripe above, one humeral. Acrostichal hairs in six rows, distance between anterior and posterior dorsocentrals about two-thirds distance between anterior pair. Anterior dorsocentrals about 0.75 length of posteriors. Anterior scutellars short and thin, posteriors long, stout and divergent. Sterno-index about 0.4. Legs yellow, preapicals on all legs, apicals prominent on mid. Fore femur with about four long bristles exteriorly. Metatarsus subequal to three succeeding tarsal joints in fore and mid legs; subequal to four succeeding tarsal joints in hind. Claws and pulvilli ordinary, shorter than ultimate tarsal joint. Wing hyaline, tip nearly round, second incision not very deep, R_{4+5} and M parallel. C-index about 1.1, 4V-index about 4.0, 4C-index about 2.7, 5x-index about 4.4, Ac-index about 3.4, C1-bristles two, subequal. C3-fringe on basal four-fifths. Halteres pale yellow.

Abdominal tergites yellow, with obscure brownish narrow transverse band, black on posterior margin of 5T and 6T.

Periphallic organs (Fig. 13A): Genital arch pale grey, pubescent, toe lower, pointed. Anal plate fused to genital arch, with many small bristles. Phallic organs (Fig. 13B-G): Aedeagus pale grey, slender in anterior view, oblong in lateral view; basally narrowing to continue to an elongate yellowish ventral recurved process apically curved. Apodeme



Figs. 13-14. 13A-G, *Microdrosophila (Microdrosophila) tabularis* n. sp. A, Periphallalic organs; B, phallic organs (part), lateral view; C, phallic organs (part), anterior view; D, vertical rod, anterior view; E, aedeagus (part), anterior view; F, aedeagus, frontal view; G, apodeme of aedeagus, anterior view. Scale 0.1 mm. 14A-G, *Microdrosophila (Microdrosophila) elongata* OKADA. A, Periphallalic organs; B, phallic organs (part), lateral view; C, phallic organs (part), anterior view; D, aedeagus (part), anterior view; E, ventral recurved process, anterior view; F, anterior paramere, anterior view; G, apodeme of aedeagus, anterior view. Scale 0.1 mm.

of aedeagus pale grey, triangular in lateral view, tip oblate in frontal view. Anterior paramere small, irregularly oval, with about four long sensilla, basally contiguous with looped ventral fragma which articulates with aedeagus. Vertical rod slender, apically pointed.

Holotype ♂, Shang-yong, Mengla county, Yunnan, 27. IX. 1985 (ZHANG).

Paratype, 1♂, collected together with the holotype.

Relationship. Allied to *Microdrosophila (Microdrosophila) spiciferipennis* n. sp., but differs from it in having only 5T and 6T black on abdominal tergite, toe lower and pointed and aedeagus wider.

***Microdrosophila (Microdrosophila) elongata* OKADA**

(Fig. 14A-G)

Microdrosophila (Microdrosophila) elongata OKADA, 1965, Kontyū, 33: 330 (Ryukyus).

Periphallalic organs (Fig. 14A): Genital arch pale grey, pubescent, toe projected to form a tapering finger-like process, with a few small setae. Anal plate fused to genital arch, with many baristles. Phallic

organs (Fig. 14B-F): Aedeagus pale yellow, crescent in lateral view tip bilobed and pointed, basally narrowing to continue to a elongate yellow ventral recurved process. Apodeme of aedeagus pale grey, finger-like in lateral view, tip oblate in frontal view. Anterior paramere small, triangular, inner lateral margin more chitinized, with a long and two shorter sensilla; contiguous with looped ventral fragma which articulates with aedeagus. Vertical rod apically curved inward.

Specimen examined. 1♂, Meng-long, Mengla county, Yunnan, 3. X. 1985 (ZHANG).

Distribution. China (new loc.), Ryukyus.

Relationship. Somewhat different from the type specimen of *Microdrosophila* (*Microdrosophila*) *elongata* OKADA in detail structure.

Key to the Chinese species of the genus *Microdrosophila*

1. Distal costal incision exceedingly deep, about 1/4 or more as deep as the length of the first costal section between the two costal breakages. Wing sharply pointed, C3-fringe on entire length. Aedeagus slender, without ventral recurved process, toe of genital arch usually with a finger-like projection
Subgenus *Oxystyloptera*... 2
- Distal costal incision not exceedingly deep, much less than 1/4 as deep as the length of the first costal section. Wing not sharply pointed at tip, C3-fringe not on entire length. Aedeagus robust, basally narrowing to continue to a ventral recurved process (excl. *cristata*); genital arch ventrally with or without finger-like projection Subgenus *Microdrosophila*... 7
2. Body larger. Scutellars all long. Accessory organ of aedeagus gross with intricate sculpture. Anterior and posterior parameres elongate 3
Body small. Anterior scutellars shorter. Aedeagus slender, curved ventrad at tip. Anterior paramere absent 5
3. Posterior portion of mesonotum brown; thoracic pleura black above sternopleurals; scutellum brown; tibiae of mid and hind legs brown *tectifrons*
Body entire yellow 4
4. Proclinate orbital outside posterior reclinate. Genital arch with a finger-like process, caudal margin with very long bristles. Clasper absent. Anterior paramere shorter than aedeagus *magniflava*
Proclinate orbital inside posterior reclinate. Genital arch with sparse long hairs ventrally and exceeding narrowing. Clasper

