

Studies on the Oriental and Pacific Clusiidae (Diptera) Part 2*

MITSUHIRO SASAKAWA

Summary Fourteen Oriental and Pacific species of the genus *Czernyola*, with a key to the species and descriptions of five new species are given in this part. The male of *Chaetoczernyola novaeguineae* Soós was recorded firstly.

I. Genus *Czernyola* Bezzi

Czernyola Bezzi, 1907, Wien. Ent. Zeit. 26 : 52.

Craspedochaeta Czerny (*nec* Macquart, 1851), 1903, ibid. 22 : 103.

Tonnoiria Malloch, 1929, Ann. Mag. Nat. Hist. (10) 4 : 98.

Type species : *Craspedochaeta transversa* Czerny

Head with four or five fronto-orbital bristles, the upper two reclinate, equally strong or first pair distinctly shorter than the second and the lower two or three, of which first pair in- and proclinate, the remainder reclinate.

Mesonotum with one to three postsutural dorsocentral bristles; scutellum with one or two pairs of short lateral setae before apical bristles. M_{1+2} ratio 3.5-5.0. Tibiae with preapical bristles.

Male terminalia with surstylus usually triangular in lateral view, bearing two or more spines on inner ventral tip; cerci lobate; hypandrium U-shaped; praegonite membranous and setulose, postgonite variable in shape. Phallus moderately sclerotized; ejaculatory apodeme not expanded terminally.

Steyskal and Sasakawa (1966) advised to retain the name *Tonnoiria* for the Old World species by the distinction in chaetotaxies between the Old and New World species, although Malloch (1942) had synonymized *Tonnoiria* with *Czernyola*, without any explanation. After that time, the New World species, such as *albohalterata* and *trivittata* Soós (1962), with two dorsocentrals, though the anterior one is shorter than the posterior, had been found. McAlpine has been examining the specimens from British Guiana and Brazil have all either two or three dorsocentrals, as is usual in the Pacific species also (by his personal communication, Oct. 1967). Therefore, I was convinced of synonymy of *Tonnoiria*.

This genus is the second large genus in the Indo-Australian Region. It is also well represented in the Neotropical Region, but does not extend as far west as the genus *Heteromeriingia* in the Old World tropics. Nearly half of thirty-three known species in the world is distributed in the Oriental and Pacific area at present.

The Oriental and Pacific species of the genus *Czernyola*, excepting *boettcheri*

*Laboratory of Entomology, Faculty of Agriculture, Kyoto Prefectural University. (Contribution No. 127)
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Frey known from Philippines, belong to the *biseta* group. This group was divided into two subgroups, according to the development of the fronto-orbital bristles, by McAlpine (1960). I am accepted his subdivision, but the terminology of bristles established by myself (1966) was used in this paper. The first subgroup consists of three species, of which two from Australia and one from Solomons, and has two strong upper fronto-orbital bristles. The cerci of *C. hyalina* are united with each other only at dorsal one-fourth as high as its height, the surstylus is extremely elongated and the distiphallus is rather simple in structure. The members of the second subgroup show the highly evolved structure, especially in the male terminalia. They have distinctly shorter and weaker first fronto-orbital bristle than the second, and the cerci united broadly, being more than half of its height. The sclerites of the distiphallus are well developed.

Key to Oriental and Pacific species of *Czernyola*

1. Male 2
 Female14
2. Two upper fronto-orbital and second reclinate lower fronto-orbital bristles subequal to each other in length 3
 First upper fronto-orbital distinctly shorter than second 6
3. Coxae and femora greatly yellow to yellowish brown; mesonotum with three dorso-centrals but anterior one short 4
 All coxae and femora black; only one dorso-central; wing brown-tinged, paler at base and posterior margin (PHILIPPINES)..... *boettcheri* Frey
4. Wing hyaline, only slightly smoky between costa and vein R_{2+3} ; all femora nearly wholly brown; surstylus extremely long (SOLOMONS)*hyalina* n. p.
 Wing with at least two dark clouds; apices of femora or only hind femur somewhat darker..... 5
5. Third antennal segment oval; wing with a dark grey patch on apical third and a much fainter cloud over cross-vein m-m (AUSTRALIA).....*australis* McAlpine
 Third antennal segment orbicular; wing with fuscous patches separated by a transparent stripe extending from apex of vein R_1 across both cross-veins to posterior margin (AUSTRALIA, BORNEO)
 *bisignata* McAlpine
6. Thoracic pleura yellow ventrally 7
 Thoracic pleura almost entirely black 9
7. Frontalia broadly yellow to orangish on ventral part; bristles yellowish..... 8
 Frontalia narrowly orangish along ventral margin; bristles brown (BISMARCK ARCH.).....
 *oedaleostylis* n. sp.
8. Large species, wing 2.7-3.2 mm long; third antennal segment only orangish dorsally (SOCIETY IS., MARQUESAS IS.).....*palliseta* (Malloch)
 Smaller, wing length 1.8-2.3 mm; third antennal segment with brown spot at base of arista (SOLOMONS, NEW HEBRIDES, NEW GUINEA, AUSTRALIA, GAROLINE IS.).....*pleuralis* Curran
9. Bristles on head and thorax yellow to yellowish brown; palpus whitish yellow.....10
 Bristles brown to black; palpus dark brown12
10. Middle and hind femora each with brown apical ring, tibiae wholly yellow.....11
 Hind femur and tibia each with brown ring apically (TAIWAN, PHILIPPINES, BORNEO, NEW GUINEA, NEW BRITAIN).....*biseta* Hendel
11. Sternopleuron with yellow median band extending forwards from insertion of middle coxae; third

