

STUDIES IN PACIFIC BOMBYLIIDAE (DIPTERA)

II. Revision of the genus *Geron* of Australia and the Pacific¹By Neal L. Evenhuis²

Abstract. Thirty-two species (27 new) of the genus *Geron* from Australia and the Pacific are discussed. Keys are given to the subgenera and species. Type depositories are given for *Geron* (*G.*) *australis*, *G. hilaris*, *G. (P.) dispar*, *G. (P.) cothurnatus*, *G. (P.) nigralis*, *G. (P.) opacus* and *G. (P.) sparsus*. The type of *Geron simplex* is presumed lost. *Geron (Plichtamyia)* is described as a new subgenus and the following species described as new: *G. (G.) aaptis*, *G. (G.) aesion*, *G. (G.) balpi*, *G. (G.) cabon*, *G. (G.) chrysonotum*, *G. (G.) europacificus*, *G. (G.) flavociput*, *G. (G.) fumipennis*, *G. (G.) fusciscelis*, *G. (G.) inflatus*, *G. (G.) karakara*, *G. (G.) malekulanus*, *G. (G.) mononesensis*, *G. (G.) mysticus*, *G. (G.) neutralis*, *G. (G.) paramonovi*, *G. (G.) robustus*, *G. (G.) terminatus*, *G. (Plichtamyia) albihalteris*, *G. (P.) amboinensis*, *G. (P.) bowdeni*, *G. (P.) erythroccipitalis*, *G. (P.) hemifuscis*, *G. (P.) nigrocciput*, *G. (P.) paraaustralicus*, *G. (P.) robertsi*, and *G. (P.) westralicus*.

Though *Geron* Meigen is represented in all the faunal regions of the world, it is one of the least studied genera of Bombyliidae. Such, it seems, is the fate of the smaller representatives of this family. Faunistic studies including *Geron* have been made by Roberts (1929) on the Australian Region, Painter (1932) on the Nearctic Region, Engel (1937) on the Palearctic Region, and Hesse (1938) on the Ethiopian Region. The Oriental and Neotropical faunas are poorly known. Authors treating the genus in recent works include Hall (1975), Bowden (1974), and Hull (1973).

Early workers placed *Geron* in either the subfamily Phthiriinae (Bezzi 1924) or Bombyliinae (Hardy 1922). Hesse (1938) erected the subfamily Geroninae to include *Geron* and 2 closely allied South African genera, *Amictogeron* Hesse and *Pseudoamictus* Bigot. Hesse's (1938) placement of *Geron* was accepted by most authors, but Painter & Painter (1965) retained the genus in Phthiriinae. In Bowden's (1974) reexamination of the Gerontinae, Hesse's classification was modified: *Amictogeron* was synonymized under *Geron* (s. str.) and *Pseudoamictus* was reduced to subgeneric status. Including *Empidigeron* Painter 1932, there are at least 3 subgenera of *Geron*; a 4th subgenus is described in this paper.

Roberts (1929) was the last to treat the Australian species of *Geron*. Curran (1936) and Bowden (1971a, b) are also among those who have contributed to further studies on the genus. In Roberts' work, only 2 species of *Geron* were listed from Australia, *Geron australis* Macquart and *G. nigralis* Roberts. Hardy (1922) recorded only *G.*

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australis in his work on Australian Bombyliidae and Cyrtidae. White (1917), working on the Tasmanian Brachycera, listed *Geron dispar* Macquart and *G. hilaris* White. Disagreement on the composition of Australian *Geron* stems from the various synonymies proposed by each author. This paper attempts to clarify the existing faunal composition of *Geron* in Australia and the Pacific islands. The limits of this study are shown by the dotted line in FIG. 1.

Specimens of *Geron* were examined from Australia, New Guinea, New Hebrides, New Caledonia, the Solomon Is and other smaller island groups in the Pacific. Detailed study showed that these specimens fell into 2 distinct subgenera. Bowden (1971b) implied this grouping when he described *Geron opacus* and *Geron sparsus* from the Bismarck Archipelago. He noted their similarity to *Amictogeron*, but placed them in *Geron* on the basis of their male genitalia. However, because of the overlapping characters and links between *Geron* and *Amictogeron* in South Africa, Bowden placed *Amictogeron* in synonymy with *Geron*. Apparently, Bowden did not examine large series of many of the species of *Geron* from the Australian Region. According to studies presented herein, *G. opacus*, *G. sparsus*, and 11 other species, 9 of which are new to science, are placed within a new subgenus, *Plichtamyia*. This subgenus occurs predominantly in the South Pacific islands and to a lesser degree in Australia. *Geron* sensu stricto predominates in the latter area. Future studies should extend the distribution of *Plichtamyia* into the Oriental Region as well. I have before me at least 3 undescribed species from Thailand and the Philippines that appear to possess the characters of *Plichtamyia*. These will be treated in future papers.

Specimens for study were received on loan from the following institutions and abbreviations noted are used throughout this paper.

AMS	The Australian Museum, Sydney.
ANIC	Australian National Insect Collection, Canberra.
BISHOP	Bishop Museum, Honolulu.
BMNH	British Museum (Natural History), London.
CAS	California Academy of Sciences, San Francisco.
GD	Mr G. Daniels, Sydney.
MNHN	Muséum National d'Histoire Naturelle, Paris.
QMFV	Queensland Museum, Fortitude Valley.
SAM	South Australian Museum, Adelaide.

KEY TO THE SUBGENERA OF *Geron* MEIGEN

1. Third antennal segment with distinct pubescence; face predominantly hairy . . . (Nearctic) **Empidigeron**
 Third antennal segment without distinct pubescence; face not as predominantly hairy 2
2. Genae broad; eyes of ♂ not in contact above antennae for a long distance; thorax not markedly humped or convex above; wings elongate; base of 2nd submarginal cell at a point nearly opposite apex of discal cell . . . (Ethiopian) **Pseudoamictus**

