

Kontyû, Tokyo, 55 (1): 100-115. March 25, 1987

Studies on the Oriental and Pacific Clusiidae (Diptera) Part 4*

Mitsuhiro SASAKAWA

Laboratory of Entomology, Faculty of Agriculture,
Kyoto Prefectural University, Shimogamo, Kyoto, 606 Japan

Abstract Eight new species of the genus *Clusiodes* are described: *C. notatus* and *C. plumipes* from N. Borneo, *C. chaetostylotis*, *C. femoratus* and *C. megastylotis* from New Guinea, *C. marginalis* from New Guinea and the Solomon Is., *C. melanospilus* from New Guinea and the Bismarck Archip., *C. dasytus* from the Solomon Is. A key is given to all species known at present.

The genus *Clusiodes* is one of the largest genera within the subfamily Clusiodinae in the Oriental region. It is also well represented in the Australian and Nearctic regions. Eleven species have been recorded from the Oriental and Australian regions by FREY (1928, 1960), HENNIG (1938), McALPINE (1960) and SASAKAWA (1974). Eight more are described herein as new from Borneo, New Guinea, the Solomon Is. and the Bismarck Archipelago. A key to the species of the Oriental and Pacific *Clusiodes* is also included. The key is based largely upon color characteristics but the male terminalia seem to be the most reliable criterion for an accurate determination of species.

I wish to express my sincere thanks to the late Dr. J. Linsley GRESSITT, Honolulu, and Dr. Leif LYNEBORG, Copenhagen, for making this study possible. All the type specimens belong to the Bishop Museum, Honolulu, and the Zoological Museum, Copenhagen, respectively.

Genus *Clusiodes* COQUILLET

Clusiodes COQUILLET, 1904, Proc. ent. Soc. Wash., 6: 93.

This genus is distinctive in having three pairs of reclinate fronto-orbital bristles, a pair of cruciate bristle situated usually between levels of second upper fronto-orbital and lower fronto-orbital bristles, and a preapical bristle on dorsal side of tibia. Other characters are as follows:

Head with first upper fronto-orbital bristle shorter than the second or rarely absent; postvertical bristle present or absent; arista pubescent or plumose. Mesonotum with 0+2, 0+3 or 1+2 dorsocentral bristles; prescutellar bristle absent.

Male terminalia with surstylus large, subtriangular, lobate or projected antero-

* Contribution from Lab. Entom., Kyoto Pref. Univ., No. 209.

ventrally, and setose or spinose; cercus minute; hypandrium U-shaped, with sidepieces connected distally with dorsal bridge; praegonite rather broad, bearing several setae; postgonite oblong, subequal to sidepiece of hypandrium in length, with many sensillae on tip; phallapodeme broad cylindrical; phallus largely membranous or weakly sclerotized; ejaculatory apodeme curved, usually expanded apically.

This genus is related to the genera *Hendelia* CZERNY (1903) and *Parahendelia* McALPINE (1960), but distinguishable from them by the antennae separated narrowly at base. Also, it differs from *Allometopon* KERTÉSZ (1906) by having the preapical tibial bristle.

FREY (1960) treated *Isoclusia* MALLOCH (1929) as a subgenus of *Clusiodes*. On the other hand, SOÓS (1964) reinstated *Isoclusia* as a valid genus. As I had noted its status, both treatments are incorrect because *Isoclusia* is a genus of the family Lauxaniidae (SASAKAWA, 1966).

Key to Species of the Oriental and Pacific *Clusiodes*

1. Mesonotum with 1+2 or 0+3 dorsocentral bristles, presutural dorsocentral situated sometimes at or just behind transverse suture 2
- Mesonotum with only two postsutural dorsocentral bristles (subgenus *Clusiaria* MALLOCH) 23
- 2 (1). Arista thickened, densely plumose (subgenus *Steleoclusiodes* FREY) (Burma)..... *nigrifrons* FREY
- Arista filiform, pubescent 3
- 3 (2). Postvertical bristle present; surstylus lobate to triangular in outline (subgenus *Clusiodes* s. str.) 5
- Postvertical bristle absent or if present very short; surstylus projected anteroventrally (subgenus *Columbiella* MALLOCH) 4
- 4 (3). Mesonotum reddish yellow, with anterior margin between humeri and and lateral margins above wing base black; fore tibia black (Burma)....
..... *leucopeza* FREY
- Mesonotum and scutellum entirely brownish black; ventral pleura and fore tibia yellow (Solomons)..... *dasytus* n. sp.
- 5 (3). Male 6
- Female 15
- 6 (5). Mesonotum and scutellum yellow to reddish yellow, vittate 7
- Mesonotum and scutellum brown to black 11
- 7 (6). Mesonotum and scutellum each with a black median stripe posteriorly (Burma)..... *punctifrons* FREY
- Mesonotum with a pair of black stripes laterad of dorsocentral bristles 8
- 8 (7). Legs entirely yellow, only two distal segments of tarsi slightly reddish

- (New Guinea, Bismarcks).....*melanospilus* n. sp.
- Legs partly infuscated 9
- 9 (8). Mesonotum with stripes broad, extending from base of dorsocentral bristles to wing base; fore tarsus black (Australia)..*megaspilos* MCALPINE
- Mesonotum with stripes narrower; fore tarsus yellow10
- 10 (9). Mesonotal stripe between lines of dorsocentral and supra-alar bristles (Australia).....*arguta* MCALPINE
- Mesonotal stripe approximated to line of dorsocentral bristles (Australia).....*gladiator* MCALPINE
- 11 (6). Mesonotum entirely black12
- Mesonotum with yellow spots14
- 12 (11). Fore femur with brown apical ring; surstylus with stout seta-like spines13
- Fore femur without apical ring; surstylus with short but dense spines (New Guinea).....*megastylotis* n. sp.
- 13 (12). Wing hyaline, with apical cloud paler; abdomen entirely brownish black (New Guinea).....*chaetostylotis* n. sp.
- Wing faintly tinged with brown, more intensive between veins R_{2+3} and M_{1+2} ; abdominal tergites with posterior margins yellow (New Guinea, Solomons).....*marginalis* n. sp.
- 14 (11). Mesonotum with a yellow patch and a pair of spots anteriorly; surstylus lobate; phallus largely membranous (Bismarcks).....*bismarckensis* SASAKAWA
- Mesonotum with a pair of inverted L-shaped markings laterally; surstylus triangular; phallus well sclerotized (Borneo).....*notatus* n. sp.
- 15 (5). Mesonotum yellow to reddish yellow and vittate16
- Mesonotum black20
- 16 (15). Mesonotum with a black median longitudinal stripe (Burma).....*punctifrons* FREY
- Mesonotum with a pair of lateral stripes17
- 17 (16). Tibiae yellow, tarsi brownish distally.....*melanospilus* n. sp.
- At least fore tibia brownish black18
- 18 (17). Mesonotum with stripes broad, extending between line of dorsocentral bristles and wing base.....*megaspilos* MCALPINE
- Mesonotum with stripes narrower19
- 19 (18). Third antennal segment entirely brownish yellow.....*arguta* MCALPINE
- Third antennal segment darkened apically.....*gladiator* MCALPINE
- 20 (15). Femora entirely yellow.....21
- Femora with apical rings distinct22
- 21 (20). Mesopleuron yellow on posteroventral corner; palpus brown.....*marginalis* n. sp.
- Mesopleuron entirely black; palpus black, with apex yellow (Borneo)....

