

The Genus *Mycodrosophila* OLDENBERG (Diptera, Drosophilidae)
of Southeast Asia and New Guinea II. Atypical Species

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Abstract A new subgenus of the genus *Mycodrosophila* OLDENBERG is erected for the atypical species lacking costal lappet, with descriptions of 6 new species from Southeast Asia and Papua New Guinea including an intermediate which is tentatively placed in the subgenus *Mycodrosophila*.

WHEELER and TAKADA (1964) suggested a possible recognition of a valid new subgenus of the genus *Mycodrosophila* for the species lacking a prominent costal lappet. The present work really erects a new subgenus for such a group of atypical species, enumerating about 13 species including 6 new from Southeast Asia and New Guinea. Validity of the new subgenus is estimated by means of numerical taxonomic analyses of both atypical and typical species. The latter species in these geographic areas are treated in the previous work (OKADA, 1986). Types of new species are deposited in Bishop Museum, Honolulu (BM) and National Science Museum, Tokyo (NSMT).

Subgenus *Promycodrosophila* n.

Costal lappet undeveloped; dark patch below 2nd costal break usually absent. Type species: *Mycodrosophila separata* DE MEIJERE.

1. *Mycodrosophila* (*Promycodrosophila*) *gracilis* n. sp.

(Figs. 1A-D)

♂, ♀. Body about 2.5 mm in length. Antenna with 2nd joint orange yellow, 3rd yellowish white. Arista 4/1. Palpus and periorbit black. Frons anteriorly as broad as median length, velvety black. Face grayish white. Carina narrow, tapering below. Cheek narrow, black with yellow median longitudinal line. Mesoscutum glossy black. Scutellum velvety black, apically yellowish orange. Thoracic pleura mat black, suture yellowish white. Humerals 2. Acrostichal hairs in about 10 rows. Lateral scutellars parallel, apicals slightly nearer to each other than to laterals. Sterno-index 0.5. Legs brownish black, knees yellow, coxa white. Wing slightly fuscous, veins black, without dark patch below 2nd costal break. C-index 1.5; 4V-index 2.2; 4C-index 1.6; 5x-index 1.2; Ac-index 3.4; C3-fringe 2/3. Halter black, stalk yellow. Abdominal tergites (Fig. 1A)

mostly black; 1T yellow, 2T anteriorly broadly yellow, 5T anterolaterally yellow. Periphallalic organs (Fig. 1B) black; epandrium ventrally very slender and curved caudally; surstylus with about 10 teeth. Phallic organs (Fig. 1C) black; aedeagus robust, distally pubescent; paramere large. Ovipositor (Fig. 1D) yellow, apically acutely pointed, discally with fine spicules.

Holotype. ♂, Lae, Papua New Guinea, 27–28. IX. 1977 (OKADA), *ex fungi*. Paratypes: 1 ♂, 1 ♀, same data as above; 1 ♀, Mc Adams Park, Wau, Papua New Guinea, 22. IX. 1977 (OKADA). Holotype in BM, paratypes in NSMT.

Distribution. New Guinea.

Relationships. This species resembles *M. scotos* BOCK in having entirely black thoracic pleura and legs, but it differs from the latter by having costal lappet undeveloped, scutellum apically pale, and epandrium unusually elongate and curved below.

2. *Mycodrosophila (Promycodrosophila) annulipes* n. sp.

(Figs. 1E–F)

♂. Body about 2 mm in length. Head broader than thorax. Antenna with 2nd joint orange gray, black above. Arista 4/1. Palpus mat black. Periorbit