- antennal segment without dark spot (AUSTRALIA) *delta* McAlpine
 Sternopleuron entirely black but hypopleuron yellowish brown; third antennal segment with brown spot near base of arista (NEW GUINEA).....*caligula* n. sp.
12. Third antennal segment yellow; middle coxa yellow, fore and middle femora yellow, slightly brownish at dorsal apices, hind femur with brown ring apically (MARIANA Is., NEW GUINEA).....
*nigripalpis* (Steyskal and Sasakawa)
 Third antennal segment brown apically; middle coxa brown to black proximally, fore femur pale brown to black13
13. Fore leg with coxa yellow, femur brown only on outer side; cercus without distinct apical seta (NEW GUINEA) *sedlaceki* n. sp.
 Fore leg with coxa and femur entirely black; cercus with one or two apical setae (BORNEO)
 *borneoensis* n. sp.
14. Two upper fronto-orbitals subequal15
 First upper fronto-orbital distinctly shorter than second.....17
15. Coxae and femora greatly yellow to light yellow-brown16
 Coxae and femora black*boettcheri* Frey
16. Middle coxa yellow; wing colour as in male*bisignata* McAlpine
 Middle coxa dark brown on outer side; wing colour as in male *australis* McAlpine
17. Thoracic pleura entirely or ventrally yellow.....18
 Thoracic pleura dark brown to black19
18. Mesonotum and scutellum yellow, the former with brown band between lines of dorsocentral bristles posteriorly and trifurcated marking anteriorly; mesopleuron dark brown dorsally (MARIANA Is.)..... *atrifrons* Malloch
 Mesonotum and scutellum black; pleura almost entirely yellow (CAROLINE Is.) *ponapensis* (Steyskal and Sasakawa)
19. Face and gena yellow to brownish yellow.....20
 Face and gena brown to brownish black.....22
20. Palpus pale yellow; femora and tibiae of middle and hind legs yellow*delta* McAlpine
 Palpus dark brown; middle and hind legs with femora and tibiae greatly brownish black.....21
21. All coxae and fore femur yellow*nigripalpis* (Steyskal and Sasakawa)
 Fore and middle coxae and fore femur brownish black*sedlaceki* n. sp.
22. Antennae yellow, only third segment with brown spot apically; femora yellow on basal one-fifth to one-half23
 Antenna entirely dark brown; femora yellow on basal one-eighth to one-fifth.....*palliseta* (Malloch)
23. Small species, with wing length of 1.7 mm; wing with clouds interrupted by narrow cross-band at middle; fore and hind femora yellow on basal half *caligula* n. sp.
 Larger, wing length 2.0-2.8 mm; either fore or hind femur yellow on basal half24
24. Frontalia with ventral margin narrowly brown..... *biseta* Hendel
 Frontalia ventrally with orangish spot..... *pleuralis* Malloch

1. *Czernyola atrifrons* Malloch

Czernyola atrifrons Malloch, 1942, Bull. Bishop Mus. 172 : 209(♀, Guam).

Tonnoiria atrifrons (Malloch): Steyskal & Sasakawa, 1966, Ins. Micronesia 14 : 245.

This species is characteristic in the coloration of mesonotum, mesopleuron and legs, and the presence of the prescutellars, and known only from Guam, Mariana Is. It was redescribed and illustrated by Steyskal and Sasakawa (1966).

2. *Czernyola biseta* Hendel

Czernyola biseta Hendel, 1913, Suppl. Ent. 2 : 80(♂, Taiwan).

Czernyola puncticornis Frey, 1928, Not. Ent. 8 : 106 (♀, Philippines). **New synonymy.**

Czernyola puncticornis laetior Frey, 1960, Comment. Biol. 22 : 22(♀, Taiwan). **New synonymy.**

Male: Head black except for yellow face and gena, ventral margin of frontalia and parafrontalia brown, the latter darkened dorsally, gena silverly pruinose; antenna and palpus whitish yellow, arista brownish. Thorax black, mesonotum slightly pollinose, ptero- and hypopleura slightly brown-tinged. Wing very slightly brown-tinged, darker on apical half between veins of costa and R_{4+5} ; halter yellow. Legs yellow; hind femur with plae brown ring on distal one-seventh to one-sixth and hind tibia with dark brown preapical ring, fifth tarsal segment of all legs very slightly brown-tinged. Abdomen black; epandrium dark brown, cercus yellow to pale brown. Setae and bristles on head and thorax brownish yellow but those on abdomen brown to black.

Frons usually equal to width of eye; first upper fronto-orbital one-fifth to one-third length of second; eye ratio as 0.93; gena one-sixth to one-fifth height of eye; arista distinctly pubescent. Mesonotum with three dorsocentrals, first dorsocentral two-fifths length of second and situated at middle between transverse suture and second dorsocentral, eight to ten rows of acrostichals; scutellum with two setae before apical bristle. Costal sections in proportion of 7.5 : 2.2 : 1.2, ultimate section of M_{3+4} about three-fourths length of penultimate. Terminalia: Cerci united with each other on basal half, each with two apical setae; surstylus with two spines and one minute spine at apex and about twenty setae along inner margin. Hypandrium subequal to basiphallus in length, with apodeme very short. Basiphallus short; ejaculatory apodeme narrow, 132 μ long.

Length: Body 2.2-2.54 mm, wing 1.9-2.13 mm.

Female: Similar to male but differs in coloration and wing venation: gena brownish black, face brown but yellow between bases of antenna, only parafrontalia silverly pruinose; antenna yellow, third segment with brown spot at apex, more largely extending on inner side; palpus brownish yellow to pale brown, paler apically; femora and tibiae dark to blackish brown excepting yellow knees and proximal one-fifth to one-third of fore and middle femora and one-third to one-half of hind femur; all setae and bristles pale brown; costal ratio as 8.8 : 2.3 : 1.4; length of body 2.6-3.0 mm, wing 1.99-2.57 mm.

Distribution: Taiwan, Philippines, Borneo, New Guinea, New Britain. New to Borneo, New Guinea and New Britain.