-*plumipes* n. sp.
 22 (20). Wing hyaline, without apical cloud; apices of femora pale brown
 (Australia).....*clara* McALPINE
 — Wing brown on apical one-third; apical one-half of mid and hind femora
 black (New Guinea).....*femoratus* n. sp.
 23 (1). Head and thorax yellow, mesonotum with anterior margin and humeri
 black (Formosa).....*formosana* HENNIG
 — Head and thorax black24
 24 (23). Bristles on head and thorax yellow; fore tibia yellow (Philippines).....
*aberrans* FREY
 — Bristles on head and thorax black; fore tibia black (Burma).....
*obscuripennis* FREY

1. *Clusiodes* (s. str.) *chaetostylotis* SASAKAWA, n. sp.

Male. Head with frons shiny black, vertical angle and parafrontalia slightly brown-tinged, frontalia orangish on ventral half, face, gena and ventral margin of postgena whitish yellow; antenna yellow, more or less orangish, arista black; palpus yellow to testaceous. Thorax subshiny black, tinged with brown on lateral sides of mesonotum, pleura yellow except dorsal half of mesopleuron and pteropleuron, respectively, and entire pleurotergite brown to brownish black. Wing hyaline, slightly brownish on apical one-third and around veins of R_{4+5} , M_{1+2} and M_{3+4} ; calypter with margin and fringe dark brown; halter yellow but stalk brown on outer base. Legs yellow; fore femur with small brown ring on apex, fore tibia with brown ring on basal half and extending ventrally as short stripe on outer side, all tarsal segments of fore leg dark brown; distal end of hind femur and basal part of hind tibia faintly brownish. Setae and bristles on head yellowish brown, peristomal setae and basal part of vibrissa paler, those on thorax dark brown except sternopleural bristle pale. Abdomen brownish black, slightly shining, with setae black.

Frons wider than eye (3:2.4), divergent ventrally; first upper fronto-orbital bristle about one-half of the second, lower fronto-orbital bristle slightly longer than first upper fronto-orbital; ocellar bristle slightly longer than first upper fronto-orbital; postvertical bristle equal to ocellar in length; cruciate bristle slightly longer than lower fronto-orbital; eye as high as wide; gena about one-sixth of eye height; vibrissa stronger than second upper fronto-orbital bristle. Antennae separated at base by a distance as wide as diameter of first antennal segment; third segment suborbicular, as long as wide, with pile distinct; arista with pubescence long, sparsely arranged on apical two-thirds.

Mesonotum with 1+2 dorsocentral bristles, first dorsocentral very close to transverse suture, distance between first and second dorsocentrals as long as that between second and third, six to eight rows of acrostichal setae anteriorly but four

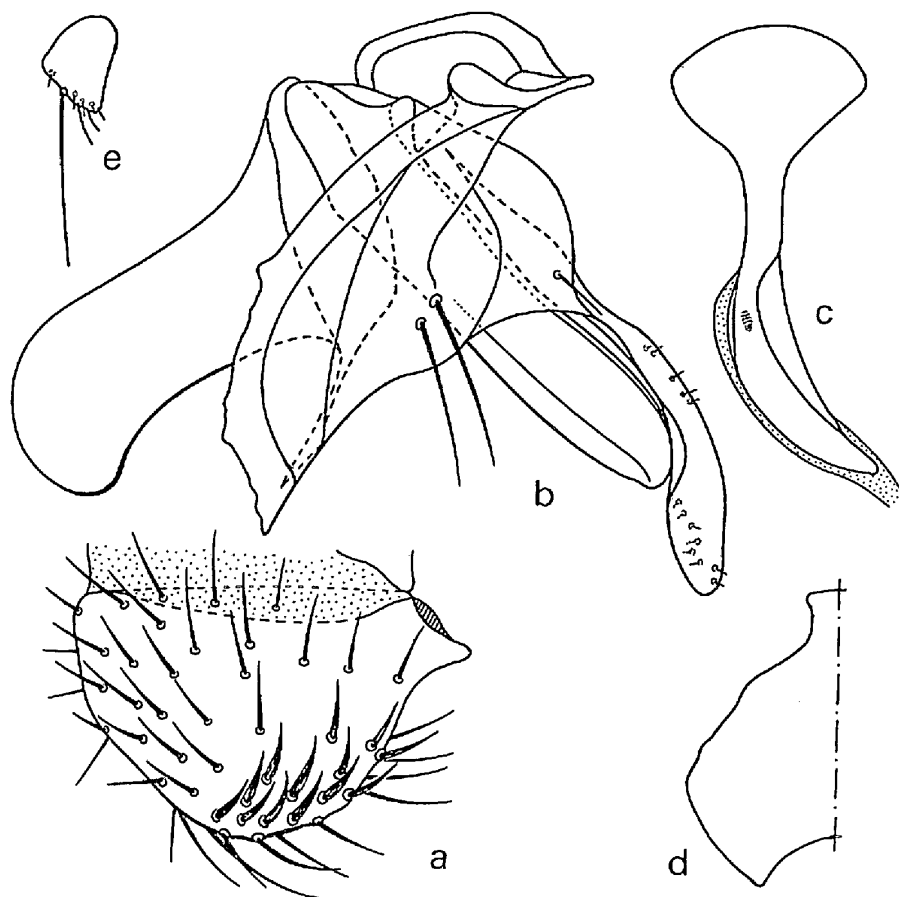


Fig. 1. Male genitalia of *Clusiodes chaetostylotis* n. sp. a, Surstylus, inner lateral view; b, hypandrium and phallus, lateral view; c, ejaculatory apodeme; d, half of proctiger, ventral view; e, cercus, caudal view.

sparse rows of them ending at level of third dorsocentral; inner post-alar bristle a quarter of the outer; scutellum with two pairs of lateral setae. Wing with costal ratio as 10:3.3:1.2; r-m slightly beyond middle of discal cell; M_{1+2} ratio as 1:4; ultimate section of M_{3+4} three-fourths to four-fifths length of penultimate.