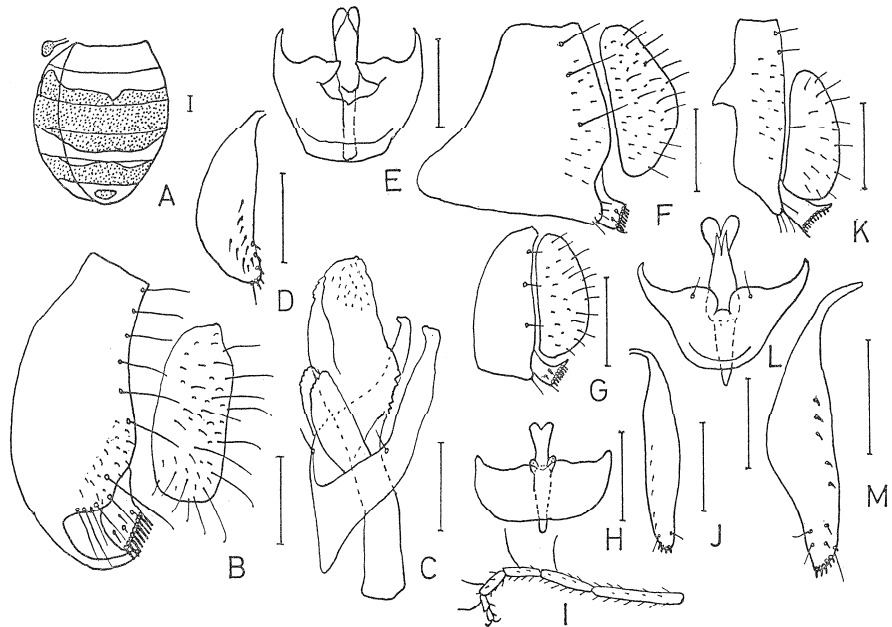


Fig. 1. A–D, *Mycodrosophila (Promycodrosophila) gracilis*; E–F, *M. (P.) annulipes*; G–J, *M. (P.) heterothrix*; K–L, *M. (P.) spinata*; M, *M. (P.) separata*. — A, abdomen; B, F, G, K, peripheral phallic organs; C, E, H, L, phallic organs; D, J, M, ovipositor; I, ♂ fore leg tibia and tarsi. Scale 0.1 mm.

gray. Frons as broad as median length, largely orange yellow. Face yellowish white. Carina narrow and long. Cheek white, caudally broad. Anterior reclinate orbital 1/3 posteriors. Mesoscutum glossy orange yellow, with median broad black stripe. Sternopleura whitish below. Lateral scutellars 1/4 apicals, which are nearer to laterals than to each other. Sterno-index about 0.5. Legs yellowish white, femora apically with broad black rings. Wing hyaline, without costal lappet, but vein blackish at the end of 2nd costal section. C-index 1.4; 4V-index 1.6; 4C-index 1.2; 5x-index 1.4; Ac-index 4.0; C3-fringe 3/7. Halter yellowish orange, base of knob black. Abdominal tergites entirely mat brownish black, 1T yellow. Periphallic organs (Fig. 1F) black; epandrium very broad, ventrally broad; surstylus with about 6 teeth. Phallic organs (Fig. 1E) gray; aedeagus apically roundly biloped.

Holotype. ♂, Wau, Papua New Guinea, 2. IX. 1977 (OKADA), *ex fungi*. Paratypes: 2 ♂, same place as above, 29. VIII–11. IX. 1977 (OKADA), *ex fungi*. Holotype in BN, paratypes in NSMT.

Distribution. New Guinea.

Relationships. This species resembles *M. annulata* BOCK in having femora black annulated, antenna and palpus dark, and thoracic pleura black striped, but it differs from the latter by having mesoscutum and scutellum not entirely black, tibiae not annulated, and halter pale.

3. *Mycodrosophila (Promycodrosophila) heterothrix* MCEVEY et BOCK

(Figs. 1G–J)

Mycodrosophila heterothrix MCEVEY et BOCK, 1982. *Aust. J. Zool.*, 30: 697 (Queensland).

♂, ♀. Tarsi of male fore leg with 4 long hairs (Fig. 1I). Periphallic organs (Fig. 1G) pale yellow; epandrium broadly truncate below; surstylus with about 6–8 teeth. Phallic organs (Fig. 1H) pale yellow; aedeagus apically roundly biloped. Ovipositor (Fig. 1J) slender, pale yellow.

Specimens examined. 5 ♂, 3 ♀, Lae, Papua New Guinea, 27–29. IX. 1977 (OKADA), *ex fungi*.