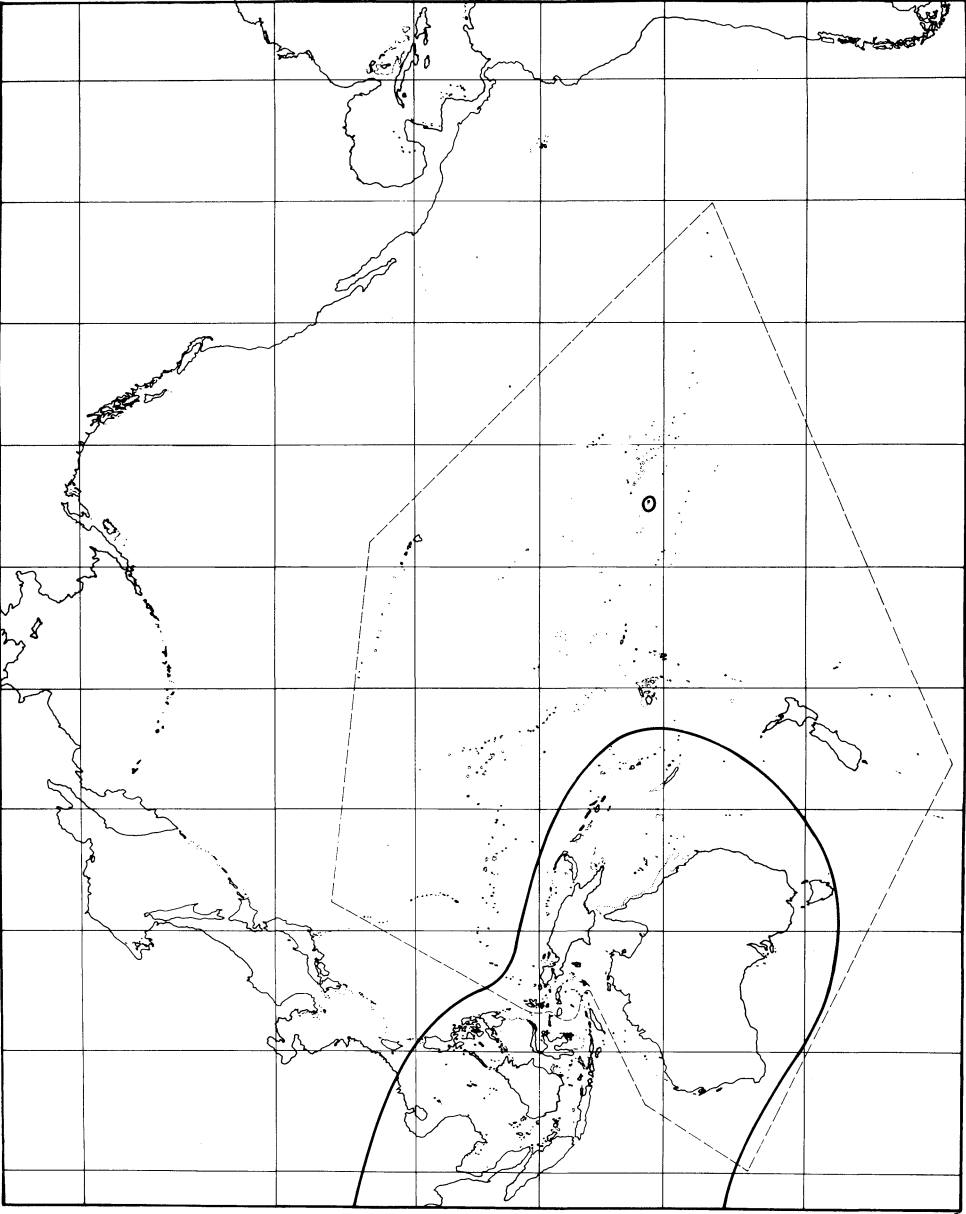


FIG. 1. Map of the Pacific Basin, showing distribution of *Geron* in the South Pacific (solid line). The dotted line represents the limits of this study.

- Genae narrow or reduced; eyes in ♂ in contact above antennae for a long distance; thorax humped or convex above; wings not elongate; 2nd submarginal cell not necessarily at a point nearly opposite apex of discal cell 3
3. First antennal segment usually less than 3× length of 2nd segment; frons bare of scales and ♂ genitalia with prominent spines on lateral rami and epiphallus **Geron**
- First antennal segment more than 3× length of 2nd segment; frons often with silver scales; face shining; ♂ genitalia without spines on lateral rami and epiphallus ... (Australian) **Plichtamyia, n. subg.**

Prior to this study only 3 species had been described from the South Pacific excluding Australia: *Geron simplex* Walker, described from Aru I [the type is apparently lost (Bowden 1971b)], *G. opacus* and *G. sparsus* from the Bismarck Archipelago. The latter 2 species are placed in the new subgenus *Plichtamyia*. However, since the type of *G. simplex* is lost and Walker's (1858) description is so vague, it is impossible to assign this species to a subgenus with any certainty.

Of the material studied, it appears that a high degree of speciation has taken place within the genus *Geron* throughout the Australian Region and especially among South Pacific island fauna. This study includes 17 species from the South Pacific islands excluding Australia and 14 species from Australia. The distribution of *Geron* in the Australian Region extends from the land masses of Australia and New Guinea eastward to the Society Is. No Bombyliidae have been recorded from the islands between the New Hebrides and the Society Is. *Tillyardomyia gracilis* Tonnoir is the only bombyliid known from New Zealand.

BIOLOGY AND ETHNOLOGY

The larvae of *Geron* are known to be parasitic on various families of Lepidoptera. Merle (1975) records *Geron* from Tortricidae, Pyralidae, Psychidae, and Noctuidae (the last family was noted as being a doubtful host of this genus). Authors treating this subject include Mik (1896), Howlett (1909), Brunetti (1920), Donahue (1968), and Bowden (1974). Nothing has been reported on the biology of *Geron* in the Australian Region.

Evans & Matthews (1973) record species of adult *Geron* as prey of many species of *Bembix* wasps (Bembicidae). The specimens of *Geron* collected in their study are deposited in ANIC and labeled with biological data. I have examined the available species of *Geron* collected by these authors and have identified 6 species of *Geron* as prey of 5 *Bembix* species. Two of the 5 *Bembix* species preyed on only 1 species each of *Geron*. *Bembix variabilis* Smith, *B. furcata* Erichson, and *B. littoralis* Turner were found to prey on 2 species each of *Geron*. Further information on this is recorded below under each species of *Geron* involved.

KEY TO SPECIES OF *Geron* OF AUSTRALIA AND THE PACIFIC

1. Face projecting, shining brown; 1st antennal segment more than 3× length of 2nd segment; tip of aedeagus beaklike ... (subgenus *Plichtamyia*) 2
- Face usually receding, small bump may be present in some ♀; face dull brown to gray; 1st antennal segment never more than 3× length of 2nd segment; tip of aedeagus truncate ... (subgenus *Geron*) 14

