Pacific Insects 7 (4): 815-902 December 30, 1965

A TAXONOMIC STUDY OF PHILIPPINE PSYCHODIDAE (Diptera)

By Laurence W. Quate[1]

Abstract: Keys, descriptions, and illustrations are given for the 107 species of Psychodidae (not including the 25 species of *Phlebotomus*) known to occur in the Philippine Islands; 72 of these are described as new and one new genus is named. Species are assigned to 10 genera: *Sycorax* (1 sp.), *Trichomyia* (4), *Telmatoscopus* (23), *Paratelmatoscopus* (3), *Notiocharis*(3), *Brunettia* (10), *Trichopsychoda* (2), *Epacretron*, n. gen. (1), *Philosepedon* (9), and *Psychoda* (51).

This study of Philippine psychodids is a part of a continuing series treating the Indomalayan fauna. Several papers have been published in earlier issues of this journal and material is on hand for additional studies of other areas.

132 species of Psychodidae are now known in the Philippines (including 25 species of *Phlebotomus*, which have been treated in a separate paper). This may be a fair sample of the psychodid fauna and probably presents a good idea of its components, but certainly many more species are yet to be revealed. Geographic, as well as seasonal, coverage is far from complete; probably a bigger proportion remains unknown than is now known about the Philippine psychodids.

The bulk of the specimens providing the raw data for this study was collected by Dr C. M. Yoshimoto and myself on the Bishop Museum Philippine Expedition from September 1959 to January 1960. Additional material has been supplied by other collectors as listed in the species records.

The only previous taxonomic study of non-phlebotomine psychodids has been that of del Rosario (1936). In that paper, ten species are recorded in the Philippines. Seven of these are recognized by me, redescribed and assigned to different genera when necessary in this paper. Two species named by del Rosario, *Psychoda zigzagensis* and *P. musae*, cannot be recognized among my specimens. *P. phalaenoides* (L.) is also listed by del Rosario, but I do not find the species in the Philippines; since it is common where it occurs and rather easily collected I suspect that it is not actually in the Philippines and del Rosario erroneously applied the name to another species. Until its presence has been corroborated, *phalaenoides* should be removed from the list of Philippine Psychodidae.

All localities listed in this paper may be found on the road maps published by various oil companies in the Philippines or the map of the Philippines published by the National Geographic Society, Washington, D. C. In each citation, the site, province and island are

1. B. P. Bishop Museum, Honolulu, Hawaii. This work was supported by U.S. Public Health Service Grants E-1723 and AI-01723 from the National Institute of Allergy and Infectious Diseases.

listed. The areas may briefly be described as follows:

Luzon. Various places in the vicinity of Manila were visited on several occasions and specimens were collected in Bulacan, Rizal, Cavite and Laguna Provinces. The latter includes work done on the lovely Mt Maquiling rising from the back doorstep of the College of Agriculture, Los Baños, with its rich cover of primary forest. Except for that mountain, all sites are in low, rolling country almost entirely devoted to agriculture.

Negros. At Dumaguete City collecting was done mainly along the beaches and by light traps. Additional work was accomplished at Lake Balinsasayao and Mt Canlaon. L. Balinsasayao is west of Dumaguete City at about 1,000 m and surrounded by primary forests which are broken by small clearings and cultivations. Mt Canlaon at the north end of the island and the highest mountain on Negros. Malaise and light traps were operated at the campsite at 2,100 m and net collecting was done up to the summit of 2,270 m. From about 2,000 m upwards the mountain is covered with shrubby *Rhododendron* forest and tall grass. Collections were also made at about 900 m which is intensively cultivated.

Cebu. 27 km SW of Cebu City is located Forestry Camp 7. The steep hills of this area are largely denuded or covered with secondary growth or forestry plantings. Specimens were collected here by light traps and sweeping and in caves on a limestone ridge.

Agusan Prov., Mindanao. The field party worked around lumber camps at Los Arcos (7 km E of Azpitia) and 10 km SE of San Francisco. Timbering operations had been carried out for some time on the low, rolling hills of both areas and the vegetation was either recently disturbed or secondary growth.

Surigao Prov., Mindanao. Work was done on the low hills near the northeast shore of Lake Mainit. The vegetation is as above.

Bukidnon Prov., Mindanao. On the southeast face of Mt Katanglad, a few km above Alanib and southwest of the provincial capital, Malaybalay, the field party worked on a chichona plantation at 1,250 m and up to 1,480 m. The vegetation at the plantation was disturbed, of course, but cultivation did not extend above 1,250 m and at the higher elevation collections were made in primary forests. The torrential stream psychodid, *Neotelmatoscopus*, was found in the swift, rocky stream flowing down the mountain.

Cotabato Prov., Mindanao. Collections were made by Dr H. E. Milliron near Milbuk. The terrain is heavily forested in the vicinity; the mountains are continuous and irregular. Extensive forestry operations were being carried out and work was done in the disturbed areas as well as in different types of rain forest.

Lanao Prov., Mindanao. Work was also done by Milliron in the vicinity of Lake Lanao, which is at an elevation of 780 m. Tops of peaks are forested, but the general aspect of the region is of one long subject to agriculture. Collections were made in the lake region, along streams, in open fields and in separated wooded areas.

Zamboanga, Mindanao. An overland trek took the field party across the Zamboanga peninsula from Manucan on the north coast to Ozamiz City. Most of the area is composed of worn, low hills, whose original vegetation has largely been replaced by coarse grass as a result of long exposure to shifting cultivation. Only in inaccessible places, as on steep ridges and mountain tops, and on stream margins, were there primary forests. Net collecting, Malaise traps, and light traps were used in the various biotic communities.

W. coast of Palawan. The west coast of Palawan is sparsely populated and is largely

covered with undisturbed forests. The U. S. Coast Guard maintains a "Loran" station at Tarumpitao Pt., about 4 km S of Eran Pt. For a period of two weeks work was done along the coast and inland up to an elevation of about 700 m.

The terminology used in the descriptions is as in my other papers, except the "leg ratio" refers to only the relative length of the femur (including the trochanter) and the tibia.

The B. P. Bishop Museum is abbreviated as BISHOP, the U. S. National Museum, Washington, D. C. as USNM, and the British Museum (Natural History), London as BMNH.

Acknowledgement: I am grateful to many people in the Philippines for their help and courtesy on my several visits there. Prof. D. S. Rabor, Silliman University, Dumaguete City, assisted us during the several months we were in the southern Philippines and greatly expedited our work. Mr Vincent Torres and Hermanello Torrevillas acted as capable guides and assistants. Mr C. P. Villeneuva, Manager of Cinchona Plantation, Mt Katanglad, provided lodgings and expedited work on the mountain. Miss M. Delfinado, Dr C. R. Baltazar and Dr L. M. Howard (USAID) kindly helped in many ways while we were on Luzon. Living accomodations and some transportation was provided our party by the Canote Logging Co., Agusan, the North Zambales Co., Surigao, and the Surigao Consolidated Mining Co., Surigao, to whom I extend thanks for their generosity.

The diligence with which Mrs Stella Quate has applied herself to executing the drawings is greatly appreciated and perhaps others using this paper will appreciate her carefully executed illustrations more than my written contribution.

LIST OF PHILIPPINE PSYCHODIDAE

Sycorax Curtis
1. filipinae*

Trichomyia Curtis
2. ransangi*
3. triflis*
4. trifida*
5. caelibata*

Telmatoscopus Eaton
6. maai Quate
7. reptens*
8. bifidens*
9. canlaonis*
10. sagittalis*
11. parsilobus*
12. longiceps*
13. digitoides*
14. trifidus*
15. amoenus*
16. campanellus*
17. mendicus*
18. cruentus*
19. erratilis*
20. taleolus Quate
21. decens*
22. amplens*
23. bulbulus*
24. zamboangis*
25. cuspiceps*
26. clusior*
27. manilensis (del Rosario)
28. albipunctatus (Williston)

Paratelmatoscopus Satchell
29. monticolus*
30. plutonis*
31. mindanensis*

Notiocharis Eaton
32. stellae Quate
33. filipinae*

* Described as new herein.

34. femoralis*

Brunettia Annandale

35. pallens*
36. parexulans*
37. mateola*
38. yoshimotoi*
39. recepta*
40. mindanensis*
41. nubicola*
42. kibawa*
43. exulans*
44. hispida*

Trichopsychoda Tonnoir

45. bukidnonica*
46. mindanensis*

Epacretron*

47. pinnagum*

Philosepedon Eaton

48. nocturnalis*
49. banksi (del Rosario)
50. baguioensis (del Rosario)
51. mutabilis*
52. frontalis*
53. balinsasayae*
54. calabens*
55. katangladensis*
56. decipiens*

Psychoda Latreille

57. delicata*
58. luzonica*
59. flexichela*
60. unioculata*
61. lusca*
62. articuliga*
63. prolarta*
64. acutilamina Quate
65. felina*
66. aponesos Quate
67. frivola*
68. harrisi Satchell
69. crenula Quate
70. phalanga*
71. fasciata*
72. alternata Say
73. acanthostyla Tokunaga
74. alia Quate
75. vagabunda Quate
76. formosiensis Tokunaga
77. subquadrilobata Tokunaga
78. platilobata Tokunaga
79. turgida*
80. terlinoculata*
81. platalea*
82. saites*
83. aderces Quate
84. paraderces Quate
85. savaiiensis Edwards
86. collina*
87. cochlearia Satchell
88. quadrifilis Edwards
89. guamensis Quate
90. ochra Quate
91. serpentina*
92. canlaones*
93. trunculens*
94. cristula*
95. caudata Quate
96. formosana Tokunaga
97. makati del Rosario
98. malleola Tokunaga & Komyo
99. moleva*
100. umbratica*
101. bidigitalis*
102. pellucida Quate
103. alabangensis del Rosario
104. parsivena Quate
105. mediocris Quate
106. innotabilis Quate
107. fusticola*

Key to genera of Philippine Psychodidae

1. Wing with only single longitudinal vein between radial and medial forks; eye without bridge; flagellar segments of antenna pyriform or subcylindrical but not nodiform 2
   Wing with 2 veins between forks (1 species with 1 vein between forks but it has eye bridge) 3
2 (1). Palpus 4-segmented; Cu short, ending near base of wing ..... **Sycorax**
   Palpus 3-segmented; Cu long, ending near center of wing ..... **Trichomyia**
3 (1). Eye hemispherical, without bridge 4
   Eye with bridge extending across vertex towards midline 6
4 (3). Palpus 4-segmented; proboscis short, non-piercing; ♂ dististyle without large spines; ♀ spermathecae hemispherical, close together and to subgenital plate ... 5
   Palpus 5-segmented; proboscis elongate and adapted to bloodsucking in ♀; ♂ dististyle with 3–5 large spines; ♀ spermathecae saccular, attached to subgenital plate through slender ducts ..... **Phlebotomus**
5 (4). Radial and medial wing forks basad of Cu apex; antenna 16-segmented in both sexes, flagellar segments nodiform; ♂ surstyle with single tenaculum ..... **Paratelmatoscopus**
   Radial and medial forks distad of Cu apex; antenna of ♂ 12-segmented, of ♀ 15- or 16-segmented, flagellar segments fusiform; ♂ surstyle with multiple tenacula ..... **Notiocharis**
6 (3). Vertex on midline longer (or higher) than width of eye bridge; species often with color pattern in vestiture 7
   Vertex on midline shorter than width of eye bridge; labellum flattened apically and bears 4–5 blunt teeth on apical margin, as well as several, long preapical spines; antenna with 14–16 segments, those beyond 13 always reduced and much smaller than preceding; small, yellowish or gray species usually unmarked ..... **Psychoda**
7 (6). Radial and medial wing forks complete or but 1 incomplete 8
   Wing forks incomplete, R_3 and M_2 with large parts of base lacking; wing membrane thickly covered with vestiture (hair sockets visible in slide mounts); ♂ surstyle short, with many long, slender, bell-tipped tenacula ... **Trichopsychoda**
8 (7). Wing forks well removed from base, radial usually distad of medial; ♂ wing not unusually broad 9
   Radial fork near base and usually basad of medial; ♂ wing very broad and both sexes with thick vestiture on membrane ..... **Brunettia**
9 (8). Terminal 2 or 3 antennal segments markedly reduced and much smaller than preceding; ascoids Y-shaped; gray or yellowish colored species 10
   Terminal segments not or only a little reduced; ascoids vary from single rods to palmate structures but not Y-shaped ..... **Telmatoscopus**
10 (9). Head not unusually broad, about as high as or higher than wide; labellum without blunt teeth; ♀ cerci not reduced ..... **Philosepedon**
   Head broad, much wider than high; labellum with teeth as in *Psychoda*; ♀ cerci much reduced ..... **Epacretron**

Subfamily TRICHOMYIINAE

Genus **Sycorax** Curtis, 1839

Range. Palearctic, Ethiopian, Neotropical Regions; Malaya, Philippines, New Zealand.

This archaic genus has a wide, but discontinuous, range with few species. This is its first record in the Philippines, but it is not unexpected since the genus is known to occur in Malaya and New Zealand. However, this probably is the eastern limit of the genus in the northern Pacific, since extensive collections on Micronesian islands have not yielded any specimens of *Sycorax*.

1. **Sycorax filipinae** Quate, n. sp. Fig. 1 a-f.

♂. Body integument brown. Head with scattered hairs on vertex and without differentiated row along posterior border of eyes; cibarium with thin, dark walls, posterior arms divergent; palpus elongate, extending to antenna 5, Newstead scales not evident, ratio= 20 : 21 : 24 : 45. Antenna broken; flagellar segments pyriform, segment 3 not longer than others; ascoids very long and sinuous. Wing membrane clear; base of R_4 far distad of M_{3+4} base; radial and medial fork on same level little basad of M_4 apex. Fore coxa very long, ratio of fore leg=57 : 76, mid=65 : 87, hind=75 : 95. Genitalia as figured; aedeagus with broad, fan-like base, apex bluntly rounded; dististyle recurved at apex and bearing 2, heavy, apical spines, postbasal spur on median margin; surstyle simple, without tenaculum.

Wing length 1.85 mm, width 0.77 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6186): Lemesahan, 25 km N of Zamboanga City, Zamboanga del Sur, 7.IX.1958, 600 m, Milliron.

Sycorax filipinae is distinct from other Asiatic or Australasian species of the genus and no close relationships are evident. It differs radically from the species closest to it geographically, *S. malayensis* Quate (1962). The ♂ genitalia, as well as the palpi, antennae and wing venation, are quite different and do not suggest affinities for the two species.

Genus **Trichomyia** Curtis, 1839

KEY TO PHILIPPINE SPECIES OF TRICHOMYIA

1. Base of R_4 distinctly distad of M_3 base 2
   Bases of R_4 and M_3 nearly on same level; ♂ coxite composed of 2 processes, upper a little longer and more slender than lower; Palawan ..... 2. **ransangi**
2. Radial fork on same level as M_4 (not Cu) apex 3
   Radial fork basad of M_4 apex; ♂ coxite composed of 2 processes, upper clavate and haired apically, lower shorter, more slender and bare ..... 3. **triflis**
3. ♂ coxite composed of 3 processes all markedly dissimilar in shape, upper clavate and haired apically, center bare and tapering to acute, upturned apex, lower sparsely haired and blunt ..... 4. **trifida**
   ♂ coxite composed of 2 processes nearly similar in shape, upper acutely pointed and lower blunt ..... 5. **caelibata**

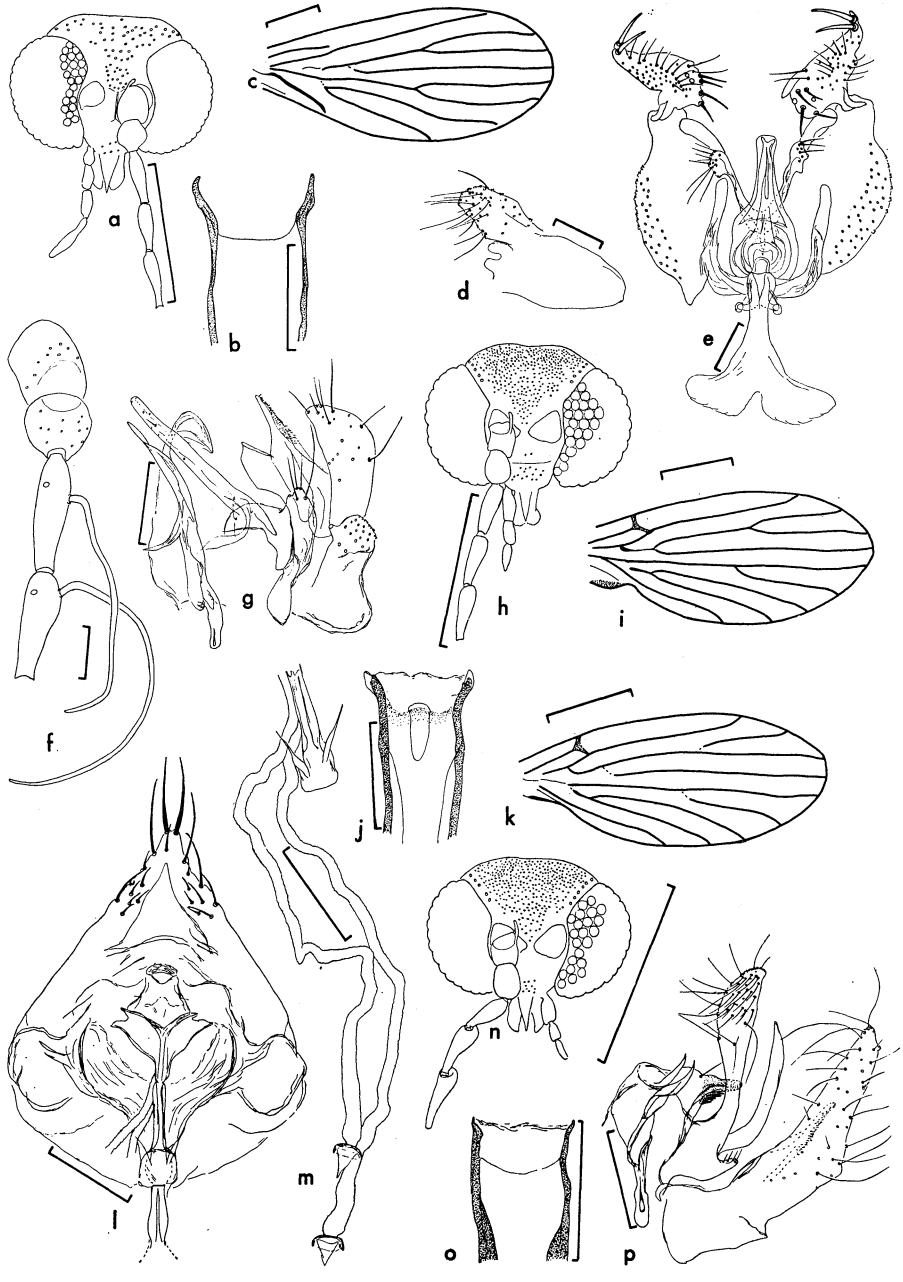

Fig. 1. a–f. *Sycorax filipinae*: a, ♂ head; b, ♂ cibarium; c, ♂ wing; d, ♂ surstyle; e, ♂ genitalia, dorsal; f, ♂ antennal base. g–j. *S. ransangi*, ♂: g, genitalia, lateral; h, head; i, wing; j, cibarium. k–p. *Trichomyia triflis*: k, ♂ wing; l, ♀ genitalia, inner face; m, ♀ spermathecae and ducts; n, ♂ head; o, ♂ cibarium; p, ♂ genitalia, lateral. Scale lines of heads & wings=0.3 mm, others=0.05 mm.

2. **Trichomyia ransangi** Quate, n. sp. Fig. 1 g–j.

♂. Body integument brown. Head with single row of large sockets along posterior 1/2 of upper eye margin; cibarium with dark, strong walls; palpus 3-segmented, ratio=26 : 19 : 20. Antenna 15-segmented; flagellar segments of usual *Trichomyia* shape; ascoids sinuous. Wing membrane clear; base of R_4 on same level as M_3 base; radial fork well basad of M_4 apex; R_2 weakened at base. Ratio of fore leg=40 : 32, mid=48 : 43, hind=47 : 52. Genitalia as figured; coxite composed of 2 processes of similar shape, upper longer and more slender.

Antenna 1.27–1.35 mm; wing length 1.35–1.40 mm, width 0.52–0.55 mm.

DISTRIBUTION. Philippines (Palawan).

Holotype ♂ (BISHOP 6187): Ransang R., about 20 km S of Eran Pt., Palawan (W. coast), 12.I.1960, light trap, Quate. Paratype: ♂, same.

The characteristic ♂ genitalia, as illustrated, possess the most reliable features for the for the identification of *ransangi*.

3. **Trichomyia triflis** Quate, n. sp. Fig. 1 k–p.

♂. Body integument light brown. Head with single row of large sockets along posterior border of eye extending forward almost to inner angle of eye; cibarium with thin, dark walls; palpus 3-segmented, ratio=17 : 12 : 12. Antenna 15-segmented; flagellar segments of usual *Trichomyia* shape; ascoids sinuous. Wing membrane clear; base of R_4 distad of M_4 base; radial fork on same level as M_4 apex. Ratio of fore leg=32 : 25, mid=38 : 33, hind=38 : 40. Genitalia as figured; coxite composed of 2 processes, upper clavate and haired, lower shorter, more slender and bare; paramere with fringe of sclerotized serrations; surstyle elongate.

Antenna 1.10–1.14 mm; wing length 1.07–1.12 mm, width 0.42 mm.

♀. Similar to ♂. Genitalia as figured; spermathecal ducts very long and spermathecae located in segment 6.

Wing length 1.30 mm, width 0.45 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂, allotype ♀ (BISHOP 6188): 10 km SE of San Francisco, Agusan, Mindanao, 17.XI.1959, Quate. Paratype: ♂, same.

T. triflis is similar to the Malayan *T. malaya* Quate (1962). In general appearance and serrated paramere, the ♂ genitalia of the two species are similar, but differ most conspicuously by the longer, more slender surstyle of *triflis*. The very long spermathecal ducts of the ♀ *triflis* are distinct from the short ones of *malaya*.

4. **Trichomyia trifida** Quate, n. sp. Fig. 2 a–h.

♂. Body integument light brown. Head with single row of large sockets along posterior border of eye extending forward almost to inner angle of eye; cibarium with dark walls, sharply curved outwards at apex; palpus 3-segmented, ratio=20 : 15 : 15. Antenna 15-segmented; flagellar segments of usual *Trichomyia* shape; ascoids sinuous. Wing membrane clear; base of R_4 far distad of M_4 base; radial fork on same level as M_4 apex. Ra-

tio of fore leg=35 : 29, mid=40 : 35, hind=40 : 47. Genitalia as figured; coxite composed of 3 dissimilar processes, upper clavate and haired, center bare and tapering to acute apex, lower sparsely haired and blunt.

Antenna 1.17-1.26 mm; wing length 1.18 mm (1.12-1.27), width 0.45 mm (0.42-0.50).

♀. Similar to ♂. Genitalia as figured; spermathecal ducts very long and spermathecae in segment 6.

Antenna 1.00 mm; wing length 1.30 mm (1.25-1.30), width 0.46 mm (0.45-0.47)

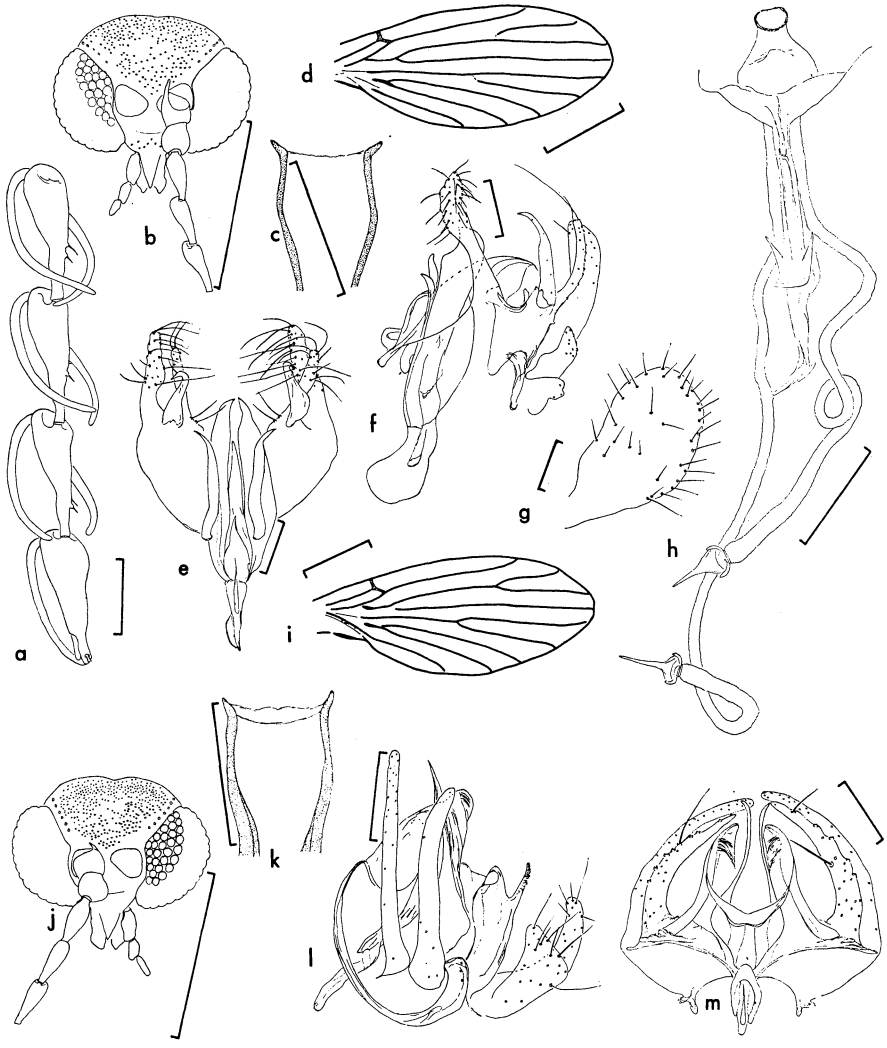

Fig. 2. a-h. *Trichomyia trifida*: a, ♂ antennal tip; b, ♂ head; c, ♂ cibarium; d, ♂ wing; e, ♂ genitalia, dorsal; f, ♂ genitalia, lateral; g, ♂ surstyle; h, ♀ spermathecae & ducts. i-m. *T. caelibata*, ♂: i, wing; j, head; k, cibarium; l, genitalia, lateral; m, genitalia, dorsal. Scale lines of heads & wings=0.3 mm, others=0.05 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂, allotype ♀ (BISHOP 6189): Los Arcos (7 km E of Azpitia), Agusan, Mindanao, 19-23.XI.1959, at light, Quate. Paratypes (USNM, BMNH): 11♂♂, 4♀♀, same except most collected by Yoshimoto.

The tripartite ♂ coxite of *trifida* is unlike any other Philippine species of *Trichomyia* and quickly distinguishes the ♂♂. The long spermathecal ducts of *trifida* are as in *triflis* but the two species differ by the ornamentation of the subgenital plate.

5. **Trichomyia caelibata** Quate, n. sp. Fig. 2 i-m.

♂. Body integument light brown. Head with single row of large sockets along posterior border of eye extending forward almost to inner angle of eye; cibarium with dark walls, only slightly curved outwards at apex; palpus 3-segmented, ratio=25 : 14 : 15. Flagellar segments of antenna of usual *Trichomyia* shape; ascoids sinuous. Wing membrane clear; base of R_4 distad of M_4 base; radial fork on same level as M_4 apex. Ratio of fore leg=34 : 28, mid=41 : 39, hind=38 : 45. Genitalia as figured; coxite composed of 2 processes nearly similar in shape.

Antenna 1.14-1.15 mm; wing length 1.27-1.30 mm, width 0.47-0.52 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6190): 10 km SE of San Francisco, Agusan, Mindanao, 14-18.XI. 1959, Quate.

The ♂ genitalia of this species are quite different from other species of *Trichomyia* in the Philippines. The shapes of the bipartite coxite and aedeagus are the most conspicuous features useful to the identification of *caelibata*.

Subfamily PSYCHODINAE

Genus **Telmatoscopus** Eaton 1904

KEY TO PHILIPPINE SPECIES OF TELMATOSCOPUS

1. Eyes contiguous 2
   Eyes separated on midline 9
2 (1). Rs pectinate, i. e., R_3 and R_4 branching in parallel fashion from Rs and base of R_4 beyond base of R_5 3
   Rs not pectinate, origin of R_4 before or at the same level as base of R_5 6
3 (2). R_5 ending in wing apex; wing slender, acutely pointed; eye bridge with 3 rows of facets 4
   R_5 ending beyond wing apex; eye bridge with 4 rows of facets 5
4 (3). ♂ surstyle with 6 tenacula; aedeagus complex, multipartite, symmetrical; ♀ subgenital plate subtruncate apically, with slight apical concavity ..... 6. **maai**
   ♂ surstyle with 4 tenacula; aedeagus a simple tubular structure; ♀ subgenital plate V-shaped apically ..... 7. **reptens**
5 (3). Radial and medial wing forks basad of Cu apex; palpus segment 1 but little shorter than 2; larger species, wing length 2 mm or more ..... 8. **bifidens**

Radial and medial forks on about same level as Cu apex; palp 1 about 1/2 length of 2; wing less than 2 mm ..... 9. **canlaonis**

6 (2). Medial fork and usually radial clearly before Cu apex, R_{2+3} shorter than or about as long as R_2 7

Medial fork on same level as Cu apex and radial beyond Cu apex, R_{2+3} longer than R_2 ..... 10. **sagittalis**

7 (6). Wing veins with spots at tips; palpus 3 little shorter than 2; tip of ♂ dististyle bifurcate 8

Veins without spots at tips; palpus 3 longer than 2; wing broad and rounded at apex; ♀ subgenital plate with apical lobes slender and widely divergent ..... 11. **parsilobus**

8 (7). Large species, wing 2.5 mm or more; terminal processes of ♂ dististyle of equal size; ♂ surstyle as long as tergite 9, strongly curved when viewed from side ..... 12. **longiceps**

Smaller species, wing less than 2.0 mm; terminal processes of ♂ dististyle of unequal sizes; ♂ surstyle short, straight when viewed from side ..... 13. **digitoides**

9 (1). Rs pectinate, i. e., R_3 and R_4 branching in parallel fashion and base of R_4 beyond base of R_5 10

Rs not pectinate 11

10 (9). Antenna 3 reduced, smaller than other flagellar segments, spherical without internode; wing bluntly rounded; radial fork near base of wing, hence R_{2+3} very short, only about 1/6 length of R_2; eyes separated by 4 or less facet diameters ..... 14. **trifidus**

Antenna 3 of normal size, similar in size and shape to other flagellar segments; wing slender and acute apically; R_{2+3} only a little shorter than R_2, radial fork distad of medial; eyes widely separated by 5-6 facet diameters ..... 15. **amoenus**

11 (9). Veins, or at least R_2 and M_3, without enlargements near forks; 2 longitudinal veins between radial and medial forks 12

Veins R_1, R_2, R_3, M_1, M_2, and M_3, with enlarged spots or nodular thickenings near forks; only single vein between forks, so radial fork appears to be on R_{3+4}; eye bridge broad, eyes separated by 1 facet diameter ..... 16. **campanellus**

12 (11). R_5 ending beyond wing apex; wing membrane spotted 13

R_5 ending in apex 16

13 (12). R_4 ending before wing apex 14

R_4 ending in apex; interocular suture highly arched; median band of hairs on frons extending posteriorly above upper eye margin to interocular suture; palpus 3 shorter than 2 ..... 17. **mendicus**

14 (13). Eye bridge with 4 rows of facets 15

Eye bridge with 3 rows of facets; eyes narrowly separated by 1 or less facet diameter ..... 18. **cruentus**

15 (14). Medial fork basad of or on same level as Cu apex; M_2 thickened at fork and with small spur; ♀ subgenital plate without circular structures ..... 19. **erratilis**

Medial fork clearly distad of Cu apex; M_2 not thickened at fork; ♀ subgenital plate with circular structure on each side near base ..... 20. **taleolus**

16 (12). Eye bridges connected by interocular suture; eyes usually separated by no more than few facet diameters; flagellar segments strongly nodiform 17

Interocular suture lacking; eyes widely separated by 6 facet diameters and bridge appears reduced; flagellar segments weakly nodiform; wing forks close to base, R_{2+3} only 1/5 length of R_2; wing acutely pointed at apex... ..... 24. **zamboangis**

17 (16). Radial fork basad of or on same level as medial fork.....18
Radial fork clearly distad of medial..... 20

18 (17). Palpus very large, extending to antennal segment 9; ascoids V-shaped 19
Palpus small, extending only to antenna 7; ascoids palmate; eyes widely separated by 5-6 facet diameters and bridges narrowing to 2 facet rows medially.....21. **decens**

19 (18). Radial fork basad of medial; palpal segments 2 & 3 of equal length; ♂ aedeagus strongly curved at apex ..... 22. **amplens**
Radial and medial forks on same level; palpus 2 longer than 3; ♂ aedeagus straight apically ..... 23. **bulbulus**

20 (17). Frons lacking diagonal suture from anteriomedial angle of eye; wing narrow, apex rounded; veins spotted at tips; smaller species, wing length 1.5 mm or less..... 21
Frons with strong, diagonal suture from anteriomedial angle of eye to antennal socket; wing broad, apex pointed; wing unspotted; larger species, wing length more than 1.5 mm 22

21 (20). Eyes separated by 3-4 facet diameters, bridge rounded on median margin; ♂ surstyle with 4 tenacula..... 25. **cuspiceps**
Eyes separated by less than 2 facet diameters, bridge truncate on medial margin; ♂ surstyle with 3 tenacula ..... 26. **clusior**

22 (20). Radial fork beyond center of wing, R_2 shorter than R_{2+3}; palpus segment 1 about 1/2 length of 2; ♂ surstyle with numerous, slender, capitate tenacula ..... 27. **manilensis**
Radial fork before center of wing, R_2 longer than R_{2+3}; palpus 1 about 1/3 length of 2; ♂ surstyle with about 10 short, simple tenacula; large, common species with white vestiture on antenna and thorax and white spots on wings and legs ..... 28. **albipunctatus**

6. **Telmatoscopus maai** Quate, 1962, Pacific Ins. **4**: 11 (♂ illus.) Fig. 3a.

DISTRIBUTION. Philippines, Borneo.

PHILIPPINES. MINDANAO: 25 km S of Manucan, Zamboanga del Norte, 18.X.1959, at light, Quate, ♀; 10 km SE of San Francisco, 12-18.XI.1959, at light, Quate, 2♂♂, ♀.

The ♀ *maai*, herein illustrated for the first time, is similar to the ♂ in non-sexual characters. Palpal segments 2 and 3 are enlarged in the ♀, but lack the heavy vestiture of the ♂. Head shape and wing venation are the same in both sexes. Besides the distinctive palpal structure and slender wing with pectinate radial sector, the genitalia of both sexes are distinctive. It is not likely that the complex, symmetrical ♂ genitalia would be confused with other species. The nearly truncate apex of the ♀ subgenital plate differs from other species now known.

7. **Telmatoscopus reptens** Quate, n. sp. Fig. 3 b-g.