Distribution. New Guinea (n. loc.), Queensland.

4. *Mycodrosophila (Promycodrosophila) spinata* n. sp.

(Figs. 1K–L)

♂, ♀. Body about 1.8 mm in length. Head broader than thorax. Antenna with 2nd joint yellowish gray, 3rd gray. Arista 3/1. Palpus yellow. Periorbit grayish black, shining. Frons medioanteriorly broadly orange, laterally black, anteriorly as broad as median length. Face gray. Carina white, broader below. Mesoscutum subshining black, anterolateral corners and behind suture dark brown, mediodorsally orange brown. Scutellum mat black, apically orange brown.

Thoracic pleura yellowish white below notopleural region. Lateral scutellars half as long as apicals, which are nearer to laterals than to each other. Sterno-index 0.8. Legs yellowish white; tarsi distally somewhat fuscous. Wing hyaline, vein black before 2nd costal break. C-index 1.8; 4V-index 1.4; 4C-index 1.0; 5x-index 1.0; Ac-index 3.4; C3-fringe 1/3 or slightly less. Halter white. Abdominal tergites mostly mat black, 1T and 6T yellow, 2T medioanteriorly and 5T anterolaterally yellow. Periphallic organs (Fig. 1K) yellowish white; epandrium narrowing below, anterolaterally triangularly projected; surstylus with about 8–10 teeth. Phallic organs (Fig. 1L) pale yellow; aedeagus distally bilobed into rounded flaps.

Holotype. ♂, Mt Missim, Papua New Guinea, 2. X. 1977 (OKADA), *ex fungi*. Paratypes: 2 ♂, same data as above; 3 ♂, 1 ♀, Lae, Papua New Guinea, 27–29. IX. 1977 (OKADA), *ex fungi*. Holotype in BM, paratypes in NSMT.

Distribution. New Guinea.

Relationships. This species resembles *M. alienata* DUDA in having pale halter, nearly entirely black abdominal tergites, and in the shape of male genitalia, but it differs from the latter by largely orange frons and anterolaterally projected epandrium.

5. *Mycodrosophila (Promycodrosophila) separata* (DE MEIJERE)

(Fig. 1M)

Drosophila separata de MEIJERE, 1911, *Tijdschr. ent.*, 54: 406.

Characteristic in having scutellum medially to apically yellow. Ovipositor (Fig. 1M) pale yellow, apically with about 4 short stout teeth.

Specimens examined. 5 ♂, Kuala Lumpur, Malaya, 20–22. VII. 1971 (OKADA); 2 ♂, 3 ♀, Penang, Malaya, 15–20. VII. 1971 (OKADA, IKEDA, KUROKAWA); 28 ♂, 9 ♀, Lae, Papua New Guinea, 27–29. IX. 1977 (OKADA); also 1 ♂, 1 ♀, Ponape, 23–26. VII. 1981 (FUYAMA).

Distribution. Indonesia, Malaya (n. loc.), New Guinea (n. loc.), Queensland, Micronesia (n. loc.).

6. *Mycodrosophila (Promycodrosophila) quadrata* n. sp.

(Figs. 2A–D)

♂. ♀. Body about 2 mm in length. Antenna with 2nd joint yellowish brown, 3rd gray. Arista 4/1. Palpus white. Periorbit subshining black. Frons deep black, silvery shining, with median triangular orange patch, anteriorly as broad as median length. Face gray. Carina narrow, low. Clypeus brownish black. Thoracic pleura yellowish white below notopleural region. Acrostichal hairs in about 10 rows. Lateral scutellars parallel, 2/3 as long as apicals, which are equally apart from each other and from laterals. Sterno-index 0.5. Legs yellow. Wing hyaline, with a trace of costal lappet, faintly dark below 2nd costal break. C-

index 1.8; 4V-index 1.5; 4C-index 1.1; 5x-index 1.5; Ac-index 3.3; C3-fringe 1/3. Halter white. Abdominal tergites (Fig. 2A) largely black, 1T and 6T yellow, 5T anteriorly yellow. Peripheralhallic organs (Fig. 2B) pale yellow; epandrium broadly quadrate below, thus the specific name; surstylus with about 7 teeth. Phallic organs pale yellow (Fig. 2C); aedeagus apically bilobed and finely serrate. Ovipositor (Fig. 2D) pale yellow, slender.