2. Wing infuscated dark brown on basal $\frac{1}{2}$, apical $\frac{1}{2}$ hyaline 3
Wing various shades of smoky brown to gray or completely hyaline 5
3. Infuscation of wing extending only up to r-m crossvein or slightly beyond 4
Infuscation of wing extending beyond r-m crossvein and up to end of R_1 **robertsi, n. sp.**
4. First abdominal tergite with white pile laterally; r-m crossvein $\frac{3}{4}$ way beyond base of discal cell;
body pile generally black ... (Australia) **nigralis**
First abdominal tergite with reddish brown pile laterally; r-m crossvein at middle of discal cell;
body pile generally black to reddish brown ... (New Guinea) **hemifuscis, n. sp.**
5. First antennal segment swollen at base; oral margin below eyes with long black hair
..... **westralicus, n. sp.**
First antennal segment not swollen at base; oral margin bare 6
6. Hair on occiput reddish brown ... (Solomon Is) **erythroccipitalis, n. sp.**
Hair on occiput black to brown 7
7. First antennal segment more than $4\times$ length of 2nd segment 8
First antennal segment less than $4\times$ length of 2nd segment 10
8. Genae with hair concolorous with those on frons ... (Australia) **dispar**
Genae bare 9
9. Wing dark smoky brown ... (Bismarck Arch., New Guinea, Solomon Is) **opacus**
Wing light smoky brown to hyaline ... (Australia) **nigrocciput, n. sp.**
10. Dense white scales on coxae, femora, and tibiae 11
Legs bare, or if white scales present, then sparsely distributed and confined to dorsal surfaces
of coxae, femora and (rarely) tibiae 12
11. Body pile dense white to pale yellow; fore tibiae brown to black; knob of halteres yellow ...
(Ambon I) **amboinensis, n. sp.**
Body pile sparse, white; fore tibiae yellowish brown to yellow; knob of halteres dark brown
... (Bismarck Arch.) **sparsus**
12. White scales sparsely distributed on hind coxae and femora ... (Larat I) **paraustalisticus, n. sp.**
Hind coxae and femora bare of scales; few scales may be present on hind tibiae 13
13. Wing hyaline; halteres white to yellow ... (Solomon Is) **albihalteris, n. sp.**
Wing smoky brown; halteres orange to yellowish orange ... (Bismarck Arch.) **bowdeni, n. sp.**
14. Wings infuscated dark brown on basal $\frac{1}{2}$, apical $\frac{1}{2}$ hyaline 15
Wings hyaline to smoky brown to gray, never as above 16
15. Infuscation of wings extending up to r-m crossvein; anal and axillary cells hyaline; scales on
frons limited to bases of antennae and just below ocellar tubercle, bare in between
..... **paramonovi, n. sp.**
Infuscation of wings not quite reaching r-m crossvein; anal and axillary cells tinted brown; scales
present on frons from ocellar tubercle to bases of antennae; no bare spot present **robustus, n. sp.**
16. Wings smoky **fumipennis, n. sp.**
Wings hyaline 17
17. Occiput inflated more than normal, brown; scales and hair on occiput sparsely distributed ...
(Western Australia); small species (2 mm) **inflatus, n. sp.**
Occiput not inflated more than normal; color variable; hair and scales usually present on occiput;
normally larger species 18
18. Pile of occiput yellow; size larger than 6 mm ... (Australia) **flavocciput, n. sp.**
Pile of occiput white or black, or mixtures of both; never yellow; size variable 19
19. Face below antennae well developed, shining brown to black; large species (7 mm) ... (Western
Australia) **cabon, n. sp.**
Face below antennae receding (small bump may be present in some species), dull brown to gray;
size variable 20
20. Dorsum of thorax and scutellum with golden tomentum 21
Dorsum of thorax with white to yellow tomentum, never golden 30
21. ♂♂ 22
♀♀ 25

22. Hairs on occiput mostly black . . . (New Hebrides) **mysticus, n. sp.**
 Hairs on occiput mostly white; few black hairs present behind vertex 23
23. Hairs on occiput mostly pale yellow; few black hairs behind vertex; occiput completely black **neutralis, n. sp.**
 Hairs on occiput white; occiput gray laterally with silver tomentum . . . (Australia) 24
24. Hind legs gray with silver-white scales and white pile **karakara, n. sp.**
 Hind legs predominantly black, yellow at extreme base with yellow-white scales and yellow pile **chrysonotum, n. sp.**
25. Occiput gray laterally 26
 Occiput black throughout, no gray present 28
26. Gray portion of occiput with dense pale yellow to white tomentum; abdominal tergites with golden orange tomentum and pale yellow pile **malekulanus, n. sp.**
 Gray portion of occiput with silvery to silvery white tomentum sparsely distributed; abdominal tergites with golden yellow tomentum and white pile . . . (Australia) 27
27. First antennal segment gray . . . (southwestern Australia) **karakara, n. sp.**
 First antennal segment black . . . (northern and eastern Australia) **chrysonotum, n. sp.**
28. Hind femora brown to black 29
 Hind femora orange-yellow, at least basally **neutralis, n. sp.**
29. Frons with mixed black and white tomentum . . . (Tahiti) **fusciscelis, n. sp.**
 Frons with yellow tomentum, no black tomentum present **mysticus, n. sp.**
30. Vein R₄ "L" shaped, straight to wing margin after 1st bend 32
 Vein R₄ "S" shaped, curved upward to wing margin after 1st bend 31
31. Hairs on 1st antennal segment mixed black and white **australis**
 Hairs on 1st antennal segment white, no black hairs **balpi, n. sp.**
32. Antennal pile brownish red . . . (Larat I) **mononesensis, n. sp.**
 Antennal pile other than above 33
33. Scutum with sparsely distributed reddish black hairs; sparse white hairs may be mixed in 34
 Scutum with pale yellow to white hairs, no darker hairs mixed in 35
34. Pleura brown to black . . . (New Hebrides) **terminatus, n. sp.**
 Pleura gray-black . . . (New Caledonia) **aesion, n. sp.**
35. R-m crossvein at or before middle of discal cell . . . (Loyalty Is) **aaptis, n. sp.**
 R-m crossvein beyond middle of discal cell . . . (Tahiti) **europacificus, n. sp.**

Subgenus *Geron* Meigen

Geron Meigen, 1820: 223 (type-species: *Bombylius gibbosus* Olivier, 1789).

Amictogeron Hesse, 1938: 918 (type-species: *meromelanus* Hesse, 1938).

The species of the subgenus *Geron* in Australia and the Pacific are very similar in appearance and can be separated only by 1 or 2 external characters. As has been shown by Painter (1932) and Hesse (1938), the male genitalia are invaluable in separating the species. The male genitalia of species of both subgenera treated in this paper were examined wherever numbers of specimens permitted. Female genitalia were examined in a few species.

In order to prevent repetition of characters which are present in all species of *Geron* sensu lato in the Australian and Pacific fauna, a generic description is presented here.

♂. *Head*: eyes holoptic from just below vertex to just above bases of antennae, color varies from copper-red to shining black; frons small, triangular, usually with a small tuft of tomentum lateral to antennal bases; face below antennae of varying shapes and sizes, usually dull colored in the subgenus *Geron* and shining in *Plichtamyia*; oral margin thin, usually dark colored, bare; vertex small, containing the ocellar

tubercle; ocellar tubercle brown to black with brown ocelli; occiput bilobed, usually darkly colored; gula broad, of varying coloration, usually with white pile; antennal segment I long, cylindrical, 2–5× the length of segment II, pile of varying length, usually short, black, the same length as segment I; segment II short, globular, with minute hairs at apex; segment III long, lanceolate, bare; proboscis black, of varying length; palpi minute, darkly colored. *Thorax*: scutum and scutellum usually concolorous, with pile of varying coloration; scutum often with dusty gray stripe anteriorly extending to middle of notal disc and gray laterally near wing base; scutellum rarely with gray laterally; pleura of varying coloration, with pile restricted to meso-, sterno-, hypo-, and pteropleura, bare elsewhere; halteres short, of varying color. *Legs*: of varying coloration; femora often with fine black hairs or spines near apex; tibiae and tarsi with short strong spines along entire length; claw brown to black; pulvilli long. *Wing*: hyaline, smoky brown, infuscated brown basally, or entirely tinted brown; veins yellow to brown, dentate along costa to end of R_{2+3} ; r-m crossvein usually near the middle of discal cell; vein closing apex of discal cell either straight or sigmoid; squama small, of varying color and with fringe of varying color. *Abdomen*: long, slender, tapering to apex, slightly compressed laterally, darkly colored above; sternites usually lighter colored; pile varying in coloration.