♂. Body integument brown. Eyes contiguous, bridge with 3 rows of facets; frons with

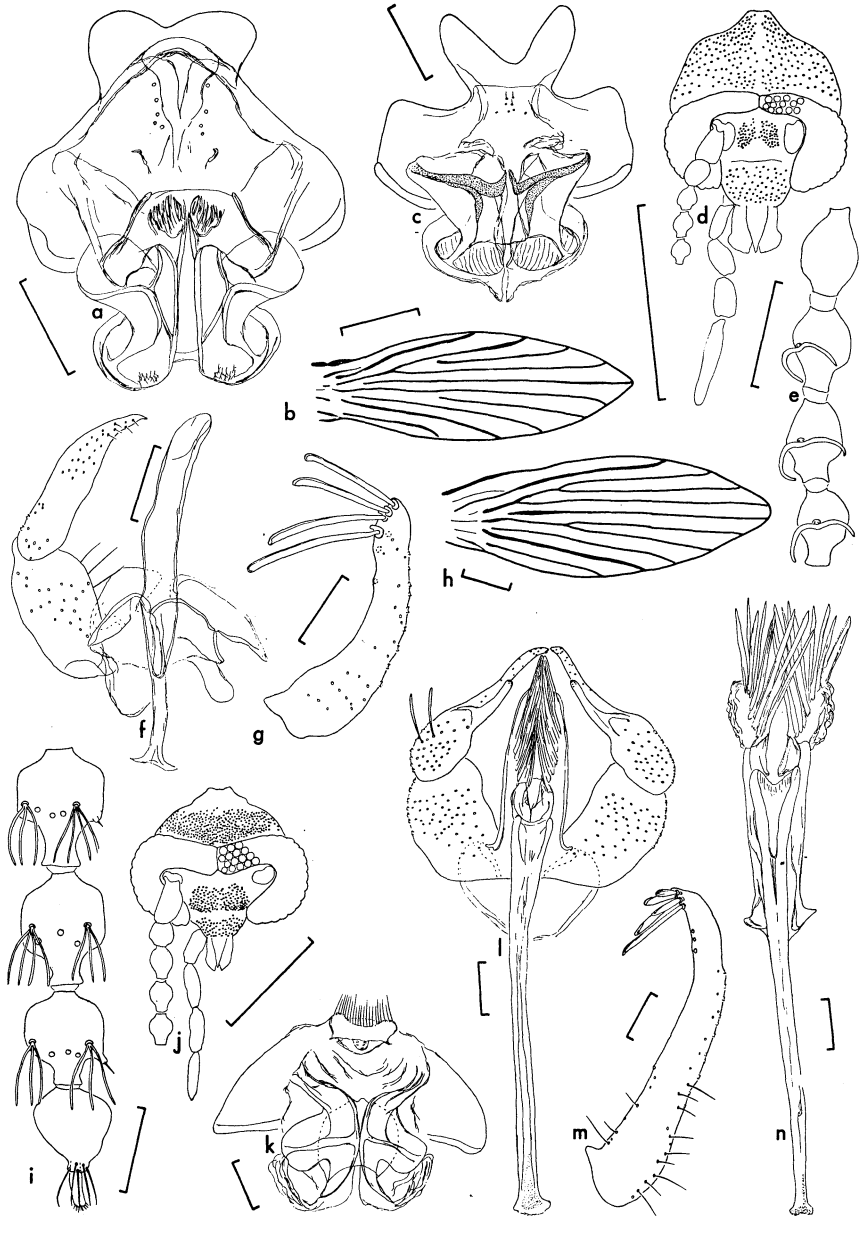

Fig. 3. a. *Telmatoscopus maai*, ♀ genitalia, inner face. b-g. *T. reptens*: b, ♂ wing; c, ♀ genitalia, inner face; d, ♀ head; e, ♀ antennal segments 3-6; f, ♂ genitalia, dorsal; g, ♂ surstyle. h-n. *T. bifidens*: h, ♂ wing; i, ♂ antennal tip; j, ♂ head; k, ♀ genitalia, inner face 1, ♂ genitalia, dorsal; m, ♂ surstyle; n, ♂ aedeagus, tip extended. Scale lines of heads & wings=0.3 mm, others=0.05 mm.

pair of hair patches, without posterior projection; palpus with basal 3 segments short and thick, terminal one longer and slender, ratio=5 : 6 : 6 : 14. Antenna with scape little longer than pedicel, segment 3 weakly nodiform; remainder broken, see ♀. Thorax without patagia. Wing slender; membrane largely clear, but some infuscation along R_1 and M_4 and at vein tips; radial and medial forks and Cu apex on same level; R_5 ending in acute apex. Ratio of fore leg=13 : 12, mid leg=14 : 18, hind leg=13 : 21. Genitalia as figured; coxite of ordinary shape; aedeagus tubular, simple; surstyle with 4 tenacula.

Wing length 1.40 mm, width 0.42 mm.

♀. Similar to ♂; flagellar segments with short internodes; ascoids V-shaped. Genitalia as figured; apex of subgenital plate V-shaped.

Antenna 0.67 mm; wing length 1.37–1.40 mm, width 0.40 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂, allotype ♀ (BISHOP 6191); Kibawe, Bukidnon, Mindanao, 7.XII.1959, Quate. Paratype: ♀, same.

The specimens were collected on roadside vegetation growing from a seepage area. *T. reptens* is similar to *maai*, but lacks the enlarged palpal segments of that species and the ♂ and ♀ genitalia of the two species differ markedly.

8. **Telmatoscopus (Neotelmatoscopus?) bifidens** Quate, n. sp. Figs. 3 h–n, 4.

♂. Body integument light brown. Eyes contiguous, bridge with 4 rows of facets; frons with rectangular patch of hairs a little concave on posterior margin, without posterior projection on midline; palpus with all segments nearly of same length, ratio=9 : 11 : 11 : 12. Antenna 16-segmented; scape about 2× length of pedicel; flagellar segments with short internodes; terminal segment with slender, preapical apiculis; ascoids 3- or 4-branched. Thorax without patagia. Wing slender; membrane clear with very light infuscation in costal cell; radial and medial forks on about same level well basad of Cu apex; R_5 ending beyond apex. Ratio of fore leg=20 : 17, mid leg=21 : 22, hind leg=20 : 23. Genitalia as figured; dististyle attenuate, with digitiform appendage arising from 0.3; aedeagus with long, slender base, expanded apical part symmetrical; surstyle elongate, with 6 tenacula.

Antenna 1.21 mm (1.11–1.25); wing length 2.26 mm (2.00–2.45), width 0.78 mm (0.70–0.87).

♀. Similar to ♂; antennal ascoids also single, but less numerous. Genitalia as figured; subgenital plate with large, indistinct base and small crescentric apex.

Antenna 0.96–1.07 mm; wing length 2.48 mm (2.35–2.75), width 0.82 mm (0.75–0.90).

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂, allotype ♀ (BISHOP 6192): Mt Katanglad, Bukidnon, Mindanao, 27–31.XI. 1959, 1480 m, Quate. Paratypes (USNM, BMNH): 9♂♂, 8♀♀, same.

Adults were taken from rocks in a swift, mountain stream. Water was rushing rapidly enough that there was much foaming water and spray was splashed on the rocks. Psychodid larvae and pupae were found in the same stream below the water line. These specimens, illustrated in fig 4, may be the immature stages of *bifidens*, but attempted rearing was unsuccessful, so the association of the stages is rather tenuous. Larvae possess 6

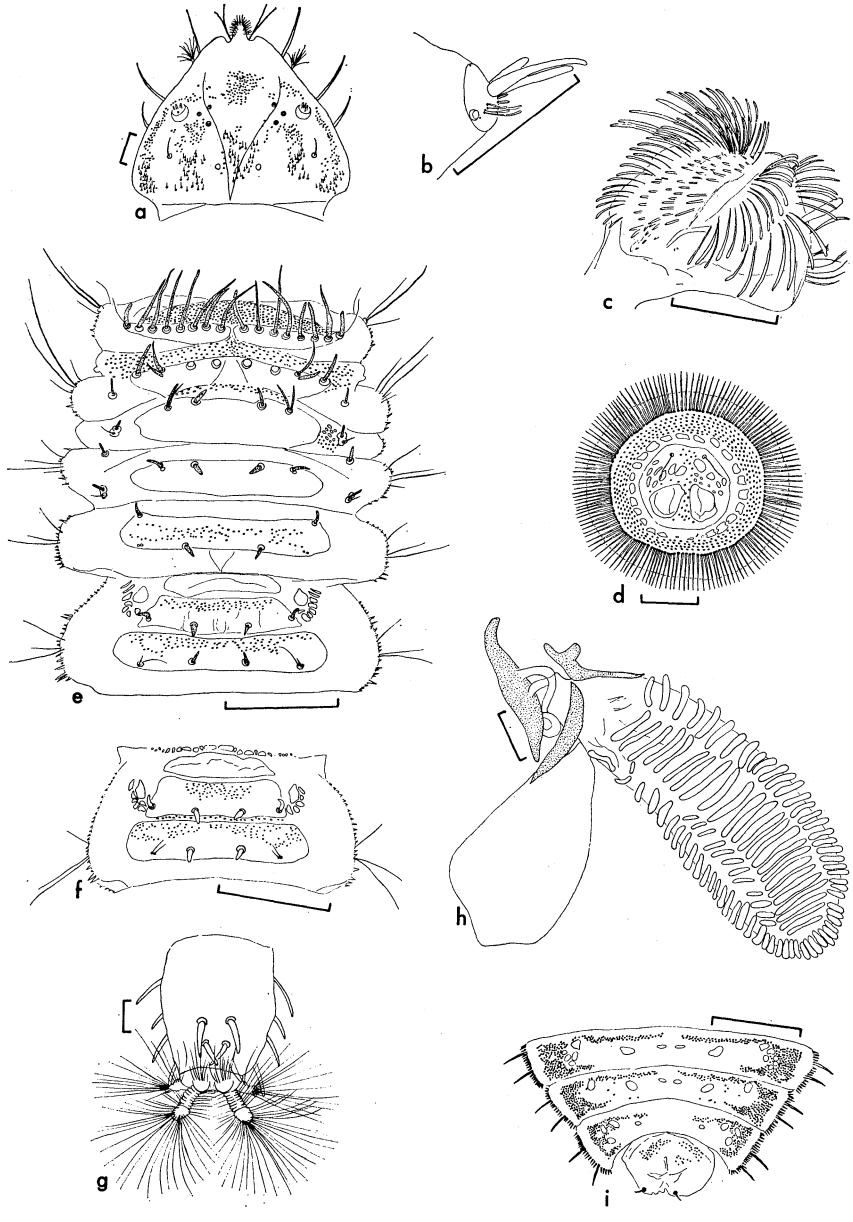

Fig. 4. *Telmatoscopus bifidens* (?), larva and pupa. a, head of larva; b, antenna of larva; c, mandible of larva d, ventral sucker of larva; e, thorax and 1st abdominal segment of larva; f, abdominal segment 4 of larva; g, anal siphon of larva, dorsal; h, respiratory horn of pupa; i, terminal 4 segments of pupa. Scales lines of e, f, i=0.3 mm, others=0.05 mm.

ventral suckers and the pupa is concave ventrally making the venter a suction disc. These immature stages belong to the subgenus *Neotelmatoscopus* Tonnoir (1933), which was erected to receive those species whose early stages had become adapted to torrential streams by developing attachment organs. Irrespective of the correctness of the association of immatures and adults, this aquatic group does occur in Philippines and extends the distribution of *Neotelmatoscopus* from India, Java and Borneo to the Philippine Archipelago.

9. **Telmatoscopus canlaonis** Quate, n. sp. Fig. 5 a-c.

♀. Body integument light brown. Eyes contiguous, bridge with 4 rows of facets; frons with rectangular patch of hairs a little concave on posterior margin, without posterior projection on midline; palpus with segment 1 about 1/2 length of 2, ratio=5 : 8 : 9 : 12. Antenna with scape about 2× length of pedicel; flagellar segments with short internodes; ascoids single-branched, apparently paired on each segment. Thorax without patagia. Wing slender; membrane clear; radial and medial forks and Cu apex on about same level; R_5 ending beyond apex. Ratio of fore leg=15 : 14, mid leg=17 : 17, hind leg=17 : 19. Genitalia as figured; subgenital plate with large, hemispherical base and small, Y-shaped apical part arising from collar-like structure.

Antenna 0.73 mm, wing length 1.85 mm, width 0.87 mm.

♂. Unknown.

DISTRIBUTION. Philippines (Negros).

Holotype ♀ (BISHOP 6193): Mt Canlaon, Negros Or., 20-25.XII.1959, 915 m, Quate.

The specimen was collected on a rock in a swift, mountain stream. *T. canlaonis* is similar to *bifidens*, but differs from that species, apart from the allopatric distribution, in the different palpal ratio with a short 1st segment, the wing forks being more distad, and unusual female genitalia which are quite different from that of *bifidens*.

10. **Telmatoscopus sagittalis** Quate, n. sp. Fig. 5 d-h.

♂. Body integument brown. Eyes contiguous, bridge broad, with 4 rows of facets; frons with truncated triangular patch of hairs and sutures on margin of hair patch from inner eye angle to frontoclypeal suture; palpus with segments 2 and 3 enlarged, ratio= 5 : 8 : 9 : 12. Antenna 16-segmented; scape 2× length of pedicel; flagellar segments with large, slightly eccentric nodes, basal internodes short but progressively lengthening distally, terminal segment with slender apiculis; ascoids single-branched, multiple, arranged in circle around each node. Thorax without patagia. Wing broad, bluntly rounded at apex; membrane clear; Sc short and nearly joined to R_1; medial fork on about same level as Cu apex and radial fork beyond Cu apex; R_5 ending beyond apex. Ratio of fore leg= 20 : 20, mid leg=23 : 26, hind leg=22 : 29. Genitalia as figured; aedeagus linear, trifid apically; surstyle with 4 small tenacula.

Antenna 1.22 mm; wing length 2.05 mm, width 0.87 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6194): 20 km SW of Manucan, Zamboanga del Norte, Mindanao, 12.X.1959, 420 m, Quate.

The contiguous eyes, enlarged palpal segments, and ♂ genitalia will distinguish *sagittalis* from other Philippine *Telmatoscopus*.

11. **Telmatoscopus parsilobus** Quate, n. sp. Fig. 5 i-l.

♀. Body integument light brown. Eyes contiguous, bridge with 4 rows of facets; frons with hemispherical patch of hairs without posterior projection on midline; palpus long, with segment 1 short and 3 longer than 2, ratio=7 : 13 : 16 : 22. Antenna 16-segmented;

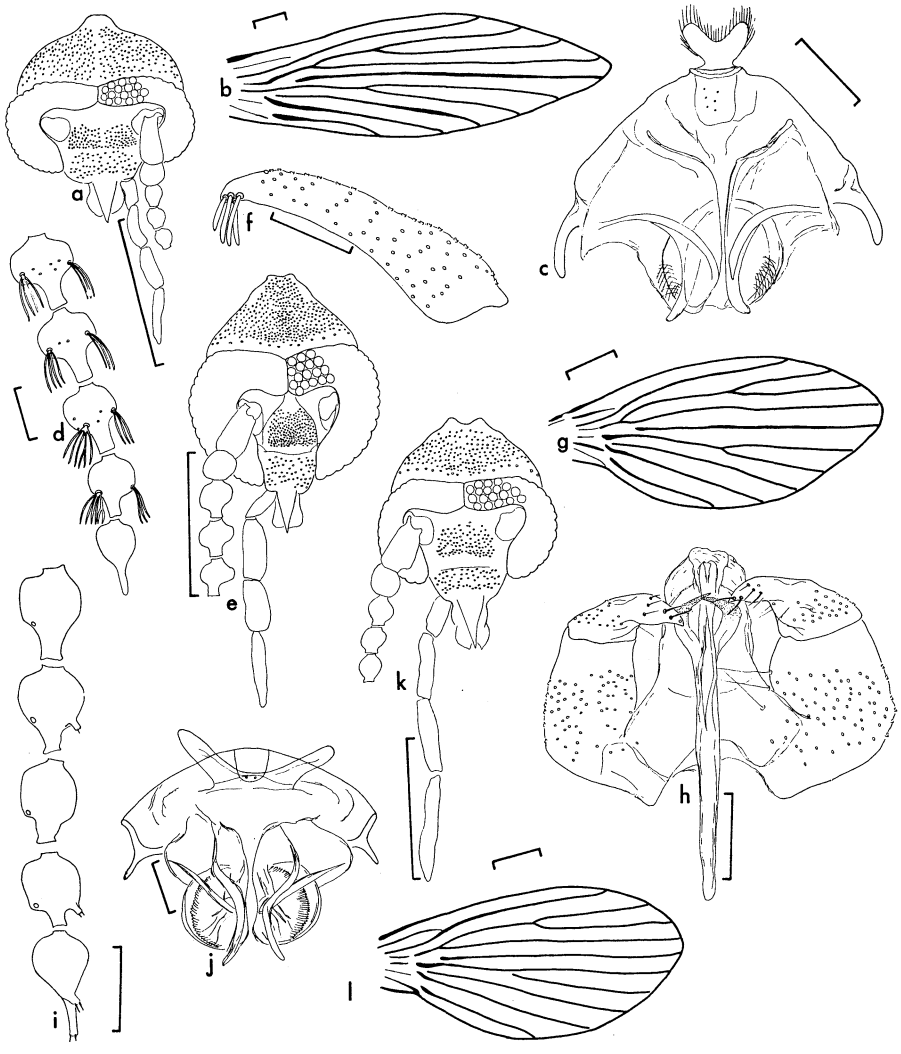

Fig. 5. a-c. *Telmatoscopus canlaonis*, ♀: a, head; b, wing; c, genitalia, inner face. d-h. *T. sagittalis*, ♂: d, antennal tip; e, head; f, surstyle; g, wing; h, genitalia, dorsal. i-l. *T. parsilobus*, ♀: i, antennal tip; j, genitalia, inner face; k, head; l, wing. Scale lines of heads & wings=0.3 mm, others=0.05 mm.

scape about 2× length of pedicel; flagellar segments with short nodes, terminal segment with slender apiculis; ascoids apparently single, but indistinct. Thorax without patagia. Wing broad; membrane clear with infuscation in most of costal cell; Sc short and nearly joined to R_1; radial fork distad of Cu apex; R_5 ending beyond apex. Ratio of fore leg= 20: 20, hind leg=23 : 27. Genitalia as figured; subgenital plate poorly defined, apical lobes slender, widely divergent.

Antenna 0.98 mm; wing length 2.25 mm, width 1.00 mm.

♂. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♀ (BISHOP 6195): Mt Katanglad, Bukidnon, Mindanao, 27.X.1959, 1480 m, at light, Quate.

The most distinctive feature of *parsilobus* is the slender apical lobes on the ♀ subgenital plate. Other taxonomic features of the species, as the contiguous eyes, long palpus, broad wing and venation, are useful in the identification of *parsilobus*, but not restricted to the species.

12. **Telmatoscopus longiceps** Quate, n. sp. Fig. 6 a-e.

♂. Body integument light brown. Eyes contiguous, bridge with 4 rows of facets; frons with rectangular patch of hair without posterior projection on midline; weak suture extending diagonally across frons at side of hair patch from frontoclypeal suture to posterior margin of patch; palpus with segment 3 shorter than 2, ratio=10 : 17 : 15 : 25(±). Antenna with scape 2× length of pedicel; basal flagellar segment with short internode; ascoids bi- or trifurcate, arising from series of large sockets encircling node. Thorax with cluster of dark, spatulate hairs near prothoracic spiracle which probably represent patagia. Wing broad, bluntly rounded apically; spots at tips of veins; Sc short, ending in R_1; radial fork little distad of medial and both basad of Cu apex; R_5 ending beyond apex. Ratio of mid leg=28 : 35, hind leg=28 : 43. Genitalia as figured; dististyle cleft apically and ending in pair of equal sized processes; aedeagus bifurcate, with long slender basal process; surstyle nearly parallel-sided over most of length, with many, short tenacula.

Wing length 2.87 mm, wing width 1.37 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6196): Mt Katanglad, Bukidnon, Mindanao, 27-31.X.1959, 1480 m, Quate.

The genitalia, especially the cleft dististyle and bifurcate aedeagus with its long base, provide the most reliable means of identifying *longiceps*. It is similar to *parsilobius*, but differs from that species in the position of the wing forks relative to the apex of Cu and the palpal ratio.

13. **Telmatoscopus digitoides** Quate, n. sp. Fig. 6 f-j.

♂. Body integument light brown. Eyes contiguous, bridge with 4 rows of facets; frons with rectangular patch of hair and without posterior projection on midline; weak suture extending diagonally across frons at side of hair patch from frontoclypeal suture to pos-

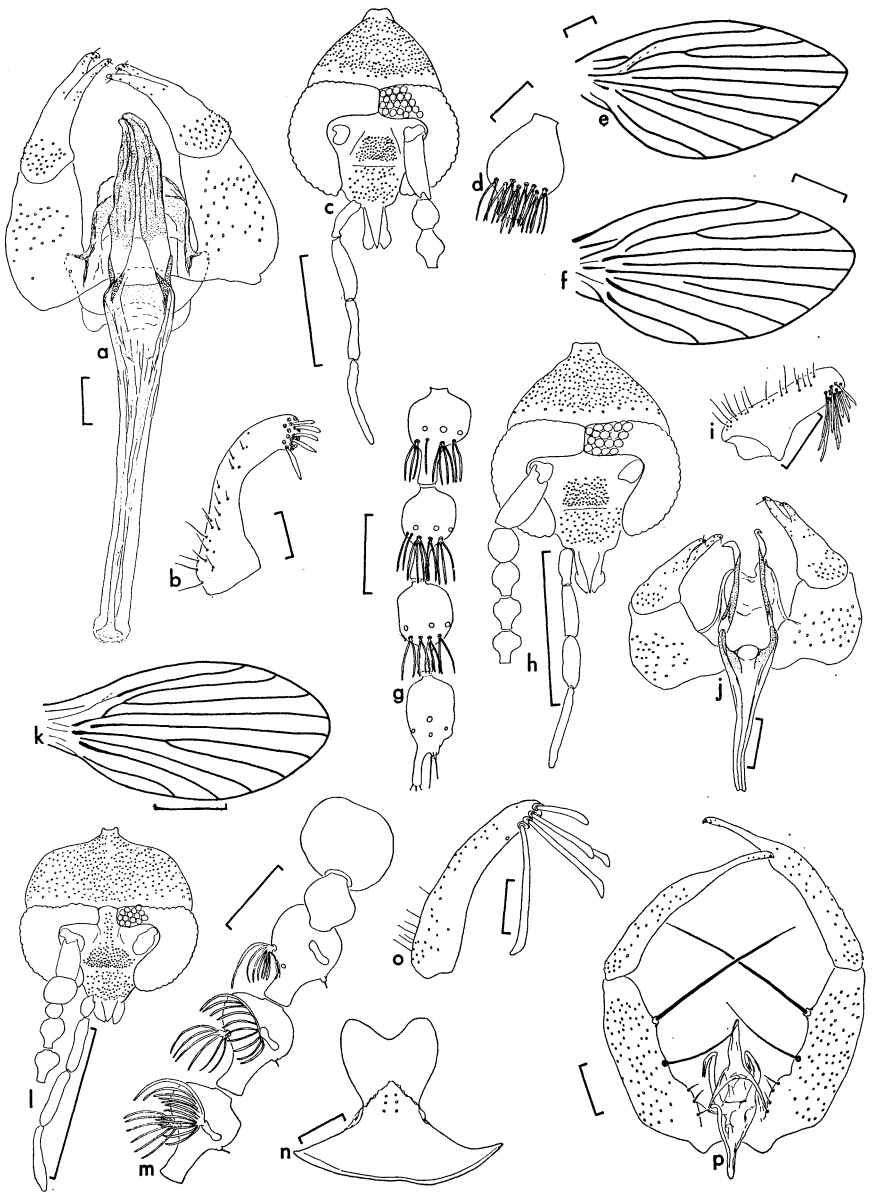

Fig. 6. a–e. *Telmatoscopus longiceps*, ♂: a, genitalia, dorsal; b, surstyle; c, head; d, antennal segment 3; e, wing. f–j, *T. digitoides*, ♂: f, wing; g, antennal tip; h, head; i, surstyle; j, genitalia, dorsal. k–p. *T. trifidus*: k, ♂ wing; l, ♂ head; m, ♂ antennal segments 2–6; n, ♀ subgenital plate; o, ♂ surstyle; p, ♂ genitlia, dorsal. Scale lines of heads & wings=0.3 mm, others=0.05 mm.

terior margin of patch; palpus with segment 3 little shorter than 2, ratio=7 : 10 : 9 : 16. Antenna 16-segmented; scape about 2× length of pedicel; basal flagellar segments with short internodes, progressively lengthening distally; terminal segment with slender, eccentric apiculis; ascoids multibranched, arising from series of large sockets encircling node. Thorax without patagia. Wing broad, bluntly rounded; spotted at tips of veins; Sc short, nearly reaching R_1; radial fork distad of medial and on same level as Cu apex; R_5 ending beyond apex. Ratio of fore leg=18 : 16, mid leg=20 : 22, hind leg=19 : 27. Genitalia as figured; dististyle cleft apically and ending in unequal pair of processes; aedeagus bifurcate, distal processes very slender; surstyle short and straight when viewed from side, with many tenacula.

Antenna 1.06 mm; wing length 1.75 mm, width 0.80 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6197): 10 km SE of San Francisco, Agusan, Mindanao, 17.XI.1959, at light, Quate.

This species is similar to *longiceps*, but differs in being smaller and having the surstyle and aedeagus of different shapes.

14. **Telmatoscopus trifidus** Quate, n. sp. Fig. 6 k-p.

♂. Body integument brown. Eyes separated by about 3 facet diameters, bridge with 3-4 irregular rows of facets; interocular suture slightly curved; frons with triangular patch of hairs extending posteriorly in wide band to upper row of facets; palpus with segment 1 only 1/2 length of 2, ratio of segments=5 : 11 : 12 : 15. Antenna with scape 1−1/2× length of pedicel; segment 3 very small, lacking internode; remaining flagellar segments normal with well developed internodes; ascoids palmate, ascoid sockets elongate, slit-like. Thorax without patagia. Wing bluntly rounded, membrane clear; Sc straight, nearly ending in R_1; radial fork near base of wing, so R_{2+3} very short, medial fork distad of radial and near level of Cu apex; R_5 ending beyond apex. Ratio of fore leg=15 : 14, mid leg =17 : 18, hind leg=16 : 22. Genitalia as figured; basistyle with small spine at 0.3 and large spine at 0.6; dististyle parallel-sided until 0.6 and then suddenly constricted and ending in slender attenuation; aedeagus small, trifid; surstyle with 5 tenacula.

Antenna 0.92 mm; wing length 1.32-1.65 mm, width 0.52-0.67 mm.

♀. Similar to ♂; eyes separated by 4 facet diameters; subgenital plate cordiform.

Wing length 1.90 mm, width 0.72 mm.

DISTRIBUTION. Philippines (Negros, Mindanao).

Holotype ♂ (BISHOP 6198): Mt Canlaon, Negros Or., 20-25.XII.1959, 915 m, rocks in swift stream, Quate; allotype ♀ (BISHOP): Mt Katanglad, Bukindnon, Mindanao, 27-31.X. 1959, 1480 m, Quate. Paratypes (USNM): ♂, same as holotype; ♂, same as allotype; ♂, Ozamiz City, Misamis Occ., Mindanao, 18.X.1959, Yoshimoto.

The small third antennal segment and very short R_{2+3} of *trifidus* are unlike comparable structures in other Philippine *Telmatoscopus* now known. Also, the ♂ dististyle and aedeagus and cordiform ♀ subgenital plate are unique to *trifidus*.

15. **Telmatoscopus amoenus** Quate, n. sp. Fig. 7 a-e.

♂. Body integument brown. Eyes widely separated by 5-6 facet diameters, bridge with 3 rows of facets, pointed on inner margin; interocular suture joining lower eye margins, partly interrupted in center; frons with large patch of hairs, convex on posterior margin and extending to interocular suture; palpus with segment 1 very short, ratio=3 : 10 : 10 : 13. Antenna with scape about 2× length of pedicel; basal flagellar segments with short internode, internodes progressively lengthening distally; ascoids single branched, broad. Prothorax with small, mushroom-shaped patagium. Wing very slender, acutely pointed; membrane infuscated along margin; Sc short, straight, clearly separated from R_1; radial fork far distad of medial fork and little basad of Cu apex; R_5 ending beyond apex. Ratio of fore leg=30 : 20, mid leg=35 : 31, hind leg=30 : 39. Genitalia as figured; dististyle slender, sword-like; aedeagus bifurcate, each arm long, curved and recurved; surstyle unusually modified, with strong, preapical projection and 4 fringed tenacula.

Antenna 0.82 mm; wing length 1.27 mm, width 0.35 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6199): 10 km SE of San Francisco, Agusan, Mindanao, 14.XI.1959, Quate & Yoshimoto.

This small species with its widely separated eyes and slender wing has the most unusual ♂ genitalia of any Philippine psychodid; the entire complex of structures is unique. It is unlikely that any of the species known at this time would be confused with *amoenus*.

16. **Telmatoscopus campanellus** Quate, n. sp. Fig. 7 f-j.

♂. Body integument brown. Eyes separated by about 1 facet diameter, bridge with 4 rows of facets, interocular suture inverted V-shaped; frons with trapezoidal patch of hairs with narrow, irregular posterior projection extending to interocular suture, diagnonal suture from inner angle of eye at margin of hair patch ending before frontoclypeal suture; palpus with 1st segment about 1/2 length of 2, ratio=8 : 15 : 14 : 16. Antenna with scape 2× length of pedicel; flagellar segments with large, eccentric nodes; ascoids single-branched, very long and curved. Thorax without patagia. Wing acute apically; membrane clear; Sc ending at level of base of R_{2+3} and free of R_1; radial fork appears to be on R_{3+4} and hence only 1 longitudinal vein between forks; radial fork distad of medial and Cu apex, medial little basad of Cu apex; veins R_1, R_2, M_1, M_2, M_3 with nodular enlargements near forks. Ratio of fore leg=19 : 21, mid leg=23 : 27, hind leg=23 : 31. Genitalia as figured; aedeagus racquet-shaped with short base; surstyle with numerous, capitate tenacula.

Wing length 2.05-2.07 mm, width 0.85-0.87 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Negros).

Holotype ♂ (BISHOP 6200): Lake Balinsasayao, Negros Or., 1-7.X.1959, light trap, Quate & Yoshimoto. Paratype: ♂, same.

The wing venation, especially the unusual position of the radial fork, nodular enlargements of the veins and the male genitalia of *campanellus* will segregate the species from other Philippine *Telmatoscopus*.

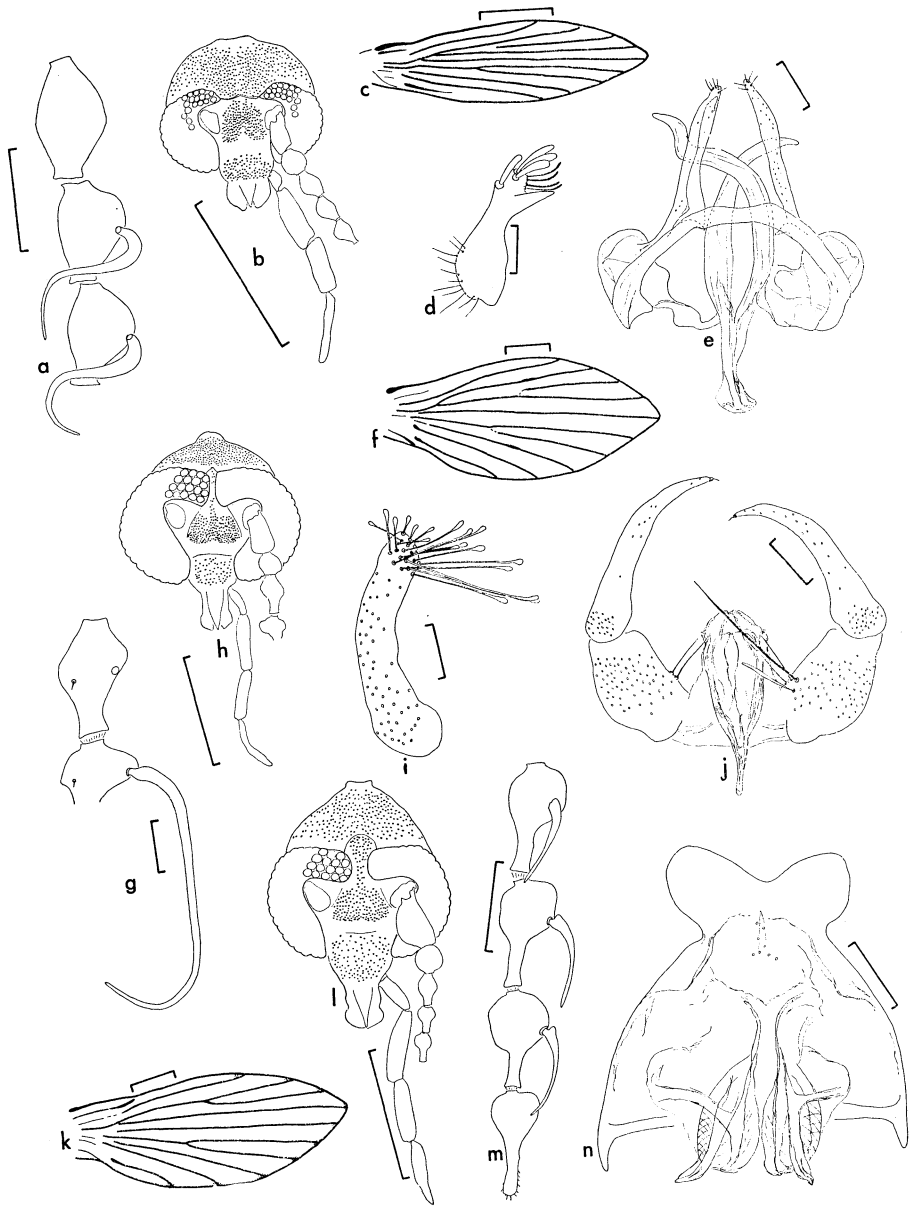

Fig. 7. a–e. *Telmatoscopus amoenus*, ♂: a, antennal segments 3–5; b, head; c, wing; d, surstyle; e, genitalia, dorsal. f–j. *T. campanellus*, ♂: f, wing; g, antennal segments 3–4; h, head; i, surstyle; j, genitalia, dorsal. k–n. *T. mendicus*, ♀: k, wing; l, head; m, antennal tip; n, genitalia, inner face. Scale lines of heads & wings=0.3 mm, others =0.05 mm.

17. **Telmatoscopus mendicus** Quate, n. sp. Fig. 7 k-n.

♀. Body integument brown. Eyes separated by 1.5–2 facet diameters, bridge with 4 rows of facets; interocular suture strongly arched; frons with trapezoidal patch of hairs extending posteriorly on midline to interocular suture well above upper eye margin, band expanded distally; palpus with segment 3 a little shorter than 2, ratio=10 : 16 : 15 : 17. Antenna 16-segmented, scape 2× length of pedicel; flagellar segments with well developed internodes, terminal segment with long apiculis; ascoids single-branched, paired on each segment, with basal spur. Wing with acute apex; membrane with light spots at vein tips; Sc long, curved away from and ending free of R_1; radial fork distad of medial and both distad of Cu apex; R_4 ending in apex, R_5 ending beyond apex. Ratio of fore leg=20 : 18, mid leg=22 : 27, hind leg=23 : 33. Genitalia as figured; subgenital plate bilobed; spermatheca reticulate.

Antenna 1.07-1.09 mm; wing length 2.07-2.25 mm, width 0.75-0.85 mm. ♂. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♀ (BISHOP 6201): Dohinog R., 20 km S of Manucan, Zamboanga del Norte, Mindanao, 14.X.1959, 250 m, at light, Quate. Paratypes: ♀, Ozamiz City, Misamis Occ., Mindanao, 18-21.X.1959, Yoshimoto; ♀, 10 km SE of San Francisco, Agusan, Mindanao, 17.XI.1959, Quate.

Although this species is not particularly unusual, it does differ in genitalic features and wing venation from other *Telmatoscopus* presently known. The highly arched interocular suture and extensive band of frons hairs is also distinctive, but probably will not remain so as other species become known.

18. **Telmatoscopus cruentus** Quate, n. sp. Fig. 8 a-g.