Holotype. ♂, Wau, Papua New Guinea, 9. IX. 1977 (OKADA), *ex fungi*. Paratypes; 1 ♂, 2 ♀, same locality as above, 25–29. VIII. 1977 (OKADA), *ex fungi*. Holotype in BM, paratypes in NSMT.

Distribution. New Guinea.

Relationships. This species resembles *M. spinata* in having thoracic pleura pale yellow, halter pale, and abdominal tergites mostly black, but it differs from the latter by having epandrium broadly quadrate below.

7. *Mycodrosophila* (*Promycodrosophila*) *flavilumbus* n. sp.

(Figs. 2H–J)

♂. Body about 1.3 mm in length. Antenna yellowish white. Arista 4/1.

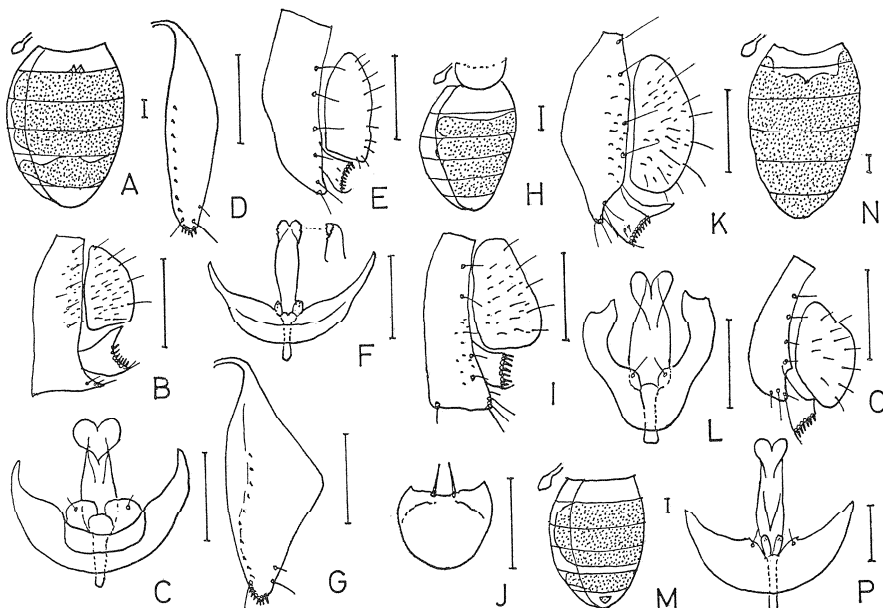


Fig. 2. A–D, *Mycodrosophila* (*Promycodrosophila*) *quadrata*; E–G, *M. (M.) costata*; H–J, *M. (P.) flavilumbus*; K–M, *M. (P.) alienata*; N–P, *M. (P.) albicornis*. — A, H, M, N, abdomen; B, E, I, K, O, peripheralhallic organs; C, F, J, L, P, phallic organs; D, G, ovipositor. Scale 0.1 mm.

Palpus brownish black. Periorbit black, narrow, short. Frons silvery whitish. Clypeus brownish black. Cheek broad, whitish, anteriorly black. Mesoscutum brownish black. Postnotum pale yellow, thus the specific name. Scutellum mat brownish black. Thoracic pleura whitish. Acrostichal hairs in 8 rows. Anterior scutellars short. Legs yellowish white. Wing hyaline, veins pale. C-index 1.0; 4V-index 2.8; 4C-index 2.4; 5x-index 2.7; Ac-index 6.3; C3-fringe 1/2. Abdominal tergites (Fig. 2H) mostly black; 1T, anterior margin of 2T and 6T yellow. Periphalllic organs (Fig. 2I) pale yellow; epandrium broadly truncate below. Phallic organs (Fig. 2J) pale yellow; aedeagus obscure; submedian spines on novasternum long and stout.

