Drosophilidae (Diptera) in Burma

III. The Subgenus Drosophila, Excepting the D. immigrans Species-group

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Abstract Six new and seven known species of the subgenus Drosophila are reported from Burma.

Toda (1986) reported eighteen species of the Drosophila immigrans species-group from Burma. This paper deals with thirteen species of the subgenus Drosophila other than the immigrans group, based on the material collected by the author himself in 1981-1982 from Burma.

Drosophila polychaeta Species-group


Diagnosis. Reddish brown species with 3 or 4 pairs of postsutural dorsocentral bristles and large aedeagus. 4V-index 1.7 to 2.2. Ventral receptacle relatively short and loosely coiled (Kumar & Gupta, 1985).

Drosophila (Drosophila) bivibrissae sp. nov.

(Figs. 1-4)

Diagnosis. Second oral bristle stout, longer (ca. 1.2) than vibrissa. Acrostichal hairs in 6 rows. Surstylus with 7 or 8 primary teeth, dorsally with large, quadrate, pubescent flap (Fig. 2).

♂. Thorax length (including scutellum) ca. 1.0 mm. Head: Eye with thick pile. Antenna yellowish brown. Arista with 4 upper and 2 lower branches in addition to terminal fork. Frons slightly narrower than 1/2 of head width (0.47, measured at level of anterior ocellus), yellowish brown, medially to anteriorly with frontal hairs; ocellar triangle darker. Anterior reclinata orbital ca. 3/5 (0.61) length of posterior reclinata; proclinate ca. 5/6 (0.84) length of posterior reclinata. Face yellowish brown, pale in lower portion; carina high, broad below. Clypeus yellowish brown. Cheek yellowish brown, ca. 1/5 (0.19) as broad as maximum diameter of eye. Palpus pale yellow, club-shaped, with numerous setae.
Thorax: Mesoscutum, scutellum and thoracic pleura yellowish brown; sternepisternum paler. Humerals 2; upper one longer. One extra pair of dorso-centrals present in front of usual anteriors. Several bristles in row of dorso-centrals and in 1st row lateral to dorso-centrals somewhat longer than other acrostichal hairs. First dorso-centrals ca. 2/5 (0.40), 2nd ca. 5/7 (0.71) length of 3rd; length distance from 1st to 2nd ca. 3/10 (0.31), distance from 2nd to 3rd ca. 1/2 (0.52) cross distance between 2nds. Anterior scutellas as long (1.01) as posteriors; posteriors nearer to each other than to anteriors. Sterno-index ca. 0.8.

Legs pale yellow. Picapals on all tibiae, apicals on fore and mid tibiae. Fore metatarsus as long as 3 succeeding tarsal joints together; mid and hind meta- tarsi as long as rest together.

Wing hyaline, somewhat fuscos. Veins brownish yellow: cross veins clear. R₁+₂ slightly curved to costa at tip; R₁+₂ and M slightly approaching each other in submedian portion. Cl-bristles 2. Wing indices: C ca. 1.8, 4V ca. 2.2, 4C ca. 1.4, 5x ca. 1.5, Ac ca. 2.9, C3-fringe ca. 0.8. Halteres dark grayish brown.

Abdomen: Tergites nearly entirely dark brown. Stermites pale yellow.

Periphalar organs (Figs. 1–2): Epandrium pubescent except ventral and anterosubmedian portions, with ca. 30 bristles in lower part, narrow in submedian to upper part; caudal margin of lower part expanding quadrangularly, covering surstylos; toe hook-like in shape, apically pointed, with several short bristles. Surstylos with ca. 4 setae at caudoventral corner and ca. 4 on inner surface. Cercus oval, nearly entirely pubescent, separate from epandrium, with ca. 50 long bristles; caudoventral corner somewhat pointed, with tuft of short bristles.

Phallic organs (Figs. 3–4): Aedeagus T-shaped in lateral view, serrate on basal lateral margins; apodeme shorter than half length of aedeagus. Anterior paramere small, oval, without sensilla. Posterior paramere absent. Novasternum without submedian spines.

Holotype ♂, Burma: Rangoon, 17. XII. 1981, by sweeping at cliff shelters and ditches; deposited in the Entomological Institute, Hokkaido University, Sapporo, Japan (EHU).


Relationship. This species is closely related to D. polychaeta Patterson et Wheeler, 1942, but clearly distinguishable from the latter by the diagnostic characters.

*Drosophila robusta* Species-group


*Drosophila* (Drosophila) lacertosa Okada

*Drosophila* (Drosophila) lacertosa Okada, 1956, Syst. Study, 158.