- present, attached to the anal plate, exceedingly narrow, somewhat curved anteriorly at tip, and with several sensilla and short setae near apex. Anterior paramere as long as aedeagus *matsudairai*
5. Proclinate orbital outside posterior reclinate. Thoracic pleura with obscure brownish longitudinal stripe above *honghensis*
Proclinate orbital inside posterior reclinate. Thoracic pleura without stripe 6
6. Male genitalia with two slender bristly process ventrally. 6T as usual *distincta*
Male genitalia without bristly process. 6T in male looks like genital arch, ventrally with a pair of much long and robust black teeth ... *nigrispina*
7. Palpus brown or black 8
Palpus yellow 8
8. Sixth sternite in male with a pair of crest-like transverse combs. Aedeagus trilobed. Anterior paramere fused with each other to form a triangular setigerous flap *cristata*
Sixth sternite without combs 9
9. Genital arch ventrally with finger-like projection 10
Genital arch ventrally without finger-like projection 13
10. Mesonotum with three black longitudinal stripes. Distal half of femora and proximal half of tibiae of mid and hind legs brown ... *luchunensis*
Mesonotum without black longitudinal stripes. Legs entirely yellow 11
11. Acrostichal hairs in six rows. Upper portion of anal plate separated from genital arch. Finger-like projection of genital arch with many upward small setae on entire length *setulosa*
Acrostichal hairs in eight rows. Anal plate completely fused to genital arch. Finger-like projection of genital arch not same as above 12
12. Haltere brown. Finger-like projection of genital arch with extended crescent plate and with small hairs and apically slightly curved outside. Aedeagus with warts at anterior lower portion. Ejaculatory apodeme black and very large *curvula*
Halteres yellowish white. Finger-like projection of genital arch without extended crescent plate and apically curved, with an irregular row of black upcurved teeth. Aedeagus without warts. Ejaculatory apodeme smaller than in the foregoing species *dentata*
13. Body yellow. C-index about 1.0. Aedeagus robust, orange, with

- triangular processes and apically forked shaggy accessory organ ...
conda
 Body brownish yellow. C-index below 1.0. Aedeagus yellowish,
 pocket-shaped, apically with a small semicircular plate with warts
 *cucullata*
14. Pregenital sternite with caudal processes, club-shaped, and setiger-
 ous. Sixth tergite with a pair of large round black lateral spots ...
maculata
 Pregenital sternite without process. Sixth tergite not as above ...
 15
15. Arista with about nine to eleven dorsal branches. Aedeagus robust,
 distally much swollen, with narrow ventrally curved paired pro-
 cesses, subapically with paired triangular ventral processes
pleurolineata
 Arista with about seven dorsal branches. Aedeagus without paired
 processes 16
16. Mesonotum with obscure black longitudinal stripe. Genital arch
 with ventral finger-like projection 17
 Mesonotum without stripe. Genital arch without finger-like pro-
 jection 18
17. Mesonotum with two obscure black longitudinal stripes. Haltere
 brown. Aedeagus with a sheath-shaped structure *elongata*
 Mesonotum with four obscure longitudinal stripes. Halteres yellow.
 Aedeagus deeply incised in anterior view *bipartita*
18. Abdominal tergites yellow, with obscure brownish narrow trans-
 verse band, 5T and 6T black on posterior margins. Genital arch
 with toe pointed. Aedeagus not narrowing apically. Vertical rod
 without a short projection *tabularis*
 Abdominal tergites brown. Genital arch with toe round. Aedeagus
 narrowing apically. Vertical rod with elongate ventral projection
 apically curved *spiciferipennis*

Abbreviations used in the text-figures

a, anterior paramere (phallic organs); an, anal plate (periphallic organs);
 e, aedeagus (phallic organs); e', accessory organ of aedeagus (phallic
 organs); g, genital arch (periphallic organs); n, novasternum (phallic
 organs); o, basal apodeme of aedeagus (phallic organs); p, posterior paramere
 (phallic organs); r, vertical rod of aedeagus (phallic organs); u, ventral
 recurved process (phallic organs); v, ventral fragma (phallic organs).

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摘 要

張文霞 (中国科学院昆明動物研究所)——雲南のオトヒメショウジョウバエ属とその 11 新種。

中国雲南省からオトヒメショウジョウバエ属の新種 11 種, すなわち *Microdrosophila (Oxystyloptera) magniflava*, *M. (O.) honoghensis*, *M. (Microdrosophila) conda*, *M. (M.) curvula*, *M. (M.) setulosa*, *M. (M.) dentata*, *M. (M.) luchunensis*, *M. (M.) bipartita*, *M. (M.) spiciferipennis*, *M. (M.) cucullata*, *M. (M.) tabularis*, を新記録 8 種と共に報告した。併せて中国産全種の検索表を付した。

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