Holotype. ♂, Los Baños, Luzon, Philippines, 10. X. 1979 (HIHARA). Type in NSMT.

Distribution. Philippines.

Relationships. This species is unique among the genus in having postnotum pale yellow and submedian spines of novasternum stout and long.

8. *Mycodrosophila (Promycodrosophila) alienata* DUDA

(Figs. 2K–M)

Mycodrosophila alienata DUDA, 1926. *Suppl. Ent.*, **14**: 58 (Sumatra).

Frons largely yellow. Scutellum faintly yellow apically. Thoracic pleura yellow. Black patch below 2nd costal break faint. Abdominal tergites (Fig. 2M) mostly black. Periphalllic organs (Fig. 2K) pale yellow; epandrium narrowing below; surstylus with about 9 teeth. Phallic organs (Fig. 2L) pale yellow; aedeagus apically with bilobed rounded flaps.

Specimens examined. 1 ♀, Peradeniya, Sri Lanka, 17–19. VIII. 1971 (KUROKAWA, IKEDA); 2 ♂, Lae, Papua New Guinea, 27–28. IX. 1977 (OKADA), *ex fungi*.

Distribution. Indonesia, Sri Lanka (n. loc.), New Guinea (n. loc.).

9. *Mycodrosophila (Promycodrosophila) albicornis* (DE MEIJERE)

(Figs. 2N–P)

Drosophila albicornis de MEIJERE, 1915. *Tijdschr. ent.*, **58** (Suppl.): 58.

Frons largely yellow. Mesoscutum black. Halter white. Abdominal tergites (Fig. 2N) mostly black. Periphalllic organs (Fig. 2O) pale yellow; epandrium tapering below; surstylus with about 5 teeth. Phallic organs (Fig. 2P) pale yellow; aedeagus roundly bifid apically.

Specimens examined. 1 ♂, Penang, Malaya, 20. VII. 1971 (KUROKAWA); 1 ♀, Mt. Kinabalu, Sabah, 10. XI. 1971 (SHIMA).

Distribution. Indonesia, Malaya (n. loc.), Sabah (n. loc.).

Other species included in the subgenus *Promyco drosophila* are *M. esakii*

WHEELER et TAKADA (Micronesia) and *M. grandifrons* McEVEY et BOCK (Queensland). The following two species are intermediate between the two subgenera, having costal lappet very weak and aedeagus apically finely serrate. They are tentatively placed in the subgenus *Mycodrosophila*.

10. *Mycodrosophila (Mycodrosophila) compacta* BOCK

Mycodrosophila compacta BOCK, 1980. *Aust. J. Zool.*, **28**: 273 (Queensland).

Trace of black costal lappet present. Aedeagus finely serrate apically.

Specimens examined. 1 ♂, 1 ♀, Lae, Papua New Guinea, 27–28. IX. 1977 (OKADA), *ex fungi*.

Distribution. Queensland, New Guinea (n. loc.).

11. *Mycodrosophila (Mycodrosophila) costata* n. sp.

(Figs. 2E–G)

♂, ♀. Body about 1.5 mm in length. Antenna grayish brown. Arista 3–4/1. Palpus yellowish white. Periorbit brownish black. Frons orange yellow, silvery shining, laterally black. Face graying brown, darker below. Carina narrow. Clypeus brownish black. Cheek 1/7 as broad as greatest diameter of eye, yellowish white, anteriorly black. Mesoscutum and scutellum black. Thoracic pleura yellow below notopleural region. Lateral scutellars half as long as apicals, Legs yellow. Wing hyaline, with a trace of black costal lappet. C-index 0.9; 4V-index 2.4; 4C-index 2.2; 5x-index 3.0; Ac-index 5.0; C3-fringe 1/2. Halter yellow, knob basally brownish black. Abdominal tergites mostly black, 1T, 2T medially, 5T laterally yellow. 6T yellow, with or without median black spot. Periphallalic organs (Fig. 2E) pale yellow; epandrium gently tapering below; surstylus with 7–9 teeth. Phallic organs (Fig. 2F) pale yellow; aedeagus apically bilobed and serrate. Ovipositor (Fig. 2G) pale yellow, medially broad.