♂. Body integument pale, nearly colorless. Eyes narrowly separated by fraction of facet diameter, bridge with 3 rows of facets, interocular suture small and with long posterior projection; frons with trapezoidal patch of hairs, diagonal suture from inner angle of eye to anteriolateral margin of hair patch; palpus with segment 1 about 1/2 length of 2, ratio=7 : 12 : 11 : 16. Antenna with scape about 2× length of pedicel; flagellar segments with large, eccentric nodes; ascoids single-branched, large and curved. Thorax without patagia. Wing rounded apically; membrane with spots at veins tips and forks; Sc curved forward and ending free of R_1 beyond base of R_{2+3}; radial fork a little distad of medial and about on same level as Cu apex; R_5 ending beyond apex. Ratio of fore leg=18 : 17, mid leg=20 : 22, hind leg=19 : 25. Genitalia as figured; dististyle evenly tapering to slender apex; aedeagus trifid; surstyle with 3 long tenacula.

Antenna 1.23 mm; wing length 1.67-1.77 mm, width 0.70 mm.

♀. Similar to ♂; eyes separated by little more than 1 facet diameter on anterior margin. Genitalia as figured; subgenital plate constricted at base of apical part, with weak apical concavity; spermatheca small.

Antenna 1.35-1.40 mm; wing length 1.75-2.05 mm, width 0.65-0.77 mm.

DISTRIBUTION. Philippines (Luzon).

Holotype ♂, allotype ♀ (BISHOP 6202): LaMesa, Rizal, Luzon, 26.IX.1961, tree trunk, S. Quate. Paratypes: ♂, 2♀♀, same.

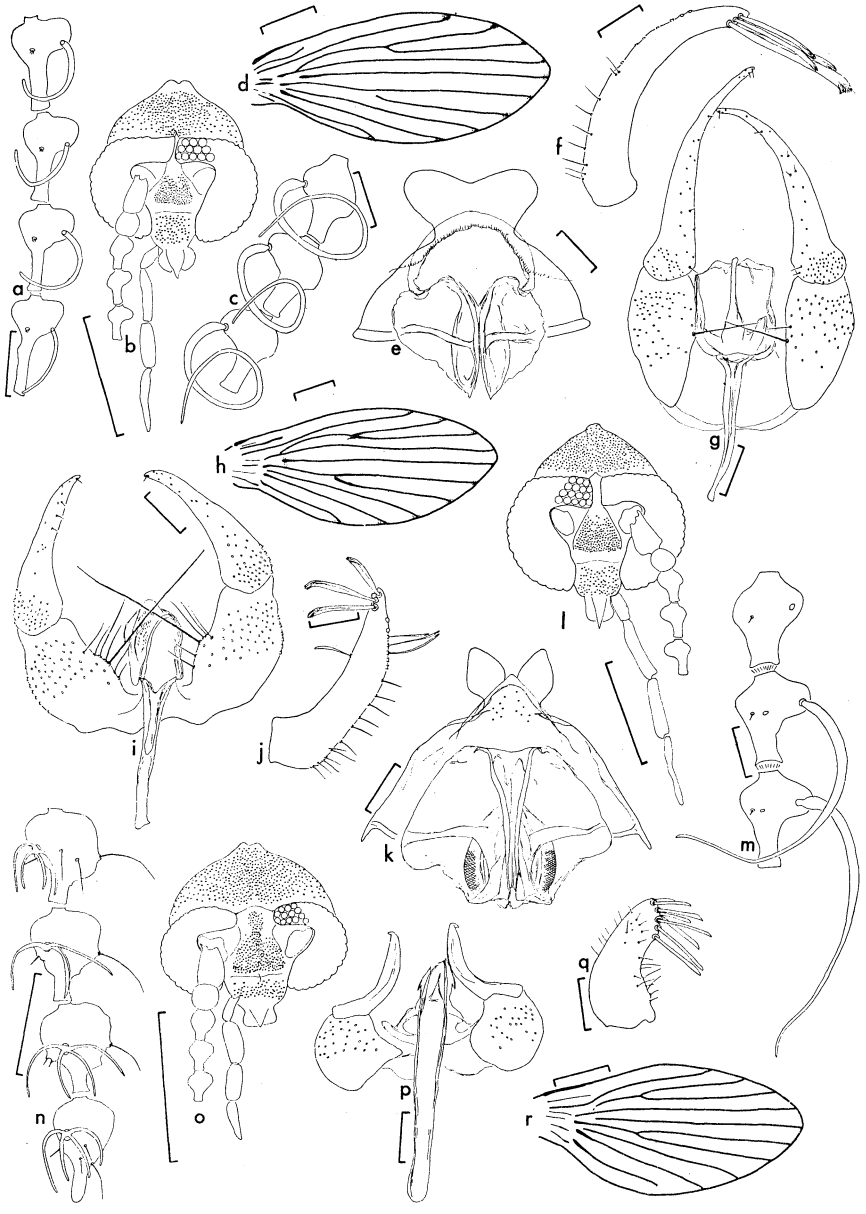

Fig. 8. a–g. *Telmatoscopus cruentus*: a, ♀ antennal segments 5–8; b, ♂ head; c, ♂ antennal segments 5–7; d, ♂ wing; e, ♀ genitalia, inner face; f, ♂ surstyle; g, ♂ genitalia, dorsal. h–m. *T. erratilis*: h, ♂ wing; i, ♂ genitalia, dorsal; j, ♂ surstyle; k, ♀ genitalia, inner face; l, ♂ head; m, ♂ antennal segments 3–5. n–r. *T. decens*, ♂: n, antennal tip; o, head; p, genitalia, dorsal; q, surstyle; r, wing. Scale lines of heads & wings=0.3 mm, others=0.05 mm.

The narrowly separated eyes, rounded and spotted wings and genitalic features distinguish *cruentus* from other Philippine *Telmatoscopus*. None of the known species are very similar to *cruentus*, but its characters appear rather common and related species will probably be found in the future.

19. **Telmatoscopus erratilis** Quate, n. sp. Fig. 8 h-m.

♂. Body integument brown. Eyes separated by 1 facet diameter, bridge with 4 rows of facets, interocular suture inverted V-shaped; frons with triangular patch of hairs, diagonal suture from inner angle of eye to frontoclypeal suture on margin of hair patch; palpus with 1st segment 1/2 length of 2, ratio=8 : 17 : 17 : 19. Antenna with scape 2× length of pedicel; flagellar segments with large, eccentric nodes; ascoids single-branched, large and curved. Thorax without patagia. Wing rounded apically; membrane with spots at vein tips; Sc ending beyond base of R_{2+3} and free of R_1; radial fork distad of medial and Cu apex, R_5 ending little beyond apex; veins enlarged at forks. Ratio of fore leg=20 : 22, mid leg=24 : 30, hind leg=24 : 36. Genitalia as figured; aedeagus paddle-like; surstyle with 3 tenacula.

Wing length 2.27 mm, width 0.92 mm.

♀. Similar to ♂; eyes separated by 1.5–2 facet diameters. Genitalia as figured; apical lobes of subgenital plate small and nearly diamond-shaped.

Antenna 1.08 mm; wing length 2.00-2.77 mm, width 0.75-1.07 mm.

DISTRIBUTION. Philippines.

Holotype ♂ (BISHOP 6203): Lake Balinsasayao, Negros Or., 1-7.X.1959, Quate. Allotype ♀ (BISHOP): Lake Mainit, Surigao, Mindanao, 23.XI-1.XII.1959, Quate. Paratypes (USNM): ♀, same as allotype; ♀, Alanib, Bukidnon, 25.X.1959, Quate. 2♀♀, Mt. Katanglad, Bukidnon, 27. X. 1959, 1480 m, at light, Quate; ♀, 2 km NW of Milbuk, Zamboanga del Sur, Mindanao, 4.VIII.1958, 150 m, light trap, Milliron. Other specimen. Palawan: About 30 km S of Eran Pt. (W. coast), 5.I.1960, 500 m, Malaise trap, Quate.

This species appears to be a widespread form in the Philippines and it is not unlikely that it will be found in other Asian countries. It is not a particularly distinctive species, but the head characters, wing venation and genitalic features will separate it from other species of *Telmatoscopus*.

20. **Telmatoscopus taleolus** Quate, 1962, Pacific Ins. **4**: 15 (♂, ♀ illus.).

DISTRIBUTION. Philippines, Borneo.

PHILIPPINES. MINDANAO: 10 km SE of San Francisco, Agusan, 17. XI. 1959, Malaise trap, Quate & Yoshimoto, ♀.

21. **Telmatoscopus decens** Quate, n. sp. Fig. 8 n-r.

♂. Body integument brown. Eyes separated by 5 facet diameters, bridge with 4 rows of facets but narrowed to 2 rows medially, interocular suture arched and partly interrupted in center; frons with triangular patch of hairs and wide band extending posteriorly to upper margin of eyes, curved suture from inner angle of eye to antenna socket; palpus short, segment 1 about 1/2 length of 2, ratio=20 : 35 : 30 : 30. Antenna with scape 1.5× length of pedicel; flagellar segments with short internodes; terminal segment with short

apiculis; ascoids palmate. Thorax without patagia. Wing rounded apically; membrane unmarked; Sc ending little beyond base of R_{2+3}, curved towards R_1 apically; radial and medial forks on same level well basad of Cu apex; R_5 ending in apex. Ratio of fore leg=15 : 13, mid leg=15 : 15, hind leg=16 : 18. Genitalia as figured; dististyle sickle-shaped; aedeagus simple, linear; surstyle short and thick, with 8 simple tenacula.

Antenna 0.96 mm; wing length 1.62 mm, width 0.72 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6204): Los Arcos (7 km E of Azpitia), Agusan, Mindanao, 22. X. 1959, Malaise trap, Quate.

The small size, widely separated eyes, plain wings with rounded tips, and the genitalia are features which will most readily separate *decens* from other Philippine *Telmatoscopus* known at present.

22. **Telmatoscopus amplens** Quate, n. sp. Fig. 9 a-e.

♂. Body integument brown. Eyes separated by 4 facet diameters, bridge with 4 rows of facets, interocular suture weak, arched; frons with triangular patch of hairs with wide band extending posteriorly to suture, diagonal suture from inner eye margin to lower margin of antenna socket; palpus very large, segment 1 less than 1/2 length of 2, ratio=10 : 22 : 22 : 27. Antenna with scape 1.5× length of pedicel; flagellar segments with short internodes basally and progressively lengthening distally; ascoids large, V-shaped. Prothorax with small, knob-like, bare patagia. Wing broad, rounded apically; membrane unmarked; Sc ending at level of base of R_{2+3}, curved and parallel to R_1 apically; radial fork clearly basad of medial, medial little basad of Cu apex; R_5 ending in apex. Ratio of fore leg=24 : 20, mid leg=27 : 29, hind leg=26 : 35. Genitalia as figured; dististyle straight and blade-like; aedeagus with large, dark base and light-colored, hooked apical part; surstyle short, with numerous tenacula.

Antenna 1.48 mm; wing length 2.37 mm, width 1.15 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6205): About 5 km S of Manucan, Zamboanga del Norte, Mindanao, 11.X.1959, 300 m, Quate.

The large size, large palpi, and unusual ♂ aedeagus will readily separate *amplens* from other Philippine *Telmatoscopus* which we now know.

23. **Telmatoscopus bulbulus** Quate, n. sp. Fig. 9 f-j.

♂. Body integument brown. Eyes separated by 3 facet diameters, bridge with 4 rows of facets, interocular suture slightly arched; frons with trapezoidal patch of hairs and band of hairs extending posteriorly to suture, diagonal suture only along margin of hair patch; palpus large, segment 1 about 1/2 length of 2, ratio=11 : 20 : 17 : 20. Antenna with scape little longer than pedicel; flagellar segments with eccentric nodes and thick internodes basally, progressively lengthening distally; ascoids of 2 types, large and V-shaped

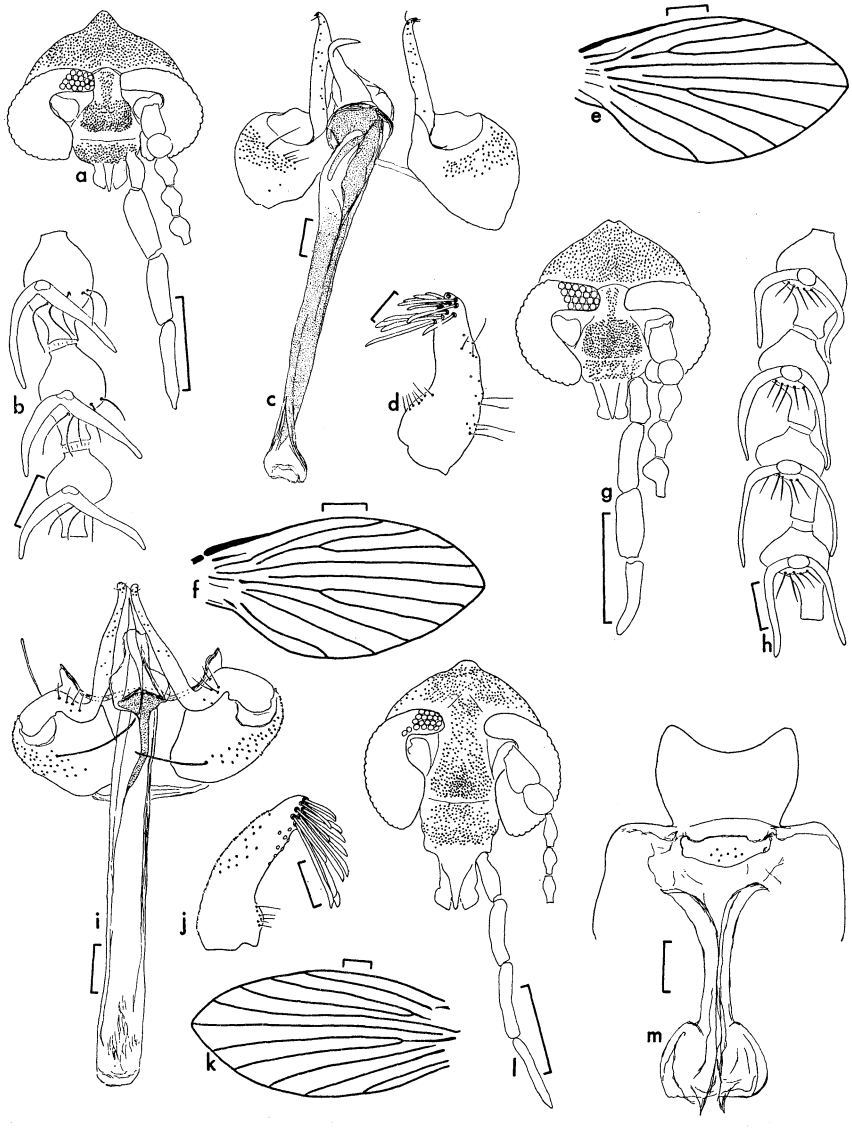

Fig. 9. a-e. *Telmatoscopus amplens*, ♂. a, head; b, antennal segments 3-5; c, genitalia dorsal; d, surstyle; e, wing. f-j. *T. bulbulus*, ♂: f, wing; g, head; h, antennal segments 3-6; i, genitalia dorsal; j, surstyle. k-m. *T. zamboangis*, ♀: k, wing; l, head; m, genitalia, inner face. Scale lines of heads & wings=0.3 mm, others=0.05 mm.

and row of 5 small, single-branched ones little beyond base of V-shaped ones. Thorax without patagia. Wing broad, pointed apically; membrane unmarked; Sc straight, ending at level of base of R_{2+3}; radial and medial forks on same level basad of Cu apex; R_5 ending in apex. Ratio of fore leg=23 : 24, mid leg=25 : 28, hind leg=23 : 32. Genitalia as figured; dististyle slender, strongly curved at base; aedeagus elongate, dark-colored and

with pale, slender apical extension; surstyle short, with many simple tenacula.

Antenna 1.47 mm; wing length 2.17 mm, width 0.97 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6206): Lake Mainit, Surigao, Mindanao, 28.XI.1959, in cave haboring bats, Quate.

T. bulbulus bears a slight resemblance to *amplens* in its large size, large palpi, and dark, elongate aedeagus. However, there are ample differences in the specific character of each of these structures to easily separate the two species.

24. **Telmatoscopus zamboangis** Quate, n. sp. Fig. 9 k-m.

♀. Large species, body integument pale brown. Eyes widely separated by 6 facet diameters, interocular suture absent, bridge reduced, with 4 rows of facets; frons with wide band of hairs that extends well beyond upper eye margin, but separated from vertex hair patch; palpus ratio=12 : 20 : 25 : 25. Antenna with scape 1.5× length of pedicel; flagellar segments elongate and weakly nodiform; ascoids simple, rod-like. Wing acute at apex; membrane unspotted, but generally infuscated; radial and medial forks very near wing base well before Cu apex, R_{2+3} short, only 1/5 length of R_2; R_5 ending in apex. Ratio of fore leg=31 : 32, mid leg=35 : 40, hind leg=37 : 52. Genitalia as figured; apex weakly concave.

Wing length 3.25-3.50 mm, width 1.35-1.37 mm.

♂. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♀ (BISHOP 6207): Lemesahan, Zamboanga del Sur, Mindanao, 7.IX.1958, 600 m, light trap, Milliron.

The widely separated eyes, reduced eye bridges, and lack of an interocular suture, weakly nodiform antennal flagellum, and acutely pointed wings with the forks near the base at once distinguish this species from all other Philippine *Telmatoscopus*. It is similar to two other Asian species, *T. distinctus* (Brunetti) in India and *T. quadripenis* Quate from Borneo. The three species are distinct enough in genitalic features, but are closely related and form an easily defined group.

25. **Telmatoscopus cuspiceps** Quate, n. sp. Fig. 10 a-f.

♂. Body integument light brown. Eyes separated by 3 facet diameters, bridge with 4 rows of facets, interocular suture weakly arched, interrupted in center; frons with rectangular patch of hairs, posterior projection extending to upper eye margin, weak diagonal suture at margin of hair patch not connected to eye; palpus with segment 1 about 1/2 length of 2, ratio=4 : 9 : 11 : 13. Antenna 16-segmented; scape 1.5× length of pedicel; flagellar segments with eccentric nodes, terminal segment with large apiculis; ascoids single-branched, long and strongly curved. Thorax without patagia. Wing membrane infuscated in costal cell and at vein tips; Sc ending at about level of R_{2+3} base and free of R_1; radial fork distad of medial, medial at about level of Cu apex; R_5 ending in apex. Ratio of fore leg=15 : 13, mid leg=16 : 17, hind leg=16 : 22. Genitalia as figured; dististyle

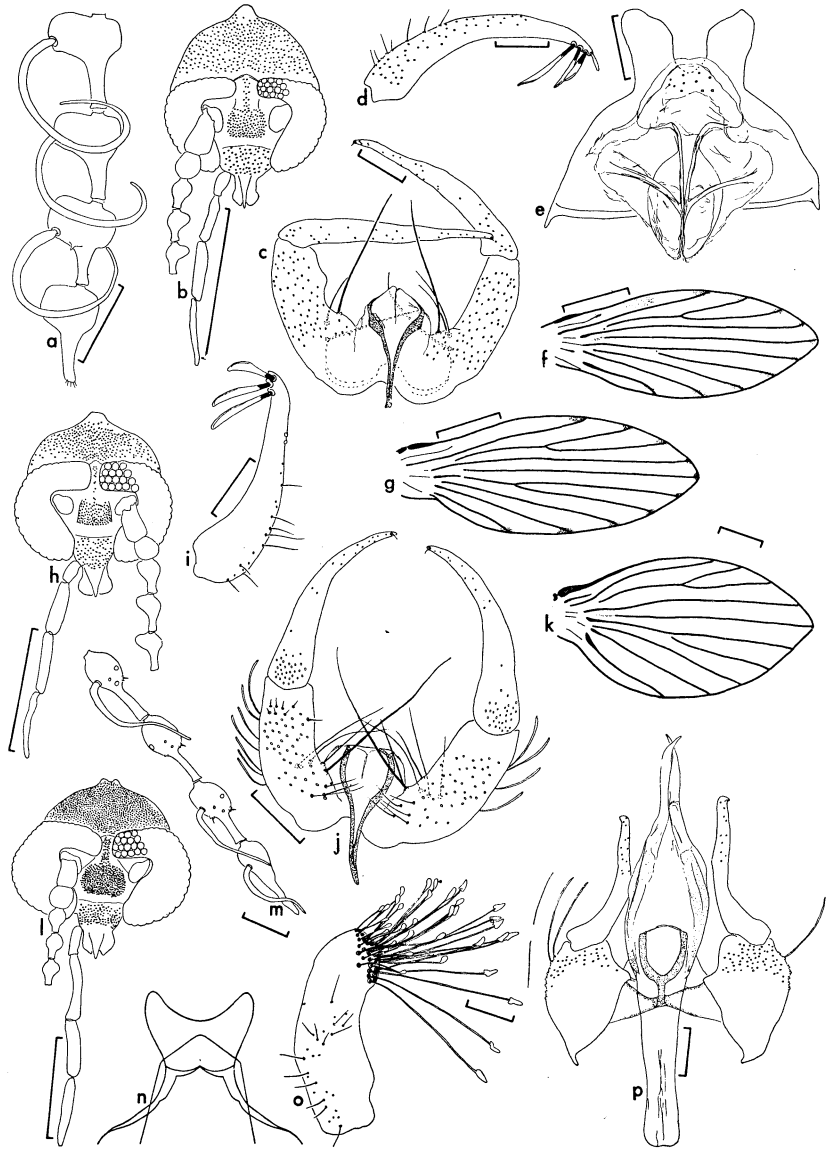

Fig. 10. a-f. *Telmatoscopus cuspiceps*: a, ♂ antennal tip; b, ♂ head; c, ♂ genitalia, dorsal; d, ♂ surstyle; e, ♀ genitalia, inner face; f, ♂ wing. g-j. *T. clusior*, ♂: g, wing; h, head; i, surstyle; j, genitalia, dorsal. k-p. *T. manilensis*: k, ♂ wing; l, ♂ head; m, ♂ antennal tip; n, ♀ subgenital plate (after del Rosario); o, ♂ surstyle; p, ♂ genitalia, dorsal. Scale lines of heads & wings=0.3 mm, others=0.05 mm.

long and slender; aedeagus Y-shaped; surstyle with 4 tenacula.

Antenna 0.98-1.10 mm; wing length 1.30-1.42 mm, width 0.47-0.52 mm.

♀. Similar to ♂; eyes separated by 3.5 facet diameters. Sternite 8 with V-shaped pattern formed of diagonal rows of dense hairs; genitalia as figured; apical lobes of subgenital plate trapezoidal.

Wing length 1.57 mm, width 0.55 mm.

DISTRIBUTION. Philippines.

Holotype ♂ (BISHOP 6208): Lake Mainit, Surigao, Mindanao, 23.XI-1.XII.1959, Quate. Allotype ♀ (BISHOP): same. Paratypes (USNM): 2♂♂, same; ♂, LaMesa, Rizal, Luzon, 26.IX.1961, tree trunk, S. Quate; ♂, San Mateo, Rizal, Luzon, 8. II. 1962, hollow *Acacia* tree, Delfinado.

The rather small, spotted wings and genitalia of both sexes will differentiate *cuspiceps* from other *Telmatoscopus* now known.

26. **Telmatoscopus clusior** Quate, n. sp. Fig. 10 g-j.

♂. Body integument light brown. Eyes separated by 1 facet diameter, bridge with 4 rows of facets, interocular suture weakly arched; frons with rectangular patch of hairs, weak suture only along margin of hair patch not reaching eye bridge or frontoclypeal suture; palpus with segment 1 very short, ratio=5 : 13 : 15 : 16. Antenna with scape 1.5× pedicel; flagellar segments beyond 3 with strongly eccentric nodes; ascoids lacking, but probably single-branched as in *cuspiceps*. Thorax without patagia. Wing membrane with spots at vein tips; Sc ending at level of base of R_{2+3} and free of R_1; radial fork well distad of medial, medial on about same level as Cu apex; R_5 ending in apex. Ratio of fore leg=17 : 16, mid leg=19 : 21, hind leg=17 : 24. Genitalia as figured; dististyle tapering to slender apex; aedeagus Y-shaped, small; surstyle with 3 tenacula.

Antenna 1.35 mm; wing length 1.50-1.52 mm, width 0.52-0.55 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6209): 10 km SE of San Francisco, Agusan, Mindanao, 19.XI.1959, light trap, Quate & Yoshimoto. Paratype: ♂, same.

T. clusior is similar to *cuspiceps*, but differs from that species in having the eyes closer together, the first palpal segment shorter, and different structures in the ♂ genitalia.

27. **Telmatoscopus manilensis** (del Rosario), n. comb. Fig. 10 k-p.

Psychoda manilensis del Rosario, 1936, Philip. J. Sci. **59**: 567.

♂. Body integument brown. Eyes separated by 1.5 facet diameters, eye bridge with 4 rows of facets, interocular suture slightly arched; frons with rectangular patch of hairs with wide band extending posteriorly to interocular suture, strong diagonal suture from inner eye margin to antenna socket; palpus with segment 1 little less than 1/2 length of 2, ratio=9 : 20 : 18 : 20. Antenna with scape 1.5× length of pedicel; terminal segment with slender apiculis; ascoids single-branched, moderately long and sinuous. Thorax without patagia. Wing broad and pointed apically; membrane without spots, but infuscated in costal and anal cells; Sc short, ending at level of base of R_{2+3}; radial fork little distad of medial, medial on same level as Cu apex; R_5 ending in apex. Ratio of fore leg=21 : 21, mid leg=25 : 27, hind leg=25 : 32. Genitalia as figured; dististyle slender and curved

at base; aedeagus inflated centrally; surstyle thick and parallel-sided, with numerours, slender, capitate tenacula.

Antenna 1.32 mm; wing length 2.05 mm, width 1.05 mm.

♀ (after del Rosario, 1936). Similar to ♂; eyes separated by 4 facet diameters; radial fork little basad of medial, medial on same level as Cu apex. Subgenital plate as figured.

Antenna 1.09 mm; wing length 1.79 mm, width 0.96 mm.

DISTRIBUTION. Philippines.

Type (destroyed): Manila, Luzon.

LUZON. Near Tala, Bulacan, 23.IX.1961, tree hole, S. Quate, ♂.

This ♂ is similar to the ♀ described by del Rosario as *manilensis* and is assigned to that species, although it needs corraboration. The ♂ differs slightly from del Rosario's description in having the radial fork further distad and the subapical antennal segments a little larger in relation to the apical. The specimens agree in the overall wing venation, antennal structure, palpal ratio, and size and were collected in the same area. These data suggest that the above ♂ is *manilensis* and will be regarded as such until it can be shown that it belongs to another, as yet undescribed, species. The identifying features of the species are, in addition to the genitalia, the structure of the antenna, palpus, head and the wing venation.

28. **Telmatoscopus albipunctatus** (Williston).—del Rosario, 1936, Philip. J. Sci. **59**: 559.—Quate, 1959, Ins. Micronesia (Bishop Mus.) **12**(4): 452.—Tokunaga, 1961, Philip. J. Sci. **88**: 490.

DISTRIBUTION. Tropicopolitan.

PHILIPPINES. LUZON: Tala, Bulacan, 25.IX.1961, tree trunk, S. Quate, 2♂♂, ♀; Los Baños, Laguna, 19.IX.1959, at light, Quate, ♂♂, ♀♀; Mt Maquiling, Laguna, 12. IX. 1951, 15.X.1950, 28.I.1951, C. R. Baltazar, 10♀♀, 3♂♂; Pili, Camarines Sur, 19.IX.1964, M. Delfinado, 3♀♀. LEYTE: Palo, 16.V.1957, Frohne, ♀. CEBU: Minglanilla, 27 km SW of Cebu City, 4.II.1962, S. Quate, ♂. MINDANAO: Ozamiz City, Misamis Occ., 18-19.X.1959, Yoshimoto, ♀♀; Gingoog, Misamis Or., 26. IV. 1960, Torrevillas, ♂; Curain Mts, Lake Lango, Lanao, 16.VI.1958, 1380 m, Milliron, 2♀♀; Kibawe, Bukidnon, 7.XII.1959, in cave, Quate, 2♂♂, 2♀♀; Lake Mainit, Surigao, 28.XI.1959, in cave, Quate, ♀.

Genus **Paratelmatoscopus** Satchell 1953

Range. Philippines, Malaya, Borneo, Australia.

The lack of eye bridges, weakly nodiform antennae, enlarged metanotum, complex, multipartite male aedeagus and unitenaculated surstyle are obvious characters which readily separates *Paratelmatoscopus* from other psychodid genera.

KEY TO PHILIPPINE SPECIES OF PARATELMATOSCOPUS

1. Antennal ascoids shorter than flagellar segments, only a little curved; radial fork clearly basad of medial 2
   Antennal ascoids very long and sinuous, much longer than flagellar segments; radial

fork on same level as medial ..... 29. **monticolus**

2. Metanotum extending to abdominal segment 4 or 5; ♂ dististyle ending in hook-like point, aedeagus ending as pair of small, bifurcate structures; ♀ subgenital plate with sclerotized lobe on inner face bearing 6–8 setae..... 30. **plutonis**

Metanotum long, extending to segment 6; ♂ dististyle notched preapically, aedeagus ending in broad, asymmetrical, paddle-like lobe; ♀ subgenital plate with bib-like structure on inner face, without usual group of setae..... 31. **mindanensis**

29. **Paratelmatoscopus monticolus** Quate, n. sp. Fig. 11 a–e.

♂. Integument brown. Interocular suture curved upward in center, without sharp projection or spur; frons with single, rectangular patch of hairs; apex of head prolonged to bilobed point; ratio of palpal segments=20 : 40 : 30 : 50. Scape and pedical subequal in length; segment 3 small, lacking internode; ascoids long and sinuous, longer than flagellar segments. Thorax without patagia; metanotum extends to abdominal segment 5 or 6. Wing membrane scarcely tinted; radial and medial forks on same level. Ratio of fore leg=30 : 25, mid=35 : 33, hind=38 : 40. Genitalia as figured; dististyle sinuous and attenuate apically; aedeagus large, racquet-shaped with large, dorsoventrally flattened base; surstyle unitenaculate, lobe of tergite 9 (between bases of surstyli) triangular.

Antenna 0.94 mm; wing length 1.35–1.62 mm, width 0.52–0.67 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6210): Mt Katanglad, Bukidnon, Mindanao, 1–2. XI. 1959, 1250 m, tree hole, Quate. Paratypes: 2♂♂, same.

The long, wavy ascoids and wing forks being on the same level are sufficient to separate *monticolus* from the other two species of *Paratelmatoscopus* presently known in the Philippines. The male genitalia are also distinctive.

30. **Paratelmatoscopus plutonis** Quate, n. sp. Fig. 11 f–m.

♂. Integument light brown. Interocular suture projecting posteriorly to sharp angle and weakened centrally; frons with hair patch partly divided by weak, median line; cibarium with posterior arms strong and evenly concave; apex of head extended to a blunt point; ratio of palpal segments=21 : 50 : 45 : 55. Scape and pedicel subequal in length; segment 3 small, 3 and 4 without internodes, following segments with internodes progressively becoming longer, nodes, except terminal one, somewhat quadrate and with weak, central annulation; ascoids simple, shorter than flagellar segments. Thorax without patagia; metanotum extends to abdominal segment 4 or 5. Wing membrane tinted light brown; radial fork clearly basad of medial, near R_{2+3+4} fork. Ratio of fore leg=38 : 33, mid=45 : 48, hind=45 : 51. Genitalia as figured; dististyle ending in hook-like point, aedeagus ending as pair of small, bifurcate structures; surstyle unitenaculate, lobe of tergite 9 rounded.

Antenna 0.75 mm (0.69–0.84); wing length 1.80 mm (1.60–2.10), width 0.73 mm (0.65–0.85).

♀. Similar to ♂; subgenital plate rather simple, inner face with brown, sclerotized lobe bearing 6–8 setae, spermatheca overlaid with heavily sclerotized plate.

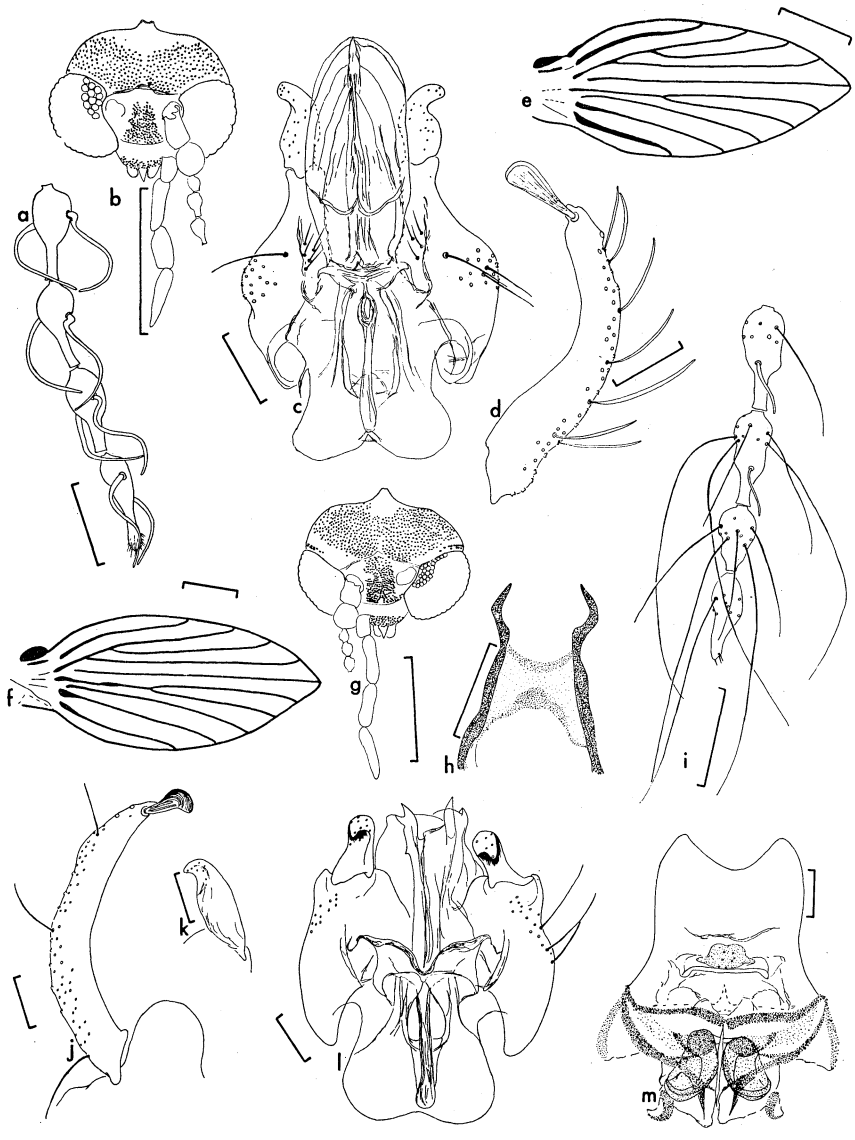

Fig. 11. a–e. *Paratelmatoscopus monticolus*, ♂ : a, antennal tip; b, head; c, genitalia, dorsal; d, surstyle; e, wing. f–m. *P. plutonis*: f, ♀ wing; g, ♀ head; h, ♂ cibarium; i, ♂ antennal tip; j, ♂ surstyle; k, ♂ dististyle, lateral; l, ♂ genitalia, dorsal; m, ♀ genitalia, inner face. Scale lines of heads & wings=0.3 mm, others =0.05 mm.

Antenna 0.80 mm (0.76–0.83); wing length 1.92 mm (1.67–2.25), width 0.77 mm (0.65–0.90).

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂, allotype ♀ (BISHOP 6211): 5 km S of Kibawe, Bukidnon, Mindanao, 7.XII.