Specimen examined. Burma: 1 ♂, Pyin Oo Lwin (previously cited as Maymyo),

Distribution. Japan, Korea, Taiwan, Nepal, India; Burma (n. loc.): Pyin Oo Lwin.

**Drosophila melanica Species-group**


**Diagnosis.** Blackish species. Arista with 7 to 8 branches including terminal fork. Sterno-index 0.7 to 0.8.

* Drosophila (Drosophila) longiserrata* sp. nov.

(Figs. 5-10)

**Diagnosis.** Aedeagus dorsally with sclerotized, broad, long process between 2 outer lobes; dorsal margin of outer lobe serrate along nearly entire length (Figs. 5-10).
7–8). Novasternum with 1 pair of submedian spines (Fig. 6). Fore metatarsus as long as 2 succeeding tarsal joints together; mid and hind metatarsi as long as 3 succedens together. Outer capsule of spermatheca entirely wrinkled transversely (Fig. 10). Posterior scutellar bristles nearer to each other than to anteriors.

♂, ♀. Body length, ♀ ca. 2.7 mm. Thorax length, ♂ ca. 1.2 mm, ♀ ca. 1.3 mm.

Head: Eye brownish red, with thick pile. Antenna dark grayish brown. Arista with 3 upper and 2 lower branches in addition to terminal fork. Frons ca. 1/2 (0.51) as wide as head, dark brown, anteriorly with frontal hairs; ocellar triangle, its surrounding area and periorbital blackish. Anterior reclinate orbital ca. 2/5 (mean = 0.39, range: 0.38–0.39) length of posterior reclinate; procline ca. 4/5 (0.81, 0.76–0.85) length of posterior reclinate. Face dark brown; carina broad. Clypeus dark brown. Cheek grayish brown, ca. 1/4 (0.25, 0.24–0.25) as broad as maximum diameter of eye. Second oral ca. 1/2 (0.51, 0.45–0.56) length of vibrissa. Palpus grayish brown, with a few prominent setae.

Thorax nearly entirely blackish brown. Humerals 2, subequal. Acrostichal hairs in 6 rows. Anterior dorso-centrals ca. 7/10 (0.70, 0.67–0.72) length of posteriors; cross distance of dorso-centrals ca. 1.8 (1.72–1.81) length distance. Anterior scutellars ca. 5/6 (0.83, 0.80–0.85) length of posteriors. Sternal-index ca. 0.7 (0.68–0.72).

Legs yellowish brown; femora darker. Preapicals on all tibiae; apicals on fore and mid tibiae.

Wing hyaline, slightly fuscous. Veins yellowish brown; cross veins clear. R3+4 slightly curved to costa at tip; R4+5 and M nearly parallel. C1-bristles 2. Wing indices: C ca. 3.1 (2.99–3.12), 4V ca. 1.7 (1.65–1.78), 4C ca. 0.85 (0.84–0.86), 5x ca. 1.1 (1.05–1.18), Ac ca. 1.9 (1.74–2.02), C3-fringe ca. 0.3 (0.24–0.31). Halteres white, with partly brownish stalk.

Abdomen: ♂ tergites nearly entirely dark brown; sternites pale grayish brown. ♀ tergites pale yellow; 1st tergite nearly entirely grayish brown; 2nd to 4th tergites each with broad, medially interrupted, dark brown, caudal band extending forward on lateral margins; 5th tergite with medially uninterrupted, caudal band extending forward on lateral margins; 6th tergite with uninterrupted, caudal band not reaching lateral margins; sternites pale yellow.

Periphalic organs (Fig. 5): Epandrium pubescent except for ventral and antero-submedian portions, with ca. 11 bristles in lower part, obliquely truncate below; anterior and posterior margins nearly parallel; toe pointed. Surstylus quadrate, pubescent except for dorsal portion, with ca. 11 primary teeth in concave row on entire length of distal margin, several straight setae on submedian to ventral outer surface and several curved setae on ventral inner surface. Cercus oval, entirely pubescent, fused to epandrium, with ca. 25 long bristles and tuft of short bristles at caudalventral corner.

Public organs (Figs. 6–8): Aedeagus dorsally bilobed, ventrally with elliptical
opening, shaped racket-like in lateral view; apodeme as long as aedeagus. Anterior paramere elongated ellipsoid, without sensilla. Posterior paramere absent. Novasternum broad, somewhat quadrate, deeply and widely notched, pubescent in lateral portions.

♀ Reproductive organs: Ovipositor (Fig. 9) narrow, apically round, with ca. 25 marginal and ca. 3 discal teeth; ultimate marginal tooth longest; basal i/thmus short, narrow. Spermatheca (Fig. 10) basally not narrowing, somewhat quadrate in lateral view; introvert entirely wrinkled; duct broad, distally slightly expanded.