Holotype. ♂, Wau, Papua New Guinea, 9. IX. 1977 (OKADA), *ex fungi*. *Paratypes:* 3 ♂, 1 ♀, same locality as above, 18. VII–21. IX. 1977 (OKADA), *ex fungi*. *Holotype* in BM, *paratypes* in NSMT.

Distribution. New Guinea.

Relationships. This species resembles *M. compacta* BOCK in general coloration and narrow carina and trace of black costal lappet, but it differs from the latter by having epandrium not very narrowing below, 4V-index larger, and wing patch below 2nd costal break often distinct.

Taximetical Analyses

For the purpose to estimate the relationships of the *Mycodrosophila* species and to evaluate the subdivision of the genus into two subgenera, taximetical analyses

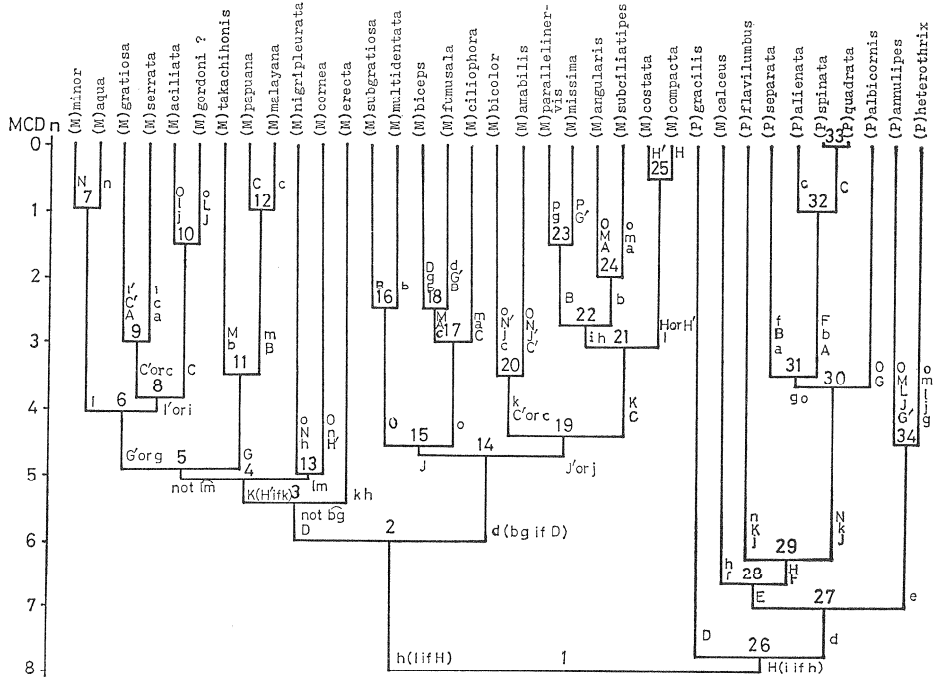


Fig. 3. A dendrogram of relationships of 35 *Mycodrosophila* species from Southeast Asia and Papua New Guinea, constructed by means of MCD proximity analysis and UPGMA cluster analysis. For further explanation see the text.

are made for 35 species ($n=35$) of Southeast Asia and Papua New Guinea—*M. (M.) biroi* DUDA and *M. (M.) ciliatipes* DUDA are excluded due to insufficient knowledge of male genitalia—using 16 diagnostic characters (A–P, $t=16$), each coded in two states (0, 1) as listed below. If intermediate states or NC's are involved, they are coded 0.5. MCD proximity analysis and UPGMA cluster analysis are applied for drawing a dendrogram (Fig. 3).