♀. Similar to ♂ except for the following: eyes dichoptic, separated at vertex by a little more than the width of ocellar tubercle; occipital pile usually lighter than ♂; if present, stripes of gray anteriorly and laterally on scutum more prominent than ♂; pleura lighter in coloration and pile; halteres usually lighter in coloration; sternites of abdomen usually with lighter pile and tomentum.

The male genitalic characters of the Australian *Geron* vary somewhat from their South African and Nearctic relatives as follows: basistylus linear-ovate to subrectangular, hairs present on ventral surface either anteriorly or posteriorly; apex of basistylus often membranous with central sclerotization; spinose processes sometimes present laterally on basistylus near fusion with dorsolateral rami; ventrolateral rami of varying shape and size, without prominent spines; epiphallus long, broad and well pronounced dorsally; tip of aedeagus truncate; basal apodeme subtriangular.

Female genitalia of Bombyliidae have been studied by only a few authors. Mühl-enberg (1970) has done the most detailed work on this subject. Both he and Zaitzev (1966) picture the female postabdomen of *Geron gibbosus* Olivier. I follow the terminology of Theodor (1977) in describing the female genitalia in this paper. The characteristics of the female reproductive system in the genus *Geron* are as follows (FIG. 2).

Spermathecal reservoir much coiled; spermathecal duct long, thin, enlarging basally to a somewhat thicker spermathecal duct shorter than previous duct, surrounded by caniculi; caniculi short; ejaculatory apparatus as long as thickened section of spermathecal duct, apical and basal valves disc-shaped, 2× as wide as spermathecal duct; basal duct as thick as basal valve, 2.5× length of ejaculatory apparatus, emptying into common duct.

***Geron* (*Geron*) *aaptis* Evenhuis, new species**

♂. *Head*: face and frons tan-gray; face bare; frons pale yellow pilose lateral to antennal bases; oral margin tan, bare; gula gray, white pilose; occiput black, white pilose; vertex black, sparse black hairs; antennal segments I and II brown, short white pilose, segment III missing; antennal ratio: 2:1:–. *Thorax*: scutum and scutellum black, white pilose; pleura black to brown, sparse white pilose; halter stem brown, knob brownish orange. *Legs*: black-brown; coxae and femora white pilose ventrally; tibiae and tarsi bare of pile and scales. *Wing*: hyaline; r-m crossvein slightly before middle of discal cell; squama white with

white fringe. *Abdomen*: tergites black, sparse white pile on all segments; sternites black-brown, sparse white pilose. *Genitalia*: not dissected.

♀. Same as ♂ except for the following: frons black, pale yellow tomentose; dorsum of thorax and abdomen with sparse pale yellow tomentum in addition to sparse white pile; knob of halter yellow; tibiae and tarsi lighter brown than in ♂.

Length. 3 mm.

Holotype ♂ (BISHOP 11,389) and allotype ♀ (BISHOP), NEW CALEDONIA: Loyalty I: Fayaoué: Ouvea, 0–50 m, I.1969, N.L.H. Krauss.

Distribution. Loyalty Is.

Relationships. *Geron* (*Geron*) *aaptis* can be separated from its closest apparent relative, *G. aesion*, n. sp. (known only from New Caledonia), by the absence of dark hairs on the dorsum of the thorax.

***Geron* (*Geron*) *aesion* Evenhuis, new species**

♂. *Head*: face and frons gray-black, bare; vertex and occiput black, vertex short black pilose; occiput black pilose posterior to eye margin, white to pale yellow pilose laterally; oral margin gray, bare; antennae black, segments I and II short black pilose, segment III bare; antennal ratio: 2:1:5. *Thorax*: scutum and scutellum black, intermixed reddish black and white pilose; pleura gray-black, sparse white pilose; halter stem cream yellow, knob brown. *Legs*: black; coxae and femora white pilose ventrally, sparse white scales on dorsal surface. *Wing*: hyaline; veins brown; r-m crossvein located at middle of discal cell; squama white, fringe pale yellow. *Abdomen*: tergites black, sparse white pilose; sternites brown, sparse white pilose; apex of abdomen brown, sparse white to pale yellow pilose. *Genitalia*: not dissected.

♀. Same as ♂ except for the following: frons shining black, silver scales lateral to antennal bases; scutum, scutellum, and abdominal tergum with sparse pale yellow tomentum overlaid by sparse white pile; legs brown.

Length. 3 mm.

Holotype ♂ (BISHOP 11,390) and allotype ♀ (BISHOP), NEW CALEDONIA: Moukoué to Dothio, 150–500 m, 20,22.III.1968, T.C. Maa.

Distribution. New Caledonia.

Relationships. This species is most similar in appearance to *G. aaptis* from the Loyalty Is and can be separated from it by the reddish black hair on the dorsum of the thorax.

***Geron* (*Geron*) *australis* Macquart FIG. 2–6**

Geron australis Macquart, 1840: 118.

Geron hilaris White, 1917: 188. **New synonymy.**

♂. *Head*: black; face and oral margin bare; vertex black pilose; occiput dense white pilose; frons with argentous tuft of scales lateral to antennal bases, bare elsewhere; antennal segments I and II white pilose as long as pile on occiput; segment III bare; antennal ratio: 2:1:5. *Thorax*: scutum and scutellum black, white pilose; pleura gray to black, white pilose; halter knob light yellow to white, stem yellowish white. *Legs*: black to orange-yellow; coxae white pilose; femora with white scales, white pilose ventrally; tibiae with white scales; tarsi bare. *Wing* (FIG. 3): hyaline; veins yellow to brown; vein closing apex of discal cell straight; squama well developed, white, with white fringe. *Abdomen*: tergites black to brown; dense white pile and sparse white scales on all segments, scales becoming denser laterally on segments II–VII; sternites gray, dense white pilose. *Genitalia* (FIG. 5): basistylus linear, membranous posteriorly with small hooked projection near apex; dististylus slender, hooked; dorsolateral rami thin; epiphallus broad; tip of aedeagus flat; basal apodeme subtriangular.