Holotype ♀, Burma: Pyin Oo Lwin, 30. XII. 1981–6. I. 1982, ex trap; in EHU. Paratype, Burma: 1 ♀, same data as holotype; in EHU.


Relationship. This species is very close to D. penii OKADA et KUROKAWA, 1957. The diagnostic differences from the latter are seen only in aedeagus, spermatheca and fore metatarsus, i.e., in D. penii: aedeagus dorsally with narrow, short process between outer lobes, dorsal margin of outer lobe serrate only in basal part; outer capsule of spermatheca transversely wrinkled only in basal part; fore metatarsus slightly longer than 2 succeeding tarsal joints together.

♀ Drosophila (Drosophila) bisetata sp. nov.

(Figs. 11–14)

Diagnosis. Novasternum with 2 pairs of submedian spines (Fig. 12). Aedeagus dorsally with narrow, moderately long process between 2 outer lobes; dorsal margin of outer lobe serrate only in basal part (Figs. 13–14). Posterior scutellar bristles equidistant from each other and from anteriors. Fore metatarsus as long as 2 succeeding tarsal joints together; mid and hind metatarsi slightly shorter than 3 succeeding together.

This species is very close to the foregoing species, D. longiserrata. The following description is made referring only to the differences from the latter.

♀. Body length ca. 2.7 mm.

Head: Frons width ca. 1/2 (0.50) of head width. Anterior reclinate ca. 3/8 (0.37) length of posterior reclinate; proclinate ca. 4/5 (0.82) length of posterior reclinate. Cheek width ca. 1/4 (0.26) of maximum diameter of eye. Second oral ca. 3/10 (0.30) length of vibrissa.

Thorax: Anterior dorsocentrales ca. 4/5 (0.79) length of posteriors; cross distance of dorsocentrales ca. 1.7 length distance. Anterior scutellars ca. 9/10 (0.94) length of posteriors.

Wing indices: C ca. 2.9, 4V ca. 2.1, 4C ca. 1.0, 5x ca. 1.3.

Periphalic and phallic organs (Figs. 11–14): Epandrium with ca. 9 bristles in lower part; toe somewhat round. Surstylus with ca. 10 primary teeth. Aedeagus ventrally with somewhat irregularly shaped opening.


Relationship. This species is closely related to the foregoing species, D. longisserrata, and D. pengi, but clearly distinguishable from the latter by having 2 pairs of submedian spines on novasternum (the latter two species having 1 pair of submedian spines). Thus, these three species can be distinguished from one another by the diagnostic characters, though they are very similar in general appearance. For the sake of making the identification easier, some quantitative characters in which interspecific differences are seen among the three species are summarized below:

<table>
<thead>
<tr>
<th>Character</th>
<th>bisetata (n=1 ♂)</th>
<th>longisserrata (n=1 ♂, 1 ♀)</th>
<th>pengi (n=10 ♂, 10 ♀)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd oral/vibrissa</td>
<td>0.30</td>
<td>0.45-0.56</td>
<td>0.34-0.63</td>
</tr>
<tr>
<td>4V-index</td>
<td>2.05</td>
<td>1.65-1.78</td>
<td>1.41-1.83</td>
</tr>
<tr>
<td>4C-index</td>
<td>0.97</td>
<td>0.84-0.86</td>
<td>0.67-0.88</td>
</tr>
<tr>
<td>5x-index</td>
<td>1.34</td>
<td>1.05-1.18</td>
<td>1.02-1.28</td>
</tr>
</tbody>
</table>

* All collected from Hokkaido, northern Japan.

Drosophila bisetata may be distinguishable from the other two also by these quantitative characters. Another species of the D. melanica species-group, D. after Tan, Hsu et Sheng, 1949, was reported from southern China. According to the description by Tan et al. (1949), not referring to ♂ genitalia, this species also seems very close to the three species concerned here, but having only one diagnostic difference from the latter, i.e., “Middle orbital about 2/3 other two.” However, there remains a doubt whether D. after may or may not be conspecific to any of the three species, until D. after is re-examined, especially for ♂ genitalia, in the light of the present knowledge on the taxonomy of this species-group.

Drosophila bizonata Species-group

D. bizonata species-group: Tan et al., 1949, 203.

Diagnosis. Anterior reclinate orbital bristle minute. Second oral bristle long. Palpus with a few prominent setae. Cheek ca. 1/5 as broad as maximum diameter of eye. Acrostichal hairs in 6 rows. Sterno-index ca. 0.5-0.6. Posterior paramere forming broad distal bow.

Drosophila (Drosophila) bizonata Kikkawa et Peng

(Fig. 15)


Spermatheca (Fig. 15) ellipsoidal, basally narrowing and transversely wrinkled,
apically indented; basal introvert deep; duct submedially expanded in introvert.