1959, in cave harboring bats, Quate. Paratypes (USNM, BMNH) : 25♂♂, 27♀♀, same data.

The specimens were collected in a level cave about 1/2 km long in a limestone ridge. The bore of the cave was fairly uniform, about 5 m wide and 8-10 m high. Entrances were at both ends of the cave. Since the bat guano was regularly taken from the cave, it was frequently disturbed with the digging. *P. plutonis* is separable from the following species largely on genitalic features as illustrated.

31. **Paratelmatoscopus mindanensis** Quate, n. sp. Fig. 12 a-f.

♂. Integument brown. Interocular suture slightly curved up in center and with long median spur projecting posteriorly; frons with single, rectangular patch of hairs; apex of head extended to truncate point; ratio of palpal segments=25 : 55 : 50 : 60. Scape and pedicel subequal in length; segment 3 small, 3 & 4 without internodes, following segments with internodes progressively becoming longer; ascoids simple, shorter than flagellar segments. Thorax without patagia; metanotum extends to abdominal segment 6. Wing membrane brown; radial fork clear basad of medial, near R_{2+3+4} fork. Ratio of mid leg=45 : 45, hind=45 : 48. Genitalia as figured; dististyle notched preapically; aedeagus ending in broad, asymmetrical, paddle-like lobe; surstyle unitenaculate, lobe of tergite 9 bilobed.

Wing length 1.60-1.85 mm; with 0.60-0.72 mm.

♀. Similar to ♂; genitalia as figured; subgenital plate rather simple, inner face with bib-like structure and without group of few setae.

Wing length 1.52 mm, width 0.62 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂, allotype ♀ (BISHOP 6212) : 10 km SE of San Francisco, Agusan, Mindanao, 12-18.XI.1959, Quate. Paratype: ♂, same.

Closely related to *plutonis*, *mindanensis* is reliably separable from that species largely on the illustrated genitalic features.

Genus **Notiocharis** Eaton 1913

Range. Seychelle Is., Philippines, Borneo, Australia.

KEY TO PHILIPPINE SPECIES OF NOTIOCHARIS

1. Radial and medial forks on or nearly on same level as Cu apex; ♂ basistyli fused and surstyle triangular; ♀ subgenital plate constricted into stalk below apical lobes...2
   Radial and medial forks far distad of Cu apex; ♂ basistyli separated and surstyle of usual shape; ♀ subgenital plate expanded below apical lobes..... 32. **stellae**
2. Wing evenly tapering to acute apex; ♂ scape about 2× length of pedicel; ♂ fore femur unmodified ..... 33. **filipinae**
   Wing attenuate apically and hind margin emarginate before apex; ♂ scape about 3× length of pedicel; ♂ fore femur bearing long, sac-like organ..... 34. **femoralis**

32. **Notiocharis stellae** Quate, 1962, Pacific Ins. **4**: 33. Fig. 12 g.

DISTRIBUTION. Philippines, Borneo.

PHILIPPINES. LUZON: Los Baños, Laguna, 22.V.1959, C. Baltazar, 2♂♂, 2♀♀. MIN-

Fig. 12. a–f. *Paratelmatoscopus mindanensis*: a, ♂ surstyle; b, ♂ dististyle, lateral; c, ♂ genitalia, dorsal; d, ♂ head; e, ♀ genitalia, inner face; f, ♂ wing. g, *Notiocharis stellae*, ♂ head. h–n. *N filipinae*: h, ♂ head; i, ♂ antennal tip; j, ♀ genitalia, inner face; k, ♂ wing; l, ♂ surstyle, lateral; m, ♂ coxite; n, ♂ genitalia, dorsal. o–s. *Notiocharis femoralis*, ♂: o, head; p, fore femur; q, genitalia, dorsal; r, surstyle, lateral; s, wing. Scale lines of heads & wings=0.3 mm, others=0.05 mm.

DANAO: 15 km S of Manucan, Zamboanga del Sur, 13.X.1959, Quate, ♀; Kibawe, Bukidnon, 7.XII.1959, Quate, ♀; Milbuk, Cotabato, 4.VIII.1958, light trap, Milliron, 2♀♀; Butuan City, Agusan, 4.XI.1959, Yoshimoto, ♀; 10 km SE of San Francisco, Agusan, 12–18.XI.1959, Quate & Yoshimoto, 25♂♂, 18♀♀.

The position of the wing forks immediately separates *stellae* from the other two species of *Notiocharis* in the Philippines. The ♂ and ♀ genitalia are also entirely different and it is unlikely that any difficulty would be experienced separating *stellae* from *filipinae* and *femoralis*. The ♂ head and antenna base are illustrated herein, since the original specimens were incomplete and these structures were not figured.

33. **Notiocharis filipinae** Quate, n. sp. Fig. 12 h–n.

♂. Body integument brown. Frons with scattered hairs extending nearly to interocular suture; vertex with small, bilobed projection at apex; cibarium with posterior arms evenly concave, sides depressed at transverse bar and divergent anteriorly; ratio of palpal segments=7 : 14 : 13 : 15. Antenna 12-segmented; scape about 2× length of pedicel; segment 3 shorter than scape, following segments about 0.6× length of 3; ascoids simple rods. Thorax without patagium. Wing slender, but apical part not attenuate; membrane slightly infuscate; radial and medial forks on same level as Cu apex; R_5 ends beyond apex. Fore femur without sac-like organ, ratio of fore leg=50 : 35, mid=58 : 65, hind=50 : 70. Genitalia as figured; basistyli fused, dististyle cylindrical, with compact cluster of apical spines; surstyle triangular with many, simple tenacula on dorsal surface.

Antenna 0.94 mm; wing length 2.04 mm (1.92–2.17), with 0.69 mm (0.67–0.72).

♀. Similar to ♂. Genitalia as figured; apical lobes of subgenital plate separated by V-shaped notch.

Wing length 1.92–1.95 mm, width 0.67–0.70 mm.

DISTRIBUTION. Philippines (Luzon).

Holotype ♂, allotype ♀ (BISHOP 6213): Mt Maquiling, Laguna, Luzon, 21.IX.1959, Quate. Paratypes (USNM, BMNH): 7♂♂, ♀ same.

N. filipinae is similar to and collected in the same place as the following species, *femoralis*. The two differ in that *filipinae* is smaller, the apex of the wing is not attenuate as in *femoralis*, and *filipinae* does not have the sac-like organ on the fore femur as found on *femoralis*. These differences appear consistent and reliable in my small series, so the two forms are named as species. However, their similarity and sympatry suggest they may be variants of the same species and when future studies are made, this should be kept in mind.

34. **Notiocharis femoralis** Quate, n. sp. Fig. 12 o–s.

♂. Body integument brown. Frons with scattered hairs extending nearly to interocular suture; vertex with small, bilobed projection at apex; cibarium with posterior arms evenly concave, longer than minimum width of cibarium; ratio of palpal segments=10 : 16 : 14 : 17. Antenna with scape very long and slender, 3× length of pedicel; segment 3 as long as scape. Thorax without patagium. Wing slender, apical part attenuate and extended into acute, elongate apex; membrane lightly infuscate and darker in basal part of cell

R_{2+3}; radial fork a little distad of medial and at about same level as Cu apex; R_5 ends beyond apex. Fore femur with elongate, membranous sac covered with long, dense hair, ratio of fore leg=55 : 40, mid=60 : 65, hind=50 : 72. Genitalia as figured; basistyli fused; dististyle cylindrical, with compact cluster of apical spines; surstyle triangular with many, simple tenacula on dorsal surface.

Wing length 2.27–2.45 mm, width 0.77–0.80 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Luzon).

Holotype ♂ (BISHOP 6214): Mt Maquiling, Laguna, Luzon, 21. IX. 1959, Quate. Paratypes: 3♂♂, same; ♂, Los Baños, Laguna, Luzon, 19.IX.1959, Yoshimoto.

Genus **Brunettia** Annandale 1910

Range. Tropicopolitan, largely Old World.

KEY TO PHILIPPINE SPECIES OF BRUNETTIA

1. Radial fork distad of or on same level as medial 2
   Radial fork clearly basad of medial 3
2 (1). Radial fork distad of medial; pedicel of antenna greatly elongate with apicomedian, lobular protrusion; ♂ eyes separated by 2 facet diameters; pale species ..... 35. **pallens**
   Radial fork on same level as medial; pedicel normal, about 2× scape; ♂ eyes contiguous; body integument brown ..... 36. **parexulans**
3 (1). Radial fork well distad from base of R_4, distance equal to more than width of cell R_4 at fork; palpus 2 & 3 usually unequal in length 4
   Radial fork close to base of R_4, distance equal to width of cell R_4 at fork; palpus 2 & 3 equal; ♂ dististyle with preapical swelling; lobes of ♀ subgenital plate well separated ..... 37. **mateola**
4 (3). R_5 ending in wing tip, if little beyond then much closer to tip than R_4; ♂ surstyle with usual, bell-tipped tenacula 5
   R_5 ending beyond wing, as far from tip as R_4; ♂ surstyle greatly enlarged, lacking usual bell-tipped tenacula but only with simple tenacula on enlarged apex and another cluster of spatulate hairs near center; apex of ♀ subgenital plate trilobed ..... 38. **yoshimotoi**
5 (4). Wing very broad, length 1.5–2× width (♂♂ only; ♀♀ must be associated with ♂♂ for reliable identification) 6
   Wing narrower, length about 2.5× width; ♂ eyes contiguous, bridge thin, ♀ eyes separated by 2–3 facet diameters; ♂ dististyle straight and slightly capitate apically ..... 39. **recepta**
6 (5). Anterior margin of wing evenly rounded 7
   Anterior margin of wing flattened and a little concave beyond basal curvature; ♂ dististyle evenly curved and not recurved ..... 40. **mindanensis**
7 (6). Paramere of ♂ genitalia small, membranous, inconspicuous; lateral shafts of aedeagus acutely pointed, similar to median shafts except larger 8
   Paramere a conspicuous, rounded shelf; lateral shafts large, flat blades quite

unlike the slender median shafts ..... 41. **nubicola**

8 (7). Dististyle curved and evenly tapering beyond base.....9

Dististyle straight beyond base, thick and parallel-sided until tapering to apex near tip ..... 42. **kibawa**

9 (8). Large species, wing length about 2.5 mm; lateral shafts of aedeagus very long, extending far beyond tips of median shafts.....43. **exulans**

Smaller species, wing length less than 2.0 mm; lateral shafts of ordinary length, extend little beyond tip of median shafts..... 44. **hispida**

35. **Brunettia pallens** Quate, n. sp. Fig. 13 a–c.

♂. Body integument light brown, head pale. Eyes separated by 2 facet diameters, interocular suture straight and thick, bridge with 3 rows of facets; frons with hair patch concave on posterior margin, without posterior projection; cibarium slender, without visible transverse bars; palpus with segment 2 shorter than 3, ratio=5 : 17 : 15 : 19. Antenna 15-segmented; scape very long and with apicomedian enlargement; terminal segment reduced, much smaller than preterminal; ascoids V-shaped. Thorax without patagium. Wing unevenly enlarged on anterior margin, large, basal hump followed by slight concavity; radial fork clearly distad of medial and at about level of Cu apex; R_5 ending beyond apex. Legs unmodified, ratio of fore leg=40 : 35, mid leg=46 : 50, hind leg=41 : 62. Genitalia as figured, of usual *Brunettia* character.

Antenna 1.20 mm; wing length 1.62 mm, width 0.97 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6215): Los Arcos (7 km E of Azpitia), Agusan, Mindanao, 22. XI.1959, Malaise trap, Quate.

The elongate, modified pedicel of the antenna, position of the wing forks and the wing shape will readily separate *pallens* from other species of Philippine *Brunettia* now known.

36. **Brunettia parexulans** Quate, n. sp. Fig. 13 f–i.

♂. Body integument brown. Eyes contiguous, bridge with 3 rows of facets; frons hair patch concave on posterior margin, without posterior projection; cibarium wide, transverse bar well developed; palpus with segment 2 shorter than 3, ratio=5 : 18 : 21 : 22. Antenna broken. Thorax with large, C-shaped patagium on anepisternite similar to that of *biformis* but dististyle shorter, thicker and more curved.

Wing length 2.30–2.45 mm, width 1.87 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6216): Mt Katanglad, Bukidnon, Mindanao, 4-9.XII.1959, 1250 m, Malaise trap, Quate. Paratype: ♂, same except 27-31.X.1959, 1480 m.

The unusual wing shape with the concavity on the fore margin and large protuberance on the hind is the most obvious feature distinguishing *parexulans* from other species of *Brunettia.*

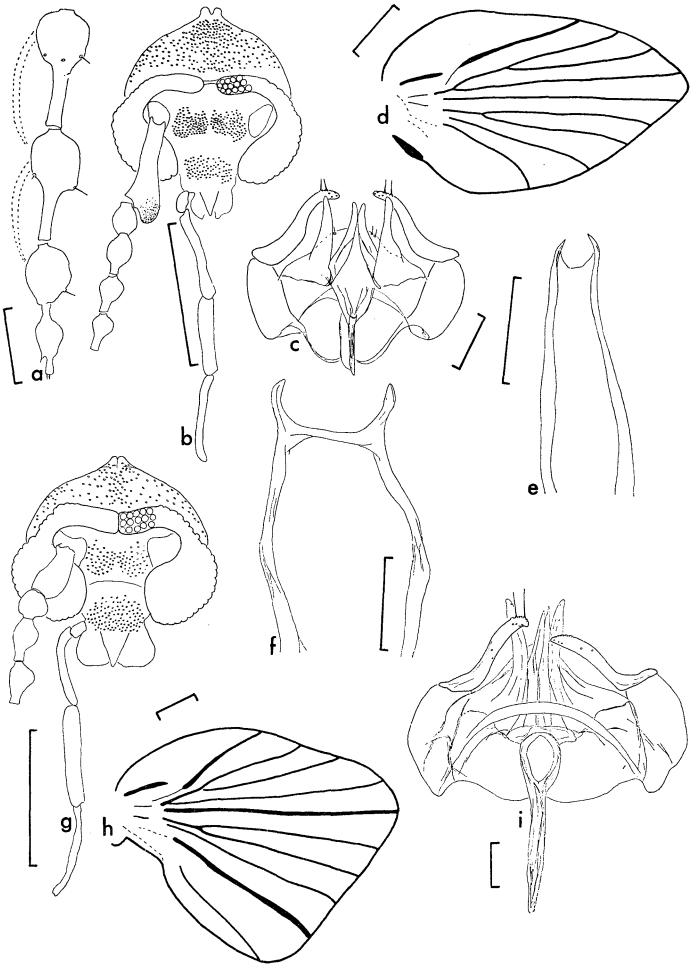

Fig. 13. a-e. *Brunettia pallens*, ♂ : a, antennal tip; b, head; c, genitalia, dorsal; d, wing; e, cibarium. f-i. *B. parexulans*, ♂ : f, cibarium; g, head; h, wing; i, genitalia, dorsal. Scale lines of heads & wings= 0.3 mm, others=0.05 mm.

37. **Brunettia mateola** Quate, n. sp. Fig. 14.

♂. Body integument brown. Eyes separated by 2 facet diameters, interocular suture straight, bridge with 3 rows of facets; frons hair patch with thick posterior projection extending to lower eye margin; cibarium wide, posterior walls black or dark brown, transverse bar convex; palpus with segments 2 & 3 equal in length, ratio=6 : 20 : 20 : 26. Antenna 15-segmented; scape about 2× length of pedicel; terminal segment very small with thick, blunt apiculis; ascoids V-shaped. Thorax without patagium. Wing broad and margins evenly curved; radial fork very close to base of R_4 and basad of medial fork; irregular thickening from apex of Sc to R_{2+3}; Cu strongly curved and recurved; R_5 ending

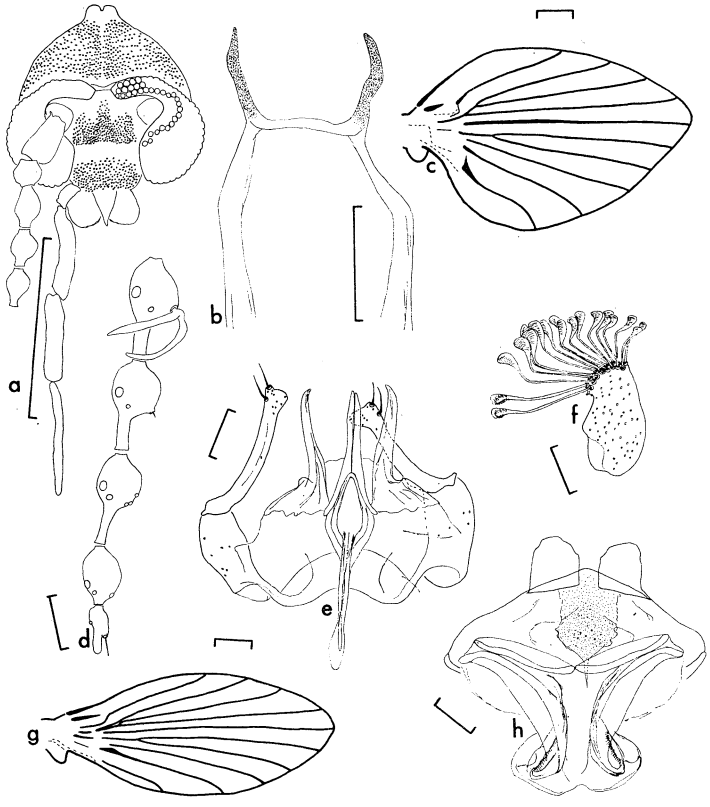

Fig. 14. *Brunettia mateola.* a, ♂ head; b, ♂ cibarium; c, ♂ wing; d, ♂ antennal tip; e, ♂ genitalia, dorsal; f, ♂ surstyle; g, ♀ wing; h, ♀ genitalia, inner face. Scale lines of head & wing = 0.3 mm, others =0.05 mm.

short distance beyond apex. Legs unmodified, ratio of fore leg=55 : 43, mid leg=55 : 60, hind leg=60 : 80. Genitalia as figured; dististyle unusually shaped with preapical swelling; shafts of aedeagus ending nearly on same level, lateral shafts curved preapically.

Antenna 1.33 mm (range?); wing length 2.30–2.75 mm, width 1.30–1.55 mm.

♀. Similar to ♂; eyes separated by 3½ facet diameters; wing narrower than ♂ but venation same, including thickening at apex of Sc. Genitalia as figured, similar to *biformis.*

Wing length 2.40 mm, width 1.00 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6217): Mt Katanglad, Bukidnon, Mindanao, 2–9.XII.1959, Malaise trap, Quate; allotype ♀ (BISHOP): same, except 26.X.1959. Paratypes (USNM): 2 ♂♂, same as holotype; ♂, same as allotype; 2♂♂, same, except 27–31.X.1959, 1480 m.

The wing venation and ♂ genitalia of *mateola* are dissimilar to other species of Philip-

pine *Brunettia.* The ♀ is less easily characterized, but it does have the wing venation that at present is known only in *mateola.*

38. **Brunettia yoshimotoi** Quate, n. sp. Fig. 15.

♂. Body integument brown. Eyes separated by 3 facet diameters, interocular suture flattened, inverted V-shaped, bridge with 3 rows of facets; frons hair patch rectangular without posterior projection; cibarium wide, with short posterior arms and convex transverse bar; palpus with segment 2 little shorter than 3, ratio=8 : 22 : 19 : 26. Antenna 15-segmented; scape about 2× length of pedicel; terminal segment reduced, much smaller than preterminal; ascoids very broad and foliate. Thorax with lobular patagium on anepisternite. Wing rather narrow and evenly curved on margins; radial fork well distad of R_4 base but basad of medial fork; R_5 ending beyond apex. Legs unmodified, ratio of fore legs=50 : 40, mid leg=55 : 60, hind leg=55 : 75. Genitalia as figured, greatly aberrant for *Brunettia*; lateral aedeagal shafts not developed; dististyle strongly curved at base, lacking 2 preapical spines; surstyle greatly enlarged, with cluster of spatulate hairs near center, apex inflated and with group of short tenacula which lack bell-tipped apices.

Antenna 1.24 mm; wing length 1.95 mm, width 0.92 mm.

♀. Similar to ♂; eyes widely separated by 5.5–6 facet diameters; wings narrower. Genitalia as figured; subgenital plate trilobed and unlike other *Brunettia*; spermatheca of usual *Brunettia* form.

Antenna 1.06 mm; wing length 1.92–2.05 mm, width 0.77–0.80 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6218): 10 km SE of San Francisco, Agusan, Mindanao, 13.XI.1959, Yoshimoto; allotype ♀ (BISHOP): Lake Mainit, Surigao, Mindanao, 27.XI.1959, Yoshimoto. Paratypes: 2♀♀, same as holotype.

The unusual, aberrant ♂ and ♀ genitalia are totally different from all other known *Brunettia* and will probably justify placing *yoshimotoi* in a separate group when the genus is revised. The species is much like other members of the genus in head and antennal characters and wing shape and venation. It is with pleasure that I name this species in recognition of my good friend and esteemed colleague, Dr C. M. Yoshimoto.

39. **Brunettia recepta** Quate, n. sp. Fig. 16.

♂. Body integument light brown. Eyes contiguous but median margins barely touching, bridge with 3 rows of facets; frons hair patch rectangular; cibarium wide, posterior arms short, transverse bar convex; palpus with segments 2 & 3 subequal in length, ratio=3 : 14 : 14 : 17. Antenna 15-segmented; scape about 2× length of pedicel; terminal segment smaller than preterminal; ascoids single-branched, broad and strongly curved. Thorax with moderately small, C-shaped patagium on anepisternite. Wing slender; radial fork well distad of R_4 base, but basad of medial fork; R_5 ending in apex. Legs unmodified, ratio of fore leg=35 : 25, mid=41 : 36, hind=35 : 45. Genitalia as figured; dististyle nearly straight and slightly capitate apically; median shafts of aedeagus shorter than lateral; surstyle of usual *Brunettia* form.

Antenna 0.77–0.88 mm; wing length 1.29 mm (1.17–1.40), width 0.54 mm (0.52–0.60).

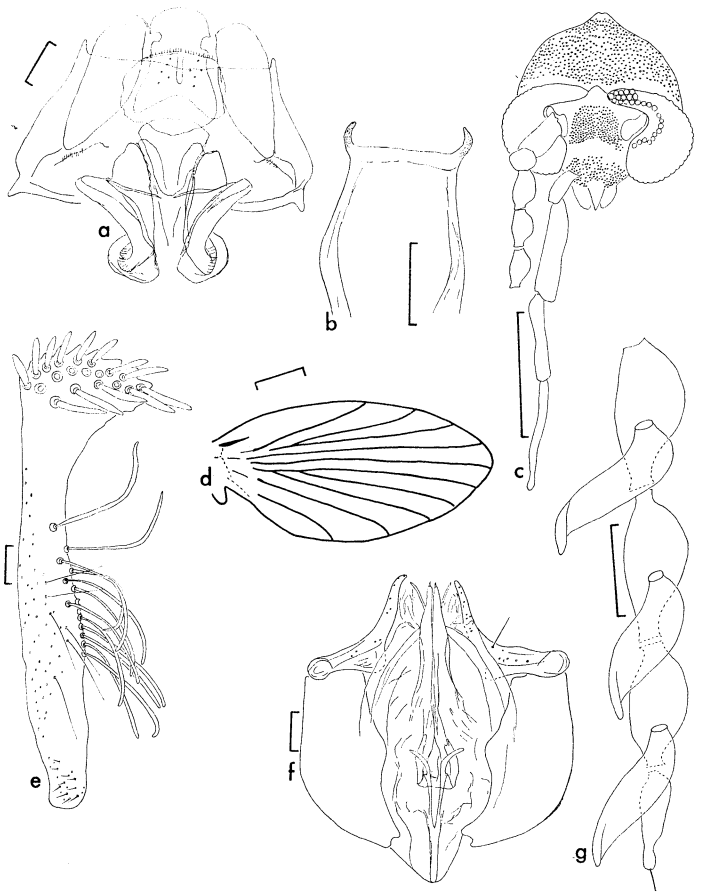

Fig. 15. *Brunettia yoshimotoi.* a. ♀ genitalia, inner face; b, ♂ cibarium; c, ♂ head; d, ♂ wing; e, ♂ surstyle; f, ♂ genitalia, dorsal; g, ♂ antennal tip. Scale lines of head & wing=0.3 mm, others=0.05 mm.

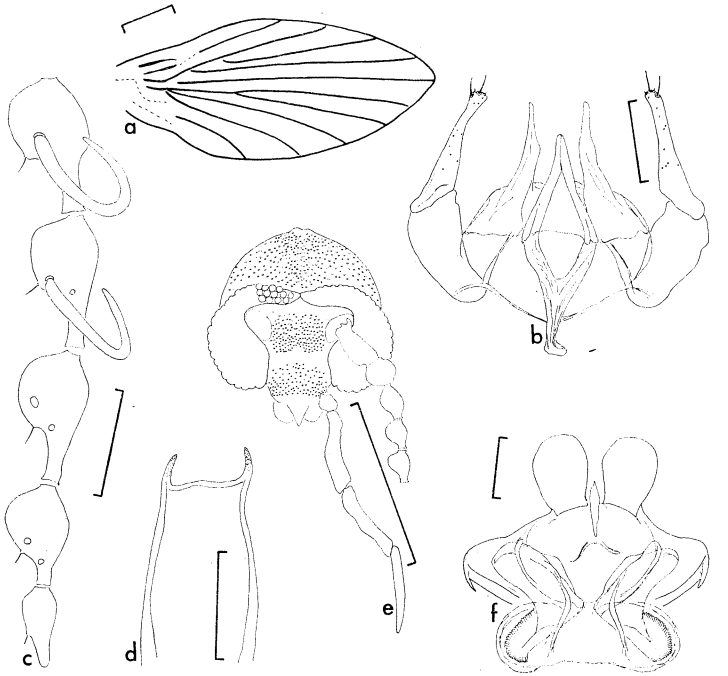

Fig. 16. *Brunettia recepta.* a, ♂ wing; b, ♂ genitalia, dorsal; c, ♂ antennal tip; d, ♂ cibarium; e, ♂ head; f, ♀ genitalia, inner face. Scale lines of head & wing=0.3 mm, others=0.05 mm.

♀. Similar to ♂; eyes separated by 2–3 facet diameters. Genitalia as figured; apical lobes more ovoid than in *biformis*.

Antenna 0.77 mm (0.71–0.84); wing length 1.63 mm (1.50–1.92), width 0.73 mm (0.65–0.87).

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂, allotype ♀ (BISHOP 6219): 10 km SE of San Francisco, Agusan, Mindanao, 14.XI.1959, Quate & Yoshimoto. Paratypes (USNM, BMNH): 11♂♂, 15♀♀, same; 1♀, Lake Mainit, Surigao, Mindanao, 27.XI.1959, Yoshimoto.

The slender eye bridges, narrow wings and genitalia of both sexes of *recepta* differ from other Philippines *Brunettia*.

40. **Brunettia mindanensis** Quate, n. sp. Fig. 17.

♂. Body integument brown. Eyes contiguous, median margin solidly fused; bridge with 3 rows of facets; frons hair patch rectangular with small concavity on posterior arms short and wide, transverse bar convex; palpus with segment 2 shorter than 3, ratio=3 : 16 : 19 : 22. Antenna 15-segmented; scape about 3× length of pedicel; terminal segment reduced, noticeably smaller than preterminal; ascoids single-branched and strongly curved, but distal ones sinuous. Thorax with large, sac-like patagium on anepisternite. Wing broad; anterior margin flattened and a little concave just beyond basal curvature; radial

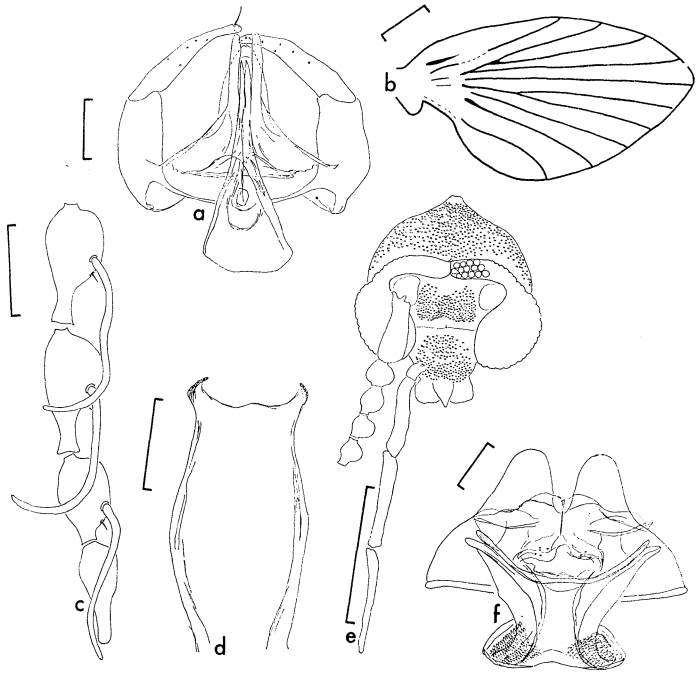

Fig. 17. *Brunettia mindanensis*. a, ♂ genitalia, dorsal; b, ♂ wing; c, ♂ antennal tip; d, ♂ cibarium; e, ♂ head; f, ♂ genitalia, inner face. Scale lines of head & wing=0.3 mm, others=0.05 mm.

fork well distad of R_4 base but basad of medial fork; R_5 ending little beyond apex. Legs unmodified, ratio of fore leg=48 : 35, mid=55 : 47, hind=45 : 53. Genitalia as figured; dististyle gently curved; median shafts of aedeagus ending well before tips of lateral shafts, lateral shafts broad; surstyle of usual *Brunettia* form.

Antenna 1.00–1.11 mm; wing length 1.73 mm (1.67–1.82), width 0.93 mm (0.87–0.97).

♀. Similar to ♂. Eyes separated by 2 facet diameters, interocular suture thick and with sharp, posterior projection on midline; wing narrower, basal curvature not as pronounced. Genitalia as figured, similar to *biformis*.

Wing length 1.65 mm, width 0.77 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂, allotype ♀ (BISHOP 6220): 10 km SE of San Francisco, Agusan, Mindanao 14.XI.1959, Quate & Yoshimoto. Paratypes (USNM, BMNH): 7♂♂, same; ♂, Los Arcos (7 km E of Azpitia), Agusan, Mindanao, 22.XI.1959, Malaise trap, Quate.

The shape of the wing and ♂ genitalia are the chief features of *mindanensis* which will separate it from other species of *Brunettia* in the Philippines.

41. **Brunettia nubicola** Quate, n. sp. Fig. 18 a–e.

♂. Body integument brown. Eyes contiguous but lower part of median margin separated forming inverted V-shaped notch, bridge with 3 rows of facets; frons hair patch concave on posterior margin; cibarium broad, posterior arms thin, transverse bar straight; palpus with segment 2 considerably shorter than 3, ratio=3 : 15 : 20 : 21. Antenna 15-segmented; scape about 2× length of pedical; terminal segment smaller than preterminal; ascoids single-branched and strongly curved, but distal one sinuous. Thorax with sac-like patagium on anepisternite. Wing broad, basal curvature of anterior margin especially pronounced; radial fork well distad of R_4 base and little basad of medial fork; R_5 ending exactly in apex. Legs unmodified, ratio of fore leg=44 : 31, mid=50 : 42, hind=45 : 70. Genitalia as figured; dististyle of usual *Brunettia* form; lateral shaft of aedeagus greatly expanded, paramere a conspicuous, rounded shelf; surstyle of usual *Brunettia* form.

Antenna 0.94 mm; wing length 1.72 mm, width 1.12 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6221): 10 km SE of San Francisco, Agusan, Mindanao, 14.XI. 1959, tree buttress, Quate & Yoshimoto.

The large, flat blades of the lateral aedeagal shafts, enlarged paramere, and to a lesser extent, the broad, evenly curved wing are features which distinguish *nubicola* from other Philippine *Brunettia*.

42. **Brunettia kibawa** Quate, n. sp. Fig. 18 f–j.

♂. Body integument brown. Eyes contiguous, median margins solidly fused, bridge with 3 rows of facets; frons hair patch rectangular but concave on posterior margin; cibarium broad, posterior arms short and black, transverse bar concave; palpus with segment 2 shorter than 3, ratio=4 : 17 : 22 : 25. Antenna with scape 2.5× length of pedicel; ascoids single-branched and strongly curved. Thorax with large, sac-like patagium on anepi-

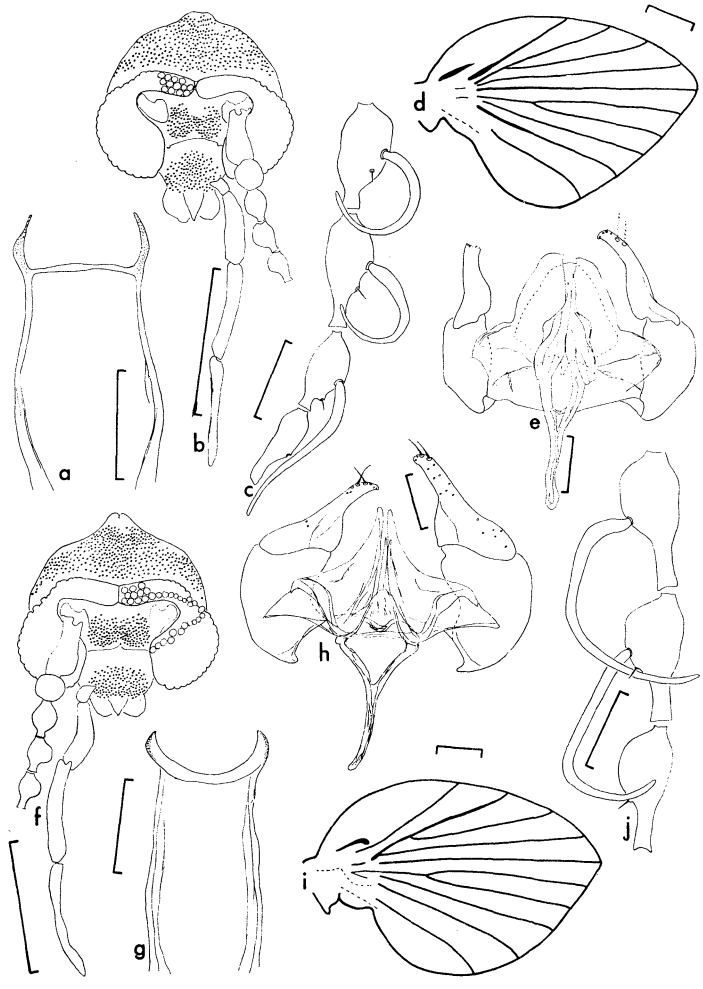

Fig. 18. a–e. *Brunettia nubicola*, ♂ : a, cibarium; b, head; c, antennal tip; d, wing; e, genitalia. f–j. *B. kibawa*, ♂ : f, head; g, cibarium; h, genitalia, dorsal; i, wing; j, antennal tip. Scale lines of wings and heads=0.3 mm, others=0.05 mm.

sternite. Wing broad with large curvature on anterior margin; radial fork well distad of R_4 base and little basad of medial fork; R_5 ending in apex. Legs unmodified, ratio of fore legs=50 : 40, mid=60 : 52, hind=50 : 60. Genitalia as figured; dististyle short, nearly straight beyond base; lateral shafts of aedeagus broad at base but tapering to acute apex, lateral shafts ending well before tips of median; surstyle of usual *Brunettia* form.

Antenna 1.25 mm; wing length 1.90–2.00 mm, width 1.25–1.37 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6222): Kibawe, Bukidnon, 7.XII.1959, on roadside vegetation grow-

ing in seepage area, Quate. Paratypes: 3♂♂, same.

The ♂ genitalia, especially the shapes of the dististyle and lateral aedeagal shafts, bear the features which separate *kibawa* from other Philippine species of *Brunettia*.

43. **Brunettia exulans** Quate, n. sp. Fig. 19 a–f.