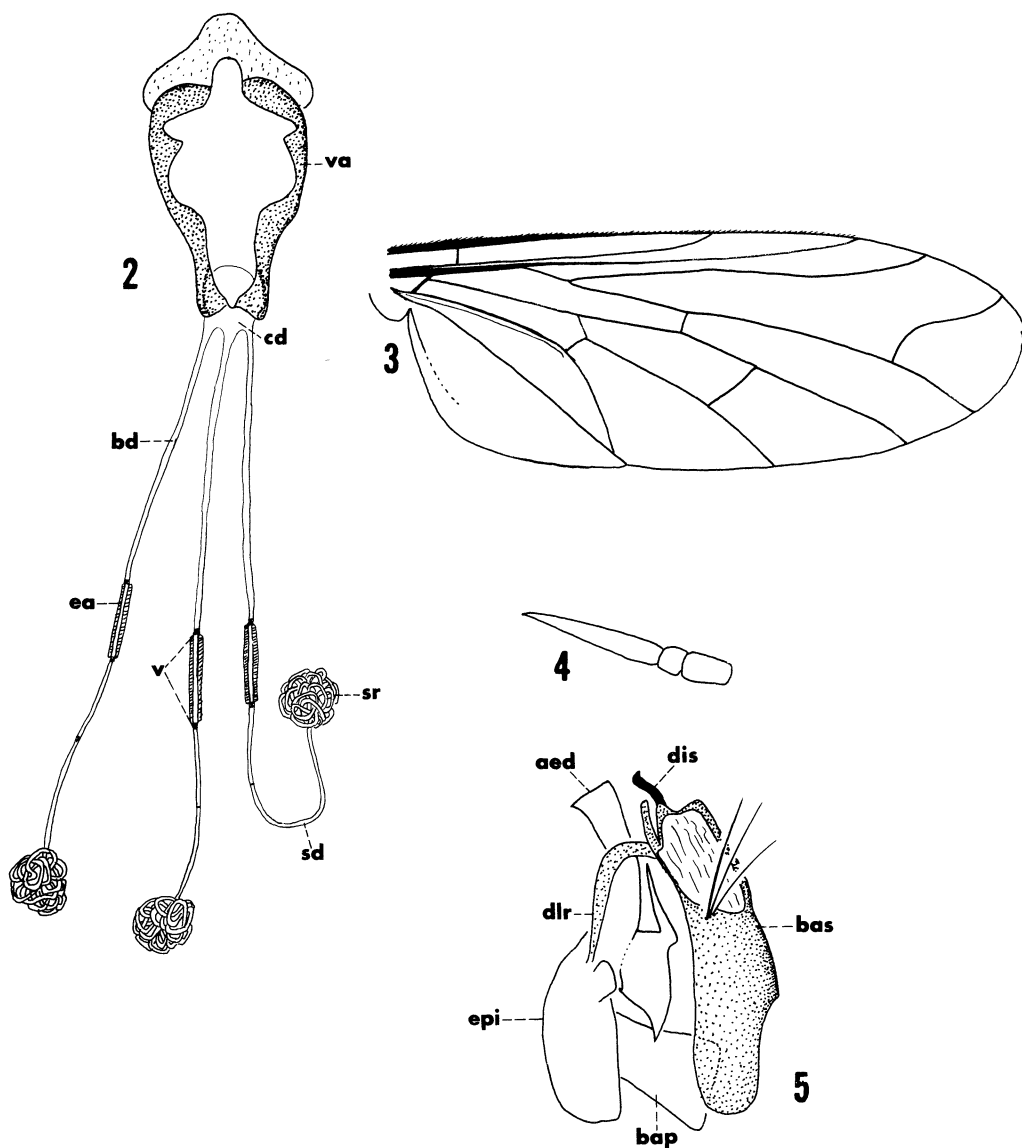


FIG. 2-5. *Geron australis*: 2, ♀ genitalia (bd = basal duct, cd = common duct, ea = ejaculatory apparatus, sd = spermathecal duct, sr = spermathecal reservoir, v = valves, va = vaginal apodeme); 3, wing; 4, lateral view of antenna; 5, ♂ genitalia (aed = aedeagus, bap = basal apodeme, bas = basistylus, dis = dististylus, dlr = dorsolateral ramus, epi = epiphallus).

♀. Similar to ♂ except for the following: frons shining black with silver scales near vertex and above antennal bases; occiput, scutum, scutellum and tergum of abdomen with fine sparse golden yellow tomentum; halter darker than ♂. Genitalia as in FIG. 2.

Length. 2.7-3.3 mm.

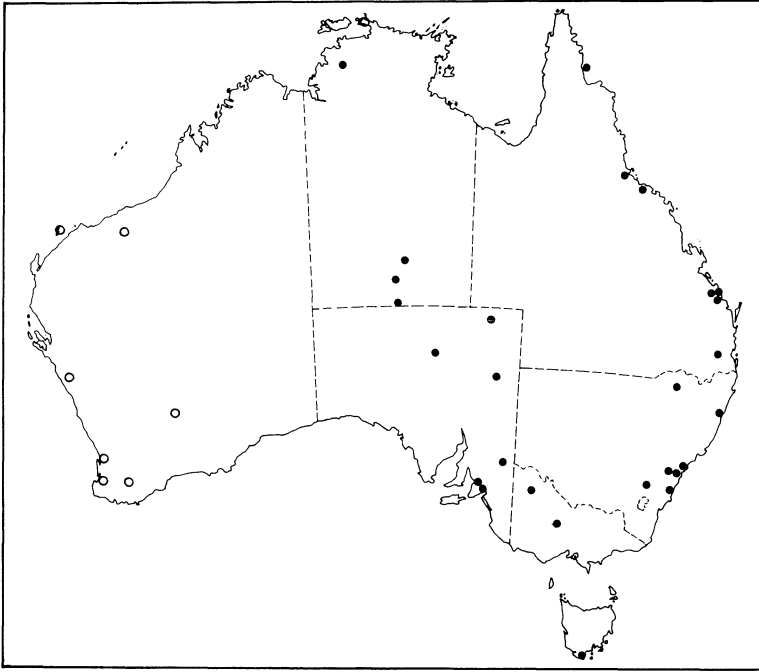


FIG. 6. Map of Australia, showing distribution of *Geron australis* (dots) and *G. balpi* (circles).

Holotype of *G. australis* deposited in Muséum National d'Histoire Naturelle, Paris. Holotype of *G. hilaris* deposited in British Museum (Natural History), London.

Specimens examined. AUSTRALIA: New South Wales: 1♀, Beecroft Penin., S of Corrarong, 20.XII.1974, G. Daniels (GD); 1♂, Bendalong, 10.I.1969, Daniels (GD); 1♂, Hat Hill nr Blackheath, 23.I.1970, D.K. McAlpine (AMS); 3♂♀, Gravesend, II.1927, F.S. Roberts (ANIC); 2♂♀, National Park, 1.I.1926, I.M. MacKerras (ANIC); 2♀, North Beach, Bellinger Riv, 21.II.1965, McAlpine & L. Lossin (AMS); 3♂♀, Royal National Park, 26.IX.1970, 7.XI.1976, Daniels (GD); 15♂♀, Royal National Park, Cascade Crk, 13.XI.1971, Daniels (GD); 1♀, Royal National Park, Flat Rock Crk, 28.XII.1970, A. & G. Daniels (GD); 1♂, Royal National Park, Goondara Ridge, 24.X.1976, Daniels (GD); 1♂, Round Hill Nature Reserve, 28.XII.1970, Daniels (GD); 3♂♀, Yass, 20,22,23.III.1930, K. English (ANIC); 8♂♀, Yass, 21–24.III.1930, 27,28.III.1930, English (AMS); Northern Territory: 1♂, Batchelor, G.F. Hill (SAM); 1♀, Emily Gap, 7 mi [11.2 km] E of Alice Springs, 22–26.IX.1972, R.W. Matthews (ANIC); 3♀, 29 km N of Erldunda HS Stuart Hwy, 2.X.1972, Z. Liepa (ANIC); 1♀, 9 mi [14.4 km] N of Kulgera, 1.X.1972, Liepa (ANIC); Queensland: 9♂♀, Forest Bch, Ingham, 15.X.1961, K.R. Norris (ANIC); 1♂, Gatton, 10.I.1932 (ANIC); 1♀, Hannah I, Great Barrier Reef, 26.VII.1969, H. Heatwole (ANIC); 1♂, N of Bundaberg, Wallum Reserve, XI.1972, H. Frauca (ANIC); 2♂♀, Townsville, XII.1929,