Specimens examined: PHILIPPINES: 2♂♂, 1♀, Esperanza, Agusan, Mindanao, 4-11. XI. 1959, C. M. Yoshimoto; 3♂♂, 5♀♀, S. Francisco 10km SE., Agusan, 13-17. XI. 1959, L. W. Quate; 1♀, Los Arcos, Agusan, 19-23. XI. 1959, Quate & Yoshimoto; 1♂, Tarumpitao Pt., Palawan, 23. V. 1958, H. E. Milliron; 1♀, Mt. Makiling, Luzon, no date, Baker (USNM). BORNEO: 1♀, Santubong, 797-1500m, Kuching, Sarawak, 18-30. VI. 1958, T. C. Maa. NE NEW GUINEA: 1♀, Busu R., 100 m, E of Lae, 13. IX. 1955, J. L. Gressitt; 2♀♀, Wampit, nr. Gurakor Village, 950 m, nr. Wau, 7. VII. 1957, D. E. Hardy; 1♀, Amok, 165 m, 6. I. 1960, T. C. Maa; 1♀, Wau, Morobe Distr., 1050 m, 4. XI. 1961, J. Sedlacek. NW NEW GUINEA: 1♂, Rain forest behind Dock V., 20 m, Hollandia, 14. VII. 1957, D. E.

Hardy; 1♀, E. coast, 10-25 m, Biak I., 21. X. 1957, Gressitt; 2♂♂, Kampong Landbouw, 40 m, 30km NE of air strip, Biak I., 16. VII. 1957, Hardy; 1♂, Manokwari, 75m, Vogelkop, 24, VII. 1957, Hardy; 1♂, 1♀, Mangrowawa, 50-100m, 31. V. 1959, Maa; 1♀, Fak Fak, S. coast of Bomberai, 10-100 m, 11. VI. 1959, Gressitt; 1♀, Sentani, 15. VI. 1959, Maa; 1♀, River Tor (mouth), 4 km E of Hol Maffen, 4. VII. 1959, Maa; 1♀, Waris, S of Hollandia, 450-500m, 24-31. VIII. 1959, Maa. SE NEW GUINEA: 1♂, 1♀, Brown River, 20. VIII. 1959, Maa. NEW BRITAIN: 1♀, St. Paul's, 350m, Bainings, Gazelle Pen., 7. IX. 1955, Gressitt.

The male of this species differs from *C. delta* McAlpine and *caligula* n. sp. in the color of the hind tibia, and also from *palliseta* Malloch in the color of the thoracic pleura. The phallus of this species is characteristic in having the short basiphallus. The female of *biseta* is distinguishable from *C. pleuralis* Malloch by the color of the frontalia, femora and bristles.

On examination of a long series of materials from the Philippines and New Guinea, the characters of *puncticornis* provided by Frey on only a single female type agree quite well with that of the females of *biseta* Hendel, excepting the dark color of the fore coxa.

3. *Czernyola bisignata* McAlpine

Czernyola bisignata McAlpine, 1960, Rec. Aust. Mus. 25: 78 (♂♀, Australia)

On account of the pictured wing, chaetotaxies on the head and thorax and smaller size, a male specimen examined should be identified with *bisignata*. But the brown spot at base of arista on the third antennal segment is indistinct in that specimen. The cercus is provided with a pair of extremely long apical setae.

Specimen examined: 1♂, Pueh, Kampong, 690-1500m, Lundu District, Sarawak, Borneo, 6-12. VI. 1958, T. C. Maa.

Distribution: Australia, Borneo. New to Borneo.

C. australis McAlpine is similar to this species in having the three equally strong, reclinate fronto-orbital bristles, but the former species has only a dark patch on apical third of the wing and oval third antennal segment.

4. *Czernyola boettcheri* Frey

Czernyola Boettcheri Frey, 1928, Notul. Ent. 8: 105 (♀, Philippines).

This is only one Oriental species belongs to the Neotropical *atra*-group which is characterised by only one pair of strong dorsocentrals. But the distinguishing features of this species are the black coxae and femora and the presence of the prescutellars.

Distribution: Philippines.

5. *Czernyola borneoensis* Sasakawa, n. sp. (Fig. 1)

Male: Head with frontalia, parafrontalia dorsad of second upper fronto-orbital and occiput black, but ventral one-fifth of frontalia, ventral part of parafrontalia, face and gena brown, peristome darker, dorsal half of frontalia shining but ventral half and parafacialia silvery pruinose; antenna yellowish brown, third segment with black apical spot below base of brown arista, extending apical half on inner side; palpus dark brown, Thorax and abdomen shiny black, humerus slightly brown-tinged,

posterior half behind base of hypopleural bristle and pleurotergite yellowish to pale brown. Bristles and setae black. Wing fuscous on apical half (largely broken); halter yellowish. Legs yellow but fore coxa and femur black, middle coxa brown at base on outer side, basal and apical rings of middle femur and apical one of hind femur (each ring one-fourth as long as whole length of femur) blackish brown, fore and hind tibiae blackish brown except for both apices but middle tibia only brownish on apical one-third.

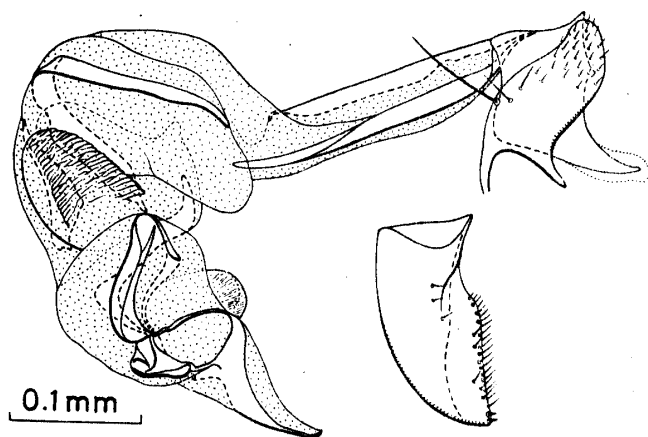


Fig. 1 Male terminalia of *Czernyola borneoensis* n. sp.