♂. Body integument brown. Eyes contiguous, anterior part of median margin separated a little to form small, inverted V-shaped notch, bridge with 3 rows of facets; frons with pair of hair patches separated anteriorly and posteriorly; cibarium broad, posterior arms short and curved, transverse bar concave; palpus with segment 2 shorter than 3, ratio= 5 : 22 : 25 : 30. Antenna 15-segmented; scape 2.5× length of pedicel; terminal segment, reduced, slender, about 1/2 size of preterminal; ascoids single-branched, strongly curved. Thorax with small, saccular patagium on anepisternite. Wing broad, strongly and evenly rounded on anterior margin; radial fork well distad of R_4 base and little basad of medial fork; R_5 ending in wing apex. Legs unmodified, ratio of fore legs=60 : 48, mid=70 : 65, hind=65 : 85. Genitalia as figured; dististyle short and only slightly curved apically; lateral shafts of aedeagus very long and slender, extend far beyond tips of median shafts.

Antenna 1.77 mm; wing length 2.45 mm, width 1.90 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao)

Holotype ♂ (BISHOP 6223): Mt Katanglad, Bukidnon, Mindanao, 27–31.X.1959, 1480 m, Malaise trap, Quate.

B. exulans differs from other Philippine species of *Brunettia* by its size and features of the ♂ genitalia, particularly the shapes of the dististyle and lateral aedeagal shafts.

44. **Brunettia hispida** Quate, n. sp. Fig. 19 g–k.

♂. Body integument brown. Eyes contiguous, median margins solidly fused, bridge with 3 rows of facets; frons hair patch concave on posterior margin, without posterior projection; cibarium broad, posterior arms short and curved, transverse bar concave; palpus with segment 2 considerably shorter than 3, ratio=3 : 16 : 21 : 22. Antenna 15-segmented; scape about 2× length of pedicel; terminal segment reduced, with elongate apiculis; ascoids single-branched, strongly curved. Thorax with moderately large, saccular patagium on anepisternite. Wing only moderately broad, with strong curvature on anterior margin; radial forks well distad of R_4 base and little basad of medial fork; R_5 ending little beyond apex. Legs unmodified, ratio of fore leg=43 : 30, mid=50 : 44, hind=45 : 55. Genitalia as figured; dististyle slightly curved; lateral aedeagal shafts slender, ending beyond tips of median shafts; surstyle of usual *Brunettia* form.

Antenna 1.01 mm; wing length 1.80 mm, width 1.02 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6224): 10 km SE of San Francisco, Agusan, Mindanao, 14.XI.1959, Quate & Yoshimoto.

B. hispida mainly differs from *biformis* (see Quate 1965) in genitalic features. The dististyle is not recurved and the median aedeagal shafts end well before the tips of the lat-

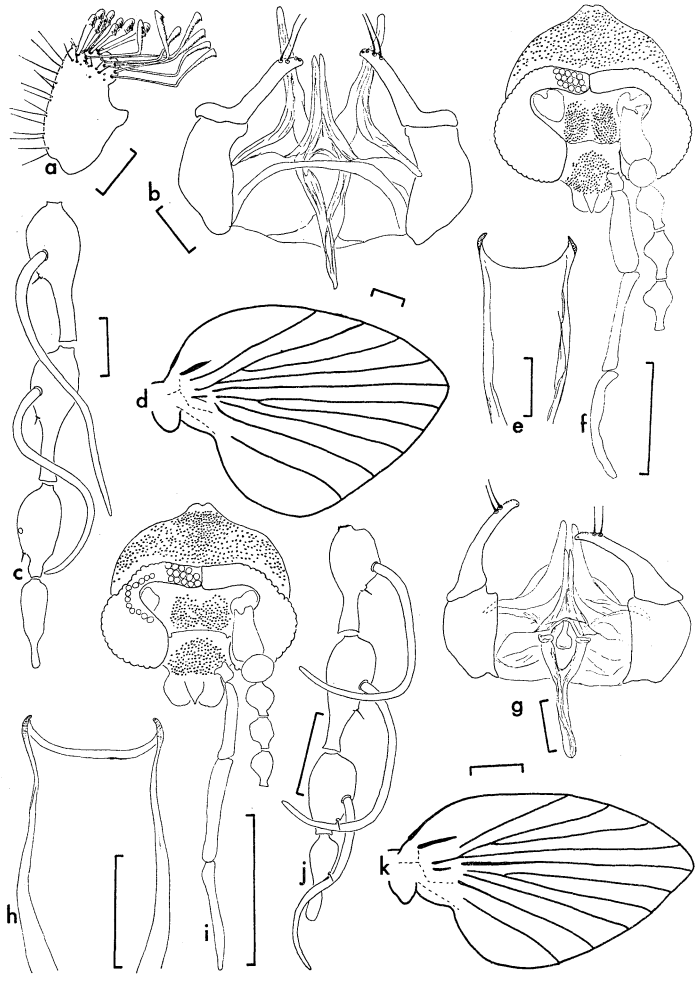

Fig. 19. a–f. *Brunettia exulans*, ♂: a, surstyle; b, genitalia, dorsal; c, antennal tip; d, wing; e, cibarium; f, head. g–k. *B. hispida*, ♂: g, genitalia, dorsal; h, cibarium; i, head; j, antennal tip; k, wing. Scale lines of heads & wings=0.3 mm, others=0.05 mm.

eral shafts in *hispida*, whereas the dististyle is distinctly recurved and the aedeagal shafts end at the same level in *biformis*.

Genus **Trichopsychoda** Tonnoir 1922

Key to Philippine species of Trichopsychoda

1. Antenna 16-segmented; median band of hairs on frons extends only to lower eye margin; fore femur and tibia subequal in length; ♂ surstyle only with 3 bell-tipped tenacula ..... 45. **bukidnonica**

Antenna 15-segmented; median band of hairs on frons extends to center of eye bridge; fore femur longer than tibia; ♂ surstyle with 2 bell-tipped and 4 simple tenacula ..... 46. **mindanensis**

45. **Trichopsychoda bukidnonica** Quate, n. sp. Fig. 20 a-d.

♂. Body integument pale brown. Eyes contiguous on upper border but separated by about 1 facet on lower border; short, thick spur at midline, bridge with 4 rows of facets; frons hair patch with triangular band projecting posteriorly only to lower eye margin; ratio of palpal segments=20 : 35 : 40 : 45. Antenna 16-segmented; terminal 3 segments reduced and subequal in size; ascoids Y-shaped. Wing forks incomplete. Ratio of fore leg=36 : 37, mid=37 : 45, hind=41 : 53. Genitalia as figured; aedeagus with ordinary base and inflated distal part; surstyle with slender, apical projection bearing 3 bell-tipped tenacula, a sharp projection near center.

Antenna 1.32 mm; wing length 1.72-1.82 mm, width 0.65-0.67 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6225): Mt Katanglad, Bukidnon, Mindanao, 26-31.X.1959, 1480 m,

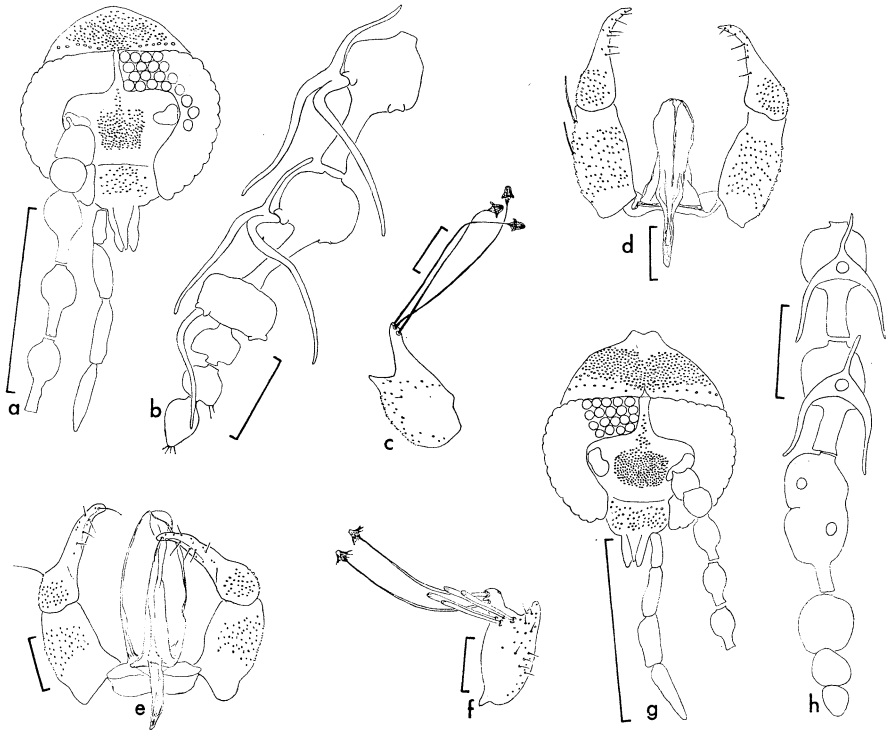

Fig. 20. a-d. *Trichopsychoda bukidnonica*, ♂: a, head; b, antennal tip; c, sursytle; d, genitalia, dorsal. e-h, *T. mindanensis*, ♂: e, genitalia dorsal; f, surstyle; g, head; h, antennal tip. Scale lines of heads=0.3 mm, others=0.05 mm.

Quate. Paratypes: 2 ♂♂, same.

The ♂ genitalia of the two Philippine species of *Trichopsychoda* are not difficult to distinguish and can be readily separated by the characters listed in the key.

46. **Trichopsychoda mindanensis** Quate, n. sp. Fig. 20 e-l.

♂. Body integument brown. Eyes separated by single facet diameter, interocular suture with long, sharp spur on midline, bridge with 4 rows of facets; frons hair patch with triangular band projecting posteriorly to center of eye bridge; ratio of palpal segments=22 : 32 : 35 : 40. Antenna 15-segmented; terminal 2 separated, terminal little smaller than preterminal; ascoids Y-shaped. Wing forks incomplete. Ratio of fore leg=35 : 27, mid=38 : 37, hind=35 : 44. Genitalia as figured; aedeagus with short base and large, inflated distal part; surstyle with 2 bell-tipped and 4 simple tenacula, small, sharp projection on apicoventral border.

Antenna 0.77 mm; wing length 1.37 mm, width 0.50 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6226): 20 km SW of Manucan, Zamboanga del Norte, Mindanao, 12.X.1959, 420 m, Quate.

Epacretron Quate, n. gen.

♀. Head broad, much broader than high; eye bridge present; vertex much higer than width of bridge; labellum flattened and with teeth as in *Psychoda*; antenna with flagellar segments strongly nodiform, terminal 2 segments reduced in size, Wing large; radial fork distad of medial; R_5 ends in apex; membrane without vestiture. Cerci reduced and much shorter than in *Psychoda*; subgenital plate with single lobe.

Type of genus. *Epacretron pinnagum*, n. sp., by present designation.

The general appearance and structure of the mouthparts place this genus near *Psychoda*, but these two differ in antennal structure, head shape, wing shape and structure of the ♀ genitalia. The terminal antennal segments of *Epacretron* are reduced as in *Psychoda*, but are of different outlines and are nodiform, except the terminal one, of course. The head of *Epacretron* is a good deal broader than in *Psychoda* and the vertex area is higher. The reduced cerci and unilobed subgenital plate of the ♀ are quite different from those structures in *Psychoda*. At first appearance, this genus resembles *Telmatoscopus*, but close examination shows the flattened labellum and at once separates *Epacretron* from *Telmatoscopus* or other related genera with inflated labella.

The generic name is derived from *epakros* (Gr., pointed at tip) and *etron* (Gr., abdomen) and refers to the simple, ♀ subgenital plate; the gender is neuter.

47. **Epacretron pinnagum** Quate, n. sp. Fig. 21 a-d.

♀. Body integument brown. Eyes separated by 1 facet diameter, interocular suture absent, bridge with 4 rows of facets; frons hair patch with elongate, triangular band of hairs extending posteriorly to lower eye margin; ratio of palpal segments=7 : 10 : 14 : 24.

Fig. 21. a-d. *Epacretron pinnagum*, ♀ : a, antennal tip; b, head; c, subgenital plate; d, wing. e-h. *Philosepedon nocturnalis*, ♂: e, genitalia, dorsal; f, surstyle; g, antennal tip; h, head. i-m. *P. banksi*: i, ♂ head; j, ♂ antennal tip; k, ♂ genitalia, dorsal; l, ♂ surstyle; m, ♀ genitalia, inner face. Scale lines of heads & wing=0.3 mm, others= 0.05 mm.

Antenna 16-segmented; segments 15 & 16 reduced, 15 little smaller than 14 and nodiform as preceding segments, 15 ovoid, without apiculis; ascoids Y-shaped, anterior branches broad and veined. Wing membrane clear, except costal cell infuscate; radial fork well distad of medial at about level of Cu apex; R_5 ends in acute apex. Genitalia as figured; subgenital plate ending in single digitiform lobe bearing several spines; spermathecae distorted and indistinct.

Antenna 1.06 mm; wing length 2.67 mm, width 1.30 mm.

♂. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♀ (BISHOP 6227): Mt Katanglad, Bukidnon, Mindanao, 27-31.X.1959, 1480 m, Malaise trap, Quate.

Genus **Philosepedon** Eaton 1904

KEY TO PHILIPPINE SPECIES OF PHILOSEPEDON

1. Palp segments 1 and 2 subequal 2
   Palp 2 considerably longer than 1 4
2 (1). Eyes contiguous, most of median surfaces touching in ♂ and at least upper margins touching in ♀; antenna with terminal segments separated and equal sized 3
   Eyes separated by 1 facet diameter or more; antenna 14 small and broadly fused to 13, might be regarded as enlarged internode, 15 larger and separated..... 48. **nocturnalis**
3 (2). Antenna 15-segmented; ♂ surstyle with single tenaculum; ♀ subgenital plate with circular marking on either side of midline..... 49. **banksi**
   Antenna 16-segmented; ♂ surstyle with 2 tenacula; ♀ unknown..... 50. **baguioensis**
4 (1). Eyes contiguous, touching over most of median surfaces..... 5
   Eyes separated..... 6
5 (4). Dististyle of ♂ genitalia cleft and hence terminates in 2 unequal digits; ♀ genitalia with arched bar at base of subgenital plate caudad of spermatheca ... . 51. **mutabilis**
   Dististyle simple, unbranched; ♀ unknown ..... 52. **frontalis**
6 (4). Wing length not exceeding 1.5 mm; palp 2 about 1.5× segment 1; ♂ surstyle with 3 or 8 tenacula..... 7
   Large species, wing length about 3 mm or more; palp 2 nearly 3× segment 1; ♂ surstyle with single tenaculum..... 8
7 (6). Antennal segments 14 & 15 equal sized and separated; ♂ surstyle with 3 tenacula; scape short, no longer than pedicel ..... 53. **balinsasayae**
   Antennal segment 14 smaller than 15 and fused to 13, 15 separated; ♂ surstyle with 8 tenacula; scape longer than pedicel..... 54. **calabens**
8 (6). Fore femur shorter than tibia; abdominal sternites unmodified ... 55. **katangladensis**
   Fore femur longer than tibia; ♂ abdominal sternites 4-6 with dense, dark patch of fine hairs..... 56. **decipiens**

48. **Philosepedon nocturnalis** Quate, n. sp. Fig. 21 e-h.

♂. Body integument brownish. Eyes separated by 1.5 facet diameters at upper margin, bridge with 4 rows of facets; frons with small, triangular projection of hairs extending posteriorly to about center of eye bridge. Labellum slightly bulbous, with 1 long spine conspicuously larger than others; palpus with segments subequal, ratio=21 : 24 : 21 : 22. Antenna 15-segmented; scape little longer than pedicel; segment 14 small, broadly fused to 13 and might be taken as enlarged internode of that segment, 15 larger, separated; ascoids apparently small and Y-shaped, but not clearly evident. Ratio of fore leg=34 : 27, mid=37 : 40, hind=37 : 40. Genitalia as figured; dististyle slender, with small, recurved tip; aedeagus forked apically; surstyle of moderate length, with single, long tenaculum.

Antenna 0.95 mm; wing length 1.32 mm, width=0.55 mm.

♀. Unknown.

DISTRIBUTION: Philippines.

Holotype ♂ (BISHOP 6228): 30 km S of Eran Pt., Palawan (W. coast), 5-11.I.1960, 500 m, at light, Quate. Other specimen: ♂ Lake Mainit, Surigao, Mindanao, 23.XI.1959, Quate.

The genitalia of this species is distinctive and will separate *nocturnalis* from other *Philosepedon* with separated eyes and palpal segments about of the same size.

49. **Philosepedon banksi** (del Rosario), n. comb. Fig. 21 i-m.

Psychoda banksi del Rosario, 1936, Philip. J. Sci. **59**: 563.

♂. Body integument brownish. Eyes contiguous, but lower margins separated as V-shaped notch, bridge with 4 rows of facets; frons with small, triangular projection of hairs extending posteriorly to lower eye margin. Labellum slightly bulbous, with several long spines on outer margin and 2 short ones on inner margin before apex; palpus with segments subequal, ratio=25 : 27 : 25 : 30. Antenna 15-segmented; scape longer than pedicel; segments 14 & 15 separated, 13 & 14 with setose tubercle on apicolateral margin; ascoids consisting of single, sinuous branch. Ratio of fore leg=45 : 38, mid=50 : 55, hind=50 : 62. Genitalia as figured; dististyle with cluster of hairs at base, aedeagus bifid apically, sidepieces parallel with main shaft when aedeagus retracted (fig 21k) or spread apart when aedeagus extended; surstyle of moderate length, with single tenaculum.

Antenna 1.19 mm (1.15-1.24); wing length 1.75 mm (1.62-1.87), width 0.73 mm (0.67-0.80).

♀. Similar to ♂. Eyes contiguous, but more of margins separated than in ♂. Genitalia as figured; subgenital plate with circular marking on each side of midline, unilobed plate between circles bearing 4 setae; spermatheca reticulate but unarmed.

Antenna 1.08 mm (0.91-1.28); wing length 1.99 mm (1.75-2.50), wdth 0.79 mm (0.67-0.97).

DISTRIBUTION. Philippines.

Types (destroyed): Laguna Prov., Luzon.

PHILIPPINES. PALAWAN: 30 km S of Eran Pt, 5-11.I.1960, 500 m, at light, Quate, 2 ♂♂, 3♀♀; Tarumpitao Pt, 4 km S of Eran Pt, 14.I.1960, Quate, ♂. MINDANAO: 20-25 km

S of Manucan, Zamboanga del Norte, 14-18.X.1959, 250-500 m, at light, Quate, 2♂♂, ♀; Mt Katanglad, Bukidnon, 27-31.X.1959, 4-9.XII.1959, 1480 m, Malaise trap, Quate, 3♂♂, ♀; 10 km SE of San Francisco, Agusan, 18.XI.1959, Malaise trap, Quate & Yoshimoto, ♂; Lake Mainit, Surigao, 23.XI-1.XII.1959, Quate, ♀.

The circular markings of the female subgenital plate and single tenaculum and bifid aedeagus of the male genitalia are structures which will separate *banksi* from other species of *Philosepedon* with contiguous eyes.

50. **Philosepedon baguioensis** (del Rosario), n. comb.

Psychoda baguioensis del Rosario, 1936, Philip. J. Sci. **59**: 560.

Holotype ♂ (destroyed): Mountain Prov., Luzon.

DISTRIBUTION. Philippines.

I have not seen specimens of this species and characters used in the key are taken from the description; the illustration of the male genitalia (del Rosario, *l.c.*) appears to be sufficiently distinct to permit recognition of the species. The species has been transferred to *Philosepedon* by virtue of possessing a bulbous labellum and multitenaculated surstyle.

51. **Philosepedon mutabilis** Quate, n. sp. Fig. 22 a-e.

♂. Body integument pale colored. Eyes broadly contiguous; bridge with 4 rows of facets; frons with rectangular patch of hairs which does not have posterior projection, but posterior border concave. Labellum bulbous, with several long spines and 4 small ones on inner margin before apex; palpus with segment 1 shorter than others, ratio=20 : 30 : 35 : 50. Antenna broken, see ♀; scape and pedicel about of same length; ascoids consist of single, sinuous branch. Ratio of fore leg=31 : 27, mid=31 : 35, hind 35 : 40. Genitalia as figured; aedeagus cleft and ending as 2 unequal digits; aedeagus tripartite, asymmetrical; surstyle short and stocky, with 2 tenacula.

♀. Similar to ♂; antenna 15-segmented, segments 14 & 15 separated. Genitalia as figured; arched bar at base of subgenital plate; spermatheca reticulate but unarmed.

Antenna 0.95 mm; wing length 1.52 mm, width 0.60 mm.

Holotype ♂, allotype ♀ (BISHOP 6229): Lake Mainit, Surigao, Mindanao, 27. XI. 1959, Yoshimoto.

The peculiar male and female genitalia of *mutabilis*, combined with the contiguous eyes and unequally segmented palpus should make its recognition relatively easy.

52. **Philosepedon frontalis** Quate, n. sp. Fig. 22 f-i.

♂. Body integument brownish. Eyes broadly contiguous, bridge with 4 rows of facets; frons with patch of hairs having posterior projections laterally and on midline extending posteriorly nearly to lower eye margin. Labellum bulbous, with several long spines; palpus with segment 1 short, ratio=22 : 37 : 40 : 50. Antenna broken; scape very little longer than pedicel; ascoids Y-shaped, anterior branches foliate and very broad. Ratio of fore leg=36 : 30, mid=40 : 37. Genitalia as figured; aedeagus tripartite and symmetrical; surstyle short, stocky and with 2 tenacula.

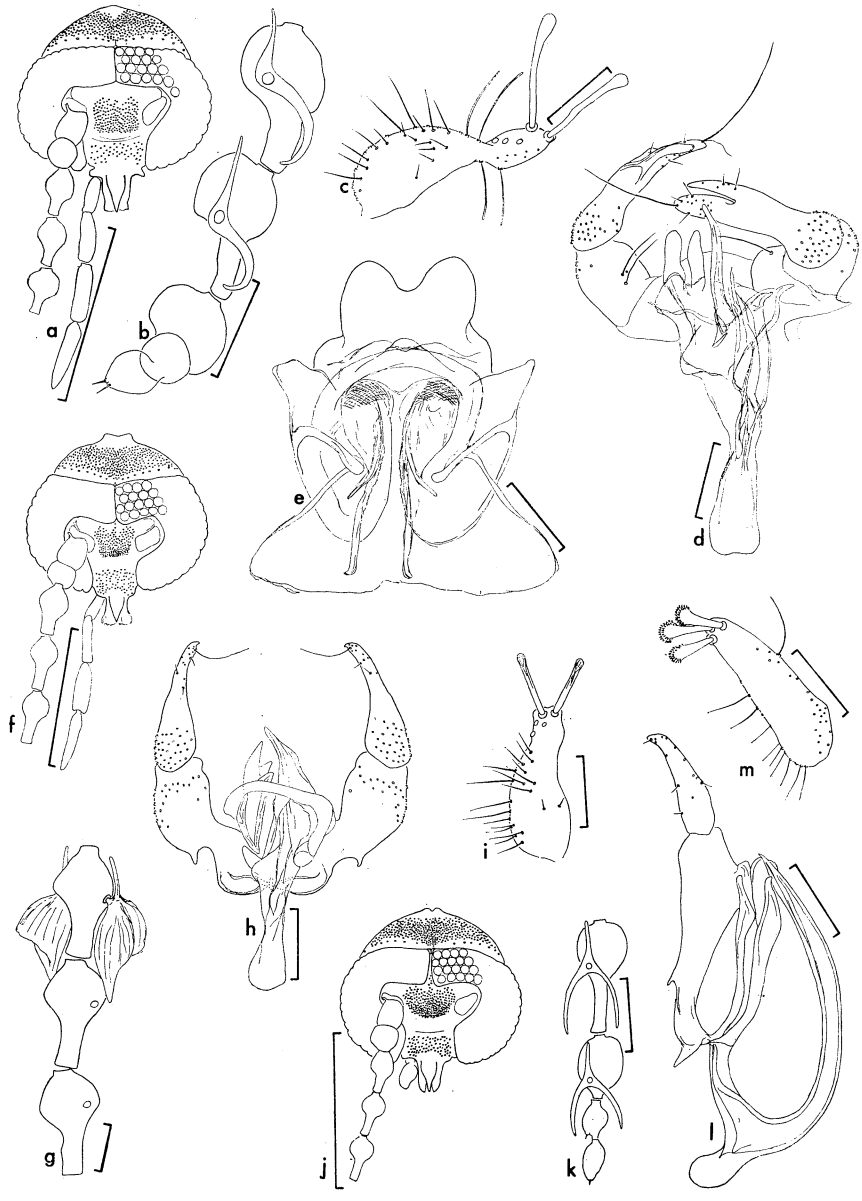

Fig. 22. a–e. *Philosepedon mutabilis*: a, ♀ head; b, ♀ antennal tip; c, ♂ surstyle (distortion artificial); d, ♂ genitalia, dorsal; e, ♀ genitalia, inner face. f–i. *P. frontalis*, ♂: f, head; g, antennal segments 3–5; h, genitalia; i, surstyle. j–m. *P. balinsasayae*, ♂: j, head; k, antennal tip; l, genitalia; m, surstyle. Scale lines of heads=0.3 mm, others =0.05 mm.

Wing length 1.32 mm, width 0.55 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Negros).

Holotype ♂ (BISHOP 6230): Mt Canlaon, Negros Occ., 21-25.XII.1959, 2100 m, Quate.

The symmetrical aedeagus and trilobed hair patch on the frons in this species are quite different from the asymmetrical aedeagus and bilobed hair patch of *mutabilis*, the species of *Philosepedon* now known to be the closest relative.

53. **Philosepedon balinsasayae** Quate, n. sp. Fig. 22 j-m.

♂. Body integument brownish. Eyes narrowly separated by about 1/3 facet diameter, bridge with 4 rows of facets; frons with slender line of hairs extending posteriorly to second row of facets from bottom. Labellum moderately bulbous, with several long spines and 2 short ones; palpus with segment 1 about 1/2 length of 2. Antenna 15-segmented; scape and pedicel subequal in length; segments 14 and 15 subequal, well separated; ascoids Y-shaped. Mid tibia unusually long, ratio of fore leg=32 : 30, mid=34 : 45, hind=35 : 50. Genitalia as figured; aedeagus symmetrical, highly arched when viewed from side; surstyle short, with 3 tenacula, each tenaculum with serrated tips.

Antenna 1.02 mm; wing length 1.40-1.45 mm, width 0.52 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Negros).

Holotype ♂ (BISHOP 6231): Lake Balinsasayao, Negros Or., 1-6.X.1959, at light, Quate. Paratype, ♂: same, sweeping freshly cut abaca, Yoshimoto.

The short scape, 15-segmented antenna, narrowly separated eyes, tritenaculated surstyle and arched aedeagus distinguish *balinsasayae* from other Philippine species of *Philosepedon.*

54. **Philosepedon calabens** Quate, n. sp. Fig. 23 a-d.

♂. Body integument brownish. Eyes separated by 1 facet diameter, bridge with 4 rows of facets; frons with elongate triangular band of hairs extending posteriorly to center of eye bridge. Labellum bulbous; ratio of palpal segments=20 : 30 : 35 : 50. Antenna 15-segmented; scape longer than pedicel; segment 14 broadly fused to 13, 15 separated; ascoids single-branched, anterior part broad. Ratio of fore leg=33 : 27, mid=35 : 40, hind =36 : 46. Genitalia as figured; apical part of dististyle attenuate, drawn out as slender extension; aedeagus asymmetrical; surstyle short, with 8 simple tenacula.

Antenna 0.90-0.95 mm; wing length 1.30-1.35 mm, width 0.47-0.50 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Luzon).

Holotype ♂ (BISHOP 6232): Imus, Cavite, Luzon, 7.II.1962, tree hole of mango, Delfinado. Paratype ♂: same.

The antenna tip of *calabens* with the fused 14th segment resembles *nocturnalis*, but otherwise the species differ markedly in the different ratios of the palpal segments and other characters. The male genitalia of *calabens* is distinctive with the attenuated dististyle tip, asymmetrical aedeagus and multitenaculated surstyle.

55. **Philosepedon katangladensis** Quate, n. sp. Fig. 23 e–i.

♂. Large, pale species. Eyes separated at center by about 1/2 facet diameter, bridge with 4 rows of facets, interocular suture with long spur on midline projecting caudad; frons with rectangular band of hairs without posterior projection. Labellum with many long spines and 4 short ones; palpus with segment 1 about 1/3 length of 2, ratio=10 : 24 : 32 : 25. Antenna broken; scape longer than pedicel; node of segment 3 larger than other nodes; ascoids Y-shaped, arms much broader than stem. Wing as figured; R_4 close to R_{2+3} and R_3. Fore femur little shorter than tibia, ratio of fore leg=29 : 33, mid=32 : 44, hind=30 : 52. Genitalia as figured; dististyle with many long, soft setae, apex recurved; aedeagus large and complex, but symmetrical (asymmetry in illustration due to position); surstyle long, with single tenaculum.

Wing length 3.17–3.75 mm, width 1.25–1.52 mm.

♀. Similar to ♂; eyes separated by about a facet diameter; genitalia as figured.

Wing length 2.85 mm, width 1.10 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂, allotype ♀ (BISHOP 6233): Mt Katanglad, Bukidnon, 27–31.X.1959, 1480 m, Quate. Paratypes: 3♂♂, same.

The large size and wing venation of *katangladensis* readily separate it from other *Philosepedon*, except *decipiens*, to which it is closely related. The two species differ mainly in genitalic characters and modifications of the male abdomen of *decipiens*.

56. **Philosepedon decipiens** Quate, n. sp. Fig. 23 j–m.

♂. Large pale species. Eyes separated by about 1.5 facet diameters, bridge with 4 rows of facets, interocular suture in shape of inverted Y; frons with rectangular patch of hairs with posterior projection. Labellum with many long spines and 4 short ones; palpus with segment 1 about 1/3 length of 2, ratio=7 : 20 : 28 : 22. Antenna broken; scape longer than pedicel. Wing as in *katangladensis*; R_4 close to R_{2+3} and R_3. Fore femur longer than tibia, ratio of fore leg=24 : 18, mid=25 : 30, hind=25 : 35. Abdominal sternites 4–6 each with dense, dark patch of fine hairs; genitalia as figured; dististyle with many long, soft setae and two shorter, heavier ones at 0.9, apex recurved and without very long setae as in *katangladensis*; aedeagus symmetrical (asymmetry in illustration due to position); surstyle long, with single tenaculum.

Wing length 2.92 mm, width 1.00 mm.

♀. Similar to ♂; abdominal sternites unmodified; genitalia as figured.

Wing length 3.00 mm, width 0.80 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂, allotype ♀ (BISHOP 6234): Mt Katanglad, Bukidnon, Mindanao, 27–31.X. 1959, 1480 m, Quate.

This large species is similar to *katangladensis* and separated from other species by its size and wing venation. The two species, *decipiens* and *katangladensis*, are separable by genitalic characters. The male dististyli and aedeagi differ in spination and shape and in the female genitalia the differences are found largely in the shape of the apical lobes

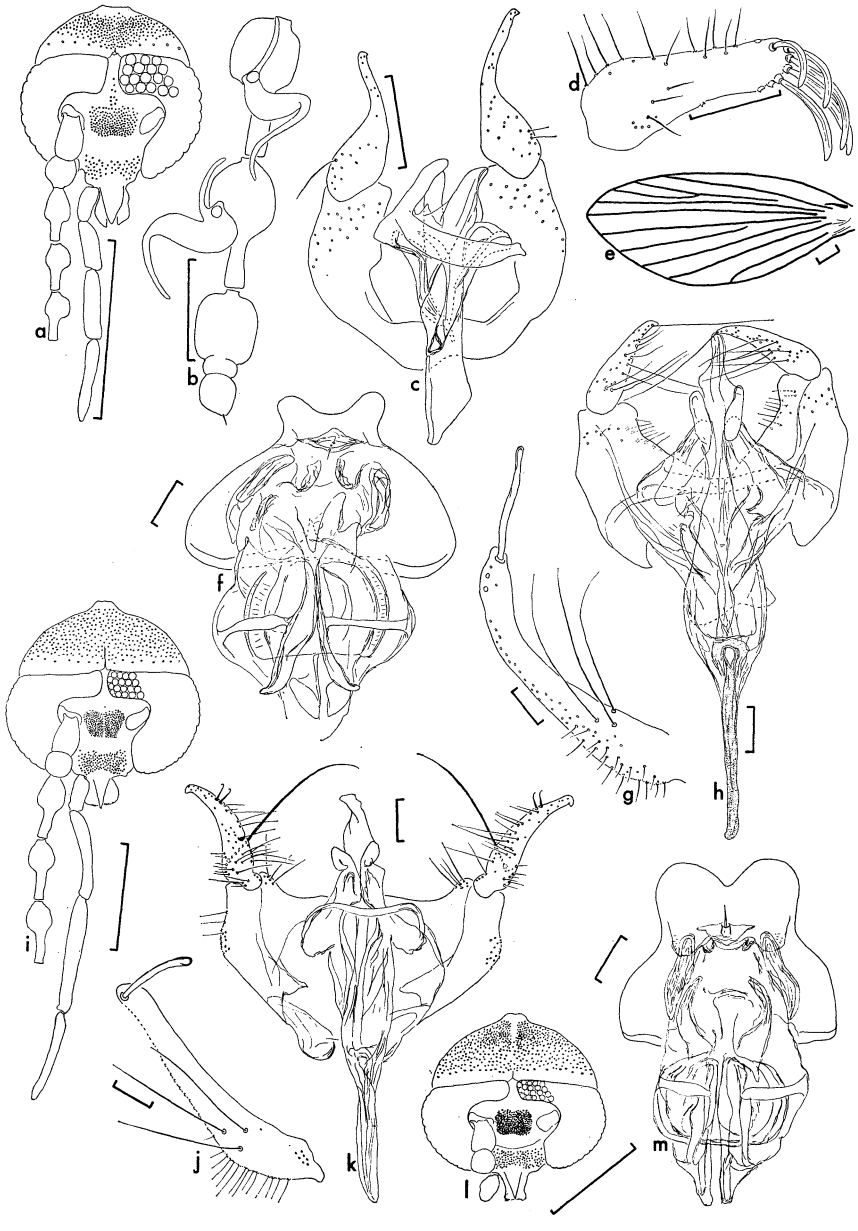

Fig. 23. a–d. *Philosepedon calabens*, ♂ : a, head; b, antennal tip; c, genitalia, dorsal; d, surstyle. e–i, *P. katangladensis*: e, ♂ wing; f, ♀ genitalia, inner face; g, ♂ surstyle; h, ♂ genitalia, dorsal; i, ♂ head. j–m. *P. decipiens*: j, ♂ surstyle; k, ♂ genitalia, dorsal; l, ♂ head; m, ♀ genitalia, inner face. Scale lines of heads & wing=0.3 mm, others=0.05 mm.

and ornamentation on the inner face at the base of the lobes; all these differences will be more evident by studying the illustrations.