Roberts (ANIC); South Australia: 1♀, Adelaide, N.B. Tindale (ANIC); 1♀, Blanche Town, 26.XII.1966, Liepa (ANIC); 1♀, 20 km N Edwards Crk, SSE of Oodnadata, 23.IX.1972, Liepa (ANIC); 1♂, 25 km N by E of Etadunna HS B/ville Track, 17.IX.1972, Liepa (ANIC); 3♂♀, Middleton (ANIC); 2♂, 1.6 km E of Morgan, 13.IX.1972, Liepa (ANIC); Victoria: 1♀, Linga, X.1922, F.E. Wilson (ANIC); 1♂, Raywood, 6.IV.1918, Hill (SAM).

Distribution (FIG. 6). Australia (Northern Territory, South Australia, Queensland, New South Wales, Victoria), Tasmania.

Relationships. This species is most similar in appearance to *G. balpi*, n. sp., but is separated from it by the absence of black pile on the antennal segments. *Geron australis* is one of the more variable of the species of *Geron* occurring in Australia, with leg color varying from all yellow to all black. Past authors have recognized *G. australis* and *G. hilaris* White as 2 distinct species on the basis of leg coloration. Genitalic studies here show them to be conspecific.

Remarks. Evans & Matthews (1973) record a specimen from Northern Territory with the label "Biol. note AM-273a" as being prey of *Bembix mianga*. This specimen fits the description of *G. australis*.

***Geron (Geron) balpi* Evenhuis, new species** FIG. 6

♂. *Head*: gray-black; face and oral margin bare; frons with sparse silver tomentum lateral to antennal bases; vertex black pilose; occiput white pilose, white tomentose laterally; antennal segments I and II white pilose above, black pilose below; antennal segment III bare; gula gray, white pilose; antennal ratio: 2:1:3.5. *Thorax*: scutum and scutellum black, sparse yellowish white tomentum overlaid by white pile; pleura gray, white pilose; halter white. *Legs*: coxae gray, white pilose and tomentose; femora black with white pile and scales ventrally, sparse scales on dorsal and lateral surfaces; tibiae yellow basally, brown apically, sparse white pile and scales on ventral surface; tarsi brown, bare of pile and scales. *Wing*: hyaline with veins yellow basally, brown apically; r-m crossvein just beyond middle of discal cell; vein closing apex of discal cell straight; squama white, fringe white. *Abdomen*: tergites black, sparse white pilose overlying sparse white recumbent hair and tomentum. *Genitalia*: not dissected.

♀. Similar to ♂ except for the following: frons gray, silver tomentose; recumbent pile on dorsum of thorax and abdomen denser than in ♂; white scales present on ptero- and sternopleura; halter yellow; sternites darker gray-black than ♂.

Length. 5.0–5.8 mm.

Holotype ♂ AUSTRALIA: Western Australia: 21 km NE of Geraldton, 21.I.1973, N. McFarland (ANIC); allotype ♀, Fremantle, 16.II.1935, K.R. Norris (ANIC). Paratypes: AUSTRALIA: Western Australia: 2♀, 8 km S of Cape Berthelot, West Kimberley, 16.IV.1977, 18.IV.1977, D.H. Colless (ANIC); 1♂, Dales Gorge, 625 m, 10.X.1962, E.S. Ross & D.Q. Cavagnaro (CAS); 1♀, Dunsborough, 21.III.1971, E.F. Riek (ANIC); 1♂, Fremantle, 11.II.1934, K.R. Norris (ANIC); Montebellow Is: 2♂♀, Hermite I: 12.XI.1953, T.G. Campbell (ANIC); 10♂♀, Hermite I: 17.X.1952, "H.M.S. Campania" (BMNH); 5♂♀, Hermite I and Trimouille I, VIII–X.1952, "H.M.S. Campania" (BMNH); 1♂, Hermite I: SE, 7.IX.1952, "H.M.S. Campania" (BMNH); 1♀, Katanning, 22.IV.1950, J.A. Mahon (ANIC); 10♂♀, 6 km W of Martin's Well, West Kimberley, 26.IV.1977, Colless (ANIC); 1♀, 30 mi [48 km] NE

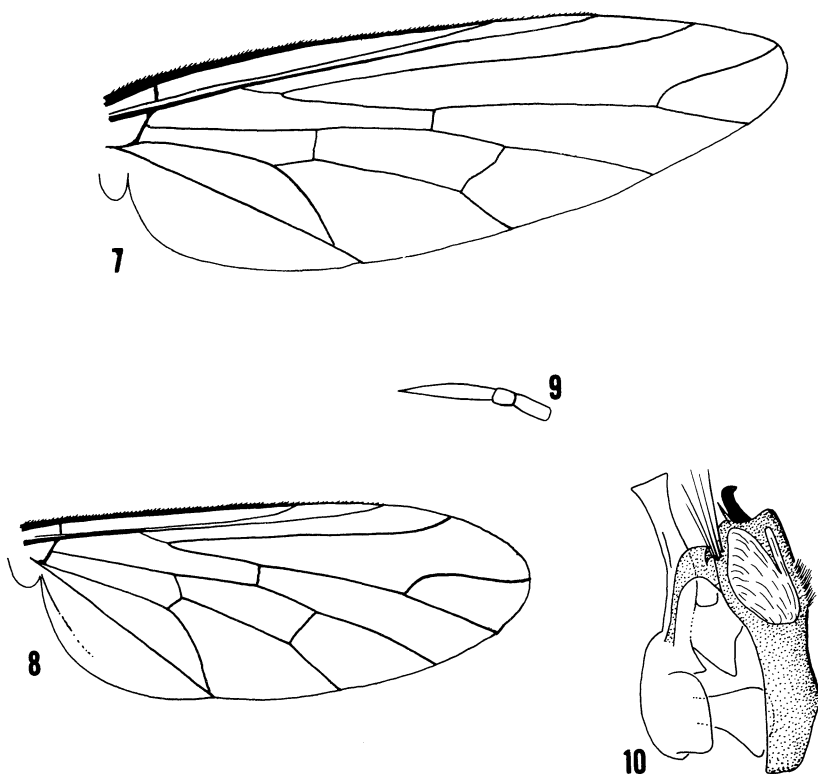


FIG. 7-10. 7, *Geron cabon*, wing. 8-10, *Geron chrysonotum*: 8, wing; 9, antenna; 10, ♂ genitalia.

of Menzies, 400 m, 20.IX.1962, Ross & Cavagnaro (CAS); Northern Territory: 1 ♀, Smith Point, Coburg Penin., 11.07S/132.08E, 10.II.1977, R. Lewis (ANIC).