Epandrium small; surstylus semicircular, a little lower than half of epandrial height, covered with dense setae, of which inner posteroventral ones extremely strong; cercus with one long and several short apical setae; proctiger broad V-shaped. Hypandrium of normal form, praegonite with two long and one short setae, postgonite almost as long as sidepiece of hypandrium, with many sensillae at middle and apex. Phallapodeme long, phallus well sclerotized, almost as long as phallapodeme. Ejaculatory apodeme $372\ \mu$ long, broadly expanded apically, $162\ \mu$ in greatest width.

Length of body 2.61–2.75 mm, of wing 2.46–2.82 mm.

Female. Unknown.

Holotype male (Bishop 13,580), Kebar Valley, 550 m, W. of Manokwari, Vogelkop, NW New Guinea, 4-31. i. 1962, L. W. QUATE. Paratype ♂, Amok, 165 m, NE New Guinea, 6. i. 1960, T. C. MAA.

Distribution. NW & NE New Guinea.

All the Papuan black species of *chaetostylotis*-group run to the Palearctic *C. albimana obscurior* LOEW, especially in the shape of surstylus. They are quite different, however, from the latter by having the partly yellow pleura, and also can be recognized from each other on the basis of characters given in the key. Moreover, this new species is characteristic in having the orangish spot on frontalia ventrally.

2. *Clusiodes* (s. str.) *femoratus* SASAKAWA, n. sp.

Female. Head shiny black, ventral margin of frontalia and area between antennal grooves brownish; antenna yellow (arista missing); palpus brownish black. Thorax black, weakly shining; lateral side of mesonotum, propleuron and pteropleuron tinged with brown; sternopleuron and hypopleuron yellow. Setae and bristles on head and thorax yellowish brown. Wing faintly tinged with brown except posterior margin, somewhat darker on anteroapical one-third; calypter yellow, with margin and fringe pale brown; halter yellow. Legs yellow but distal one-fifth of fore femur, distal halves of mid and hind femora, all tibiae and fore tarsus brown to brownish black. Abdomen brownish black; ovipositor testaceous yellow.

Frons as wide as eye, distinctly divergent ventrally; first upper fronto-orbital bristle one-half length of the second, lower fronto-orbital shorter than first upper fronto-orbital; ocellar and cruciate bristles each equal to first upper fronto-orbital; eye ratio as 0.84; gena about one-seventh height of eye. Antennae separated at base by a distance as wide as diameter of first antennal segment, third segment slightly shorter than broad, with pile distinct.

Mesonotum with 1+2 dorsocentral bristles, first dorsocentral at level of transverse suture, second dorsocentral as far apart from the first as from the third; six irregular rows of acrostichals, becoming sparser behind level of second dorsocentral; scutellum with a rather long subapical seta and a setula on lateral side. Wing with costal ratio as 10:3.2:1.2; r-m slightly beyond middle of discal cell; M_{1+2} ratio as 1:3.5; ultimate section of M_{3+4} nearly four-fifths length of penultimate.

Length of body 3.57 mm, of wing 2.75 mm.

Male. Unknown.

Holotype female (Bishop 13,581), Ifar (east end of Cyclops Mts.), 150 m, NW New Guinea, 18. x. 1957, J. L. GRESSITT.

Distribution. NW New Guinea.

The coloration of femora is distinctive feature of this new species.

3. *Clusiodes* (s. str.) *marginalis* SASAKAWA, n. sp.

Male. Head with frons shiny black; vertical angle, parafrontalia and ventral margin of frontalia brown-tinged; face and peristome yellowish brown; gena and ventral margin of postgena yellow; antenna and palpus yellow, arista brownish black. Thorax shiny black; mesonotum brown-tinged laterally, ventral part of propleuron testaceous, ventral one-third of mesopleuron, ventral half of pteropleuron, sternopleuron and hypopleuron entirely yellow. Setae and bristles on head and thorax yellowish brown. Wing faintly tinged with brown except posterior margin, darker on apical one-third between veins R_{2+3} and M_{1+2} ; calypter yellow, with margin and fringe pale brown; halter yellow but stalk brownish lateroproximally. Legs yellow; fore femur with apical ring narrow, indistinct on outer side, fore tibia with brown stripes on outer and inner sides but interrupted at middle of inner side, fore tarsus dark brown; apices of mid and hind femora somewhat orangish. Abdomen subshiny brownish black, second to fifth tergites with caudal margins yellow narrowly, with setae black.