Genus **Psychoda** Latreille 1796

Key to Philippine species of Psychoda

1. Eyes contiguous on midline 2
   Eyes separated on midline 6
2 (1). Palpal segment 1 longer than 2; wing banded 3
   Palp 1 about 1/2 as long as 2; wing not banded; antenna 16-segmented ..... 57. **delicata**
3 (2). Eyes broadly contiguous, nearly all median surfaces of eye bridge touching; antenna 15-segmented, 14 smaller than 15 4
   Eyes barely touching, in contact only at upper facet row; antenna 14-segmented, 2 tubercles on segment 13 internode ..... 58. **luzonica**
4 (3). Hind femur and tibia subequal in length; lateral shaft of ♂ aedeagus curved at base only and not sinuous; ♀ unknown 5
   Hind femur shorter than tibia (40 : 45); ♂ lateral shaft curved at base and sinuous beyond; ♀ subgenital plate small and Y-shaped ..... 59. **flexichela**
5 (4). Lower margin of eye bridge with notch at midline; ♂ dististyle with preapical claw-like appendage extending far beyond tip of attenuated apex ... 60. **unioculata**
   Lower margin of eye bridge straight, without median notch; ♂ dististyle with short, preapical, claw-like appendage barely extending beyond rounded apex ..... 61. **lusca**
6 (1). Eye bridge with 2 or 3 rows of facets; antenna 15-segmented, 14 fused to 13, 15 separated 7
   Eye bridge with 4, or rarely 5, rows of facets 8
7 (6). ♀ subgenital plate Y- or wineglass-shaped; ♂ with only 2 rows of eye facets, facets lacking at side of antenna, from bare area arises inflated, membranous sac ..... 79. **turgida**
   Subgenital plate quadrate, sides parallel; ♂ unknown ..... 80. **terlinoculata**
8 (6). Node of antenna 3 not unusually large; eyes separated by less than 3 facet diameters 9
   Antenna 3 very large, node larger than scape; eyes widely separated by 3–5 facet diameters ..... 62. **articuliga**
9 (8). Palpus 1 cylindrical, of usual shape 10
   Palp 1 massive, expanded into large, flat, trapezoidal appendage as wide as head; antenna 14-segmented; ♀ unknown ..... 93. **canlaones**
10 (9). Palp 1 very long, about twice or more length of 2 11
   Palp 1 not unusually long, at most little longer than 2 13
11 (10). Antenna 14- or 15-segmented; ♂ dististyle not sinuous; ♀ unknown 12
   Antenna 16-segmented; ♂ dististyle ending in slender, sinuous elongation, lateral shaft of aedeagus spiraled; ♀ subgenital plate parallel-sided or sides divergent ..... 63. **prolarta**
12 (11). Antenna 15-segmented, 14 smaller than 15 but distinct; main shaft of ♂

aedeagus slender; wing banded..... 71. **fasciata**
Antenna 14-segmented, 13 with long internode bearing 2 tubercles; main shaft of ♂ aedeagus broad; wing not banded..... 94. **trunculens**
13 (10). Radial and medial forks complete, may be weakened but at most only a little of R_3 and M_2 bases lacking..... 14
Radial and medial forks incomplete, large parts of R_3 and M_2 bases lacking... 47
14 (13). Antenna 16-segmented.....15
Antenna 14- or 15-segmented 21
15 (14). Hairs on vertex not extending forward beyond upper eye margin, frons hairs extend posteriorly, but vertex hairs usually form straight line on anterior margin..... 16
Hairs on vertex extend forward on midline to lower eye margin, frons hairs not extending posteriorly on midline, ♂ with dense row of very long hairs arising from large sockets on anterior part of frons; ♀ subgenital plate trilobed apically.....64. **acutilamina**
16 (15). Antenna with terminal segments separated 17
Antenna with segments 13, 14, 15 fused, 16 separated; ♀ subgenital plate ending in 2 slender lobes separated by semicircular concavity, inner face with conspicuous, distinctive markings (fig 26 l); ♂ unknown ..... 65. **felina**
17 (16). Palpus segment 1 noticeably shorter than 2 (20 : 25) 18
Palpus segment 1 equal or subequal to 2 (20 : 22) 19
18 (17). Labellum with 3 spines before teeth; ♀ subgenital plate somewhat quadrate with nearly straight, convergent sides; ♂ aedeagus with simple, straight main shaft and acute, slightly curved lateral shaft.....66. **aponesos**
Labellum with only 2 spines; ♀ subgenital plate semicircular with weak apical concavity; ♂ unknown ..... 67. **frivola**
19 (17). ♀ subgenital plate wider than long; ♂ unknown.....20
♀ subgenital plate slender, longer than wide; ♂ aedeagus ends in long, curved hook, base obsolescent..... 68. **harrisi**
20 (19). Subgenital plate with weak apical concavity, digit scarcely extends beyond margin, rugose, circular structure on midline near base ..... 69. **crenula**
Subgenital plate with deep, U-shaped apical concavity, digit long, 1/2 or more of its length extends beyond margin ..... 70. **phalanga**
21 (14). Antenna 15-segmented, 14 broadly fused to 13, 15 separated, smaller than preceding segments, button-like; wing veins with spots at tips..... *alternata* complex 22
Antenna not as above; veins without spots at tips 30
22 (21). Radial and medial forks nearly on same level, radial distad of medial by less than width of radial cell 23
Radial fork distad of medial by 1–2 × width of radial cell 28
23 (22). ♀♀ 24
♂♂.....27
24 (23). Subgenital plate with sides parallel or convergent.....25
Subgenital plate V-shaped.....74. **alia**
25 (24). Subgenital plate with sides parallel.....26
Subgenital plate with sides convergent, apical concavity broad and shallow

..... 76. **formosiensis**

26 (25). Subgenital plate with deep apical concavity, deeper than 1/2 length of plate ..... 73. **acanthostyla**

Subgenital plate quadrate with V-shaped apical concavity, less than 1/2 length of plate ..... 75. **vagabunda**

27 (23). Dististyle tapering to slender apex ..... 75. **vagabunda(?)**

Dististyle inflated and bearing about 15 stiff setae on inner face, apex claw-like ..... 73. **acanthostyla**

28 (22). Hind femur subequal to tibia 29

Hind femur shorter than tibia; ♀ subgenital plate V-shaped; large, yellowish species common around human habitations ..... 72. **alternata**

29 (28). Ascoids on ♀ antenna 3 & 4 flattened, triangular with extended apices; subgenital plate weakly bilobed, with several diagonal grooves basad of digit, base with deep, slender notch; ♂ dististyle and lateral shaft of aedeagus nearly straight ..... 78. **platilobata**

All ascoids Y-shaped; ♀ subgenital plate quadrate with parallel sides and without grooves or basal notch; ♂ dististyle curved apically, lateral shaft strongly curved over center of main shaft ..... 77. **subquadrilobata**

30 (21). Antenna 15-segmented, terminal 2 segments of equal size or nearly so 31

Antenna 14- or 15-segmented, terminal 2 segments markedly dissimilar in size... 32

31 (30). Eyes separated by 3 facet diameters; ♀ subgenital plate in form of stalk with inflated apex; ♂ unknown ..... 81. **platalea**

Eyes separated by 1 facet diameter or less; ♀ subgenital plate with crescent-shaped apex; ♂ unknown ..... 82. **saites**

32 (30). ♀♀ 33

♂♂ 42

33 (32). Subgenital plate Y- or T-shaped, i. e., a narrow stalk leads to apical arms, with or without broad base 34

Subgenital plate broader, neither Y- nor T-shaped 36

34 (33). Stem of subgenital plate long, longer than wide; antenna 15-segmented, 14 smaller than 15, appears as mere enlargement of internode 35

Stem of subgenital plate short, length less than width; antenna 14-segmented, without trace of additional segments ..... 94. **cristula**

35 (34). Inner face of subgenital plate with hairy, diagonal ridge on either side of stem ..... 83. **aderces**

Inner face of plate with hairy, transverse ridge across stem at base of digit ..... 84. **paraderces**

36 (33). Subgenital plate higher than wide, without rosette ornamentations on inner face 37

Subgenital plate wider than high, with pair of rosette-like structures on inner face ..... 85. **savaiiensis**

37 (36). Spermatheca unarmed 38

Spermatheca with series of short setae on inner margin and longer ones on mesocephalic margin ..... 86. **collina**

38 (37). Genital digit cylindrical, much longer than wide 39

Genital digit triangular, about as long as wide; distal part of subgenital plate

darker than membranous basal part ..... 87. **cochlearia**

39 (38). Hind femur and tibia subequal in length 40
Hind femur shorter than tibia (40 : 45) 41

40 (39). Subgenital plate with ridge on inner face bare and not inverted U-shaped ... . 88. **quadrifilis**
Subgenital plate with ridge on inner face setose and inverted U-shaped..... ..... 89. **guamensis**

41 (39). Antenna 15-segmented, 13 & 14 bearing setose tubercle on apicolateral angles; subgenital plate appears bipartite, apical part seems detached from basal, membranous part ..... 88. **quadrifilis**
Antenna 14-segmented, only 13 with setose tubercle on apicolateral angle; subgenital plate unipartite, spermathecae large ..... 90. **ochra**

42 (32). Aedeagus with clearly developed lateral shaft at side of main shaft..... 43
Aedeagus without evident lateral shaft, main shaft a simple, spatulate structure, paramere unilobed, setose..... 90. **ochra**

43 (42). Lateral shaft of aedeagus straight and short, ends well before tip of main shaft...44
Lateral shaft long and curved, extends well beyond tip of main shaft..... 45

44 (43). Ascoids 4-branched; base of aedeagus before foramen slender, much narrower than apical part..... 85. **savaiiensis**
Ascoids Y-shaped; base of aedeagus broader than apical part.....87. **cochlearia**

45 (43). Paramere moderately developed; lateral shaft of aedeagus not sinuous..... 46
Paramere strongly developed as pair of slender, setose lobes; lateral shaft of aedeagus long and sinuous ..... 91. **serpentina**

46 (45). Paramere asymmetrical, one lobe strongly setose; lateral shaft of aedeagus curved over most of its length and recurved at apex..... 88. **quadrifilis**
Paramere symmetrical, lobes bare; lateral shaft straight except at base and apex..... 89. **guamensis**

47 (13). Antenna 16-segmented..... 48
Antenna 15-segmented..... 51

48 (47). Antennal segment 13 fused to 14 49
Antenna 14 separated from 13 but solidly fused to 15; ♀ subgenital plate Y-shaped, with pair of setose lobes before digit ..... 95. **caudata**

49 (48). Eyes separated by 1 or more facet diameters..... 50
Eyes separated by less than 1 facet diameter; ♀ subgenital plate nearly quadrate with slightly divergent sides..... 96. **formosana**

50 (49). Female subgenital plate heart-shaped; lateral shaft of ♂ aedeagus sharply recurved near center, coxite normal ..... 97. **makati**
Female subgenital plate quadrate with small apical lobes; spermatheca large; ♂ aedeagus with large, saccular inflation at junction of basi- and dististyle .....98. **malleola**

51 (47). Median band of hairs on frons extending posteriorly to upper part of eye bridge, narrowly separated from hairs on vertex 52
Median band of hairs on frons extending posteriorly only to lower row of facets, widely separated from hairs on vertex; eyes separated by 2 facets; ♂ unknown ..... 99. **moleva**

52 (51). Eyes separated by 1.5–2 facet diameters 53

Eyes separated by about 1 facet diameter or less 55
53 (52). Terminal 2 antennal segments relatively large, more than 1/2 as large as 13, separated 54
Terminal 2 antennal segments less than 1/2 as large as 13, 14 partly fused to 13; ♀ subgenital plate roughly Y-shaped with thick stem ..... 102. **pellucida**
54 (53). ♀ subgenital plate Y-shaped, base considerably narrower than apex; ♂ aedeagus twisted, paramere unilobed ..... 103. **alabangensis**
♀ subgenital plate much broader at base than at apex; ♂ aedeagus straight, paramere bilobed ..... 104. **parsivena**
55 (52). ♀♀ 56
♂♂ 59
56 (55). Subgenital plate with single digit, basal margin straight 57
Subgenital plate with U-shaped concavity in basal margin, similar to that at apex, 2 digits on inner face ..... 101. **bidigitalis**
57 (56). Sides of subgenital plate convergent 58
Sides of plate parallel, inner face with setose, rectangular lobe ..... 105. **mediocris**
58 (57). Hind femur and tibia subequal in length; terminal 2 segments less that 1/2 size of 13; inner face of subgenital plate without obvious ornamentations ... . 100. **umbratica**
Hind femur shorter than tibia; terminal 2 segments more than 1/2 size of 13; inner face of plate with truncated, cone-shaped structure ..... 106. **innotabilis**
59 (55). Aedeagus consisting only of main shaft without lateral shaft 60
Aedeagus consisting of main and lateral shaft; dististyle bluntly rounded at apex with preapical nodular enlargement ..... 107. **fusticola**
60 (59). Paramere rather short, not extending to tip of basistyle 61
Paramere elongate, extending to tip of basistyle, with band of setae along each side ..... 106. **innotabilis**
61 (60). Paramere rounded, unilobed 62
Paramere bilobed; dististyle short and stocky ..... 102. **pellucida**
62 (61). Dististyle parallel-sided until suddenly tapering to apex; terminal 2 antennal segments less than 1/2 segment 13, 14 partly fused to 13 ..... 100. **umbratica**
Dististyle tapering from near base to apex; terminal 2 antennal segments about 1/2 or more size of 13, separated ..... 105. **mediocris**

57. **Psychoda delicata** Quate, n. sp. Fig. 24 a–f.

♀. Body integument pale yellowish. Eyes contiguous on upper 1/2–1/4 of median surfaces, lower margins separated and forming inverted V-shaped notch; bridge with 4 rows of facets; frons with triangular projection of hairs extending posteriorly to anterior eye margin. Labellum with single seta and 3 teeth; palpus with segment 1 much shorter than others, ratio=21 : 36 : 45 : 46. Antenna 16-segmented, terminal 3 segments free and distinctly separated; ascoids Y-shaped. Wing unbanded; forks complete. Ratio of fore femur: tibia=33 : 28, mid=35 : 35, hind=38 : 37. Genitalia as figured.

Antenna 0.89–1.00 mm; wing length 1.20–1.37 mm, width 0.45–0.52 mm.

♂. Similar to ♀. Genitalia as figured; coxite long and slender, dististyle ending in beak-like apex; aedeagus capitate, base obsolescent; paramere evenly rounded, bare.

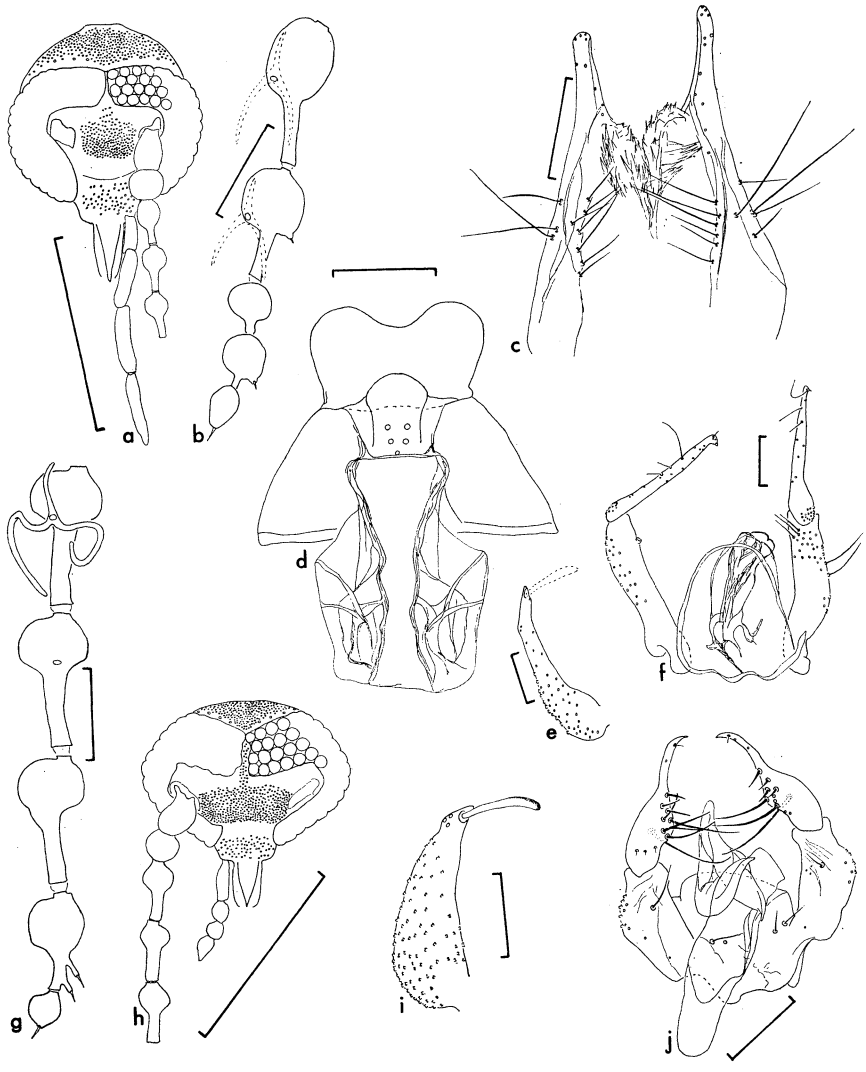

Fig. 24. a–f. *Psychoda delicata*: a, ♀ head; b, ♀ antennal tip; c, ♀ surstyli; d, ♀ genitalia, inner face; e, ♂ surstyle; f, ♂ genitalia, dorsal. g–j. *P. luzonica*, ♂: g, antennal tip; h, head; i, surstyle; j, genitalia, dorsal. Scale lines of heads=0.3 mm, others =0.05 mm.

Wing length 1.22 mm; width 0.52 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♀, allotype ♂ (BISHOP 6235): Los Arcos (7 km E of Azpitia), Agusan, Mindanao, 19–23.XI.1959, at light. Paratypes: 4♀♀, same.

The short first palpal segment and distinctive genitalia distinguish *delicata* from other Philippine members of *Psychoda* with contiguous eyes.

Some obvious variation is noted in the ♀ type series. The genitalia of some of the paratypes appear rather different than in the holotype; the apical lobe is larger and more constricted at its base, the rectangular plate on the inner face of the plate at the base of the apical lobe is longer and bears 5 or 6, rather than 4, punctures (fig 24d), and the eyes are separated over most of their median surfaces. The paratype showing the greatest variation bears the same data as the holotype and the differences are of degree, not kind. For these reasons I have grouped the variants under a single species on the assumption that this is intraspecific variation, but the possibility of a species complex should not be overlooked by future workers.

58. **Psychoda luzonica** Quate, n. sp. Fig. 24 g-j.

♂. Body integument pale yellowish. Eyes contiguous only at level of upper row of facets; bridge with 4 rows of facets; frons with narrow band of hairs extending posteriorly to and nearly touching upper row of facets. Labellum with single seta and 4 teeth; palpus with segment 1 longer than others, ratio=25 : 15 : 13 : 18. Antenna 14-segmented, segment 13 with long internode bearing 2 slender, spinose tubercles, 14 separated; ascoids Y-shaped. Wing apparently banded; forks complete. Ratio of fore leg=26 : 22, hind= 30 : 34. Genitalia as figured; dististyle suddenly narrowed near center and apical part a slender, curved structure; aedeagus bipartite, thick and compact; surstyle short and stocky.

Antenna 1.01 mm; wing length 1.20 mm, width 0.50 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Luzon).

Holotype ♂ (BISHOP 6236): Compra, Bigti (N of Manila), Bulacan, Luzon, 25.IX.1961, J. Santos.

59. **Psychoda flexichela** Quate. n. sp. Fig. 25 a-d.

♂. Body integument pale yellowish. Eyes contiguous over most of median surfaces, lower margin at level of lower row of facets separated and forming inverted V-shaped notch; bridge with 4 rows of facets; frons with short, triangular projection of hairs extending posteriorly to anterior eye margin. Labellum with 2 setae and 4 teeth; palpus with segment 1 longer than 2 & 3, ratio=22 : 20 : 18 : 27. (Antenna broken, see ♀). Wing with 3 brown bands; forks complete. Ratio of fore leg=34 : 28, mid=36 : 40, hind=38 : 42. Genitalia as figured; dististyle ending in claw-like tip with short, subapical projection; main shaft of aedeagus straight and rather simple, lateral shaft broadly curved and sinuous, paramere nearly straight and minutely setose; surstyle short but slender except inflated base.

Wing length 1.90 mm, width 0.75 mm.

♀. Similar to ♂. Antenna 14-segmented, segment 13 with internode slightly inflated. Genitalia as figured; subgenital plate small and Y-shaped.

Antenna 1.00 mm; wing length 1.85 mm, width 0.72 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂, allotype ♀ (BISHOP 6237): Mt Katanglad, Bukidnon, Mindanao, 27.X-1. XI.1959, 1480 & 1250 m, Quate. Paratype: same as holotype.

The general pattern of the ♂ genitalia is similar to the following two species, particular-

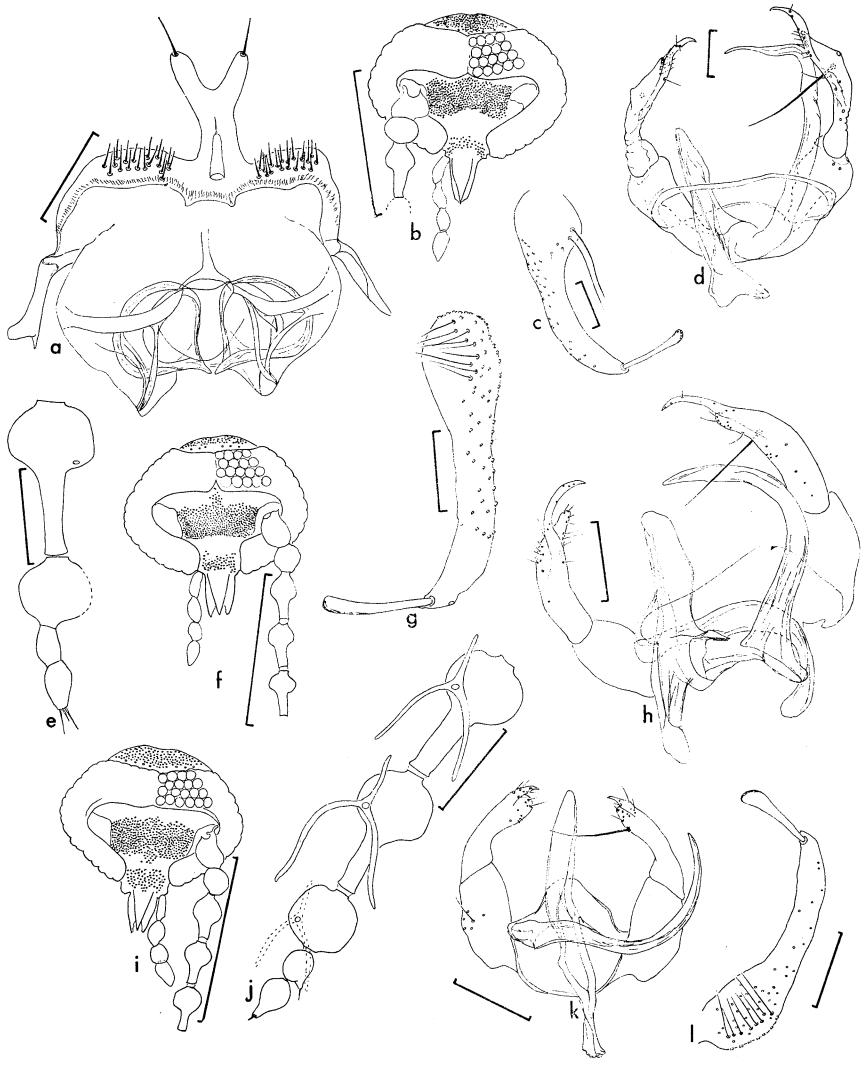

Fig. 25. a–d. *Psychoda flexichela*: a, ♀ genitalia, inner face; b, ♂ head; c, ♂ surstyle; d, ♂, genitalia, dorsal. e–h. *P. unioculata*, ♂: e, antennal tip; f, head; g, surstyle; h, genitalia, dorsal. i–l. *P. lusca* ♂: i, head; j, antennal tip; k, genitalia, dorsal; l, surstyle. Scale lines of heads=0.3 mm, others=0.05 mm.

ly the claw-like termination of the dististyle and the long, curved lateral shaft of the aedeagus. On morphologic grounds, the three are good species, but additional data may alter that conclusion.

In addition to the ♀ assigned to this species, there is another which is similar but differs in the structure of the spermatheca. It is a single specimen and is not being named, but

future workers should be aware that it poses a question as to the correct association of sexes in *flexichela.*

60. **Psychoda unioculata** Quate, n. sp. Fig. 25 e-h.

♂. Body integument yellowish. Eyes contiguous over most of median surfaces, lower margin at level of lower row of facets separated and forming shallow, inverted V-shaped notch; bridge with 4 rows of facets; frons with triangular projection of hairs extending posteriorly to anterior eye margin. Labellum with 2 setae and 4 teeth; palpus with segment 1 longer than others, ratio=24 : 15 : 15 : 17. Antenna 15-segmented; segment 13 with slender, subapical spinose tubercle, without internode; 14 and 15 small, fused to each other and to 13, appear as little more than swellings. Wing with 3 brown bands; forks complete. Ratio of fore leg=30 : 25, mid=32 : 32, hind=35 : 35. Genitalia as figured; dististyle ending in long, preapical claw-like appendage and attenuated apex; lateral shaft of aedeagus broadly curved but not sinuous, paramere arched, bare.

Antenna 1.05 mm; wing length 1.35 mm, width 0.57 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Palawan).

Holotype ♂ (BISHOP 6238): About 30 km S of Eran Pt, Palawan (W. coast), 5.I.1960, at light, Quate.

61. **Psychoda lusca** Quate, n. sp. Fig. 25 i-l.

♂. Body integument yellowish. Eyes contiguous over entire median area and not separated on anterior margin; bridge with 4 rows of facets; frons without posterior projection of hairs. Labellum with 2 setae and 4 teeth; palpus with segment 1 longer than others, ratio=23 : 15 : 14 : 20. Antenna 15-segmented; segment 14 little smaller than 15, with spinose tubercle, 15 separated. Wing with 3 brown bands; forks complete. Ratio of fore leg=28 : 24, hind=34 : 33. Genitalia as figured; dististyle ending in rounded apex with short, subapical claw-like projection; lateral shaft of aedeagus broadly curved, paramere asymmetrically arched and bare.

Antenna 0.95 mm; wing length 1.45 mm, width 0.60 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Palawan).

Holotype ♂ (BISHOP 6239): About 30 km S of Eran Pt, Palawan (W. coast), 5.I.1960, at light, Quate.

This species is similar to the preceding one, but the genitalic structures shown in the illustrations will separate them. Also the broadly joined eye bridges without an anterior notch are characteristic of *lusca.*

62. **Psychoda articuliga** Quate, n. sp. Fig. 26 a-f.

♂. Body integument brownish. Eyes separated by 5 facet diameters, bridge with 4 rows of facets; tuft of scales on back of head at apicolateral angles of occipital foramen; frons with wide band of hairs extending posteriorly. Labellum short, with 2 setae and 3

teeth; palpus with segment 1 short, others elongate, ratio=20 : 30 : 30 : 30. Antenna 16-segmented, node of segment 3 very large, pyriform, nodes of following segments also pyriform but smaller and gradually becoming spherical; terminal 3 segments separated, segment 15 apparently larger than 14 and 16; ascoids not visible. Wing as figured, forks complete. Ratio of fore leg=32 : 30, mid=30 : 30, hind=35 : 45. Genitalia as figured; aedeagus paddle-shaped; posterior margin of paramere straight, bare.

Antenna 1.04 mm; wing length 1.40 mm, width 0.50 mm.

♀. Similar to ♂. Eyes separated by 3 facet diameters; ascoids Y-shayed. Genitalia as figured.

Antenna 0.98 mm; wing length 1.57 mm, width 0.57 mm.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6240): Mt Katanglad, Bukidnon, Mindanao, 27-31.X.1959, 1480 m, Quate, Paratype: ♀, same data.

The widely separated eyes and greatly enlarged first flagellar segment of the antenna immediately separate *articuliga* from other species of *Psychoda* now known in the Philippines.

63. **Psychoda prolarta** Quate, n. sp. Fig. 26 g-k.

♂. Body integument brownish. Eyes separated by 1 facet diameter, bridge with 4 rows of facets; frons with elongate triangular band of hairs extending posteriorly to upper row of eye facets. Labellum with 2 setae and 4 teeth; palpus with segment 1 very long, ratio =44 : 25 : 20 : 23. Antenna 16-segmented; segment 13 without internode, 14, 15, 16 progressively diminishing in size, slightly fused together; ascoids Y-shaped. Wing forks complete. Ratio of fore leg=28 : 25, mid=30 : 31; hind=35 : 36. Genitalia as figured; dististyle narrowed at distal 1/3 and ending in slender, recurved piece; lateral shaft of aedeagus sharply curved and recurved at base into spiraliform structure; paramere setose, markedly asymmetrical with one lobe well developed and other undeveloped; paramere of usual *Psychoda* shape.

Antenna 0.96 mm; wing length 1.30-1.35 mm, width 0.60-0.65 mm.

♀. Similar to ♂. Genitalia as figured; subgenital plate parallel-sided or sides divergent, inner face with dark, sclerotized, bilobed piece.

Antenna 0.97-0.99 mm; wing length 1.57-1.82 mm, width 0.70-0.75 mm.

DISTRIBUTION. Philippines (Negros, Mindanao).

Holotype ♂, allotype ♀ (BISHOP 6241): Lake Balinsasayao, Negros Or., 1-7.X.1960, light trap, Quate & Yoshimoto. Paratype: ♂, same; 2♀♀. Mt Katanglad, Bukidnon, Mindanao, 27-31.XI.1959.

The elongate first palpal segment is an unusual feature in the psychodines and gives a distinctive feature to identify *prolarta*. Only one other species now known, ***trunculens***, has a similar palp, but it has a 14-segmented antenna instead of 16-segmented as in *prolarta*.

64. **Psychoda acutilamina** Quate, 1959, Ins. Micronesia (Bishop Mus.) **12**(4) : 463 (illus. ♂, ♀).

DISTRIBUTION. Philippines (Negros), Caroline Is.

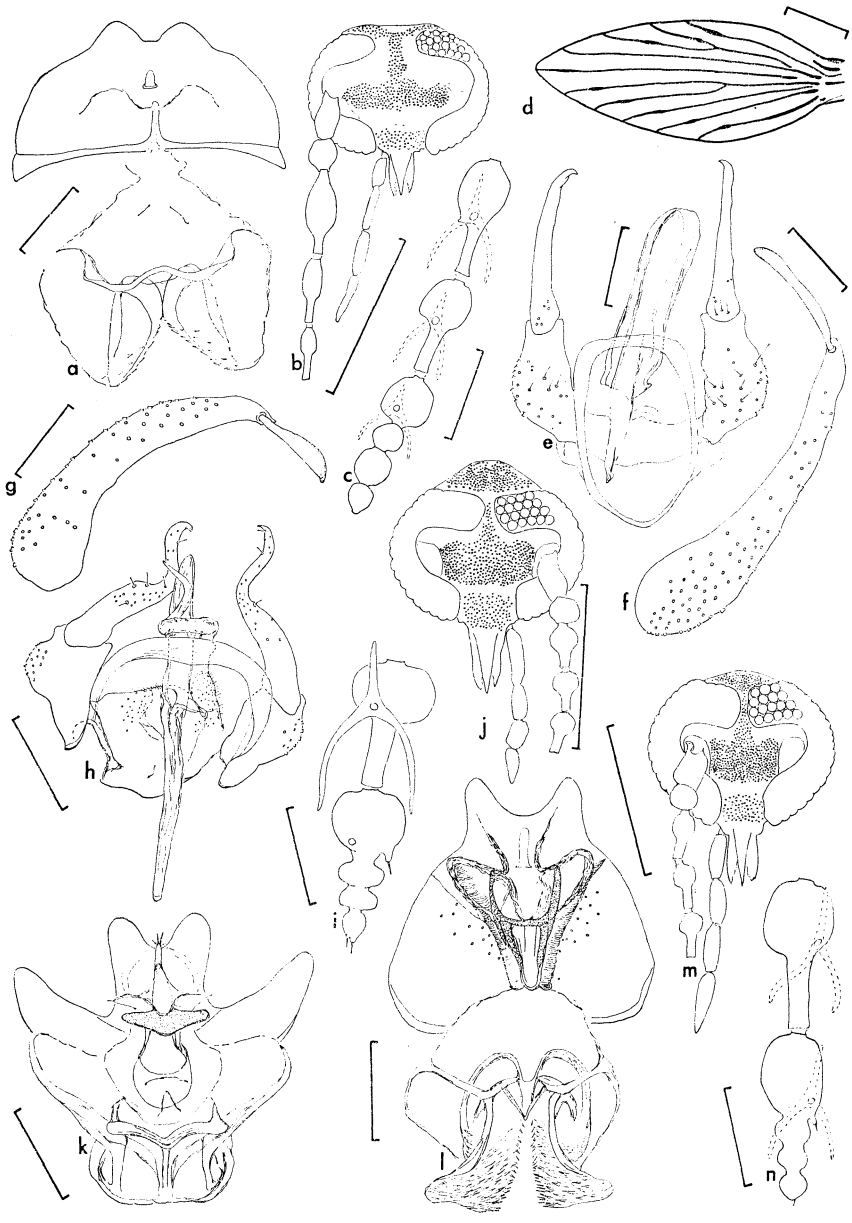

Fig. 26. a–f. *Psychoda articuliga*: a, ♀ genitalia, inner face; b, ♂ head; c, ♂ antennal tip; d, ♀ wing; e, ♂ genitalia, dorsal; f, ♂ surstyle. g–k. *P. prolarta*: g, ♂ surstyle; h, ♂ genitalia, dorsal; i, ♂ antennal tip; j, ♂ head; k, ♀ genitalia, inner face. l-n. *P. felina*, ♀ : l, genitalia, inner face; m, head; n, antennal tip. Scale lines of heads & wing=0.3mm, others=0.05 mm.

PHILIPPINES. Negros Or.: Dumaguete City, 8.X.1959, at light, Quate, ♀.

65. **Psychoda felina** Quate, n. sp. Fig. 26 l-n.

♀. Body integument yellowish. Eyes separated by about 2/3 facet diameter, bridge with 4 rows of facets; frons with elongate triangular band of hairs extending posteriorly to upper row of facets. Labellum with 2 setae and 3 teeth; ratio of palpal segments= 35 : 35 : 40 : 45. Antenna 16-segmented; segments 14, 15, 16 progressively diminishing in size, solidly fused together and to 13; ascoids Y-shaped. Wing forks complete. Ratio of fore leg=37 : 30, mid=42 : 40, hind=44 : 50. Genitalia as figured; subgenital plate with rounded, sloping sides leading to pair of slender lobes; inner face with well defined ridges forming distinctive pattern.

Antenna 1.12 mm; wing length 1.77-2.00 mm, width 0.70-0.80 mm.

♂. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♀ (BISHOP 6242): Mt Katanglad, Bukidnon, Mindanao, 27-30.X.1959, 1480 m, Malaise trap, Quate & Yoshimoto. Paratype, 2♀♀: same.

The distinctive markings on the inner face, as illustrated, are the only feature which will separate *felina* from other species of *Psychoda* with 16-segmented antennae.

66. **Psychoda aponesos** Quate, 1959, Ins. Micronesia (Bishop Mus.) **12** (4): 465 (illus. ♀, ♂); 1959, Pacific Ins. **1**: 437; 1962, *ibid.* **4**: 55, 234; 1962, Proc. Hawaiian Ent. Soc. **18**: 186.

DISTRIBUTION. India, Malaya, Borneo, Philippines, Caroline Is., Samoa.

PHILIPPINES. PALAWAN: About 30 km S of Eran Pt. (W coast), 12. I. 1960, light trap, Quate, ♀. MINDANAO: 3 km NW of Milbuk, Cotabato, 4. VIII. 1958, Milliron, ♂; 10 km SW of San Francisco, Agusan, 12-17.XI.1959, Quate & Yoshimoto, 3♀♀, 1♂; Lake Maint, Surigao, 27.XI.1959, Quate, 2♂♂.

67. **Psychoda frivola** Quate, n. sp. Fig. 27 a-c.