Frons as wide as eye, slightly diverging ventrally; first upper fronto-orbital weak, about one-third length of second; eye ratio 0.76; gena about one-eighth height of eye; antennae separated at base, third segment slightly shorter than broad, microscopically pilose, arista pubescent. Mesonotum with three dorsocentrals, first pair less than half length of second which is situated at middle between transverse suture and third pair, about eight rows of acrostichals, prescutellar subequal to first dorsocentral in length, inner post-alar one-third length of outer. Costal sections in proportion of 3.8 : 1 : 0.5. Terminalia: Surstylus about one-half as high as epandrium, triangular in outer side but excavated basally in inner side, bearing two apical spines; cerci united with each other on dorsal two-thirds, each with one or two apical setae. Postgonite with one long seta, setulose apically. Phallus with basiphallus rather short, with a pair of striate, membranous and valvate processes between basiphallus and distiphallus; ejaculatory apodeme 250 μ long. (Fig. 6).

Length: Body 3.0 mm, wing 2.4 mm.

Female: Unknown.

Distribution: Borneo.

Holotype ♂ (BISHOP), Paring, nr. Ranau, British N. Borneo, 23.I. 1958, T. C. Maa (terminalia mounted on slide).

The general appearance of this species is similar to *C. sedlaceki* n. sp. but the colorations of the legs and posteroventral sclerites of the thoracic pleura, shape of the surstylus and structures of phallus between them are quite different.

6. *Czernyola caligula* Sasakawa, n. sp. (Fig. 2)

Male: Head black, frontalia narrowly orangish along ventral margin or on ventral one-fourth, parafrontalia brown-tinged, becoming paler ventrally, face and peristome pale brown, gena dirty yellow; antenna and palpus whitish yellow, second antennal segment orangish apically, third segment with pale brown spot just dorsad base of brown arista. Thorax shiny black, lateral side of notum and pleurotergite slightly brown-tinged, hypopleuron yellowish brown. Setae and bristles yellowish brown,

Wing subhyaline, darker anteriorly on apical half, interrupted by narrow transparent cross-band just distad of R_1 -termination, veins yellowish brown; calypter yellow, with margin and fringe slightly brownish; halter yellow. Legs yellow, fore femur sometimes orangish dorsoapically, middle femur with pale brown apical ring, hind femur with apical ring darker and about one-fifth as long as femoral length. Abdomen black, second to fifth tergites with yellowish caudal margins, sixth to ninth tergites entirely brownish black, surstylus and cercus brown.

Frons a little wider than eye (1.8 : 1.5), slightly diverging ventrally; first upper fronto-orbital one-fifth to one-fourth length of second, cruciate bristle as long as second upper fronto-orbital, ocellar and postvertical each two-thirds length of second upper fronto-orbital; eye almost as high as broad; gena one-seventh to one-sixth height of eye. Antennae narrowly separated at base, third segment shorter than broad, microscopically pilose, arista distinctly pubescent. Mesonotum with three dorsocentrals, first dorsocentral one-half length of second, seven to eight rows of acrostichals anteriorly, six rows of them ending at level of third dorsocentral, an isolated pair behind that level slightly longer than others, inner post-alar one-fourth length of outer; scutellum with two setae laterally. Costal sections in proportion of 7 : 2 : 1, r-m almost at distal one-third of discal cell, M_{1+2} ratio as 5.0, ultimate section of M_{3+4} about four-fifths length of penultimate. Terminalia: Surstylus conical, about one-half as high as epandrium, bearing two spines at tip, cercus twice as high as wide and as high as surstylus, with two long apical setae. Postgonite boot-shaped, bearing three setae at middle and many setulae at apex. Phallus as figured, ejaculatory apodeme 210 μ long.

Length: Body 2.20 mm, wing 1.79-1.93 mm.

Female: Similar to male but face dark brown on ventromesal two-thirds, gena pale brown, peristome darker; antenna yellow, third segment with brown apical spot on outer half and almost reaching to basal margin of inner side, palpus brown; thorax brownish black, sterno-, hypo- and pteropleura, pleurotergite pale brown; legs with distal one-half of fore, four-fifths of middle and three-fifths of hind femora, and all tibiae except for distal apices brown; abdomen blackish brown, ovipositor yellow.

Frons subequal to width of eye; gena about one-ninth height of eye; acrostichals arranged in six rows anteriorly and four rows of them extending posteriorly. Length of wing 1.65 mm.

Distribution: New Guinea, New Britain.

Holotype ♂ (BISHOP), allotype ♀, Gurakor Village, 950m, Wampit V., nr. Wau, NE New Guinea, 7. VII. 1957, D. E. Hardy. Paratypes 2♂♂, same data as

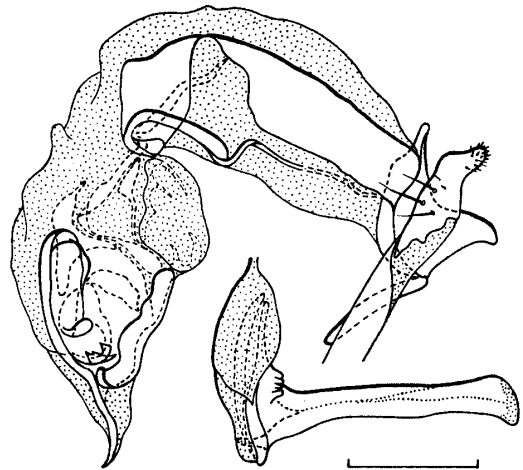


Fig. 2 Male terminalia of *Czernyola caligula* n. sp.

holotype; 1♂, 1♀, Between Hollandia and Binnen, 50 m, NW New Guinea, 12. VII. 1957, Hardy; 1♂, Lindenhafen, 2 m, S. Coast, New Britain, 23. IV. 1956, J. L. Gressitt; 1♂, Silanga, Nakanai Mts., 150 m, 30. VII. 1956, E. J. Ford, Jr.

This new species belongs to the *biseta*-group but is easily recognizable by the subhyaline wings. The male of this species differs from *biseta* Hendel by the entirely yellow tibiae, bootshaped postgonites and well-developed basal sclerites of the basiphallus, and the female differs from *biseta* and *pleuralis* Malloch by the broadly yellow femora of the fore and hind legs. It is also clearly distinct from *delta* McAlpine by the characters given in the key.