Distribution. Japan, Korea, Ryukyu, Nepal (n. loc.); Burma (n. loc.): Pyin Oo Lwin, Mandalay, Rangoon.

Remarks. One ♂ specimen deposited in Tokyo Metropolitan University as a paratype of D. trizonata Okada, 1966, was reexamined and confirmed to be D. bizonata (misidentified).

'Drosophila (Drosophila) trizonata Okada

(Figs. 16–20)


Diagnosis. Aedeagus long, slender, distally not dilated, gently curved ventrad, ventrosubapically (ca. 1/4 from apex) with 1 pair of marginally serrate flaps, dorso-subapically (ca. 1/4 from apex) with 1 pair of small flaps; aedeagal apodeme as long as aedeagus (Fig. 18). Circum with tuft of several short, stout bristles at caudodorsal corner (Fig. 16). Ovipositer apically round; sclerotized lobe slender, with dorosubapical margin nearly parallel to ventral margin; basal isthmus ca. 1/4 as long as lobe (Fig. 19).

♂, ♀. Body length, ♂ ca. 1.9 mm (1.58–2.27, holotype 1.83), ♀ ca. 2.3 mm (2.05–2.52). Thorax length, ♂ ca. 1.0 mm (0.69–1.08, 0.96), ♀ ca. 1.1 mm (1.03–1.25).

Head: Arista with ca. 5 (4–6, 6) upper and ca. 2 (2–3, 2) lower branches in addition to terminal fork. Frons ca. 1/2 (0.51, 0.48–0.53, 0.50) as wide as head. Anterior reclinate orbital ca. 2/9 (0.22, 0.16–0.34, 0.25) length of posterior reclinate; proclinate ca. 7/9 (0.77, 0.67–0.97, 0.81) length of posterior reclinate. Carina high, broad. Cheek ca. 1/6 (0.18, 0.16–0.24, 0.17) as broad as maximum diameter of eye. Second oral ca. 8/9 (0.89, 0.76–1.03, 0.95) length of vibrissa.

Thorax: Anterior dorsocentrales ca. 2/3 (0.65, 0.48–0.75, 0.62) length of posteriors; cross distance of dorsocentrales ca. 2.3 (1.79–2.81, 1.79) length distance. Anterior scutellars slightly shorter (0.93, 0.80–0.98, 0.98) than posteriors. Sternoindex ca. 0.6 (0.52–0.77, 0.55)

Wing indices: C ca. 3.4 (3.14–3.89, 3.39), 4V ca. 1.7 (1.48–1.91, 1.66), 4C ca. 0.7 (0.63–0.85, 0.71), 5x ca. 1.4 (1.20–1.77, 1.60), Ac ca. 2.1 (1.87–2.46, 1.88), C3-fringe ca. 0.3 (0.22–0.37, 0.35).

Periphallic and phallic organs (Figs. 16–17): Epandrium apically with ca. 6 (4–8) strong, black, short bristles. Surstylus with ca. 14 (13–15) primary teeth. Circum with ca. 38 (34–43) long bristles. Novasternum mediadly widely notched on distal margin.
♀ Reproductive organs: Ovipositor (Fig. 19) with 3 or 4 discal and 19 or 20 marginal teeth. Spermatheca (Fig. 20) very similar to that of the foregoing species, *D. bizonata*; but outer capsule not so narrowing in lower part; duct expanded in distal part.


*Distribution.* Nepal; Burma (n. loc.): Pyin Oo Lwin, Mandalay.

*Relationship.* This species is very close to the foregoing species, *D. bizonata*, but clearly distinguishable from the latter by the diagnostic characters.

*Drosophila histrio* Species-group

Diagnosis. Anterior reclinate orbital bristle minute or small, ca. 1/3–1/5 length of procline. Palpus with a few prominent setae. Posterior paramere apparently absent.

♂ Drosophilidae (Drosophila) bifidiprocessa ZHANG et GAN

(Figs. 21–25)

Diagnosis. Surstylus with ca. 2 weak secondary teeth adjacent to row of primary teeth (Fig. 21). Aedeagus subapically flattened, dilated and with serrate lateral margins (Figs. 22–23). Anterior paramere partly fused to novasternum, with 1 sensillum (Figs. 22). Ovipositor with ca. 6 discal teeth (Fig. 24).

♂, ♀. Body length, ♂ ca. 2.8 mm (2.39–3.21), ♀ ca. 3.2 mm. Thorax length, ♂ ca. 1.4 mm (1.21–1.56), ♀ ca. 1.8 mm.