♀. Body integument yellowish. Eyes separated by little less than a facet diameter, bridge with 4 rows of facets; frons with narrow band of hairs extending posteriorly to 2nd row of facets. Labellum with 2 setae and 4 teeth; ratio of palpal segments=20 : 30 : 20 : 30. Antenna 16-segmented, terminal 4 segments separated, 16 smallest; ascoids Y-shaped. Wing forks complete. Ratio of fore leg=28 : 25, mid=33 : 35, hind=35 : 41. Genitalia as figured; subgenital plate semicircular with shallow apical concavity.

Antenna 0.85-0.98 mm; wing length 1.40-1.67 mm, width 0.57-0.70 mm.

♂. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♀ (BISHOP 6243): Mt Katanglad, Bukidnon, Mindanao, 27.X.1959, 1480 m, at light, Quate. Paratypes: 2♀♀, same, 26-30.X.1959.

68. **Psychoda harrisi** Satchell, 1950, Trans. R. Ent. Soc. Lond. **101**: 171 (♂, ♀ illus.).

Psychoda bifurcata Tokunaga, 1958, Phil. J. Sci. **86**: 378 (♀ only).

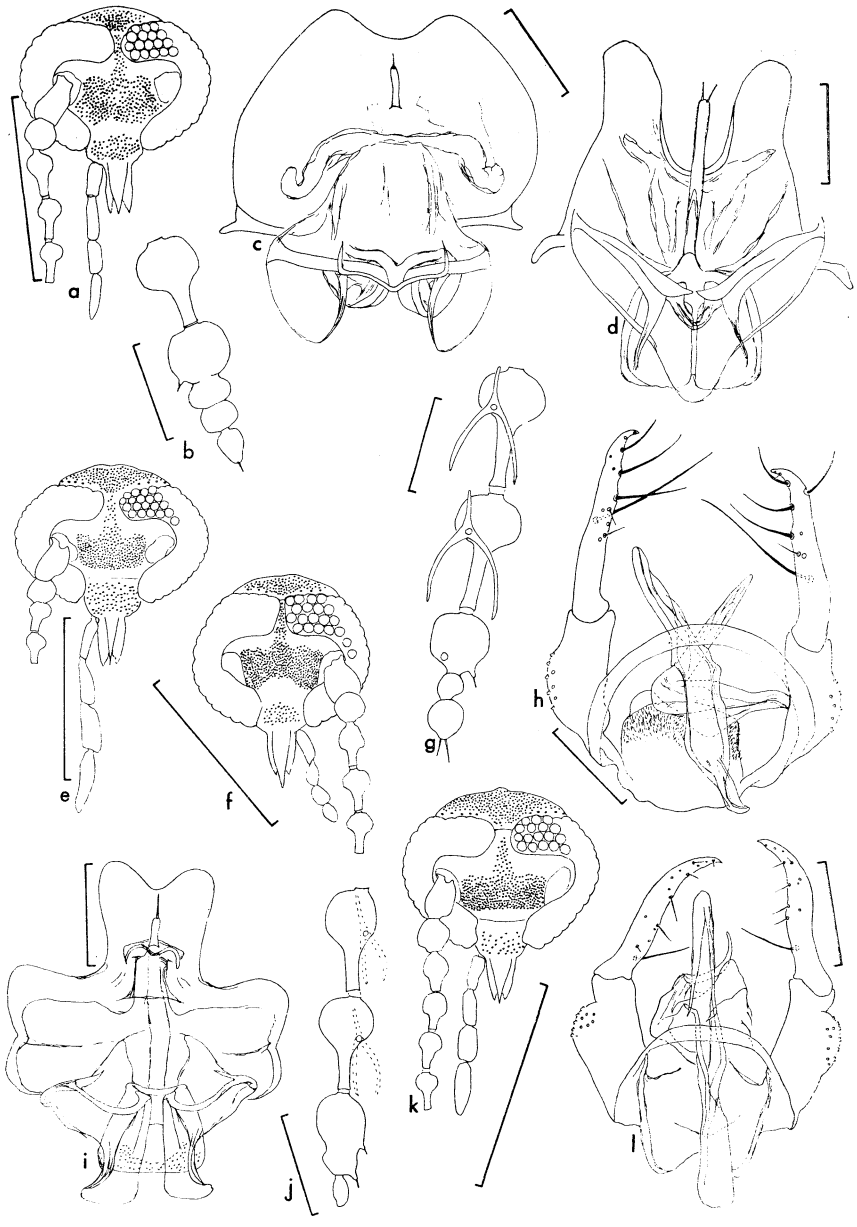

Fig 27. a–c. *Psychoda frivola*, ♀ : a, head; b, antennal tip; c, genitalia, inner face. d–e. *P. phalanga*, ♀ : d, genitalia, inner face; e, head. f–h. *P. fasciata*, ♂ : f, head; g, antennal tip; h, genitalia, dorsal. i–l. *P. subquadrilobata*: i, ♀ genitalia, inner face; j, ♀ antennal tip; k, ♀ head; l, ♂ genitalia, dorsal. Scale lines of heads=0.3 mm, others =0.05 mm.

Psychoda hamatifera Tokunaga, 1958, *Ibid.* **86**: 385 (♂ only).

DISTRIBUTION. India to Hawaii, Borneo to Ryukyu Is.

PHILIPPINES. LUZON: Los Baños, Laguna, 27.IX.1961, Santos, ♀. NEGROS OR.: Lake Balinsasayao, 1-7.X.1959, at light, Quate, ♂, 2♀♀. MINDANAO: About 25 km S of Manucan, Zamboanga del Norte, 17. X. 1959, at light, 460 m, Quate, 4♀♀; Mt Katanglad, Bukidnon, 27.X-1.XI.1959, 1250-1480 m, Quate & Yoshimoto, 8♂♂, 3♀♀; 10 km SE of San Francisco, Agusan, 13. XI. 1959, Quate, ♀; Los Arcos, Agusan, 19-23.XI.1959, at light, Quate, 3♂♂. PALAWAN: 30 km S of Eran Pt, 5-11.I.1960, Quate, ♂, 4♀♀.

69. **Psychoda crenula** Quate, 1962, Pacific Ins. **4**: 57 (♀ illus.).

DISTRIBUTION. Ryukyus, Philippines, Borneo.

PHILIPPINES. NEGROS: Mt Canlaon, Negros Occ., 21-25. XII. 1959, 2100 m, Quate, 58 ♀♀; Lake Balinsasayao, Negros Or., 1-6.X.1959, Quate, 5♀♀. MINDANAO: Masawan (trail from Mt Malindang), Zamboanga del Norte, 15.VIII.1958, Milliron, ♀; Alanib, Bukidnon, 25.X.1959, Quate, 3♀♀; Mt Katanglad, Bukidnon, 26.X-1. XI. 1959, 1250-1480 m, Quate & Yoshimoto, 44♀♀.

70. **Psychoda phalanga** Quate, n. sp. Fig. 27 d-e.

♀. Body integument yellowish. Eyes separated by 2 facet diameters, bridge with 4 rows of facets; frons with elongate triangular band of hairs extending posteriorly to nearly upper eye margin. Labellum with 2 setae and 4 teeth; ratio of palpal segments=30 : 30 : 40 : 50. Antenna 16-segmented, terminal 4 separated; ascoids Y-shaped. Wing forks complete. Ratio of fore leg=30 : 26, mid=37 : 40, hind=40 : 46. Genitalia as figured; subgenital plate with apical concavity deep and U-shaped, digit long, more than 1/2 length extending beyond margin of plate.

Antenna 0.70 mm; wing length 1.40-1.47 mm, width 0.57-0.60 mm.

♂. Unknown.

DISTRIBUTION. Philippines (Negros, Mindanao).

Holotype ♀ (BISHOP 6244): Lake Balinsasayao, Negros Or., 1-6.X.1959, at light, Quate. Paratype, ♀: 20 km SW of Manucan, Zamboanga del Norte, Mindanao, 12.X.1959, 420 m, Quate.

The deeply excised subgenital plate and long genital digit are the features most distinctive of *phalanga*.

71. **Psychoda fasciata** Quate, n. sp. Fig. 27 f-h.

♂. Body integument yellowish. Eyes separated by little less than 1 facet diameter, bridge with 4 rows of facets; frons with band of hairs extending posteriorly to upper row of facets. Labellum with 1 seta and 3 teeth; palpus with segment 1 long, ratio=25 : 15 : 15 : 15. Antenna 15-segmented; segment 14 little smaller than 15, partly fused to 13; ascoids Y-shaped. Wing forks complete; with 3 brown bands, 1 at basal 1/3, 1 just beyond center, 1 at distal 1/4. Ratio of fore leg=27 : 20, mid=29 : 30, hind=35 : 33. Genitalia as figured; lateral shaft of aedeagus straight, paramere asymmetrical and setose; surstyle of usual *Psychoda* shape.

Antenna 0.86 mm; wing length 1.25 mm, width 0.55 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6245): 10 km SE of San Francisco, Agusan, Mindanao, 18.XI.1959, Quate.

A few other Philippine *Psychoda* have banded wings, but the other species also have the eyes contiguous, so the banded wings and separated eyes of *fasciata* are distinctive. The tip of the antenna is similar to *platalea*, but that species lacks the bands on the wings and the eyes are much more widely separated. The elongate first palpal segment of *fasciata* is also dissimilar to most other species.

72. **Psychoda alternata** Say. Quate, 1959, Ins. Micronesia (Bishop Mus.) **12**(4): 469 (♂, ♀ illus., biblio.).

DISTRIBUTION. Cosmopolitan.

PHILIPPINES. LUZON: Tala, Bulacan, 25. IX. 1961, M. Delfinado, 6♀♀; Tungkong Manga, Bulacan, 23.IX.1961, S. Quate, 5♀♀, ♂; Bay, Laguna, 27.IX.1961, Delfinado, 2♂♂; Los Baños, Laguna, 27. IX. 1961, Santos, 2 ♀♀; same, XI. 1915, Muir, ♀; Mt Maquiling, Laguna, 28.I.1951, Baltazar, 2♀♀. NEGROS OR.: Dumaguete City, 20-28.IX.1959, Quate, 7 ♀♀, ♂. MINDANAO: 15-25 km S of Manucan, Zamboanga del Norte, 13-17.X.1959, Quate, 8♀♀, 2♂♂; Molave, Zamboanga del Sur, 16. X. 1959, at light, Yoshimoto, 7♀♀; Ozamiz City, Misamis Occ., 18-21.IX.1959, Yoshimoto, 12♀♀, 2♂♂; Alanib, Bukidnon, 25.X.1959, Yoshimoto, 2♀♀, 5♂♂; Mt Katanglad, Bukidnon, 4-9.XII.1959, 1250 m, Quate, 5♀♀; 10 km SE of San Francisco, Agusan, 12-17. XI. 1959, Quate, 4♀♀, ♂; Lake Mainit, Surigao, 29. XI.1959, Yoshimoto, ♀.

73. **Psychoda acanthostyla** Tokunaga, 1957, Saikyo Univ. Agric., Sci. Rpts. **9**: 53 (♀, ♂ illus.).—Quate, 1959, Ins. Micronesia (Bishop Mus.) **12**(4): 439 (♀, ♂ illus.); 1962, Pacific Ins. **4**: 59, 233 (♂ illus.); 1962, Proc. Hawaiian Ent. Soc. **18**: 186.

DISTRIBUTION. India, Malaya, Taiwan, Ryukyus, Philippines, Borneo, Mariana Is., Caroline Is.

PHILIPPINES. LUZON: Los Baños, Laguna, 19.IX.1959, at light & 27.IX.1961, tree trunk, L. & S. Quate, ♀, ♂. NEGROS OR.: Dumaguete City, 26-29.IX.1959, light trap, Quate & Yoshimoto, 3♀♀, 2♂♂; Basay, 15.XII.1959, 2♀♀. MINDANAO: 20-30 km SW of Manucan, Zamboanga del Sur, 12-19.X.1959, Quate, 7♀♀; Molave, Zamboanga del Sur, 16. X. 1959, ♀, 2♂♂ and Ozamiz City, Misamis Occ., 18-21.IX.1959, 5♀♀, ♂, Yoshimoto; 10 km SE of San Francisco, Agusan, 12-17.XI.1959, Quate, 10 ♀♀, ♂; Los Arcos, Agusan, 19-23. XI. 1959, Quate, ♀; 3 km NW of Milbuk, Cotabato, 4.VIII.1958, 1650 m, Milliron, ♀.

74. **Psychoda alia** Quate, 1962, Pacific Ins. **4**: 61 (♀ illus.).

DISTRIBUTION. Philippines, Borneo.

PHILIPPINES. MINDANAO: Mt Katanglad, Bukidnon, 27-31.X.1959, at light, Quate, 6♀♀; 30 km S of Manucan, Zamboanga del Norte, 19.X.1959, Quate, ♀.

75. **Psychoda vagabunda** Quate, 1962, Pacific Ins. **4**: 61, 232; 1962, Proc. Hawaiian Ent. Soc. **18**: 186.

DISTRIBUTION. India, Malaya, Philippines, Borneo.

PHILIPPINES. LUZON: Tala, Bulacan, 25.IX.1961, tree trunk, S. Quate, ♀. MINDANAO: Mt Katanglad, Bukidnon, 26.X.1959, 1250 m, Yoshimoto, ♀; 10 km SE of San Francisco, 12-17.XI.1959, light trap, Quate & Yoshimoto, 2♀♀.

The male of *vagabunda* probably has been misidentified as *formosiensis* by Quate (1962: 60, fig. 26c). Three of these ♂♂ have been collected with *vagabunda* ♀♀ on Mt Katanglad. No specimens of *formosiensis* have yet been found in the Philippines and I assume that the ♂♂ previously associated with this species were done so erroneously and actually belong to *vagabunda*. However, it is possible that *formosiensis* is present in the Philippines, so more records are necessary before this ♂ can be associated unequivocally with a ♀.

76. **Psychoda formosiensis** Tokunaga, 1957, Saikyo Univ. Agric., Sci. Rpts. **9**: 66 (♀ illus.). —Quate, 1962, Pacific Ins. **4**: 59 (♀ illus.).

DISTRIBUTION. Ryukyus, Taiwan.

This species has not yet been found in the Philippines, but it is probable that it will be and therefore included in the key to Philippine species. See above for discussion of possible misassociation of the ♂ with this species.

77. **Psychoda subquadrilobata** Tokunaga, 1957, Saikyo Univ. Agric., Sci. Rpts. **9**: 67. (♀, ♂ illus.). Fig. 27 i-l.

DISTRIBUTION. Taiwan, Philippines.

PHILIPPINES. LUZON: Tala, Bulacan, 25.IX.1961, tree trunk, S. Quate & M. Delfinado, 3♀♀, 5♂♂; Tungkong Manga, Bulacan, 23.IX.1961, S. Quate, 6♀♀, ♂; Los Baños, Laguna, 19.IX.1959, 27.IX.1961, L. & S. Quate, 2♀♀, ♂; Dayap, Laguna, 27.IX.1961, M. Delfinado, 3♀♀; Bay, Laguna, 27.IX.1961, S. Quate, 2♀♀, 16♂♂. MINDANAO: 15-20 km S of Manucan, 13-14.X.1959, Quate, 2♀♀; 10 km SE of San Francisco, Agusan, 12-17. XI. 1959, at light, Quate, 4♀♀.

The specimens were identified by comparing them with the ♀ holotype and ♂ allotype, which were kindly loaned to me by Prof. Tokunaga. The structures of the type specimens are somewhat distorted and it is possible that with further study of Taiwan psychodids, it might become evident that my present identification is incorrect. However, it seems reasonably certain that the specimens are properly identified and can be regarded as such until proved otherwise.

It appears that the ♀ illustration (Tokunaga, 1957: 68) shows the apex of the subgenital plate pushed against the base rather than standing out from the base as it actually does. The illustration of the ♂ genitalia (*l.c.*) does not show the strong curve of the lateral shaft of the aedeagus. It also appears that antennal segments 13 & 14 are strongly fused rather than separated. These structures, as well as the head, appear in the Philippine specimens as illustrated.

78. **Psychoda platilobata** Tokunaga, 1957, Saikyo Univ. Agric., Sci. Rpts. **9**: 65 (♀ illus.). —Quate, 1959, Pan-Pac. Ent. **35**: 214 (♀, ♂ illus.); 1962, Pacific Ins. **4**: 65. Fig. 28 a-b.

DISTRIBUTION. Taiwan, Philippines, Borneo, Jamaica, Trinidad.

PHILIPPINES. LUZON: Tala, Bulacan, 25.IX.1961, M. Delfinado, ♂; Tungkong Manga, Bulacan, 23.IX.1961, tree trunk, S. Quate, 7♀♀, 2♂♂; Dayap, Laguna, 27.IX.1961, M. Delfinado, 3♂♂; Bay, Laguna, 27.IX.1961, tree trunk, L. & S. Quate, 5♀♀, 25♂♂, Los Baños, Laguna, 27.IX.1961, tree hole, J. Santos, 3♀♀, 6♂♂. MINDANAO: 20-30 km S of Manucan, Zamboanga del Norte, 12-17.IX.1959, at light, Quate, 6♀♀; Ozamiz City, Misamis Occ., 18-21.X.1959, Yoshimoto, ♀.

79. **Psychoda turgida** Quate, n. sp. Fig. 28 c-j.

♂. Body integument yellowish. Eyes widely separated by 3 facet diameters, connected by interocular suture; bridge with only 2 rows of facets; facets lacking on side of head at level of antenna base, from this area arises inflated membranous sac, covered with microtrichia; frons with only a few, scattered hairs extending posteriorly, hair patch essentially without posterior extension, hairs on vertex extend anteriorly to lower eye margin. Labellum with 2 setae and 3 short teeth; ratio of palpal segments=23 : 24 : 22 : 26. Antenna 15-segmented; node of segment 3 enlarged; segment 14 broadly fused to 13, 15 separated; ascoids not visible. Wing forks complete. Ratio of fore leg=30 : 25, mid=32 : 37, hind=35 : 45. Genitalia as figured; main shaft of aedeagus straight, lateral shaft curved sickle-like, paramere weakly bilobed, setose.

Antenna 0.88-0.94 mm; wing length 1.50-1.62 mm, width 0.55-0.57 mm.

♀. Similar to ♂. Eyes separated by 2-3 facet diameters, sometimes connected with interocular suture; eye bridge with 3 rows of facets; side of head normal, facets not lacking and no inflated area. Antenna with ascoids Y-shaped. Genitalia as figured; subgenital plate wineglass-shaped, but variable (figs 28 e-g), genital digit absent.

Antenna 0.85 mm (0.80-0.95); wing length 1.74 mm (1.50-1.95), width 0.68 mm (0.55-0.72).

DISTRIBUTION. Philippines (Mindanao, Negros).

Holotype ♂, allotype ♀ (BISHOP 6246): Mt Katanglad, Bukidnon, Mindanao, 27-31.XI. 1959, Quate. Paratypes (USNM, BMNH): 2♂♂, 40♀♀, same but some collected by Yoshimoto; ♀, Masawan (trail from Mt Malindang), Zamboanga del Norte, Mindanao, 15. VIII.1958, 1400 m, Milliron; ♀, Lake Balinsasayao, Negros Or., 1-6.X.1959, Quate.

80. **Psychoda terlinoculata** Quate, n. sp. Fig. 28 k-m.

♀. Eyes separated by 1.5 facet diameters, inner margin rounded; bridge with only 3 rows of facets; frons with short projection of hairs extending only to lower eye margin, vertex hairs projecting down to upper row of facets. Labellum short, with 2 setae and 3 teeth; palpus 1 longer than other segments, ratio=30 : 22 : 20 : 27. Antenna 15-segmented, segment 14 broadly fused to 13, 15 separated; ascoids Y-shaped. Wing forks complete. Ratio of fore leg=35 : 27, mid=37 : 40, hind=40 : 47. Genitalia as figured; subgenital plate

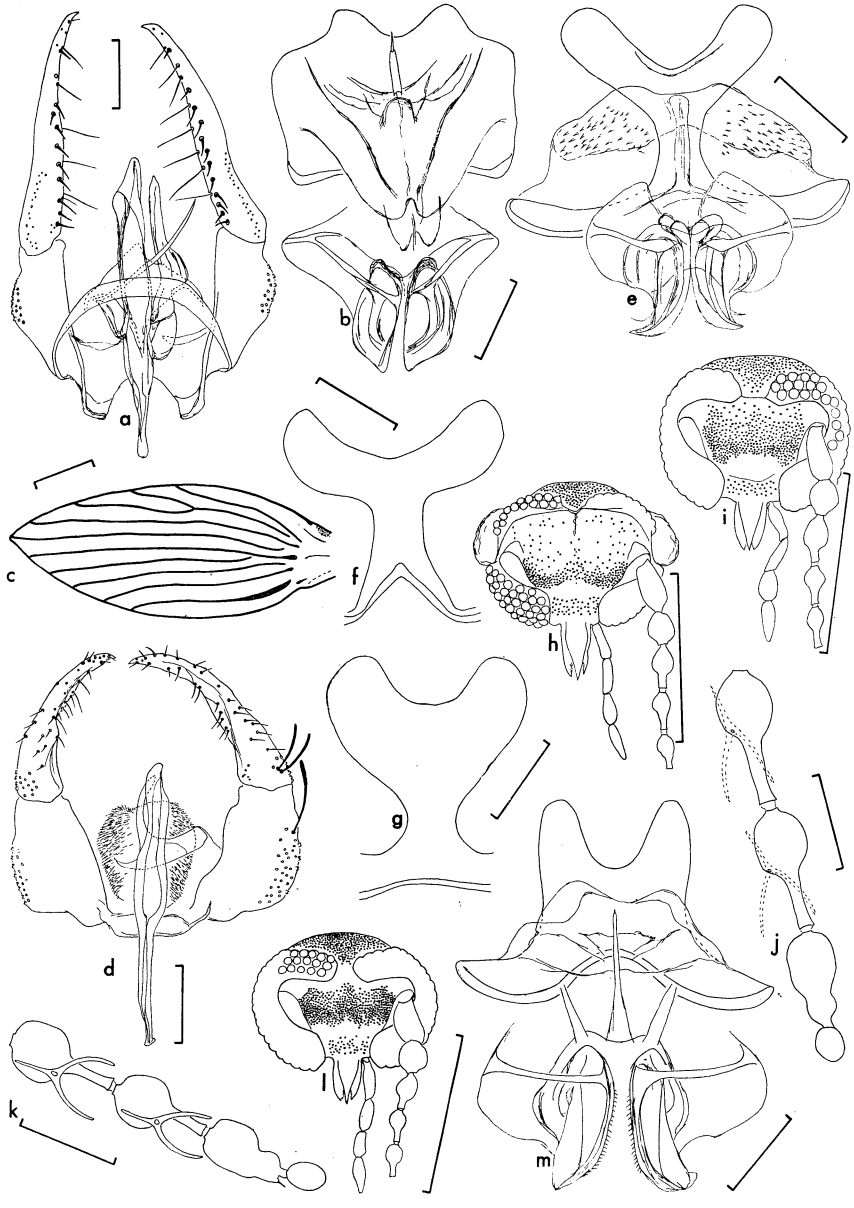

Fig. 28. a–b. *Psychoda platilobata*: a, ♂ genitalia, dorsal; b, ♀ genitalia, inner face. c–j. *P. turgida*: c, ♀ wing; d, ♂ genitalia, dorsal; e, ♀ genitalia, inner face; f, g, ♀ subgenital plates showing variations; h, ♂ head; i, ♀ head; j, ♂ antennal tip. k–m. *P. terlinoculata*, ♀: k, antennal tip; l, head; m, genitalia, inner face. Scale lines of heads & wing=0.3 mm, others=0.05 mm.

essentially quadrate with large, U-shaped apical concavity.

Antenna 0.80 mm; wing length 1.75 mm, width 0.62 mm.

♂. Unknown.

DISTRIBUTION. Philippines (Negros, Mindanao).

Holotype ♀ (BISHOP 6247): Lake Balinsasayao, Negros Or., 1-7.X.1959, Quate. Paratypes: 2♀♀, Alanib, Bukidnon, Mindanao, 25.X.1959, Quate; 2♀♀ Mt Katanglad, Bukidnon, Mindanao, 26-30.X.1959, 1480 m, Quate. Other specimen. Masawan (trail from Mt Malindang), Zamboanga del Norte, 15.VIII.1958, 1400 m, at light, Milliron, ♀.

Distinctive features of *terlinoculata* are the 3 rows of facets on the eye bridge, the shape of the antenna tip and the female genitalia. The three facet rows are shared by another Philippine species, *turgida*, but it is easily separated from *terlinoculata* by the wineglass-shape of the ♀ subgenital plate.

81. **Psychoda platalea** Quate, n. sp. Fig. 29 a-c.

♀. Body integument brownish. Eyes rather widely separated by 3 facet diameters, bridge with 4 rows of facets; frons with wide band of hairs extending posteriorly to 3rd row (from bottom) of facets. Labellum with 2 setae and 3 teeth; ratio of palpal segments 19 : 22 : 22 : 28. Antenna 15-segmented; segment 14 partly fused to 13 and a little smaller than and separated from 15; ascoids Y-shaped. Wing forks complete; forks close to same level, radial distad of medial by about width of cell at bifurcation. Ratio of fore leg= 26 : 19, mid=28 : 30, hind=30 : 35. Genitalia as figured; subgenital plate in form of stalk with bilobed, inflated apex.

Antenna 0.68-0.73 mm; wing length 1.15-1.30 mm, width 0.42-0.47 mm.

♂. Unknown.

DISTRIBUTION. Philippines (Cebu, Mindanao).

Holotype ♀ (BISHOP 6248): Minglanilla, 27 km SW of Cebu City, Cebu, 4.II.1962, 500 m, S. Quate. Paratypes: ♀, same; ♀, Lake Mainit, Surigao, Mindanao, 28.XI.1959, bat cave, Quate.

The unusual tip of the antenna, the widely separated eyes and stalked ♀ subgenital plate are features which separate *platalea* from other known *Psychoda*.

82. **Psychoda saites** Quate, n. sp. Fig. 29 d-f.

♀. Body integument brownish. Eyes narrowly separated by less than 1/2 facet diameter; frons with elongate triangular band of hairs extending posteriorly to 3rd (from bottom) row of facets. Labellum with 2 setae and 4 long teeth; palpus with segment 1 longest, ratio=35 : 30 : 30 : 32. Antenna 15-segmented; terminal 2 equal sized and separated, setose tubercle on apicolateral margins of 13 & 14; ascoids Y-shaped. Wing forks complete; radial far distad of medial. Ratio of fore leg=40 : 35, mid=47 : 50, hind=52 : 65. Genitalia as figured; plate large with crescent-shaped apex.

Antenna 1.18 mm; wing length 2.17-2.20 mm, width 0.80-0.90 mm.

♂. Unknown.

Holotype ♀ (BISHOP 6249): Mt Katanglad, Bukidnon, Mindanao, 27-31.X.1959, 1480 m, Quate. Paratype: 4♀♀, same.

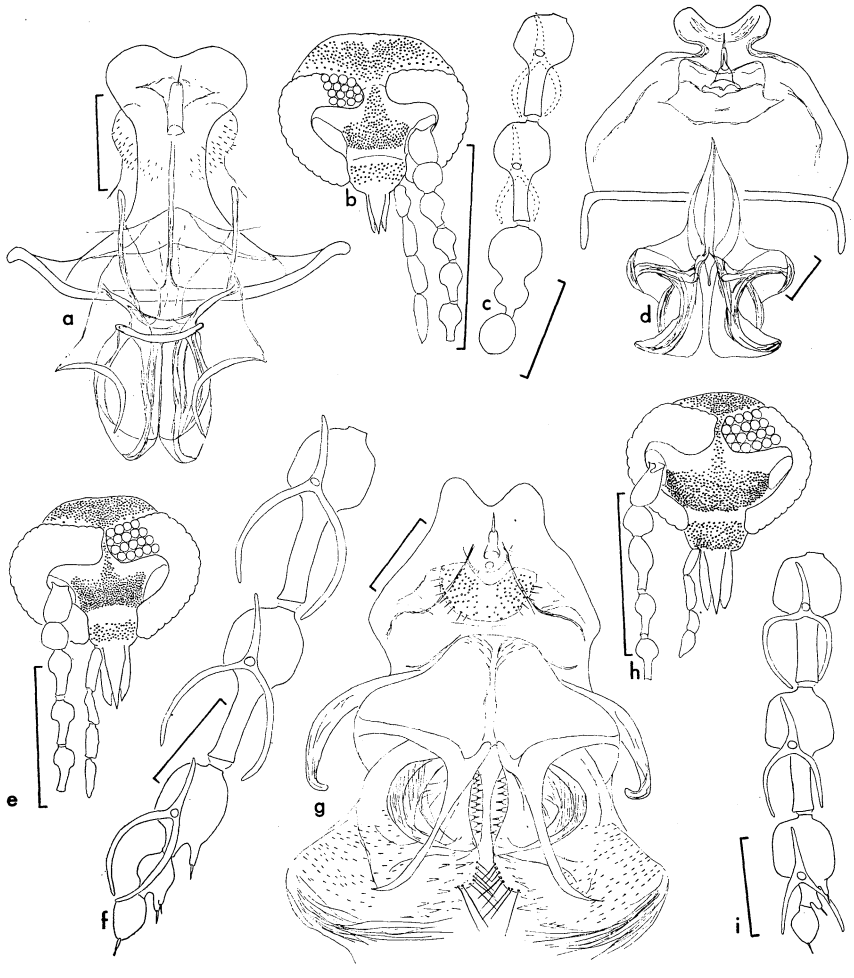

Fig. 29. a–c. *Psychoda platalea*, ♀ : a, genitalia, inner face; b, head; c, antennal tip. d–f. *P. saites*, ♀: d, genitalia, inner face; e, head; f, antennal tip. g–i. *P. collina*, ♀ : g, genitalia, inner face; h, head; i, antennal tip. Scale lines of heads=0.3 mm, others =0.05 mm.

This rather large species is most easily recognized by the distinctive subgenital plate bearing a crescent-like structure on the apex.

83. **Psychoda aderces** Quate, 1962, Pacific Ins. **4**: 66. (♀ illus.).

DISTRIBUTION. Philippines, Borneo

PHILIPPINES. NEGROS OR.: Lake Balinsasayao, 1-7.X.1959, light trap, Quate & Yoshimoto, 5♀♀. MINDANAO: Ozamiz City, Misamis Occ., 18-21.X.1959, Yoshimoto, ♀ ; Alanib, Bukidnon, 25.X.1959, Quate, 6♀♀ ; Mt. Katanglad, Bukidnon, 27-31.X.1959, 1480 m, Quate, ♀ ; Los Arcos, Agusan, 19-23.XI.1959, at light, Quate, ♀ ; 10 km SE of San Francisco, Agu-

san, 17–18.XI.1959, light trap, Quate & Yoshimoto, 5♀♀.

84. **Psychoda paraderces** Quate, 1962, Pacific Ins. **4**: 66 (♀ illus.).

DISTRIBUTION. Philippines, Borneo.

PHILIPPINES. NEGROS OR.: Lake Balinsasayao, 1–7.X.1959, Quate & Yoshimoto, ♀. MINDANAO: Alanib, Bukidnon, 25.X.1959, Quate, 3♀♀; Mt Katanglad, Bukidnon, 26–30.X. 1959, 1480 m, Quate 2♀♀.

85. **Psychoda savaiiensis** Edwards, 1928, Ins. Samoa (BMNH), Pt. 6, **2**: 74.

DISTRIBUTION. Tropicopolitan.

PHILIPPINES. LUZON: Tala, Bulacan, 25.IX.1961, tree trunk, S. Quate, ♂; Tungkong Manga, Bulacan, 23.IX.1961, tree trunk, S. Quate, 2♀♀, 5♂♂; Dayap, Laguna, 27.IX.1961, M. Delfinado, ♂. NEGROS OR.: Lake Balinsasayao, 1.X.1959, light trap, Quate & Yoshimoto, 9♀♀, 2♂♂. MINDANAO: Dipolog, Zamboanga del Norte, 6.VII.1958, light trap, H.E. Milliron, ♀; 20 km S of Manucan, Zamboanga del Norte, 14.X.1959, at light, Quate, ♀; Masawan (trail from Mt Malindang), Zamboanga del Norte, 15.VIII. 1958, at light, Milliron, ♀; Alanib, Bukidnon, 25.X.1959, 910 m, Quate, 3♀♀; 3 km NW of Milbuk, Cotabato, 4.VIII.1958, 1650 m, Milliron, ♀, ♂; 10 km SE of San Francisco, Agusan, 12–18.XI.1959, Quate, 7♀♀; Los Arcos, Agusan, 19.XI.1959, at light, Quate, 7♀♀, 2♂♂; Lake Mainit, Surigao, 23.XI–1.XII.1959, Quate & Yoshimoto, 4♀♀, 13♂♂. PALAWAN: Macagua, Brookes Pt., 27–31.III.1962, light trap, Yoshimoto & Holtman, 23♀♀, ♂; 30 km S of Eran Pt. (W. coast), 5–11.I.1960, at light, Quate, 5♀♀.

86. **Psychoda collina** Quate, n. sp. Fig. 29 g–i.

♀. Body integument yellowish. Eyes separated by little less than a facet diameter, bridge with 4 rows of facets; frons with band of hairs extending posteriorly to upper eye margin but not joining hairs on vertex. Labellum with 2 setae and 4 teeth; ratio of palpal segments=25 : 20 : 15 : 20. Antenna 14-segmented, segment 14 separated, 13 with 2 setose tubercles, 1 on apicolateral margin of node and other at center of internode; ascoids Y-shaped. Wing forks complete. Ratio of fore leg=33 : 30, mid=35 : 35, hind=40 : 45. Genitalia as figured; inner face of subgenital plate with U-shaped, setose ridge and bib-like structure below digit, spermatheca with row of short, thick setae on median margin and long setae at mesocephalic angle.

Antenna 0.95–0.98 mm; wing length 1.80–2.05 mm, width 0.75–0.85 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♀ (BISHOP 6250): Mt Katanglad, Bukidnon, 27–30.X.1959, Malaise trape, Quate & Yoshimoto. Paratypes 5♀♀, same, except 1 at light and 4–9.XII.1959.

87. **Psychoda cochlearia** Satchell, 1950, Proc. R. Ent. Soc. London, ser. B, **19**: 181; 1954, *Ibid.* **22**: 188.–Quate, 1959, Ins. Micronesia (Bishop Mus.) **12**(4): 439; 1959, Pacific Ins. **1**: 438; 1959, Pan-Pac. Ent. **35**: 124; 1962, Pacific Ins. **4**: 62. Fig. 30 a–d

DISTRIBUTION. Borneo, Philippines, Caroline Is., Fiji, Samoa, Panama, Trinidad.

PHILIPPINES. LUZON: Dayap, Laguna, 27.IX.1961, Delfinado, ♀; Bay, Laguna, 27.IX. 1961, tree trunk, Delfinado & S. Quate, 2♀♀, ♂. NEGROS OR.; Dumaguete City, 28.IX. 1959, sweeping beach at dusk, Quate & Yoshimoto, 2♀♀; Lake Balinsasayao, 1-6.X.1959, Quate, ♀. MINDANAO: Molave, Zamboanga del Sur, 16.X.1959, at light, Yoshimoto, 11♀♀, 2♂♂; Ozamiz City, Misamis Occ., 22.X.1959, at light, Quate, ♀; 10 km SE of San Francisco, Agusan, 17.XI.1959, Quate, ♀, ♂; Los Arcos, Agusan 19-23.XI.1959, Quate, ♀.

88. **Psychoda quadrifilis** Edwards, 1928, Ins. Samoa (BMNH), Pt. 6, **2**: 73.—Quate, 1959, Ins. Micronesia (Bishop Mus.) **12**(4): 476; 1959, Pacific Ins. **1**: 439; 1962, *Ibid.* **4**: 65. Fig. 30 e-g.

Psychoda hardyi Quate, 1954, Proc. Hawaiian Ent. Soc. 15 : 348.

DISTRIBUTION. Widespread in Pacific.