7. *Czernyola delta* McAlpine

Czernyola delta, McAlpine, 1960, Rec. Aust. Mus. 25: 79 (♂♀, Australia).

This species differs from *C. biseta* Hendel in the absence of a brown preapical ring on the hind tibia of male and in having the pale face and gena of the female. Also, the phallus is not provided with a pointed triangular, ventral sclerite at middle as seen in *biseta* (McAlpine, fig. 14).

Specimen examined: 1♀, Sarmi, W. of Hollandia, NW New Guinea, 30. VI. 1959, T. C. Maa.

Distribution: Australia, New Guinea. New to New Guinea.

8. *Czernyola hyalina* Sasakawa, n. sp. (Fig. 3)

Male: Head dark brown but frons ventrally, face and gena paler, peristome black; antenna yellow, basal two segments orangish, arista brownish distally, palpus brown. Thorax and abdomen blackish brown, the former shining. Wing hyaline, very slightly smoky between costa and vein R_{2+3} , veins yellowish brown, calypter yellow, with margin testaceous and fringe pale brown; halter whitish yellow. Legs whitish yellow but fore and middle coxae, fore and middle femora except for distal ends, and distal five-sevenths of hind femur brown. Lower fronto-orbitals, vibrissa, dorsocentrals, supra-alar, post-alar and scutellar brownish yellow, other setae and bristles brownish black.

Frons as wide as eye, parallel-sided; first upper fronto-orbital broken but well recognizable by pit; postvertical two-thirds length of second upper fronto-orbital; eye ratio as 0.78; gena one-ninth height of eye; vibrissa about twice

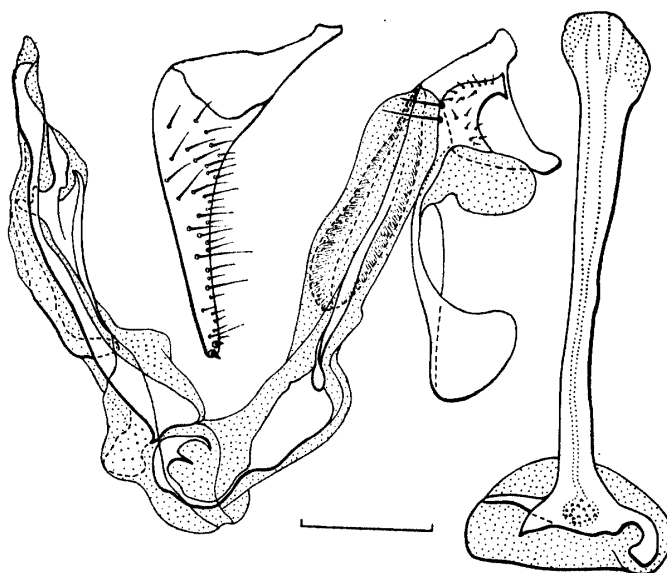


Fig. 3 Male terminalia of *Czernyola hyalina* n. sp.

as long as second upper fronto-orbital. Antennae approximated at base, third segment rather large, shorter than broad, with distinct pile, arista distinctly pubescent. Mesonotum with three dorsocentrals, first dorsocentral two-thirds length of third, distance between second and third dorsocentrals about one-half that between transverse

suture and first dorsocentral, about six rows of long acrostichals, inner post-alar one-third length of outer; scutellum with subapical seta which is nearly one-half length of apical and a short seta before that. Costal sections in proportion of 10 : 2.2 : 1.6, r-m beyond middle of discal cell (3 : 2), M_{1+2} ratio as 3.5, ultimate section of M_{3+4} three-fifths length of penultimate. Terminalia: Epandrium small, surstylus three-fifths as high as epandrium, distinctly tapering apically, bearing two spines at tip, cerci united with each other at dorsal one-fourth, almost as high as epandrium and twice as high as wide, without apical bristle. Postgonite truncated at apex, with two long and many minute setae. Distiphallus with sclerites long; ejaculatory apodeme 420μ long.

Length: Body 2.75 mm, wing 2.30 mm.

Female: Unknown.

Distribution: Solomons.

Holotype ♂ (BISHOP), Tangtalau, Malaita, 200 m, 25. IX. 1957, J. L. Gressitt.

This species is closely related to *C. boettcheri* Frey in having the dark legs and pale bristles, but is immediately distinguishable by the paler hind coxa and wing. The male terminalia is quite distinct: the cercus is not provided with the apical seta, the surstylus is extremely elongated, the distal end of the postgonite is truncate and the phallus is long.

9. *Czernyola nigripalpis* (Steyskal and Sasakawa), n. comb.

Tonnoiria nigripalpis Steyskal and Sasakawa, 1966, Ins. Micronesia 14 : 246 (♂♀, Mariana Is., New Guinea).

The distinguishing features of this species are the dark thorax, second antennal segment, palpus and bristles, the pale face and gena, and the long phallus and ejaculatory apodeme.

Distribution: Mariana Is., New Guinea.

Specimens examined: 1♂, Kokoda-Pitoki, 400m, SE New Guinea (Papua), 23. III. 1956, J. L. Gressitt; 1♂1♀, Mangrowawa, 50-100m, Biak I., NW New Guinea, 29-30. V. 1956, T. C. Maa.

10. *Czernyola oedaleostylis* Sasakawa, n. sp. (Fig. 4)

Male: Head black, frontalia more or less orangish along ventral margin, parafrontalia brownish ventrally, face, gena and ventro-anterior margin of postgena whitish yellow; antenna and palpus yellow, the former sometimes orangish. Thorax subshiny black, lateral side of notum slightly brown-tinged; pleura yellow but propleuron, dorsal one-fifth to one-third of mesopleuron and pleurotergite dark brown. Setae and bristles brown.