Frons wider than eye (3:2.5), almost parallel-sided; first upper fronto-orbital bristle about one-third length of the second, lower fronto-orbital bristle one-half length of second upper fronto-orbital; ocellar and postvertical bristles each subequal to lower fronto-orbital in length; cruciate bristle slightly longer than lower fronto-orbital; eye ratio as 0.89; gena about one-sixth height of eye; vibrissa as long

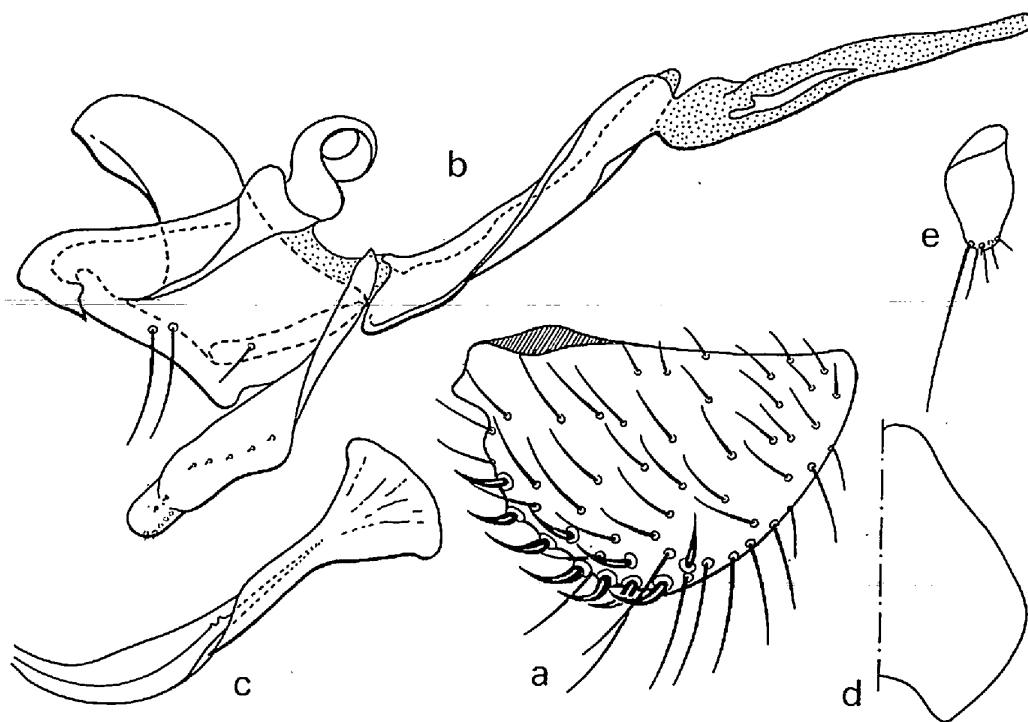


Fig. 2. Male genitalia of *Clusiodes marginalis* n. sp. Abbreviation: see Fig. 1.

as second upper fronto-orbital. Antennae separated at base by a distance three-fifths as wide as diameter of first antennal segment; third segment as long as wide, narrowing apically, distinctly pilose; arista with pubescence long, sparsely arranged on apical two-thirds.

Mesonotum with 1+2 dorsocentral bristles, first dorsocentral just before transverse suture, second dorsocentral at middle between first and third; eight irregular rows of acrostichal setae ending behind level of third dorsocentral; inner post-alar bristle almost one-third length of the outer; scutellum with one rather long lateral seta. Wing with costal ratio as 10:3:1.4; r-m beyond middle of discal cell (3:2); M_{1+2} ratio as 1:5.5; ultimate section of M_{3+4} slightly shorter than penultimate.

Terminalia similar to that of *chaetostylotis* in general appearance, but phallus with endophallus distinct but weakly sclerotized, proctiger subtriangular; ejaculatory apodeme 368 μ long, 140 μ broad.

Length of body 3.30 mm, of wing 3.03 mm.

Female. Differs from male as follows: Face and gena black, epistome brownish; antenna orangish yellow, basal two segments darker; palpus brown; propleuron and pteropleuron dark brown except for ventral margin of the latter; mesopleuron yellow on posteroventral one-fourth; fore femur without apical ring, fore tibia except basal end and fore tarsus brownish black; abdominal tergite without yellow caudal margin; ovipositor orangish yellow. Frons as wide as eye, distinctly divergent ventrally; gena one-eighth height of eye; first dorsocentral bristle situated behind transverse suture; acrostichals sparser; scutellum with lateral seta short.

Length of body 3.16 mm, of wing 2.66 mm.

Holotype male (Bishop 13,582), Kokure, 690 m, Bougainville (S), Solomon Is., 8. vi. 1956, E. J. FORD, Jr. Allotype female, NE of air strip, 40 m, Kampong Landbouw, Biak I., NW New Guinea, 16. vii. 1957, D. E. HARDY.

Distribution. Solomons, NW New Guinea.

This new species is very similar to *C. chaetostylotis* n. sp. in the colorations of thoracic pleura and legs, and shape of the surstylus, but can be separated from the related species by its dark frontalia, dense rows of acrostichal setae, faintly fuscous wing and well developed distiphallus.

4. *Clusiodes* (s. str.) *megastylotis* SASAKAWA, n. sp.

Male. Head brownish black; face, gena and ventral one-fifth of postgena whitish yellow; antenna and palpus yellow, third antennal segment orangish at base of arista which is blackish brown. Thorax shiny black, lateral sides of mesonotum brown-tinged; pleura yellow, but propleuron with anterodorsal corner pale brown, mesopleuron and pteropleuron brown on dorsal half respectively. Setae and bristles on head and thorax yellow to yellowish brown. Wing hyaline, faintly fuscous on apical one-third cephalad from vein M_{1+2} ; calypter yellowish, with margin and fringe brown; halter yellow, with stalk brownish at base. Legs yellow;

fore tibia with pale brown stripes on outer and inner sides but interrupted at middle of inner side, fore tarsus slightly tinged with brown. Abdomen subshiny brownish black.

Frons slightly wider than eye, a little divergent ventrally; first upper fronto-orbital bristle one-third length of second, lower fronto-orbital bristle nearly one-half length of second upper fronto-orbital; cruciate bristle subequal to lower fronto-orbital in length; ocellar and postvertical bristles each subequal to first upper fronto-orbital; eye ratio as 0.86; gena one-sixth to one-eighth height of eye; vibrissa subequal to second upper fronto-orbital in length but slender. Antennae approximated at base (nearly a quarter as wide as diameter of first antennal segment), third segment shorter than broad, distinctly pilose; arista with pubescence distinct, densely on basal one-third.

Mesonotum with 0+3 dorsocentral bristles, first dorsocentral just behind transverse suture, distance between second and third dorsocentrals wider than that between first and second; six rows of acrostichal setae cephalad of second dorsocentral, two to four rows of them extending posteriorly; scutellum with one seta and one minute setula on lateral side. Wing with costal ratio as 9:3:1; r-m beyond middle of discal cell (2:1.5); M_{1+2} ratio as 1:5.7; ultimate section of M_{3+4} only slightly shorter than the penultimate.