Distribution (FIG. 6). Australia (Western Australia, Northern Territory).

Relationships. *G. balpi* is closest in appearance to *G. australis* Macq. It can be separated from it by the presence of black pile on the first 2 antennal segments.

Geron (Geron) cabon Evenhuis, new species FIG. 7

♀. *Head*: frons, vertex and occiput black; frons dense white tomentose from vertex to bases of antennae; vertex bare; occiput sparse white pilose and tomentose. Face shining brown, bare, well developed above oral margin, oral margin light yellow, bare; gula gray, white pilose; antennal segments I and II yellowish brown, sparse, short white pilose; antennal segment III black, bare; antennal ratio: 2.5:1:4. *Thorax*: scutum and scutellum brownish black; scutum with sparse pale yellow pile overlying shorter recumbent white to pale yellow pile; scutellum pale yellow pilose; pleura gray-black, sparse pale yellow pilose and tomentose; halter yellow. *Legs*: coxae gray-black, white pilose and tomentose; fore femur brownish black, white pilose ventrally at base, white scales along entire length; mid and hind femora orange-yellow, white pilose ventrally, sparse white tomentose mesally and laterally; fore tibia brownish black, bare; mid and hind tibiae orange-yellow, bare; fore tarsi black, bare; mid and hind tarsi brownish black. *Wing* (FIG. 7): hyaline; veins yellow; r-m crossvein at a spot $\frac{2}{3}$ beyond base of discal cell; vein closing apex of

discal cell slightly sigmoid; squama light yellow, fringe white. *Abdomen*: tergites brownish black, dense white pile on segment I; abdominal tergites II–VII with sparse white pile; sternites brown, sparse white pile overlying dense white tomentum; apex of abdomen brown with white hair. *Genitalia*: not dissected.

♂. Unknown.

Length. 7.0 mm.

Holotype ♀, AUSTRALIA: Western Australia: Montebello Is: Hermite I and Trimouille I [sic], VIII–X.1952, "H.M.S. Campania" (BMNH). Paratypes: AUSTRALIA: Western Australia: 1♀, Perth, 10–18.II.1956, R.E. Turner (BMNH); 1♀, Perth, 10.I.1961, M.S. Moulds (AMS).

Distribution. Western Australia.

Relationships. *Geron cabon* is separated from its congeners by the well-developed face above the oral margin and its large size. The development of the face likens it in appearance to many of the species in the new subgenus *Plichtamyia*; however, the ratio of the length of the 1st and 2nd antennal segments places it in *Geron* sensu stricto.

***Geron (Geron) chrysonotum* Evenhuis, new species** FIG. 8–11

♂. *Head*: black; face and oral margin bare; frons with tuft of argentous tomentum lateral to antennal bases; vertex with black hair; occiput with yellow pilose overlying fine golden tomentum, light yellow tomentum laterally; antennal segments I and II short black pilose as long as segment II; segment III bare; antennal ratio: 2.5:1:5. *Thorax*: scutum and scutellum black, intermixed black and whitish yellow pile overlying golden tomentum; pleura gray-black, sparse white pilose; halter stem pale yellow, knob white. *Legs*: coxae gray, white pilose; femora dark brown; fore and mid femora with white pile and scales; hind femur with white pile ventrally; tibiae and tarsi brown, bare. *Wing* (FIG. 8): hyaline; veins brown; r-m crossvein at middle of discal cell; vein closing apex of discal cell straight; squama brown with white fringe. *Abdomen*: tergite I brown, white pilose; tergites II–VII black, intermixed brown and yellow pile overlying golden tomentum; sternites brown, sparse white pilose and tomentose; apex brown; golden and white pilose. *Genitalia* (FIG. 10): basistylus linear, membranous near apex with short spine lateral to dististylus, short hairs ventromedially, 4–5 long hairs at contact with dorsolateral rami; dististylus long, recurved ventrally; dorsolateral rami thin; epiphallus long, broad, straight to aedeagal tip; tip of aedeagus flared; basal apodeme subtriangular.

Length. 3.7–4.8 mm.

♀. Similar to ♂ except for following: frons gray, silver tomentose; antennal segment I black and white pilose; occiput black, gray laterally, yellowish white pilose; pleura white pilose and tomentose; squama white; coxae white pilose and tomentose; femora black; tibiae and tarsi orange-brown.

Holotype ♂, AUSTRALIA: Northern Territory: Darwin, Casuarina Beach, 22.X.1972, D.H. Colless (ANIC); allotype ♀, Koongara, 15 km E of Mt Cahill, 12.VI.1973, Colless (ANIC). Paratypes: AUSTRALIA: Northern Territory: 9♀, 11 mi [17.6 km] N of Alice Springs, 28.X.1962, Ross & Cavagnaro (CAS); 1♂, Bessie Spring, 8 km ESE of Cape Crawford, 12.IV.1976, Colless (ANIC); 2♀, Birraduk Crk, 17 km WSE of Nimbuwah Rock, 4.5.VI.1973, Colless (ANIC); 2♀, 22 km WSW of Borrooloola, 17.IV.1976, Colless (ANIC); 1♀, 1 km S of Cahills Crossing, E Alligator Riv, 3.XI.1972, Colless (ANIC); 1♀, 5 km NNW of Cahills Crossing, E Alligator Riv, 8.VI.1973, Colless (ANIC); 1♂, 7 km NW by N Cahills Crossing, E Alligator Riv, 4.XI.1972, Colless (ANIC); 1♂, Casuarina Beach, 22.X.1972, Colless (ANIC); 2♂ ♀,

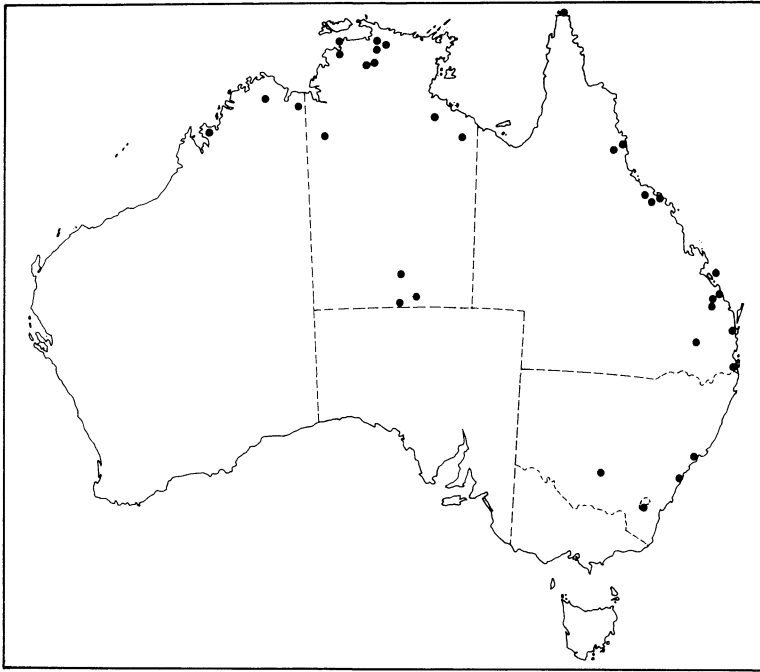


FIG. 11. Map of Australia, showing distribution of *Geron chrysonotum*.