- A. Antenna black (A=0) or pale (a=1).
- B. Palpus black (B=0) or pale (b=1).
- C. Frons largely black (C=0) or largely orange yellow (c=1).
- D. Carina broad below (D=0) or narrow (d=1).
- E. Mesocutum black (E=0) or pale brown (e=1).
- F. Scutellum entirely black (F=0) or pale at least apically (f=1).
- G. Thoracic pleura black (G=0) or yellow with black longitudinal stripe (G'=0.5) or yellow below notopleural region (g=1).
- H. Costal lappet undeveloped (H=0) or well developed (h=1).
- I. Wing cloud below 2nd costal break absent (I=0) or distinct (i=1).
- J. C-index more than 1.3 (J=0) or less than 1.2 (j=1).

- K. Halter with knob black at least partially (K=0) or entirely yellow (k=1).
- L. Legs black at least partially (L=0) or entirely yellow (l=1).
- M. Male leg without (M=0) or with long hairs (m=1).
- N. Abdominal tergites 3-5T mostly black (N=0) or with yellow patches (n=1).
- O. Epandrium broad (O=0) or narrow (o=1) below.
- P. Aedeagus smooth (P=0) or serrate or dentated (p=1) apically.

The dendrogram shows that the subgenera *Mycodrosophila* and *Promycodrosophila* are well discriminated from each other to be grouped in separate major clusters, with an exception of *M. (M.) calceus* which is grouped in *Promycodrosophila* cluster.

From the dendrogram, a key to subgenera and species is constructed as below. The numerical figures attached on the branching points of dendrogram correspond to the orders of key couplets. Alphabetical signs attached on the branches are the character states selected from original $n \times t$ matrix.

Key to the Subgenera and Species

1. Costal lappet well developed (h), if undeveloped wing cloud below 2nd costal break absent (I if H) Subgenus *Mycodrosophila*, 2
- Costal lappet undeveloped (H), if developed wing cloud below 2nd costal break distinct (i if h)....Subgenus *Promycodrosophila*, incl. (*M.*) *calceus*, 26
2. Carina broad below (D); not simultaneously frons pale and thoracic pleura yellow below notopleural region (not bg) 3
- Carina narrow (d), if broad, palpus pale and thoracic pleura yellow below notopleural region (bg if D). 14
3. Halter entirely yellow (k), costal lappet well developed (h)..... (*M.*) *erecta*
- Halter with knob black at least partially (K), if entirely yellow costal lappet weak (H' if k)..... 4
4. Not simultaneously legs entirely yellow and male leg with long hairs (not lm). 5
- Legs entirely yellow and male leg (fore tarsi) with long hairs (lm). 13
5. Thoracic pleura yellow with black longitudinal stripe or yellow below notopleural region (G' or g). 6
- Thoracic pleura black (G). 11
6. Wing cloud below 2nd costal break absent (I). 7
- Wing cloud below 2nd costal break distinct or weak (I' or i). 8
7. Abdominal tergites 3-5T mostly black (N)..... (*M.*) *minor*
- Abdominal tergites 3-5T with yellow patches (n). (*M.*) *aqua*
8. Frons largely orange yellow or black with orange area (C' or c). 9
- Frons largely black (C). 10
9. Antenna black (A); frons black with orange area (C'); wing cloud below 2nd costal break weak (I'). (*M.*) *gracilis*