Epandrium with surstylus large, higher than semicircular, three-fifths as high as epandrium, densely setigerous on outer and inner sides, bearing fifteen to twenty-one stout spines along inner ventral margin; cercus with one long and a few short apical setae; proctiger subquadrate, slightly projected anteriorly. Hypandrium of normal shape; praegonite with four setae, postgonite hooked near tip and setulose

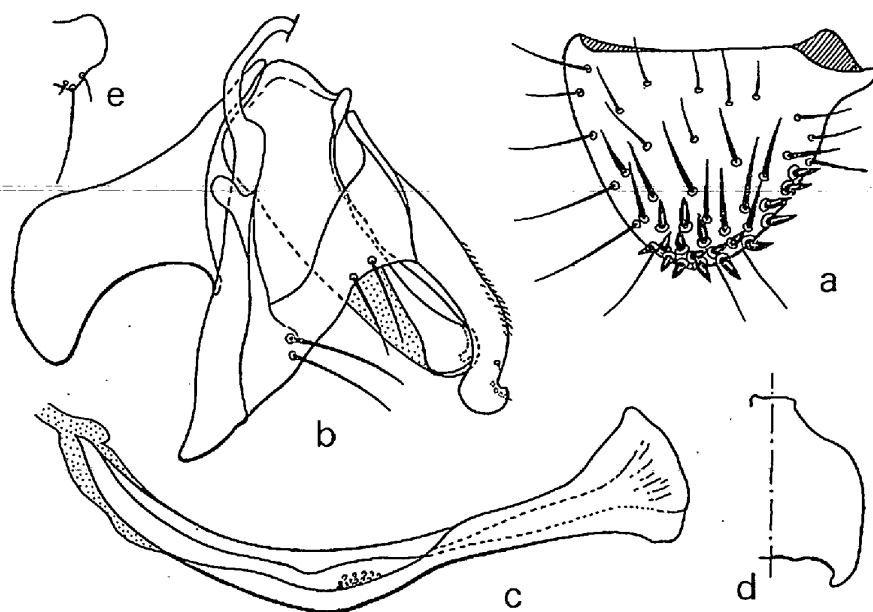


Fig. 3. Male genitalia of *Clusiodes megastylotis* n. sp.

at middle. Phallapodeme long; phallus almost as long as postgonite. Ejaculatory apodeme 208–312 μ long, 64–128 μ in greatest width.

Length of body 2.75 mm, of wing 2.17–2.56 mm.

Female. Unknown.

Holotype male (Bishop 13,583), Manokwari, 75 m, Vogelkop, NW New Guinea, 23. vii. 1957, D. E. HARDY. Paratypes: 1 ♂, Dreikikir, 350 m, Sepik Distr., NE New Guinea, 25. vi. 1951, J. L. & M. GRESSITT; 1 ♂, Ransiki, 10 m, Vogelkop, NW New Guinea, 9. viii. 1957, D. E. HARDY.

Distribution. NW & NE New Guinea.

Superficially, this species resembles *C. chaetostylotis* and *marginalis* n. spp., but is readily differentiated by its spinose surstylus and absence of femoral ring.

5. *Clusiodes* (s. str.) *melanospilus* SASAKAWA, n. sp.

Male. Head fulvous yellow, parafrontalia paler; ocellar triangle brown between ocelli; face and gena black, silverly pruinose; antenna and palpus yellow, third antennal segment largely brown on outer side except dorsoproximal corner and with apical margin in inner side narrowly brown, arista brown. Thorax shiny yellow to testaceous yellow; mesonotum with a pair of brown vittae, which are about one-half as wide as width between rows of dorsocentral and supra-alar bristles, laterad of dorsocentral bristles, narrowing anteriorly and not reaching to transverse suture; dorsocentrals growing at edge of yellow area. Setae and bristles on head and thorax brownish yellow. Wing hyaline, fuscous on apical one-third, darkened anteriorly, posterior margin of discal cell faintly brownish; clyapter yellow, with margin and fringe testaceous; halter yellow. Legs yellow; fourth and fifth tarsal segments somewhat reddish. Abdomen subshiny yellow; posterior one-third of second tergite reddish, posterior three-fourths or entire length of third tergite and fourth tergite entirely dark brown, fifth and sixth tergites pale brown; epandrium and cercus yellow.

Frons wider than eye (3:2), almost parallel-sided; first upper fronto-orbital bristle as long as orbital hair or absent, lower fronto-orbital bristle one-third to one-half length of second upper fronto-orbital; cruciate bristle as long as ocellar bristle and about three-fourths length of second upper fronto-orbital; postvertical bristle subequal to lower fronto-orbital; eye ratio as 0.8; gena about one-eighth height of eye. Antennae separated at base by a distance almost as wide as diameter of first antennal segment; third segment circular, as long as wide, with pile rather distinct; arista distinctly but sparsely pubescent.

Mesonotum with 1+2 dorsocentral bristles (broken but detectable by pits); eight rows of acrostichal setae, four rows of them ending at level of third dorsocentral; scutellum with two rather long lateral setae. Wing with costal ratio as 10:2.8:1; r-m almost at middle of discal cell; M_{1+2} ratio as 1:3.5; ultimate section of M_{3+4} about three-fifths length of penultimate.

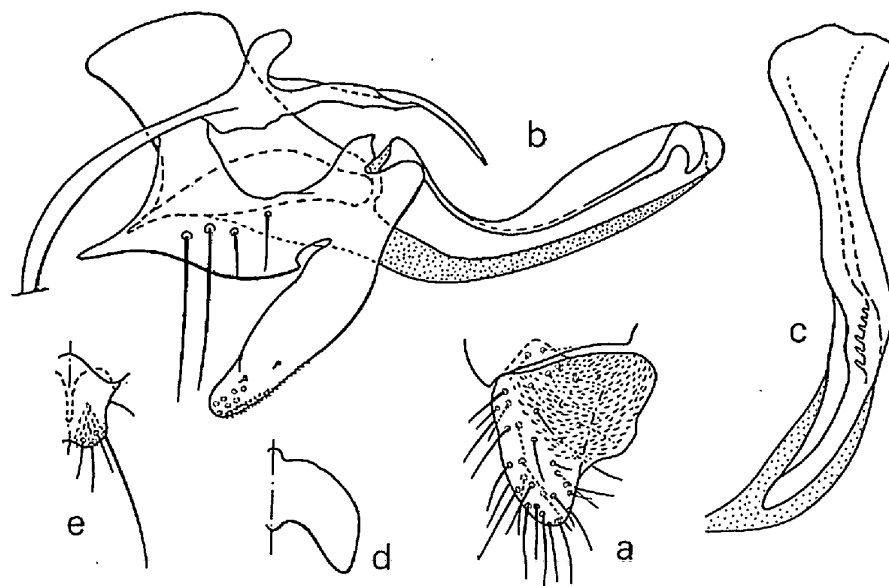


Fig. 4. Male genitalia of *Clusiodes melanospilus* n. sp.