Head: Eye red, with pile. Antenna yellow; 3rd joint darker. Arista with ca. 6 (5–6) upper and 3 lower branches in addition to terminal fork. Frons ca. 1/2 (0.50, 0.47–0.53) as wide as head, orange yellow, anteriorly with a few frontal hairs; ocellar triangle brownish yellow, especially darker on inside margins of ocelli; periorbits yellow. Anterior reclinate orbital ca. 1/3 (0.32, 0.25–0.35) length of posterior reclinate; procline ca. 3/4 (0.76, 0.71–0.81) length of posterior reclinate. Face brownish yellow; carina pale, high, broad below. Clypeus brown. Cheek orange yellow, ca. 1/5 (0.21, 0.18–0.25) as broad as maximum diameter of eye. Second oral ca. 2/3 (0.68, 0.56–0.78) length of vibrissa. Palpus yellow.

Thorax: Mesoscutum, scutellum and thoracic pleura brownish yellow; sternopleuron paler. Hemeral 2, unequal. Aerostichal hairs in 8 rows. Anterior dorsocentrals ca. 2/3 (0.66, 0.59–0.74) length of posteriors; cross distance of dorsocentrals ca. 2.5 (2.28–2.58) length distance. Anterior scutellars ca. 9/10 (0.91, 0.85–0.96) length of posteriors. Sterno-index ca. 0.7 (0.60–0.75).

Legs yellow. Preapicals on all tibiae; apicals on fore and mid tibiae. Fore metatarsus slightly shorter than 2 succeeding tarsal joints together; mid and hind metatarsi slightly longer than 3 succeeding together.

Wing hyaline, slightly fuscous. Veins brownish yellow; cross veins cloud. R_{4+5} slightly curved to costa at tip; R_{4+5} and M nearly parallel. C1-bristle 1. Wing indices: C ca. 3.9 (3.50–4.46), 4V ca. 1.6 (1.47–1.71), 4C ca. 0.6 (0.59–0.70), 5x ca. 1.2 (1.14–1.35), Ac ca. 1.8 (1.69–1.98), C3-fringe ca. 0.45 (0.42–0.49). Halteres pale yellow.

Abdomen: Tergites pale yellow; 2nd tergite with narrow, medially widely interrupted, brown, caudal band; 3rd and 4th tergites in ♂ and 3rd tergite in ♀ each with medially widely interrupted, laterally narrowing, dark brown, caudal band; ♂ 5th and 6th tergites nearly entirely black except for lateral parts. Sternites pale yellow.

Periphalic organs (Fig. 21): Epandrium submedially to dorsally broad,
black, pubescent on caudal half; lower part narrow, yellow, with ca. 9 or 10 bristles; toe somewhat pointed. Surstylus large, quadrate, with ca. 12 or 13 primary teeth in slightly convex row on entire length of distal margin and several setae on ventral inner surface. Cercus yellow, separate from epandrium; dorsal part oval, submedially slightly pubescent, with ca. 28 or 29 long bristles; ventral part narrow, elongate, apically with ca. 2 or 3 elliptical teeth.

Phallic organs (Figs. 22–23): Aedeagus curved ventrad, apically with bifurcated process, with numerous spinules on dorsal surface near base of subapical dilation, submedially finely wrinkled longitudinally; apodeme as long as aedeagus. Novasternum somewhat quadrate, with 1 pair of submedian spines at apices of hypandrium processes(?); median notch broadened basally.

♀ Reproductive organs: Ovipositor (Fig. 24) broad, slightly constricted on dorsosubapical margin, with ca. 17 marginal teeth; basal ithmus narrow, ca. 1/5 as long as ovipositor. Spermatheca (Fig. 25) ellipsoidal; introvert deep; duct expanded distally and subdistally.


Distribution. Southern China; Burma (n. loc.): Pyin Oo Lwin.

Relationship. This species is very close to D. histrio MEIGEN, 1830, hardly distinguished from the latter in the external morphology other than genitalia.

Drosophila (Drosophila) trisetosa Okada

(Figs. 26–28)


Aedeagus (Figs. 26, 27) ventrosubapically with 1 pair of acute, sclerotized projections. Spermatheca (Fig. 28) ellipsoidal; outer capsule small, less than 0.1 mm high; introvert shallow, less than 1/2 height of outer capsule; duct distally expanded.


Distribution. Nepal, India; Burma (n. loc.): Pyin Oo Lwin, Mandalay, Shwebo, Rangoon.

Drosophila (Drosophila) pagoda sp. nov.

(Figs. 29–32)

Diagnosis. Second oral bristle weak, short (ca. 1/3 length of vibrissa). First
to 4th abdominal tergites nearly entirely pale yellow, 2nd to 4th each with narrow, faint, medially interrupted, caudal band. Hyalndrial process pubescent (Fig. 32). Anterior paramere absent (Fig. 30).