- Antenna pale (a); frons largely orange yellow (c); wing cloud below 2nd costal break distinct (i). (*M.*) *serrata*
10. C-index less than 1.2 (j); legs entirely yellow (l); epandrium broad below (o); (*M.*) *aciliata*
- C-index less than 1.2 (j); legs black at least partially (L); epandrium narrow below (o). (*M.*) *gordoni?*
11. Palpus pale (b); male leg without long hairs (*M.*). (*M.*) *takachihonis*
- Palpus black (B); male leg (mid tarsi) with long hairs (m). 12
12. Frons largely black (C). (*M.*) *papuana*
- Frons largely orange yellow (c). (*M.*) *malayana*
13. Costal lappet well developed (h); abdominal tergites 3–5T mostly black (N); epandrium narrow below (o). (*M.*) *nigripleurata*
- Costal lappet weakly developed (H'); abdominal tergites 3–5T with yellow patches (n); epandrium broad below (O). (*M.*) *cornea*
14. C-index more than 1.3 (J). 15
- C-index 1.3 or less than 1.2 (J' or j). 19
15. Epandrium broad below (O). 16
- Epandrium narrow below (o). 17
16. Palpus black (B). (*M.*) *papuana*
- Palpus pale (b). (*M.*) *malayana*
17. Frons largely black (C); antenna pale (a); male leg (mid tarsi) with long hairs (m). (*M.*) *ciliophora*
- Frons largely orange yellow (c); antenna black (A); male leg without long hairs (M). 18
18. Palpus pale (b); thoracic pleura yellow below notopleural region (g); carina broad below (D). (*M.*) *biceps*
- Palpus black (B); thoracic pleura yellow with black longitudinal stripe (G'); carina narrow (d). (*M.*) *fumusala*
19. Frons largely orange yellow or black with orange area (C' or c); halter entirely yellow (k). 20
- Frons largely black (C); halter with knob black at least partially (K). . . . 21
20. Frons largely orange yellow (c); C-index less than 1.2 (j); abdominal tergites 3–5T mostly black but 5T yellow on caudal margin (N'); epandrium narrow below (o). (*M.*) *bicolor*
- Frons black with orange area (C'); C-index about 1.3 (J'); abdominal tergites 3–5T mostly black (N); epandrium broad below (O). (*N.*) *amabilis*
21. Wing cloud below 2nd costal break distinct (i); costal lappet well developed (h). 22
- Wing cloud below 2nd costal break absent (I); costal lappet undeveloped or weakly developed (H or H'). 25
22. Palpus black (B). 23
- Palpus pale (b). 24

23. Thoracic pleura yellow below notopleural region (g); aedeagus serrate apically (p). (*M.*) *parallelinervis*
 — Thoracic pleura yellow with black longitudinal stripe (G'); aedeagus smooth apically (P). (*M.*) *missima*
24. Aedeagus black (A); male leg without long hairs (M); epandrium broad below (O). (*M.*) *angularis*
 — Antenna pale (a); male leg (fore tarsi) with long hairs (m); epandrium narrow below (o). (*M.*) *subciliatipes*
25. Costal lappet weakly developed (H'). (*M.*) *costata*
 — Costal lappet undeveloped (H). (*M.*) *compacta*
26. Carina broad below (D). (*P.*) *gracilis*
 — Carina narrow (d). 27
27. Mesoscutum black (E). 28
 — Mesoscutum pale brown (e). 34
28. Scutellum pale at least partially (f); costal lappet well developed (h).
 (*M.*) *calceus*
 — Scutellum entirely black (F); costal lappet undeveloped (H). 29
29. C-index less than 1.2 (j); halter with knob black at least partially (K); abdominal tergites with yellow patches (n). (*P.*) *flavilimbus*
 — C-index more than 1.3 (J); halter with knob entirely yellow (k); abdominal tergites 3-5T mostly black (N). 30
30. Thoracic pleura black (G); epandrium broad below (O). (*P.*) *albicornis*
 — Thoracic pleura yellow below notopleural region (g); epandrium narrow below (o). 31
31. Antenna pale (a); palpus black (B); scutellum pale medially to apically (f). (*P.*) *separata*
 — Antenna black (A); palpus pale (b); scutellum entirely black (F). 32
32. Frons largely orange yellow (c). (*P.*) *alienata*
 — Frons largely black (C). 33
33. Epandrium tapering below. (*P.*) *spinata*
 — Epandrium quadrate below. (*P.*) *quadrata*
34. Thoracic pleura yellow with black longitudinal stripe (G'); C-index more than 1.3 (J); legs black at least partially (L); male leg without long hairs (M); epandrium broad below (O). (*P.*) *annulipes*
 — Thoracic pleura yellow below notopleural region (g); C-index less than 1.2 (j); legs entirely yellow (l); male leg (fore tarsi) with long hairs (m); epandrium narrow below (o). (*P.*) *heterothrix*

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