Epandrium with surstylus projected anteroventrally, densely setose and setulose; cercus with a long and a few short apical setae; proctiger bilobate. Hypandrium circular, with sidepiece narrow; praegonite large, well sclerotized, bearing two long and one or two short setae; postgonite spinulose on posteroventral one-third and with several sensillae on tip. Phallus about one and a half times as long as phallapodeme, sclerotized dorsally but membranous ventrally. Ejaculatory apodeme $184\ \mu$ long, slightly expanded apically, $72\ \mu$ in greatest width.

Length of body 2.38–2.75 mm, of wing 2.55–2.75 mm.

Female. Head entirely yellow; third antennal segment with brown apical spot smaller, covering anterior half on outer side. Mesonotal vittae darker and broader than in male, about four-fifths as wide as width between rows of dorsocentral and supra-alar bristles; dorsocentral bristles growing at edge of black area; all segments of fore tarsus, fourth and fifth segments of mid and hind tarsi brownish; gena about one-sixth height of eye; pubescence of arista shorter than that in male; abdomen with first tergite entirely brown, second and third tergites brown except yellow lateral margins, fourth tergite brown in central half of whole width, fifth and sixth tergites yellow, the former sometimes with brown median stripe; ovipositor yellow. Length of body 2.75–3.50 mm, of wing 2.85 mm.

Holotype male (Bishop 13,584), allotype female, Wau, 1,200 m, Morobe Distr., NE New Guinea, 11–14. ix. 1961, malaise trap, J. SEDLACEK. Paratypes: 1 ♂, same data as holotype; 1 ♀, Talumalaus, Mussau, Bismarck Is., 26. vii. 1962, Danish Noona Dan Expedition (see SASAKAWA, 1974).

Distribution. NE New Guinea, Bismarck Isls.

This species is closely related to the Australian species, *C. megaspilos* MCALPINE

and *C. arguta* MCALPINE in having the bivittate mesonotum, but differs in its unmarked legs and in having the projecting surstylus.

6. *Clusiodes* (s. str.) *notatus* SASAKAWA, n. sp.

Male. Head with frons, occiput and dorsal two-thirds of postgena shining brownish black; face, first and second antennal segments (third segment missing), gena and palpus yellow. Thorax and abdomen shiny brownish black; mesonotum with a pair of testaceous inverted L-shaped markings, each extending from base of anterior notopleural bristle to that of first dorsocentral bristle transversely and from transverse suture to level of outer post-alar bristle along lateral side of notum; scutellum yellow but brown on lateral sides, apical scutellar bristle growing on yellow area; pleura testaceous yellow, dorsal half of mesopleuron, pleurotergite and metanotum brownish black. Setae and bristles on head and thorax yellowish, but most of them broken. Wing hyaline, faintly brown-tinged on apical one-third between veins R_{2+3} and M_{1+2} , and around vein R_{4+5} ; calypter with margin brown and fringe pale brown; halter yellow. Legs yellow, fore tarsus brown.

Frons as wide as eye, slightly divergent ventrally; first upper fronto-orbital bristle slightly shorter than cruciate bristle; eye ratio as 0.9; gena about one-seventh height of eye.

Mesonotum with 0+3 dorsocentral bristles, first dorsocentral just behind transverse suture; four irregular rows of acrostichal setae. Wing with costal ratio as

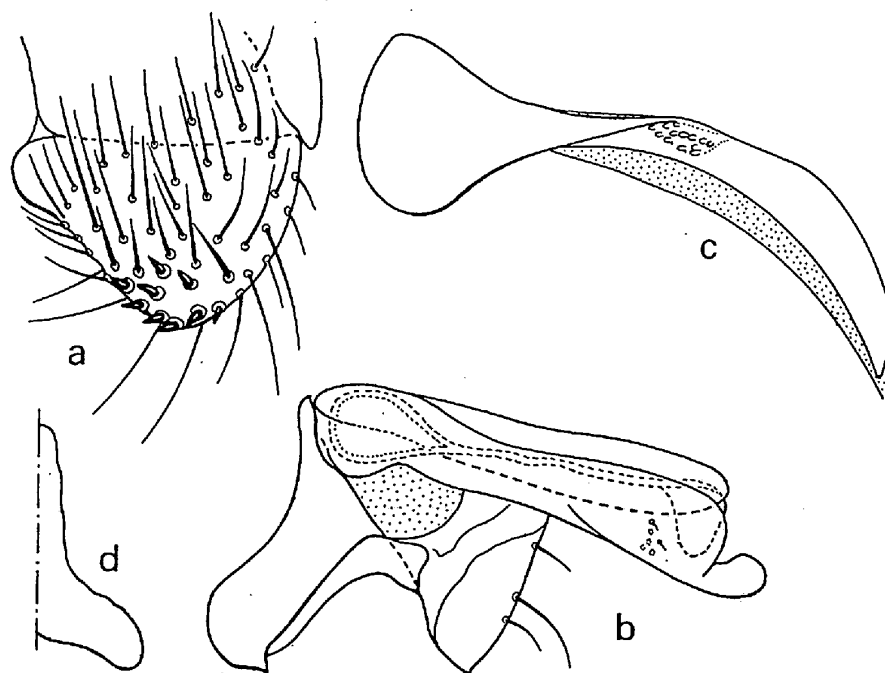


Fig. 5. Male genitalia of *Clusiodes notatus* n. sp.

7.6: 2.8: 1; r-m beyond middle of discal cell; M_{1+2} ratio as 1: 5; ultimate section of M_{3+4} slightly shorter than penultimate (7: 8).