♂. Thorax length ca. 0.9 mm.

Head: Eyes with pile. Antenna with 2nd joint brownish yellow and 3rd paler. Arista with 5 upper and 2 lower branches in addition to terminal fork. Frons ca. 1/2 (0.50) as wide as head, yellow, anteriorly with a few frontal hairs; ocellar triangle brown on inside margins of ocelli: periorbital pales. Anterior reclinate orbital minute, ca. 1/5 (0.20) length of posterior reclinate; proclinate ca. 5/8 (0.62) length of posterior reclinate. Face pale yellow; carina high, narrow. Clypeus brownish yellow. Cheek pale yellow, ca. 1/7 (0.14) as broad as maximum diameter of eye. Palpus pale yellow, with ca. 5 prominent setae on apical to lateral margin and numerous small setae on ventral surface.

Thorax: Mesoscutum, scutellum yellow. Thoracic pleura pale yellow, without dark patches or stripes. Humerals 2, subequal. Acrostichal hairs in 6 rows. Anterior dorso-centrals ca. 3/5 (0.59) length of posteriors; cross distance of dorso-centrals ca. 2.4 length distance. Anterior scutellar ca. 7/8 (0.87) length of posteriors; posteriors slightly nearer to anteriors than to each other. Sterno-index ca. 0.5; mid sternopleural somewhat weak, ca. 7/10 (0.70) length of anterior sternopleural.

Legs pale yellow. Preapicals on all tibiae; apicals on fore and mid tibiae. Fore metatarsus as long as 3 succeeding tarsal joints together; mid and hind meta-tarsi slightly longer than 3 succeeding together.

Wing hyaline. Veins pale brown; cross veins clear. R4+5 slightly curved to costa at tip, R4+5 and M nearly parallel. C1-bristles 2; ventral one somewhat weak. Wing indices: C ca. 3.4, 4V ca. 1.8, 4C ca. 0.8, 5x ca. 1.5, Ac ca. 1.9, C3-fringe ca. 0.4. Halteres yellowish white; stalk darker.

Abdomen: Fifth and 6th tergites each with broad, medially interrupted, brown, caudal band. Stermites pale yellow.

Periphallic organs (Fig. 29): Epandrium pubescent dorsally, narrow, truncate below, constricted at base of surstylus, with ca. 3 or 4 bristles on caudal margin of lower part. Surstylus quadrate, with ca. 9 primary teeth in slightly concave row on entire length of distal margin, 2 bristles on outer surface and several setae on ventral inner surface. Cercus oval, caudoventrally triangularly pointed, pubescent except for caudal margin, separate from epandrium, with ca. 31 long bristles.

Phallic organs (Figs. 30–32): Aedeagus slender, distally expanded like trumpet and with serrate lateral margins, laterosubapical with 1 pair of acute, sclerotized projections, basally with large vertical rod; apodeme short, ca. 1/3 as long as aedeagus. Novasternum narrowly triangular, with 1 pair of submedian spines at bases of hyalndrial processes; median notch deep, wide.

Holotype ♂. Burma: Mandalay, 26–30. XII. 1981, ex trap; in FHI.

Figs. 26–38. — 26–28, Drosophila (Drosophila) trisetosa Okada, 1966; 29–32, D. (D.) pagoda sp. nov.; 33–38, D. (D.) auriculata sp. nov. — 29, 33: Periphallic organs; 20, 21: phallic organs (ventral view); 26: ovipositor (ventral view); 27, 31, 36: ditto (lateral view); 32, 36: hypandrial process; 37: ovipositor; 28, 38: spermatheca. (Scale-line = 0.1 mm.)

Relationship. This species somewhat resembles the foregoing species, D. trisetosa, and D. sternopleuralis Okada et Kurokawa, 1957, in ♀ genitalia, but clearly distinguishable from the latter two by the diagnostic characters.

♀ Drosophila (Drosophila) auriculata sp. nov.

(Figs. 33–38)

Diagnosis. Dark brown caudal bands on 2nd to 6th abdominal tergites not extending anteriorly at lateral margins. Hypandrial process ear-like shaped, broad, smooth, basally constricted (Fig. 36). Anterior paramere absent (Fig. 34).

Some characters commonly seen in the foregoing species, D. pagoda, are not referred to in the following description.