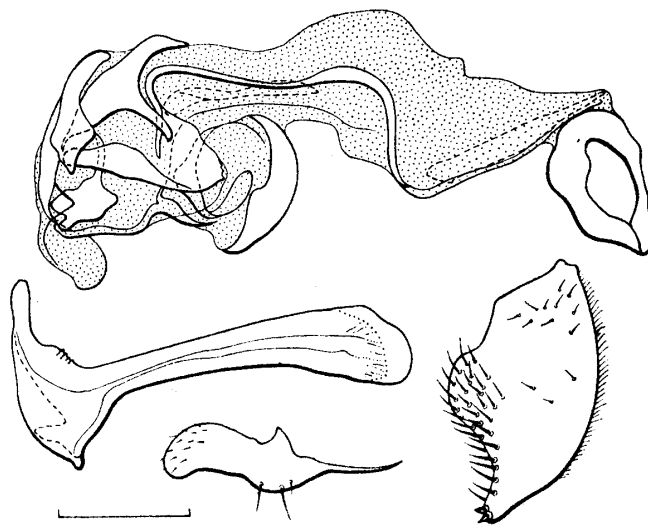


Fig. 4 Male terminalia of *Czernyola oedaleostylis* n. sp.

Wing hyaline, with pale brown spot on apical half, veins pale brown, yellowish basally; calypter brownish gray, with margin and fringe pale brown; halter yellow. Legs yellow; hind femur narrowly with brown apical ring. Abdomen black; epandrium brownish black, surstylus and cercus brown.

Frons almost as wide as eye, slightly diverging ventrally; fronto-orbitals missing; eye as high as wide; gena one-seventh to one-sixth height of eye. Antennae narrowly separated at base, third segment distinctly shorter than broad, minutely pilose, arista with distinct pubescence. Mesonotum with three dorsocentrals, six to eight rows of acrostichals, inner post-alar about one-third length of outer. Costal sections in proportion of 8.5 : 2.5 : 1.4, r-m beyond middle of discal cell (3 : 2), M_{1+2} ratio as 3.8-4.5, ultimate section of M_{3+4} slightly shorter than penultimate (4 : 4.5). Terminalia: Surstylus swollen at middle of inner side, one-half as high as epandrium, bearing two spines at tip and many stout but short setae; cercus as high as surstylus, twice as high as wide, with one long apical seta. Postgonite subequal to hypandrium, bearing two setae at middle and many setulae on curved tip. Phallus as figured, ejaculatory apodeme 268 μ long, slightly expanded apically.

Length: Body 2.34-3.03 mm, wing 1.93-2.20 mm.

Female: Unknown.

Distribution: Bismarck Arch. (Manus I.).

Holotype ♂ (BISHOP), Paratopotypes 2♂♂, Momote, Manus I., 24. XII. 1959, T. C. Maa.

This species is closely related to *C. palliseta* Malloch and *pleuralis* Malloch in having the pale ventral side of the thoracic pleura, but is immediately distinguishable by the dark frontalia and bristles. The third antennal segment is similar to that of *palliseta*, differing from that of *pleuralis*. The surstylus is most distinctive in the shape.

11. *Czernyola palliseta* (Malloch)

Tonnoiria palliseta Malloch, 1929, Ann. Mag. Nat. Hist. 26 : 98 (♂♀, Society Is.) ; 1932, Bull. Bishop Mus. 98 : 215 (♀, Marquesas Is.).

Czernyola palliseta (Malloch), 1942, Bull. Bishop. Mus. 172 : 209.

Czernyola palliseta palliseta (Malloch) : McAlpine, 1960, Rec. Aust. Mus. 25 : 80.

Male: Head black, frontalia orangish yellow on ventral one-third to one-half, parafrontalia brown but yellowish ventrally, face, gena and ventrocephalal margin of postgena whitish yellow; antenna and palpus yellow, first and second segments and dorsal margin of third segment more or less orangish, arista brown but yellow at base. Thorax shiny black, lateral side of mesonotum slightly brown-tinged, pleura yellow except for brown propleuron, dorsal one-third to one-half of mesopleuron and dorsal one-half of pteropleuron and pleurotergite. Setae and bristles on head and thorax yellowish. Wing faintly or distinctly tinged with brown, darker on apical one-third; halter yellow. Legs yellow, hind femur orangish distally. Abdomen brownish black; epandrium brownish ventrally, surstylus and cercus testaceous yellow.

Frons subequal to width of eye, slightly broader ventrally; first upper fronto-orbital one-third to one-half length of second; eye almost as high as wide; gena about one-fifth

height of eye. Antennae moderately separated at base, third segment orbicular, minutely pilose, arista distinctly pubescent. Mesonotum with three dorsocentrals, first dorsocentral about one-half length of second which is almost as far apart from transverse suture as from third, eight or nine rows of acrostichals anteriorly but becoming sparser behind second dorsocentral. Costal sections in proportion of 10.5 : 3.2 : 1.6, r-m beyond middle of discal cell (3.5 : 2.5), M_{1+2} ratio as 3.4, ultimate section of M_{3+4} about two-thirds length of penultimate. Surstylus about two-thirds as high as epandrium, tapering distally, bearing two spines on tip; cercus slightly lower than surstylus, almost twice as high as wide, with three long apical setae. Postgonite as long as hypandrium, with two setae and many setulae on apical part. Ejaculatory apodeme 220μ long.

Length: Body 2.89-3.40 mm, wing 2.69-3.20 mm.

Female: Differs from male in following points: ventral half of frontalia and parafrontalia, face and gena pale brown, parafacialia silverly pruinose, gena sometimes testaceous; antenna and palpus dark brown, third segment darkened apically, arista paler; thoracic pleura entirely brownish black (rarely posterior part of sternopleuron just above coxa yellowish); femora excepting proximal one-eighth to one-sixth and distal ends dark brown to brownish black, tibiae brown excepting distal one-sixth, paler on fore tibia; ovipositor yellow; setae and bristles on head and thorax brown, postvertical and ocellar bristles stronger; gena one-seventh to one-sixth height of eye; r-m more beyond middle of discal cell, M_{1+2} ratio variable from 4.0 to 4.5

Length: Body 3.03-3.85 mm, wing 2.61-3.40 mm.