Epandrium with surstylus similar to that of *megastylotis* n. sp., but sparsely spinose and densely setose on inner side as shown in Fig. 5a; structures of phallus and praegonite quite similar to those of *chaetostylotis* n. sp.; proctiger Y-shaped, with long stalk anteriorly; ejaculatory apodeme 380 μ long, 120 μ in greatest width.

Length of body 2.75 mm, of wing 2.35 mm.

Female. Unknown.

Holotype male (Bishop 13,585), Tapuh, 300–450 m, Kampong, Sadong, Sarawak, Borneo, 4–9. vii. 1958, T. C. MAA.

Distribution. Borneo.

This species is closely allied to *C. bismarckensis* SASAKAWA, but differs in colorations and genitalic characters. Male genitalia of this species show similarity to those of *C. megastylotis* and *chaetostylotis* n. spp. by having the spinose surstylus and sclerotized phallus. But the structures in detail between these species are quite different: in *notatus*, the spines on surstylus are four to nine in number, and the proctiger is provided with a long projection anteriorly, while in the related species only weakly projected.

7. *Clusiodes* (s. str.) *plumipes* SASAKAWA, n. sp.

Female. Head shiny black; parafrontalia slightly brown-tinged, face and gena yellowish brown; antenna orangish yellow, arista black; palpus black but yellowish apically. Thorax black; mesonotum pollinose, weakly shining; humerus and notopleuron faintly brown-tinged; pleura shiny brown, propleuron yellowish brown, sternopleuron yellow but with anterior corner brown, hypopleuron entirely yellow. Setae and bristles on head and thorax yellowish brown. Wing hyaline, distinctly fuscous on anteroapical one-third, paler caudad from vein M_{1+2} , more or less brownish around both cross-veins and basal vein of M_{3+4} ; calypter with margin and fringe brown; halter yellow. Legs yellow; fore tibia and tarsus brownish black, usually basal one-third of mid and hind tibiae faintly tinged with brown. Abdomen matt black; ovipositor brownish yellow.

Frons slightly wider than eye, slightly divergent ventrally; first upper fronto-orbital bristle one-half to two-thirds length of the second and subequal to lower fronto-orbital; cruciate bristle a little longer than lower fronto-orbital bristle; postvertical bristle subequal to ocellar bristle; eye almost as high as broad; gena about one-seventh height of eye; vibrissa longer than second upper fronto-orbital bristle. Antennae separated at base by a distance two-thirds as wide as diameter of first antennal segment; third segment a little wider than long, rather distinctly pilose, arista distinctly pubescent, densely on basal half.

Mesonotum with 1+2 dorsocentral bristles, first dorsocentral bristle nearly one-half length of the third and situated just before transverse suture, second dorso-

central as far apart from the first as from the third; six or seven irregular rows of acrostichal setae, four rows of them ending behind level of third dorsocentral; scutellum with two lateral setae, sometimes with a setula before that. Wing with costal ratio as 10: 3.6: 1.3; r-m beyond middle of discal cell (3: 2); M_{1+2} ratio as 1: 6, ultimate section of M_{3+4} slightly shorter than the penultimate.

Length of body 3.3–3.8 mm, of wing 2.2–3.03 mm.

Male. Unknown.

Holotype female (Bishop 13,586), Ranau, 500 m, N. Borneo, 8–18. x. 1958, L. W. QUATE. Paratypes: 1 ♀, same data as holotype; 1 ♀, Quoin Hill, Tawau, N. Borneo, 8–14. vii. 1962, malaise trap, H. HOLTMANN; 1 ♀, Quoin Hill, N. Borneo, 3–7. vii. 1962, light trap, H. HOLTMANN.

Distribution. Borneo.

This species resembles *C. marginalis* n. sp., but differs in respect to the characters mentioned in the key.

8. *Clusiodes (Columbiella) dasytus* SASAKAWA, n. sp.

Male. Head with frons shiny black, vertical angle and dorsal half of parafrontalia brown-tinged, face and gena yellow; antenna and palpus yellow, third antennal segment brown on basal one-third of outer side, arista dark brown. Thorax and abdomen subshining brownish black; ventral one-third of propleuron, sternopleuron and hypopleuron yellow. Setae and bristles on head and thorax yellowish; vibrissa brown apically. Wing hyaline, slightly brownish around veins of R_{4+5} , M_{1+2} and basal section of M_{3+4} ; calypter with margin and fringe brown; halter yellow. Legs yellow.

Frons as wide as eye, slightly divergent ventrally; first upper fronto-orbital bristle equal to orbital hair in length, lower fronto-orbital bristle rather strong; cruciate bristle about one-third length of lower fronto-orbital; postvertical bristle shorter than cruciate; eye ratio as 0.89; gena about one-seventh height of eye; vibrissa stronger than lower fronto-orbital. Antennae separated at base by a distance one-half as wide as diameter of first antennal segment; third segment slightly shorter than broad, microscopically pilose; arista with pubescence long, distinctly on basal half.

Mesonotum with 1+2 dorsocentral bristles, first dorsocentral just before transverse suture, second as far apart from first as from third, eight rows of acrostichal setae anteriorly, six rows of them ending at level of third dorsocentral bristle; scutellum with two lateral setae. Wing with costal ratio as 10: 3.2: 0.9; r-m situated at distal one-third of discal cell; M_{1+2} ratio as 1: 7; ultimate section of M_{3+4} slightly shorter than the penultimate.