♂, ♀. Body color generally darker, yellowish brown. Body length, ♀ ca. 2.4 mm (2.14–2.65). Thorax length, ♀ ca. 1.2 mm (1.10–1.37).
Head: Third antennal joint darker than 2nd. Arista with ca. 5 (5–6) upper and 3 lower branches. Frons ca. 1/2 (0.48, 0.45–0.51) as wide as head; periorbital darker. Anterior reclinate orbital ca. 2/7 (0.29, 0.27–0.32) length of posterior reclinate; proclinate ca. 5/9 (0.53, 0.45–0.56) length of posterior reclinate. Cheek width ca. 1/10 (0.09, 0.07–0.11) of maximum diameter of eye. Second oral stout, long, ca. 5/6 (0.83, 0.76–0.88) length of vibrissae. Palpus with ca. 5 (3–6) prominent setae on apical to lateral margin, in ♂ with dense microsetae on ventral surface.

Thorax: Thoracic pleura with 3 obscurely demarcated, longitudinal, dark patches. Aerostichal hair in 8 rows. Anterior dorsocentrals ca. 1/7 (0.57, 0.52–0.64) length of posteriors; cross distance of dorsocentrals ca. 2.2 (2.02–2.43) length distance. Anterior scutellars slightly shorter (0.95, 0.90–0.98) than posteriors. Sternal index ca. 0.5 (0.47–0.57); mid sternopleural stout, as long (0.98, 0.92–1.05) as anterior.

Legs: Fore metatarsus slightly shorter than 3 succeeding tarsal joints together; hind metatarsus as long as 3 succeeding together.

Wing slightlyfuscous. Posterior cross vein cloud. C1-bristles 2, subequal. Wing indices: C ca. 3.2 (3.10–3.35), 4V ca. 1.8 (1.67–1.99), 4C ca. 0.8 (0.73–0.80), 5x ca. 1.3 (1.18–1.50), Ac ca. 2.2 (2.15–2.36), C3-fringe ca. 0.65 (0.58–0.70).

Periphalic and phallic organs (Figs. 33-36): Epandrium moderate in breadth, obliquely truncate below, with 1 bristle in middle part and 5 or 6 in lower part. Surnystus with 10 or 11 primary teeth. Cercus nearly entirely pubesent, with ca. 27 long bristles and tuft of 3 or 4 short bristles at caudoventral corner. Aedeagus irregularly serrate on distal margin.

♀ Reproductive organs: Ovipositor (Fig. 37) slender, apically much narrowing, with 3 (seldom 4) bristle-like discal and ca. 14 (13–15) marginal teeth; distal discal tooth especially long; basal iethmus short, narrow. Spermatheca (Fig. 38) ellipsoidal; outer capsule small, less than 0.1 mm high; introvert shallow, ca. 1/3 height of outer capsule; duct distally expanded.

Holotype ♂, Burma: Pyin Oo Lwin, 30. XII. 1981, by sweeping on forest floor; in EHU. Paratypes, Burma: 4 ♀, same data as holotype; in EHU and author’s collection (M. J. T.).


Relationship. This species is somewhat related to the foregoing species, D. pagoda, in having no anterior parameres, but clearly distinguishable from the latter by the differences in hypandrial process, epandrium, 2nd oral bristle and abdominal color pattern.

♂ Drosophila (Drosophila) mutica sp. nov.

(Figs. 39–44)

Diagnosis. Dark brown caudal bands on 2nd to 5th abdominal tergites extending anteriorly at lateral margins. ♂ fore tarsus anteriorly with ca. 1 row of
recurred hairs. Aedeagus subapically without acute, sclerotized projections (Fig. 41). Hypandrial process slender, smooth, apically knob-like (Fig. 42). Anterior paramere present, fused to novasternum, with 1 prominent sensillum (Fig. 40). Ovipositor proximally somewhat broad, apically much narrowing, with 3 or 4 bristle-like discal teeth; distal discal tooth especially long (Fig. 43).

Some characteristics commonly seen in D. pugoda are not referred to in the following description.

♂, ♀. Body color generally brownish yellow. Body length, ♂ ca. 1.7 mm, ♀ ca. 2.3 mm (2.14–2.39). Thorax length. ♂ ca. 1.0 mm (0.89–1.06), ♀ ca. 1.1 mm (1.08).

Head: Arista with ♂ ca. 7 (6–7) upper and 3 lower branches. Frons narrower than 1/2 of head width (0.46, 0.43–0.47); periorbits darker. Anterior reclinate orbital ca. 2/7 (0.29, 0.26–0.31) length of posterior reclinate; proclinate ca. 5/9 (0.53, 0.47–0.56) length of posterior reclinate. Cheek very narrow, less than 1/10 of maximum diameter of eye (0.08, 0.08–0.09). Second oral ca. 3/4 (0.76, 0.73–0.80) length of vibrissa. Palpus with 2 prominent setae apically and laterally; ventral surface ordinary, with moderate number of small setae.