PHILIPPINES. NEGROS OR.: Lake Balinsasayao, 1-7.X.1959, light trap & sweeping cut abaca, Quate & Yoshimoto, 6♂♂, ♀. MINDANAO: Masawan (trail from Mt Malindang, Zamboanga del Norte, 15.VIII.1958, 1400 m, at light, Milliron, ♂; Mt Katanglad, Bukidnon, 27-31.X.1959, at light & Malaise trap, Quate & Yoshimoto, 33♀♀. PALAWAN: 30 km SE of Eran Pt (W. coast), 5.I.1960, at light, Quate, ♀.

Additional variation to that already noted in this species (Quate, 1959, 1962) is exhibited by the Philippine specimens. The ♀♀ are similar to Borneo specimens in having a small, lightly colored apical part of the subgenital plate and small, lightly sclerotized spermathecae. The Philippine ♂♂ differ from the Borneo forms, as well as Micronesian, in having the dististyle inflated basally and sometimes with subapical projection, the lateral shaft of the aedeagus is small and close to the median shaft and one lobe of the paramere has a cluster of setae. By themselves, these forms probably deserve nomenclatorial recognition, but the pattern of variation throughout the range of *quadrifilis* is still unclear. For example, at least two forms occur in New Guinea and one of those is similar to the Borneo and Philippine ♀♀ and to the Philippine ♂♂. Further taxonomic division of this species is deferred for the present.

89. **Psychoda guamensis** Quate. New status.

Psychoda quadrifilis guamensis Quate, 1959, Ins. Micronesia (Bishop Mus.) **12** (4): 479.

DISTRIBUTION. Guam, Philippines.

PHILIPPINES. NEGROS Or.: Lake Balinsasayao, 1-7.X.1959, light trap, Quate & Yoshimoto, ♂. MINDANAO: 10 km SE of San Francisco, Agusan, 17.XI.1959, Quate, 2♀♀, ♂; Los Arcos, Agusan, 22.X.1959, Quate, ♀; Lake Mainit, Surigao, 27.X.1959, Yoshimoto, ♂.

This form is raised from a subspecies of *quadrifilis* to a full species. The above collections show its distribution does not conform to a subspecific pattern and its taxonomic position is changed to reflect the new interpretation of its status. The ♂♂ of *guamensis* are very close to *quadrifilis*, but the ♀♀ are quite distinct and perhaps justify specific status on morphological grounds alone.

90. **Psychoda ochra** Quate, 1959, Ins. Micronesia (Bishop Mus.) **12** (4): 480; 1962, Pacific Ins. **4**: 65.

DISTRIBUTION. Borneo, Philippines, Caroline Is., Fiji, Samoa.

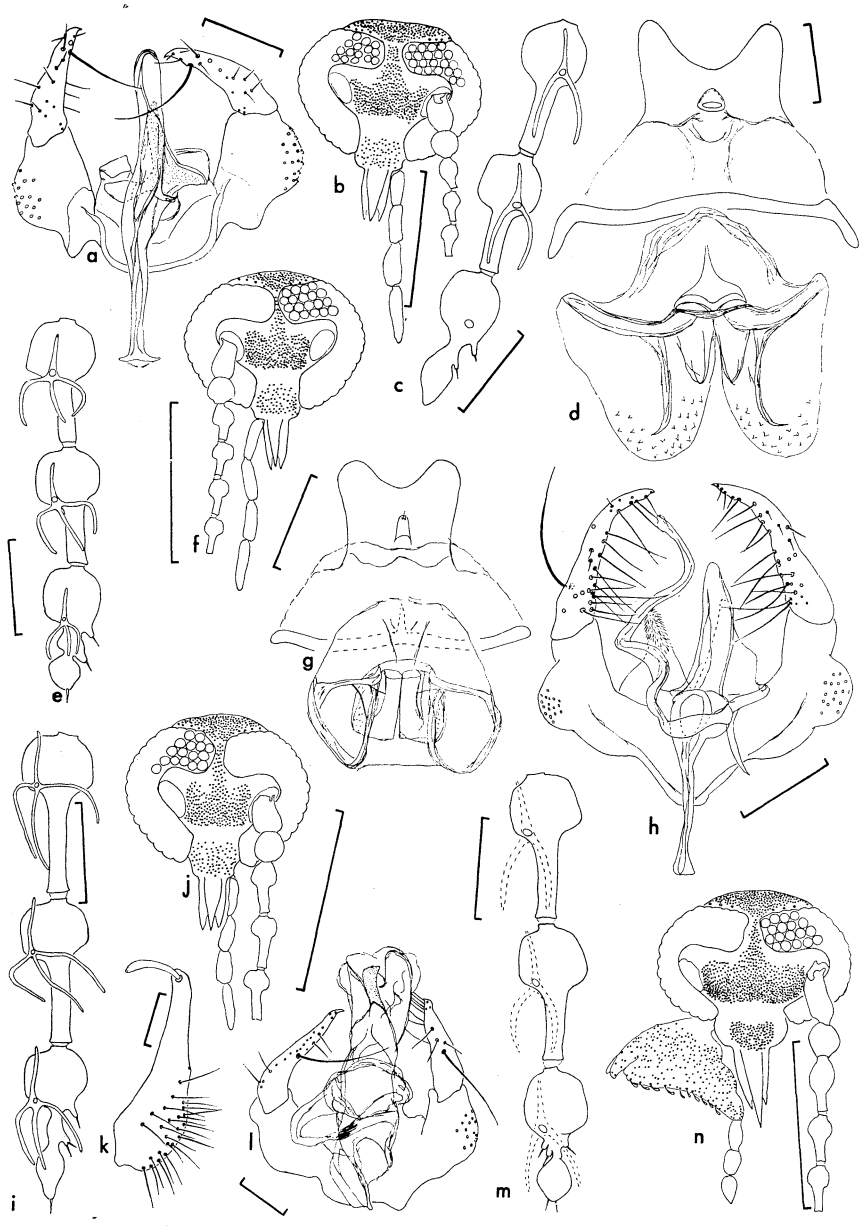

Fig. 30. a–d. *Psychoda cochlearia*: a, ♂ genitalia, dorsal; b, ♀ head; c, ♀ antennal tip; d, ♀ genitalia, inner face. e–g. *P. quadrifilis* "P. I. form": e, ♀ antennal tip; f, ♀ head; g, ♀ genitalia, inner face. h–j. *P. serpentina*, ♂: h, genitalia, dorsal; i, antennal tip; j, head. k–n. *P. canlaones*, ♂: k, surstyle; l, genitalia, dorsal; m, antennal tip; n, head. Scale lines of heads=0.3 mm, others=0.05 mm.

PHILIPPINES. NEGROS OR.: Lake Balinsasayao, 1-7.X.1959, Quate, ♀. MINDANAO: 10 km SE of San Francisco, 13-18.XI.1959, Quate, 3♀♀.

91. **Psychoda serpentina** Quate, n. sp. Fig. 30 h-j.

♂. Body integument yellowish. Eyes separated by about 1 facet diameter, bridge with 4 rows of facets; frons with elongate triangular band of hairs extending posteriorly to upper row of facets. Labellum with 2 setae and 4 teeth; ratio of palpal segments=30 : 30 : 28 : 32. Antenna apparently 15-segmented; segment 14 a mere swelling between 13 and 15 and questionably regarded as segment, 13 & 14 with setose tubercle on apicolateral angle; ascoids 4-branched. Wing forks complete. Ratio of fore leg=32 : 27, mid=35 : 35, hind=38 : 42. Genitalia as figured; lateral shaft of aedeagus long and sinuous, extends well beyond tip of main shaft, paramere extending caudad as pair of slender, setose lobes; surstyle of usual elongate, *Psychoda* shape.

Antenna 0.86-1.08 mm; wing length 1.25-1.37 mm, width 0.50-0.60 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Negros, Mindanao).

Holotype ♂ (BISHOP 6251): Lake Mainit, Surigao, Mindanao, 30.IX.1959, Quate. Paratypes (USNM, BMNH): ♂, 10 km SE of San Francisco, Agusan, Mindanao, 18.XI.1959, Quate; 5♂♂, Alanib, Bukidnon, Mindanao, 25.X.1959, 910 m, Quate; 4♂♂, Lake Balinsasayao, Negros Or., 1-7.X.1959, light trap, Quate & Yoshimoto.

92. **Psychoda canlaones** Quate, n. sp. Fig. 30 k-n.

♂. Body integument brownish. Eyes separated by little more than 1 facet diameter at upper margin and margins divergent anteriorly, bridge with 4 rows of facets; frons with triangular band of hairs extending posteriorly to upper row of facet. Labellum with 2 setae and 3 teeth; palpus with segment 1 greatly enlarged into flat, trapezoidal appendage as wide as head, other segments normal and equal sized. Antenna 14-segmented; node 3 larger than following nodes; segment 13 with internode a little enlarged, with setose tubercle on apicolateral angle and another on internode; 15 separated; ascoids not visible. Wing forks complete. Ratio of fore leg=33 : 25, mid=35 : 35, hind=40 : 45. Genitalia as figured; aedeagus main shaft very large, with cleft apex; lateral shaft inconspicuous, with beak-like apex.

Antenna 1.02-1.10 mm, wing length 1.55-2.12 mm, width 0.60-0.87 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Negros).

Holotype ♂ (BISHOP 6252): Mt Canlaon, Negros Occ., 21-25.XII.1959, 2100 m, Quate. Paratypes: 3♂♂, same.

93. **Psychoda trunculens** Quate, n. sp. Fig. 31 a-d.

♂. Body integument yellowish. Eyes separated by 1/2 facet diameter at upper margin, bridge with 4 rows of facets; frons with elongate triangular band of hairs extending posteriorly to upper eye margin. Labellum short, with 2 setae and 3 teeth; palpus with segment 1 very long, ratio of segments=30 : 15 : 12 : 15. Antenna 14-segmented; inter-

node of segment 13 long and slender, bearing 2 setose tubercles opposite each other near apex; 14 small and separated; ascoids not visible. Wing forks complete. Ratio of fore leg=28 : 33, mid=29 : 30, hind=30 : 34. Genitalia as figured; main shaft of aedeagus broad and paddle-like, lateral shaft reduced to short projection.

Antenna 1.11 mm; wing length 1.35 mm; wing width 0.60 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Negros).

Holotype ♂ (BISHOP 6253): Lake Balinsasayao, Negros Or., 1-7.X.1959, light trap, Quate & Yoshimoto.

The elongate first palpal segment and 14-segmented antenna with the slender internode of segment 13 is sufficient to recognize this species. In addition, the ♂ genitalia is characteristic.

94. **Psychoda cristula** Quate, n. sp. Fig. 31 e-g.

♀. Body integument yellowish. Eyes separated by about 1 facet diameter, bridge with 4 rows of facets; frons with band of hairs extending posteriorly to upper row of facets. Labellum with 2 setae and 4 teeth; ratio of palpal segments=30 : 33 : 33 : 40. Antenna 14-segmented; segment 13 without an internode, with single setose tubercle on apicolateral angle, no distinct suture between 13 & 14; ascoids Y-shaped. Wing forks complete. Ratio of fore leg=35 : 30, mid=35 : 37, hind=37 : 43. Genitalia as figured; apex of subgenital plate in form of Y with short, thick stalk.

Antenna 0.88 mm; wing length 1.57 mm, width 0.62 mm.

♂. Unknown.

DISTRIBUTION: Philippines (Mindanao).

Holotype ♀ (BISHOP 6254): Mt Katanglad, Bukidnon, Mindanao, 27-31.X.1959, 1480 m, Quate. Paratypes: 3♀♀, same.

95. **Psychoda caudata** Quate, 1962, Pacific Ins. **4**: 68 (♀, ♂ illus.).

DISTRIBUTION. Borneo, Philippines.

PHILIPPINES. MINDANAO: Alanib, Bukidnon, 25.X.1959, Quate, ♀; Los Arcos, Agusan, 19-23.XI.1959, at light, Quate, 2♀♀.

96. **Psychoda formosana** Tokunaga, 1957, Saikyo Univ. Agric., Sci. Rpt. **9**: 61 (♀, ♂ illus.)—Quate, 1962, Pacific Ins. **4**: 70 (♀ illus.); 1962, Proc. Hawaiian Ent. Soc. **18**: 184.

DISTRIBUTION. Ceylon, Borneo, Philippines, Taiwan.

PHILIPPINES. MINDANAO: 20-30 km S of Manucan, Zamboanga del Norte, 12-19.X.1959, Quate, 2♀♀; Mt Katanglad, Bukidnon, 26.X-1.XI, 4-9.XII.1959, 1250-1480 m, Quate & Yoshimoto, 3♀♀.

97. **Psychoda makati** del Rosario, 1936, Philip. J. Sci. **59**: 568 (♀, ♂ illus.).—Satchell, 1953, Austral. J. Zool. **1**: 372; 1954, Proc. R. Ent. Soc. Lond., ser. B, **22**: 188.—Tokunaga, 1957, Saikyo Univ. Agric., Sci. Rpt. **9**: 58 (♀ illus.).—Quate, 1959, Pacific Ins. **1**: 436; 1962, *Ibid.* **4**: 68, 231 (♀ illus.); 1962, Proc. Hawaiian Ent. Soc.

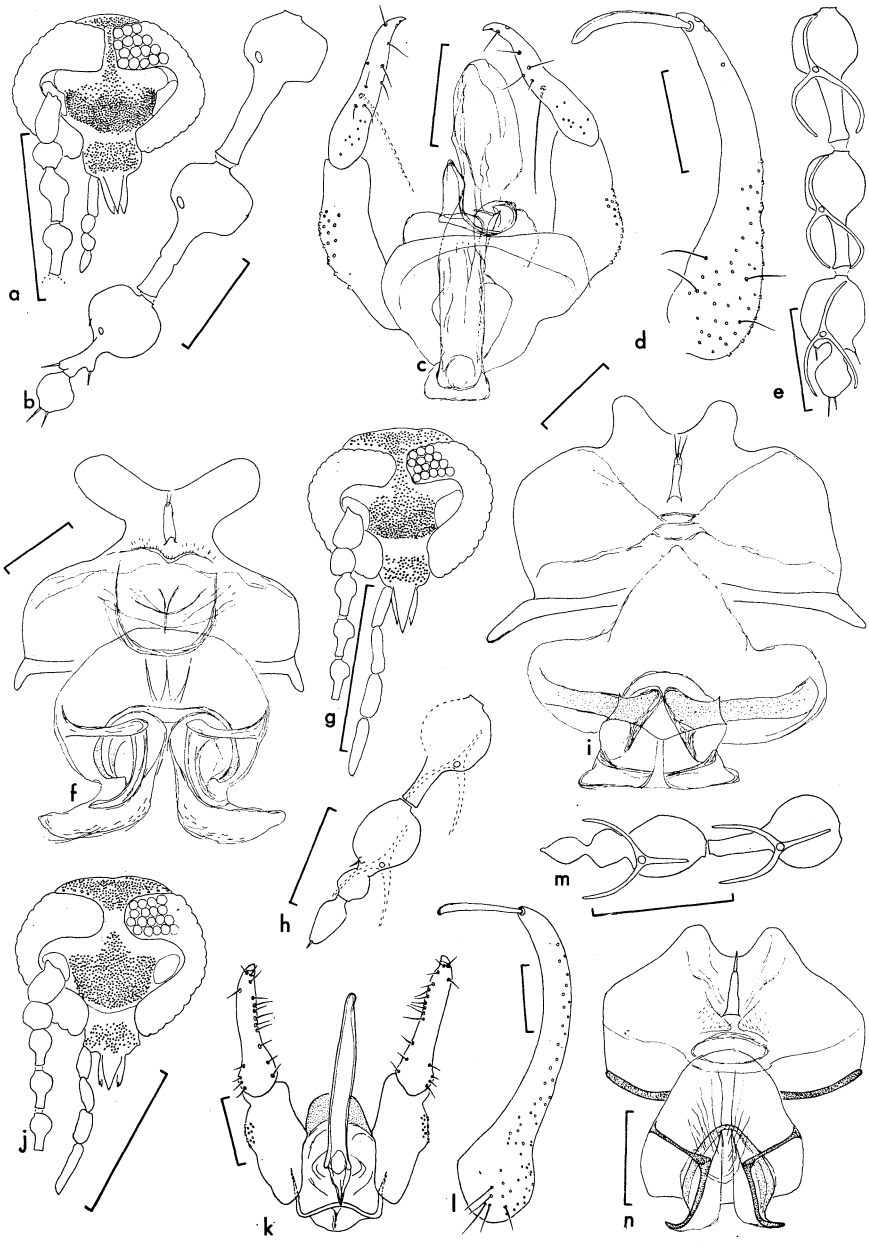

Fig. 31. a–d. *Psychoda trunculens*, ♂: a, head; b, antennal tip; c, genitalia, dorsal; d, surstyle. e–g. *P. cristula*, ♀: e, antennal tip; f, genitalia, inner face; g, head. h–j. *P. moleva*, ♀: h, antennal tip; i, genitalia, inner face; j, head. k–n. *P. umbratica*: k, ♂ genitalia, dorsal; l, ♂ surstyle; m, ♀ antennal tip; n, ♀ genitalia, inner face. Scale lines of heads=0.3 mm, others=0.05 mm.

18: 184.

DISTRIBUTION. India, Malaya, Borneo, Philippines, Taiwan, Australia, Fiji, Samoa, Cook Is.

PHILIPPINES. LUZON: Tala, Bulacan, 25.IX.1961, tree trunk, S. Quate, ♀; Bigti, Bulacan, 25.IX.1961, M. Delfinado, ♀; Tungkong Manga, Bulacan; 23.IX.1961, L. Quate, ♀; Los Baños, Laguna, 19-20.IX.1959, carabao dung, L. Quate, 25♀♀, 10♂♂; Dayap, Laguna, 27.IX.1961, Delfinado, ♂; Bay, Laguna, 27.IX.1961, Delfinado, ♂. MINDANAO: 20-30 km S of Manucan, Zamboanga del Norte, 12-19.X.1959, Quate, 55♀♀; Molave, Zamboanga del Sur, 16.X.1959, Yoshimoto, 5♀♀; Ozamiz City, Misamis Occ., 18-19.X.1959, Yoshimoto, 7♀♀; Alanib, Bukidnon, 25.X.1959, 910 m, Quate, ♂; 10 km SE of San Francisco, Agusan, 17.XI.1959, Quate, 4♀♀; Los Arcos, Laguna, 19.XI.1959, Quate, 4♀♀; Lake Mainit, Surigao, 23.XI-1.XII.1959, Quate, 4♀♀.

98. **Psychoda malleola** Tokunaga & Komyo, 1954, Philip. J. Sci. **83**: 310 (♂ illus.); Tokunaga, 1958, *Ibid.* **86**: 374 (♀ illus.).—Quate, 1962, Pacific Ins. **4**: 71 (♀, ♂ illus.).

DISTRIBUTION. Japan, Ryukyu Is., Philippines, Borneo, S. Africa.

PHILIPPINES. LUZON: Tala, Bulacan, 25.IX.1961, tree trunk, Delfinado, ♂; Tungkong Manga, Bulacan, 23.IX.1961, S. Quate, ♀, 2♂♂; Bay, Laguna, 27.IX.1961, 2♂♂. NEGROS OR.: Basay, 15. XII. 1959, Quate, ♀. MINDANAO: 20 km S of Manucan, 12-14. X. 1959, at light, Quate, 12♀♀, ♂; Alanib, Bukidnon, 25.X.1959, ♀, ♂; Mt Katanglad, Bukidnon, 26-27.X.1959, 1250-1480 m, Quate, 2♀♀, ♂.

99. **Psychoda moleva** Quate, n. sp. Fig. 31 h-j.

♀. Body integument brownish. Eyes separated by 2 facet diameters, bridge with 4 rows of facets; frons with short triangular projection of hairs extending posteriorly only to lower row of facets, vertex hairs extending anteriorly to 2nd row of facets. Labellum short, with 1 seta and 3 teeth; ratio of palpal segments 25 : 25 : 25 : 40. Antenna 15-segmented; segment 14 fused to 13, 15 separated; ascoids Y-shaped. Wing forks incomplete, base of R_3 at level of tip of R_1. Ratio of mid leg=43 : 43, hind=45 : 52. Genitalia as figured; bar below spermatheca unusually heavy.

Antenna 0.95 mm; wing length 1.75 mm, width 0.67 mm.

♂. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♀ (BISHOP 6255): Molave, Zamboanga del Sur, Mindanao, 16.X.1959, at light, Yoshimoto. Other specimen. Dipolog, Zamboanga del Norte, Mindanao, 6.VII.1958, light trap, Milliron, ♀.

100. **Psychoda umbratica** Quate, n. sp. Fig. 31 k-n.

♀. Body integument yellowish. Eyes separated by 1-1.5 facet diameters, bridge with 4 rows of facets; frons with triangular band of hairs extending posteriorly to upper row of facets. Labellum with 2 setae and 4 teeth; ratio of palpal segments=18 : 19 : 19 : 26. Antenna 15-segmented, segments 14 and 15 subequal in size, clearly separated; ascoids Y-shaped. Wing forks incomplete. Ratio of fore leg=23 : 18, mid leg=25 : 25, hind leg

=27 : 27. Genitalia as figured; subgenital plate with sides strongly convergent and small U-shaped apical concavity; membranous plate below spermatheca marked with diagonal wrinkles or grooves.

Antenna 0.61 mm (0.58-0.63); wing length 1.09 mm (0.90-1.27), width 0.44 mm (0.37-0.50).

♂. Similar to ♀. Genitalia as figured; dististyle parallel until suddenly tapered to acute, slightly curved apex; aedeagus simple, linear; paramere simple, arched.

Antenna 0.72 mm; wing length 0.95-1.02 mm, width 0.42-0.45 mm.

DISTRIBUTION. Philippines.

Holotype ♀, allotype ♂ (BISHOP 6256): Tungkong Manga, near Tala, Bulacan, Luzon, 23.IX.1961, tree trunk, S. Quate. Paratypes (USNM, BMNH): 7♀♀, 2♂♂, same; ♀, ♂, Dayap, Laguna, Luzon, 27.IX.1961, M. Delfinado; 2♀♀, L. Balinsasayao, Negros Or., 1.X. 1959, light trap, Quate & Yoshimoto; ♀, Malaybalay, Bukidnon, Mindanao, 25. X. 1959, Quate; 2♀♀, 10 km SE of San Francisco, Agusan, Mindanao, 13-17. XI. 1959, at light, Quate; ♀, 30 km S of Eran Pt., Palawan (W. coast), 5-11.I.1960, light trap, Quate.

P. umbratica is similar to the Micronesian species, *lucubrans* Quate (1959 : 468). The females differ by *umbratica* lacking the quadrate, setose lobe at the base of the genital digit, which is characteristic of *lucubrans*, and possessing the prominent wrinkles in the plate below the spermathecae, which are absent in *lucubrans*. The male of *umbratica* has the aedeagus slightly tapering apically instead of parallel-sided as in *lucubrans* and the dististyli of *umbratica* are thicker than in *lucubrans*.

101. **Psychoda bidigitalis** Quate, n. sp. Fig. 32 a-c.

♀. Body integument brownish. Eyes separated by about 1 facet diameter, bridge with 4 rows of facets; frons with band of hairs extending posteriorly to 3rd row of facets, not joining hairs on vertex which extend anteriorly to upper row of facets. Labellum small, with 2 setae and 4 teeth; ratio of palpal segments=23 : 21 : 21 : 30. Antenna 15-segmented; segment 14 partly fused to 13, 15 separated, little smaller than 14; ascoids Y-shaped. Wing forks incomplete, base of R_3 at level of apex of R_1. Ratio of fore leg= 29 : 22, mid=30 : 31, hind=34 : 34. Genitalia as figured; inner face with 2 digits, apical and basal margin with similar U-shaped concavities.

Antenna 0.75 mm; wing length 1.25 mm, width 0.52 mm.

♂. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♀ (BISHOP 6257): 10 km SE of San Francisco, Agusan, Mindanao, 17. XI. 1959, at light, Quate.

102. **Psychoda pellucida** Quate, 1962, Pacific Ins. **4**: 230 (♂ illus.).

Psychoda alabangensis Tokunaga (*nec* del Rosario), 1957, Saikyo Univ. Agric., Sci. Rpt. **9**: 63 (♀ illus.).

DISTRIBUTION. Malaya, Borneo, Philippines, Taiwan.

PHILIPPINES. LUZON: Tala, Bulacan, 25.IX.1961, tree trunk, S. Quate, ♀, ♂; Tungkong Manga, Bulacan, 23.IX.1961, tree trunk, L. Quate 2♀♀, ♂; Los Baños, Laguna, 19.

IX. 1959, 27. IX. 1959, L. & S. Quate, 6 ♀♀, 3 ♂♂; Bay, Laguna, 27. IX. 1961, tree hole, S. Quate, ♂; Dayap, Laguna, 27.IX.1961, tree hole, Delfinado, ♀. NEGROS OR.: Dumaguete City, 26-29.IX.1959, light trap, Quate & Yoshimoto, ♀. MINDANAO: 25 km S of Manucan, Zamboanga del Norte, 18.X.1959, Quate, 3♀♀; Ozamiz City, Misamis Occ., 22.X.1959, Yoshimoto, ♀; 10 km SE of San Francisco, Agusan, 13.XI.1959, at light, 2♀♀, Quate.

The ♀ of *pellucida* had been associated with *alabangensis* (Tokunaga, 1957), but this association had been questioned (Quate, 1962). This female has been taken together with *pellucida* ♂ in several localities in Malaya and the Philippines, they agree in morphological features, and there seems little question that its assignment to *pellucida* is correct. Furthermore, another ♀ has been associated with *alabangensis*, as is discussed below.

103. **Psychoda alabangensis** del Rosario, 1936, Philip. J. Sci. **59**: 566 (♂ illus.).—Quate, 1962, Pacific Ins. **4**: 72; 1962, Proc. Hawaiian Ent. Soc. **18**: 184.

Psychoda ichthycerca Quate, 1959, Ins. Micronesia (Bishop Mus.) **12** (4): 472 (♀ illus.); 1959, Pan-Pac. Ent. **35**: 213; 1962, Pacific Ins. **4**: 72. **New Synonymy.**

DISTRIBUTION. India, Borneo, Philippines, Caroline Is., Mariana Is., Trinidad.

PHILIPPINES. LUZON: Tala, Bulacan, 25. IX. 1961, tree trunks, S. Quate & M. Delfinado, 5♀♀, 4♂♂; LaMesa, Rizal, 26.IX.1961, tree hole, J. Santos, ♀; Los Baños, Laguna, 27.IX.1961, S. Quate, ♀; Dayap, Laguna, 27. IX. 1961, Delfinado, ♀. NEGROS OR.: Lake Balinsasayao, 1-7.X.1959, Quate, 7♀♀, ♂; Basay, 15.XII.1959, Quate, ♂. PALAWAN: About 30 km S of Eran Pt., (W. coast), 12.I.1960, light trap, Quate, ♂.

P. ichthycerca has been taken in association with *alabangensis* and is believed to be the ♀ of that species. In addition to being taken together, the specimens agree well in morphological characters. Of significance is the tip of the antenna, which bears 2 fairly large, separated segments. *P. ichthycerca* shares this feature. On the other hand, the ♀ formerly associated with *alabangensis* has the 2 terminal segments smaller and usually 13 & 14 are partly fused. This is characteristic of *pellucida*, to which that ♀ is now assigned as noted above.

104. **Psychoda parsivena** Quate, 1959, Ins. Micronesia (Bishop Mus.) **12** (4): 439 (♀, ♂ illus.); 1962, Pacific Ins. **4**: 72.

DISTRIBUTION. Borneo, Philippines, Caroline Is.

PHILIPPINES. NEGROS OR.: Dumaguete City, 26-29.IX.1959, light trap, Quate & Yoshimoto, ♀. MINDANAO: About 30 km S of Manucan, Zamboanga del Norte, 17.X.1959, at light, Quate, ♀.

105. **Psychoda mediocris** Quate, 1959, Ins Micronesia (Bishop Mus.) **12** (4): 468 (♀, ♂ illus.); 1962, Pacific Ins. **4**: 72; 1962, Proc. Hawaiian Ent. Soc. **18**: 184.

DISTRIBUTION: India, Borneo, Philippines, Caroline Is.

PHILIPPINES. NEGROS OR.: Lake Balinsasayao, 1-6.X.1959, Quate & Yoshimoto, ♀. MINDANAO: Alanib, Bukidnon, 25.X.1959, Quate, ♀; 10 km SE of San Francisco, Agusan, 17.XI.1959, Quate, 3♀♀; Los Arcos, Agusan, 19.XI.1959, at light, Quate, 2♀♀.

106. **Psychoda innotabilis** Quate, 1962, Pacific Ins. **4**: 72. Fig. 32 d-h.

♂. Body integument pale brown. Eyes separated by 1/2 facet diameter, bridge with

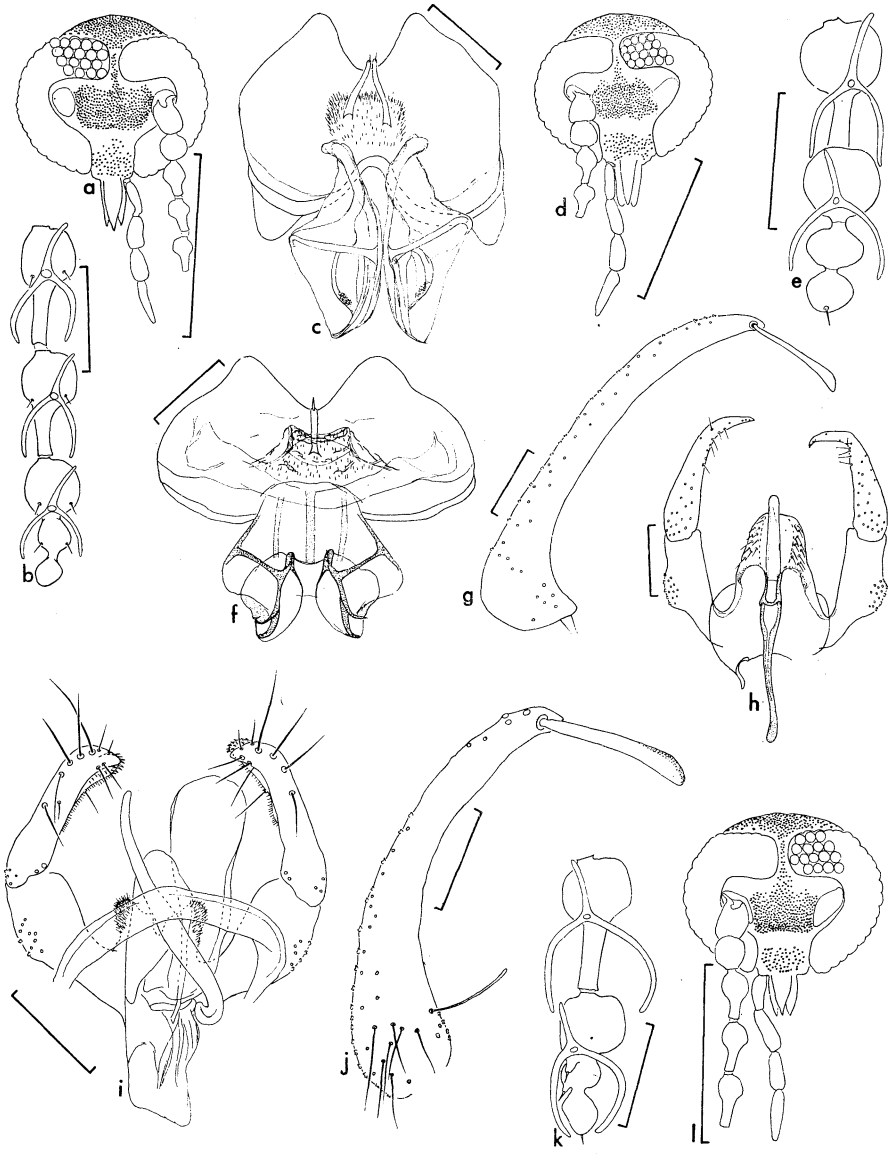

Fig. 32. a–c. *Psychoda bidigitalis*, ♀ : a, head; b, antennal tip; c, genitalia, inner face. d–h. *P. innotabilis*: d, ♀ head; e, ♀ antennal tip; f, ♀ genitalia, inner face; g, ♂ surstyle; h, ♂ genitalia, dorsal. i–l. *P. fusticola* ♂ : i, genitalia, dorsal; j, surstyle; k, antennal tip; l, head. Scale lines of heads=0.3 mm, others=0.05 mm.

4 rows of facets; frons with triangular band of hairs extending posteriorly to upper row of facets. Labellum with 2 setae and 4 teeth; palpus with basal 3 segments nearly equal size, ratio=23 : 24 : 23 : 32. Antenna 15-segmented, terminal 2 segments of equal size and clearly separated; ascoids Y-shaped. Wing forks incomplete. Ratio of fore leg=27 : 21,

mid leg=29 : 30, hind leg=31 : 34. Genitalia as figured; aedeagus simple; paramere an elongate shelf-like projection extending nearly to tip of aedeagus, upper surface spinose along sides.

Antenna 0.85 mm (0.82–0.90); wing length 1.28 mm (1.12–1.47), width 0.50 mm (0.45–0.57).

DISTRIBUTION. Philippines, Borneo.

PHILIPPINES: NEGROS OR.: Lake Balinsasayao, 1–7.X.1959, light & on cut abaca, Quate & Yoshimoto, 40♀♀, 10♂♂. MINDANAO: Masawan (trail from Mt Malindang), Zamboanga del Norte, 15.VIII.1958, Milliron, ♀, ♂; Mt Katanglad, Bukidnon, 26.X–1.XI. 1959, 1250–1480 m, Quate & Yoshimoto, 6♀♀, 3♂♂.

The ♂♂ of this species have not been described previously and therefore are described and illustrated at this time. The ♀♀ of the Philippine forms differ from the Borneo specimens in having the subgenital plate considerably wider and the sides divergent, rather than parallel. The internal structures of the ♀ genitalia are similar in the two forms. The ♂♂ of Borneo specimens (discovered since publication, Quate, 1962) are indistinguishable from the Philippine specimens. Of the Philippine species, *P. innotabilis* is most likely to be confused with *umbratica*. The truncated cone at the base of the genital digit and the lack of wrinkles on the spermathecal plate separate females of *innotabilis* from *umbratica* and the males differ mainly by the setose paramere of *innotabilis*, which is quite different from that of *umbratica*.

107. **Psychoda fusticola** Quate, n. sp. Fig. 32 i–l.

♂. Body integument brownish. Eyes separated by about 1 facet diameter, bridge with 4 rows of facets; frons with elongate triangular band of hairs extending posteriorly to upper row of facets. Labellum with 2 setae and 4 teeth; ratio of palpal segments 25 : 26 : 25 : 35. Antenna 15-segmented; terminal 2 segments equal sized, separated; setose tubercles on apicolateral angles of segments 13 & 14; ascoids Y-shaped. Wing forks incomplete; base of R_3 well before level of R_1 apex. Ratio of fore leg=33 : 27, mid=34 : 34, hind=35 : 40. Genitalia as figured; dististyle bluntly rounded at apex, with preapical nodular enlargement; lateral shaft of aedeagus sharply curved at base, narrower than main shaft.

Antenna 0.98–1.02 mm; wing length 1.42–1.55 mm, width 0.50–0.62 mm.

♀. Unknown.

DISTRIBUTION. Philippines (Mindanao).

Holotype ♂ (BISHOP 6258): Mt Katanglad, Bukidnon, Mindanao, 26–30.X.1959, 1480 m, Quate. Paratypes: 2♂♂, same data.

The unusual structures of the ♂ dististyle and aedeagus are the only ones that can be used reliably for identification of this species.

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Rosario, F. del 1936 Philippine Psychodidae (Diptera), I. Psychodinae. *Philip. J. Sci.* **59**: 553–572.