Epandrium with surstylus projected anteroventrally, about two-thirds as high as epandrium, bearing about ten spines along posterior margin; cercus with four or five apical setae and one spine-like minute seta. Proctiger T-shaped, broadened

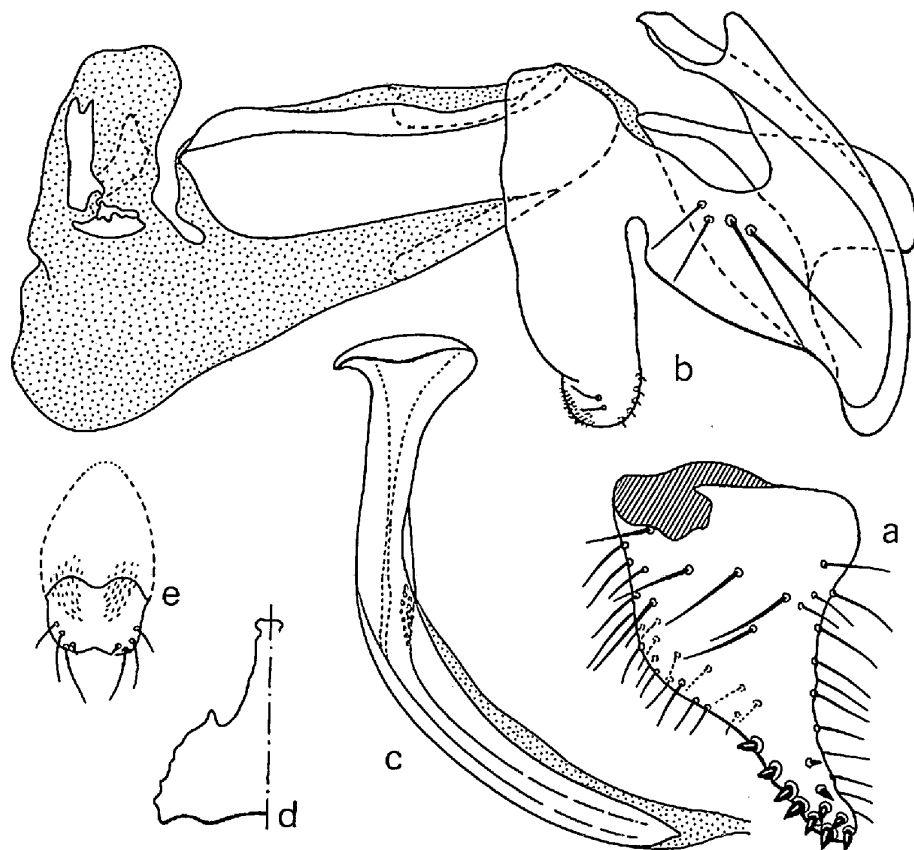


Fig. 6. Male genitalia of *Clusiodes dasytus* n. sp.

laterally. Hypandrium without dorsal bridge; praegonite with two long and two short setae, postgonite shorter than sidepiece of hypandrium. Phallapodeme short, basiphallus well sclerotized and plate-like, distiphallus largely membranous and with a pair of small sclerites near apex. Ejaculatory apodeme strongly curved, 184 μ long, expanded apically in a shape of trumpet, 80 μ in greatest width.

Length of body 2.75 mm, of wing 2.34 mm.

Female. Unknown.

Holotype male (Bishop 13,587), Munda, 1–30 m, New Georgia I., 15. vii. 1959, J. L. GRESSITT.

Distribution. Solomon Is.

This species differs strikingly from any other known *Clusiodes* because of the distinctive characters of the male terminalia which are most primitive. It is clearly distinct from *C. leucopeza* FREY by the coloration of thorax.

References

- CZERNY, L., 1903. Revision der Heteroneuriden. *Wien. ent. Ztg.*, 22: 61–107.
 FREY, R., 1928. Philippinische Dipteren VI. *Notul. ent.*, 8: 100–108.

- FREY, R., 1960. Studien über indoaustralische Clusiiden (Dipt.) nebst Katalog der Clusiiden. *Commentat. biol.*, 22: 1-31.
- HENNIG, W., 1938. Beiträge zur Kenntnis der Clusiiden und ihres Kopulationsapparates (Dipt., Acalypt.). *Encycl. ent.*, (B), II. Dipt. 9: 121-138.
- KERTÉSZ, K., 1906. Eine neue Gattung der Heteroneuriden. *Annls. hist.-nat. Mus. natn. hung.*, 4: 320-322.
- MALLOCH, J. R., 1929. Clusiidae (Heteroneuridae) and Sapromyzidae. In *Insects of Samoa*, Part 6 Diptera, Fasc. 4: 199-213.
- MCALPINE, D. K., 1960. A review of the Australian species of Clusiidae (Diptera, Acalyptrata). *Rec. Aust. Mus.*, 25: 63-94.
- SASAKAWA, M., 1966. Studies on the Oriental and Pacific Clusiidae (Diptera) Part 1. Genus *Heteromeria* CZERNY, with one new related genus. *Pacif. Ins.*, 8: 61-100.
- 1971. Studies on the Oriental and Pacific Clusiidae (Diptera) Part 2. *Sci. Rep. Kyoto Pref. Univ., Agric.*, 23: 50-63.
- 1974. Clusiidae from the Philippine and Bismarck Islands (Insecta, Diptera). *Steensrupia*, 3: 153-162.
- 1977. Family Clusiidae. In *A Catalog of the Diptera of the Oriental Region III*, pp. 234-239.
- Soós, Á., 1964. *Sobarocephaloides discolor* gen. nov., spec. nov., eine neue Clusiide aus Costa-Rica, nebst einer Bestimmungstabelle der Gattungen der Familie Clusiidae (Diptera, Acalyptrata). *Reichenbachia*, 4: 1-8.

新 刊 紹 介

British Pyralid Moths — A Guide to their Identification, by Barry GOATER. 178 pp., 9 colour plates, 12 text-figs. Harley Books, 1986. Price: £18.95.

英国のメイガ科に属する蛾についての普及的な仕事は 1952 年に出版された BEIRNE のものが絶版になって以来、長い間途絶えていた。その間に 34 種ものものが英国に他より移入され増加しつつある事が断片的に報告されてきたが、今回出版されたこのハンディーなカラー図版を用いたガイドブックによって集大成された感がある。図版そのものの出来栄は決して良いとは思えないが、写真版としては比較的鮮明に斑紋の構造が出ている。英国のメイガ相の全容を知るには手頃な本のように思える。種類数にして 208 であるが、変異や雌雄異型をも含め 272 の図が示されており、口絵には各亜科を代表する種の自然状態での静止の姿が 12 枚の写真で紹介されている。図がカラーで示されているため個々の記載は簡潔になされ、近似種間の比較は黒白の図や交尾器の図を補足的に加え判り易く述べられている。これは英国というよりヨーロッパ諸国の伝統とでもいえるのであろうが、詳しい生活史、食草、発生期、分布の記述がなされ良い情報を与えてくれる。チェック・リスト、用語の解説も掲載され、小冊子ながらも充実したものと言える。(保田 淑郎)