Thorax: Thoracic pleura with 3 distinct, longitudinal, dark brown patches. Lower humeral bristle longer. Acrostichal hairs in 8 rows. Anterior dorsiocentrales ca. 2/3 (0.65, 0.59–0.68) length of posteriors; cross distance of dorsiocentrales ca. 2.0 (1.86–2.15) length distance. Anterior scutellar slightly shorter (0.93, 0.90–0.96) than posteriors. Stermno-index ca. 0.6 (0.53–0.67); mid sternopleural stout, longer (× 1.24, 1.14–1.34) than anterior.

Legs: Fore metatarsus slightly shorter than 3 succeeding tarsal joints together; mid and hind metatarsi as long as 3 succeedings together.

Wing slightly fuscous. Posterior cross vein cloud. C1-bristles 2, subequal.

Wing indices: C ca. 3.3 (2.71–3.70), 4V ca. 1.6 (1.48–1.75), 4C ca. 0.7 (0.61–0.86), 5x ca. 1.4 (1.23–1.66), A6 ca. 2.1 (1.96–2.17), C3-fringe ca. 0.6 (0.55–0.65).

Abdomen: Sixth tergite entirely dark brown in ♂, with broad, medially uninterrupted, dark brown, caudal band in ♀.

Periphalic and phallic organs (Figs. 39–42): Epandrium with 1 bristle in middle part and 7 or 8 in lower part, obliquely truncate below; toe somewhat pointed. Surstulus with 10 primary teeth and ca. 3 (2–4) bristles on outer surface. Cercus with ca. 30 long bristles and tuft of ca. 3 short bristles at caudodental corner. Aedeagal apodeme ca. 1/4 as long as aedeagus. Novasternum somewhat quadrate, basally narrowing; median notch moderate in width.

♀ Reproductive organs: Ovipositor (Fig. 43) with ca. 18 (16–19) marginal teeth. Spermatheca (Fig. 44) ellipsoidal; outer capsule small, less than 0.1 mm high; introvert small, with depth less than 1/3 height of outer capsule.


Figs. 39–47. — 39–44, Drosophila (Drosophila) mutica sp. nov.; 45–47, D. (D.) repletoides Hsu, 1943. — 39, 45: Periphallic organs; 40, 46: phallic organs (ventral view); 41, 47: aedeagus (lateral view); 42: hypandrial process; 43: ovipositor; 44: spermatheca. (Scale-line = 0.1 mm.)

Relationship. This species is somewhat close to D. sternopleuralis, but clearly distinguishable from the latter by the differences in ♀ fore tarsus, aedeagus, hypandrial process and ovipositor.

Ungrouped Species

✓ Drosophila (Drosophila) repletoides Hsu

(Figs. 45–47)

Drosophila (Drosophila) chinol Okada, 1956, Syst. Study, 162.

♀. Thorax length ca. 1.2 mm.

Head: Arista with 3 upper and 2 lower branches in addition to terminal fork. Anterior reclinate orbital ca. 5/9 (0.53) length of posterior reclinate; procline ca.
7/10 (0.69) length of posterior reclinate.

Thorax: Anterior dorsocentrals ca. 7/9 (0.77) length of posteriors; cross distance of dorsocentrals ca. 1.8 length distance. Anterior scutellars ca. 4/5 (0.79) length of posteriors; posteriors nearer to each other than to anteriors.

Legs: Fore metatarsus slightly longer than next tarsal joint; mid and hind metatarsi slightly longer than 2 succeeding joints together.

Wing: Veins yellowish brown. \(R_{+3}\) slightly curved to costa at tip; \(R_{+5}\) and M nearly parallel. Ac-index ca. 2.1.

Perinhallic organs (Figs. 45): Epandrium pubescent except for anterior margin; heel prominent. Surstylus with ca. 4 stout, short bristles on outer surface and numerous setae on caudoventral margin. Cercus nearly entirely pubescent, with tuft of short bristles around somewhat pointed caudoventral corner.

Phallic organs (Figs. 46–47): Aedeagus serrate on apical margin, with minute elongated conical processes on proximal lateral surface and longitudinal wrinkles on submedian to distal ventral surface. Novasternum laterally pubescent, with 1 pair of submedian spines at apices of triangular hypandrial plates.


Distribution. Japan, southern China; Burma (n. loc.): Pyin Oo Lwin.

\[\text{v} \text{ Drosophila (Drosophila) penipina} \text{ Gupt}a \text{ et S}i\text{ngh}\]

\[\text{Drosophila (Drosophila) penipina} \text{ Gupt}a \text{ et S}i\text{ngh}, 1979, \text{Entomon, 4: 167.}\]

♀. Mid and hind tarsi laterally with row of minute cuneiform black bristles.


Distribution. India; Burma (n. loc.): Pyin Oo Lwin.

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References