Distribution: Society Is., Marquesas Is.

Specimens examined: TAHITI-3♂♂, 5♀♀, Fautaua Val., 11. IX. 1928, A. M. Adamson (USNM, Bishop); 1♂, Tipaerui Val., 12.IX. 1928, Adamson (USNM); 1♀, nr. Papeete, 23. III. 1934, E. C. Zimmerman. MARQUESAS-2♀♀, Kaava Ridge, Hivaoa, 8. I. 1932, Le Bronnec.

12. *Czernyola pleuralis* Curran

Czernyola pleuralis Curran, 1936, Proc. Calif. Acad. Sci. **22** : 54 (♂, Solomons).

Czernyola palliseta pleuralis: McAlpine, 1960, Rec. Aust. Mus. **25** : 80.

Tonnoiria palliseta pleuralis: Steyskal & Sasakawa, 1966, Ins. Micronesia, **14** : 248.

This species has been considered as the western race of *C. palliseta* (Malloch) by the extreme similarity, especially in the males. McAlpine (1960) stated that these two races may represent distinct species. I am agreeable with his opinion, and the differences between both species will be summarized as follows:

	<i>palliseta</i>	<i>pleuralis</i>
Third antennal segment	♂ : only orangish dorsally ♀ : entirely dark brown	♂ } brown spot at base ♀ } of arista
Surstylus	tapering distally, with two apical spines	truncate at distal end, with four spines
Length of wing	♂ : 2.7-3.2 mm ♀ : 2.6-3.4 mm	♂ : 1.8-2.3 mm ♀ : 2.1-2.5 mm

Specimens examined: SE NEW GUINEA (PAPUA)-1♂, Kapagere, nr. Rigo, 14-19. V. 1959, C.D. Michener; 1♂, Daradae, 500 m, 80 km N. to Port Moresby, 5. IX. 1959, T. C. Maa. NW NEW GUINEA-1♂,

Mangrowawa, 50-100 m, Biak I., 31. V. 1959, Maa.

Distribution: Solomons, New Hebrides, New Guinea, North Queensland, Caroline Is. New to New Guinea.

13. *Czernyola ponapensis* (Setyskal and Sasakawa), n. comb.

Tonnoiria ponapensis Steyskal and Sasakawa, 1966, Ins. Micronesia 14: 245 (♀, Caroline Is.).

This species is specific in the entirely yellow pleura.

Distribution: Caroline Is.

14. *Czernyola sedlaceki* Sasakawa, n. sp. (Fig. 5)

Male: Head shiny black, ventral part of parafrontalia and gena slightly brown-tinged, face pale brown dorsally; antenna pale brown, third segment yellowish on basal half and darkened apically; palpus dark brown. Thorax and abdomen black; mesonotum and pleura shining, humerus, pteropleuron, sternopleuron and pleurotergite very slightly tinged with brown; epandrium brownish black, surstylus and cercus brown. Wing faintly tinged with brown, darker on antero-apical half, veins pale brown; calypter brownish gray, with margin and fringe brown; halter yellow. Legs yellow, middle coxa brown to black proximally, fore femur pale brown but inner side yellowish, distal one-third of middle femur dorsally pale brown and of hind femur dark brown, tibiae brown but middle tibia paler and hind darker, tarsi brownish yellow. Setae and bristles black.

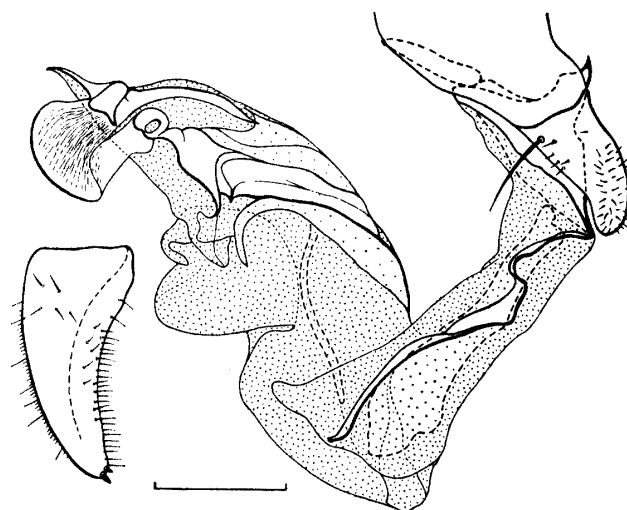


Fig. 5 Male terminalia of *Czernyola sedlaceki* n. sp.

Frons slightly wider than eye, slightly diverging ventrally; first upper fronto-orbital one-third to one-half length of second, postvertical slightly longer than first upper fronto-orbital, ocellar three-fourths or a little shorter than second upper fronto-orbital; eye ratio as 0.79; gena one-seventh to one-ninth height of eye. Antennae moderately separated at base, third segment slightly shorter than broad, microscopically pilose, arista pubescent. Mesonotum with three dorsocentrals, sometimes a short seta before first dorsocentral which is one-half length of second, second dorsocentral situated at middle between transverse suture and third dorsocentral, eight or nine rows of acrostichals, six or seven rows of them ending behind level of third dorsocentral, inner postalar about one-fourth length of outer. Costal sections in proportion of 9 : 2.5 : 1.5, r-m very slightly beyond middle of discal cell (2.5 : 2.2), M_{1+2} ratio as 3.6, ultimate section of M_{3+4} slightly shorter than penultimate (4 : 4.5). Fore coxa silverly pruinose on ventral side. Terminalia: Surstylus two-thirds as high as epandrium, with two spines on tip, cerci broadly united with each other on basal two-thirds, as high as surstylus and about twice as high as wide, without distinct apical seta.

Postgonite with one long seta and numerous setulae at apex. Distiphallus as figured; ejaculatory apodeme 300μ long.

Length: Body 2.61-2.75 mm, wing 2.20-2.48 mm.

Female: Similar to male but face and anterior part of gena except for peristome usually testaceous yellow; legs brownish black except for yellow hind coxa, both extremities of middle femur and basal one-seventh of hind femur, fore tarsus pale brown, middle and hind tarsi slightly brownish distally; ovipositor yellow.

Distribution: New Guinea.

Holotype ♂ (BISHOP), allotopotype ♀, Wau, Morobe Distr., 1200 m, NE New Guinea, 16. VII. 1961, J. Sedlacek. Paratypes 4♂♂, 9♀♀, same locality as holotype, 8. VII.-4. IX. 1961; 1♀, Sibog Vill., Saidor, Finisterre Range, NE New Guinea, 6-16. VI. 1958, W.W. Brandt; 1♀, Aiyuro nr. Mendi, 1530 m, S. Highlands, SE New Guinea, 7. X. 1958, J. L. Gressitt; 1♀, S. coast of Bomberai, 10-100m, Fak Fak, Vogelkop, NW New Guinea, 1. VI. 1959, Gressitt; 1♀, 40 km N. of Baliem Val., ca. 1300 m, Bokondini, NW New Guinea, 16-23. XI. 1961, L. W. Quate.

This species very much resembles *C. nigripalpis* (Steyskal and Sasakawa) in the color of thoracic pleura and bristles, but can be easily separated by having the darker legs.

II. Genus *Chaetoczernyola* Soós

Chaetoczernyola Soós, 1962, Acta Zool. Hung. 8: 141.

Type species: *Chaetoczernyola novaeguineae* Soós

Head with two strong upper and two lower fronto-orbital bristles. Mesonotum with two strong dorsocentral bristles. The first vein R_1 setulose at termination.

Male terminalia with surstylus clavate; cerci narrowing ventrally, separated from each other.

This genus was described by only one female from New Guinea by Soós, and is characteristic in having the setulose termination of the vein R_1 . The male terminalia of *Chaetoczernyola* is easily separable from that of *Czernyola* by the separate cercus and clavate surstylus. Now a clear distinction between genera was drawn.

As a generic character, the presence of three pairs of lateral scutellar bristles described by Soós seems to be unavailable by reason of all the specimens examined have two lateral setae as in *Czernyola*.

15. *Chaetoczernyola novaeguineae* Soós (Fig. 6)

Chaetoczernyola novaeguineae Soós, 1962, Acta Zool. Hung. 8: 141 (♀, New Guinea).

The following characters are differentiated from those of female by Soós. The dorsal part of frons is variable in the darkness, only reddish to brown, the occiput (Soós' interpretation for the occiput is not accurate morphologically) is yellow on dorsal half, the post-vertical bristles are growing at edge of yellow part, but is blackish ventrally. The posterior margin of scutellum is yellow in various width, the apical bristles are growing on yellow area and the subapical seta (hindmost lateral one) arising at edge of dark or yellow area. The bristles on the head and thorax in male are yellow. The mesonotum is provided with three dorsocentrals, of

which anterior one is less than one-half as long as the hindmost one. The vein R_1 has only two setulae before termination (five setulae by Soós, fig 4B). Length: Body ♂: 2.4-2.8, ♀: 2.7-3.0 mm; wing ♂: 2.0-2.1, ♀: 2.2-2.5 mm.

Male terminalia: Surstylus yellow, clavate, with four spines at inner apex; cercus yellow, narrowing ventrally, three-fourths as high as epandrium, separated from each other, bearing one long apical bristle. Postgonite with three long setae, serrated at apex. Distiphallus with dorsal sclerite distinctly forked at end; ejaculatory apodeme 364 μ long.

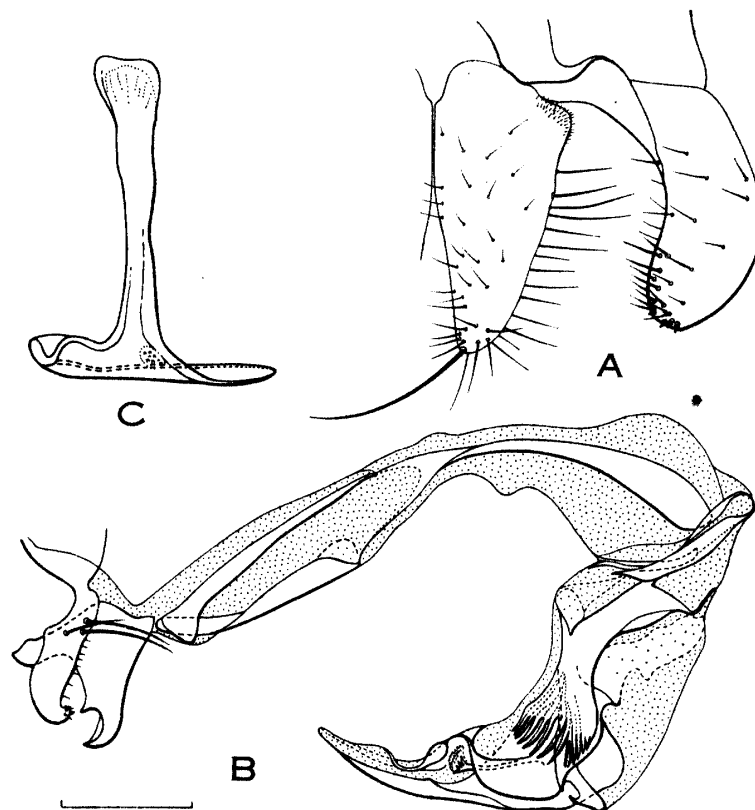


Fig. 6 Male terminalia of *Chaetoczernyola novaeguineae* (A, B) and ejaculatory apodeme of *Czernyola borneoensis* (C).

Specimens examined: 1♂, 1♀, Daradae, 80 km N. to Port Moresby, SE New Guinea, 5. IX. 1959, T. C. Maa; 3♂♂, 1♀, Brown River, SE New Guinea, 20. VIII. 1959, Maa.

Distribution: New Guinea.

要旨: 東洋および太平洋地域産クチキバエ科 *Czernyola* 属の14種 (5新種を含む) と *Chaetoczernyola* 属1種について分類学的検討を行なった。

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