Cooper Crk, 11 km S by W Minbuwah Rock, 3.VI.1973, Colless (ANIC); 2♂, Cooper Crk, 19 km E by S Mt Borradaile, 5.VI.1973, Colless (ANIC); 1♂, Elizabeth Riv, 25 mi [40.0 km] S of Darwin, 18.IX.1972, R.W. Matthews (ANIC); 1♂, 47 km SW by W Finke, 1.X.1972, Z. Liepa (ANIC); 1♂, Jim Jim Crk, 20 km WSW Mt Cahill, 20.XI.1972, Colless (ANIC); 2♂, Koongara, 15 km E of Mt Cahill, 12.VI.1973, Colless (ANIC); 1♀, Koongara area, 15–22 km E of Mt Cahill, 9.III.1973, Colless (ANIC); 1♀, Koongara area, 15–22 km E of Mt Cahill, 9.III.1973, Colless (ANIC); 1♂, 9 km N of Kulgera, 1.X.1972, Liepa (ANIC); 1♀, McDonnell Airstrip, Stuart Hwy, 25.XI.1972, Colless (ANIC); 1♀, Nourlangie Crk, 8 km N of Mt Cahill, 17.VI.1973, Colless (ANIC); 1♂, 5 mi [8.0 km] SW of Wave Hill Police Stn., 17.30S/130.47E, 12.VIII.1969, M. Mendum (ANIC); Australian Capital Territory: 1♀, Black Mt, 18.I.1967, I.F.B. Common (ANIC); New South Wales: 1♀, nr Catherine Hill Bay, 60 m, 2.XII.1962, E.S. Ross & D.Q. Cavagnaro (CAS); 1♀, Deep Crk, Narrabeen, 28.XII.1961, Colless (ANIC); 1♂, 8 mi [12.8 km] E of Rankin's Springs, 15.XII.1950, K.R. Norris (ANIC); Queensland: 3♂♀, Chinchilla, 4.I.1928, 4.IV.1929, A.P. Dodd (ANIC); 1♂, Bowen, 25.IX.1950, E.F. Reik (ANIC); 2♂♀, N Bundaberg, 21.III.1972, H. Frauca (ANIC); 1♀, N Bundaberg, Wallum Reserve, IV.1972, Frauca (ANIC); 2♂♀, Burdekin Riv, 40 mi [64.0 km] W Collinsville, 15.IX.1950, Riek (ANIC); 2♂♀, Eidsvold, 8.IV.1929, 6.X.1929 (ANIC); 2♂, 5 mi [8.0 km] SW of Gordonvale,

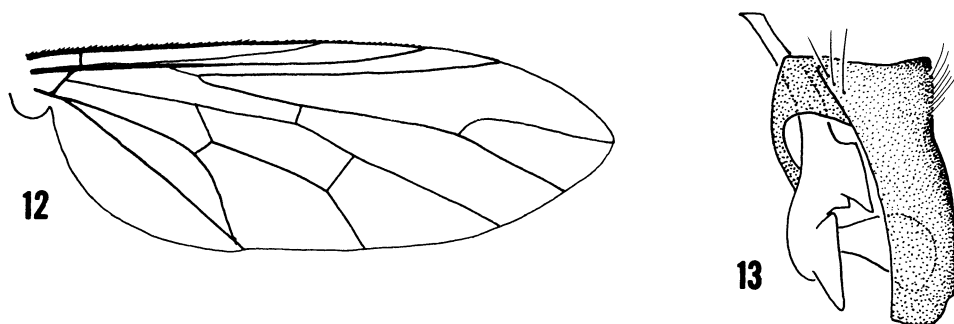


FIG. 12-13. 12, *Geron europacificus*, wing. 13, *Geron flavociput*, ♂ genitalia.

8-14.XI.1972, H. Evans (ANIC); 1♀, 7-14 mi [11.2-22.6 km] W of Herberton via Watsonville, 1.V.1967, Colless (ANIC); 1♂, Maroochy Agric. Stn., 16.X.1970, W. Mitchell (ANIC); 1♂, 17 mi [27.2 km] W of Monto, 500 m, 21.IX.1962, Ross & Cavagnaro (CAS); 1♀, Mt Walsh Natl. Park, Rockpool Gorge, 4.X.1976, Frauca (ANIC); 1♂, Nindooibah, 11.X.1954, Norris (ANIC); 2♂♀, Somerset, Cape York, 3.IX.1968, R. & E. Tovey (AMS); 4♂♀, Heron I, 17-22.XI.1955, I.M.M. (ANIC); Western Australia: 1♀, Carson Escarpment, 14.49S/126.49E, 15.VIII.1975, I.F.B. Common & M.S. Upton (ANIC); 1♀, 8 km S of Cape Berthelot, West Kimberley, 19.IV.1977, Colless (ANIC); 3♀, Drysdale Riv, 15.02S/126.55E, 3-8.VIII.1975, Common & Upton (ANIC); 1♀, Wyndham, K.R.S., 7.IX.1953, R. Lukins (ANIC).

Distribution (FIG. 11). Australia (Australian Capital Territory, New South Wales, Northern Territory, Queensland, Western Australia).

Relationships. *Geron chrysonotum* is closest in appearance to *G. australis* and can be separated from it by the dense golden tomentum on the dorsum of the thorax and abdomen.

Remarks. Specimens identified as *G. chrysonotum* in this study were recorded by Evans & Matthews (1973) as being prey of *Bembix littoralis* in Queensland and *B. variabilis* in Northern Territory.

***Geron* (*Geron*) *europacificus* Evenhuis, new species** FIG. 12

♀. *Head*: black, face and oral margin bare; frons sparse white tomentose; vertex with few black hairs; occiput white to pale yellow pilose, sparse pale yellow tomentose; gula white pilose; antennal segments I and II brown pilose; segment III bare; antennal ratio: 2:1:4.5. *Thorax*: scutum and scutellum black, sparse white pile overlying fine white to pale yellow tomentum; pleura brownish black, sparse white pilose and tomentose; halter stem brownish yellow, knob brown on dorsum, tan ventrally. *Legs*: coxae and femora black; coxae white pilose and tomentose; femora white pilose ventrally; fore and mid tibia tan, bare; hind tibia black, bare; tarsi brown to black, bare. *Wing* (FIG. 12): tinted light smoky yellow-brown; veins brown; r-m crossvein slightly beyond middle of discal cell; vein closing apex of discal cell straight; squama brown, fringe white. *Abdomen*: tergite I brown, white pilose; tergites II-VII black, sparse white to pale yellow pile overlying sparse mat of pale yellow to yellow recumbent pile; sternites black, sparse erect white pile overlying white recumbent pile; apex black, white pilose. *Genitalia*: not dissected.

Length. 2.5 mm.

♂. Unknown.

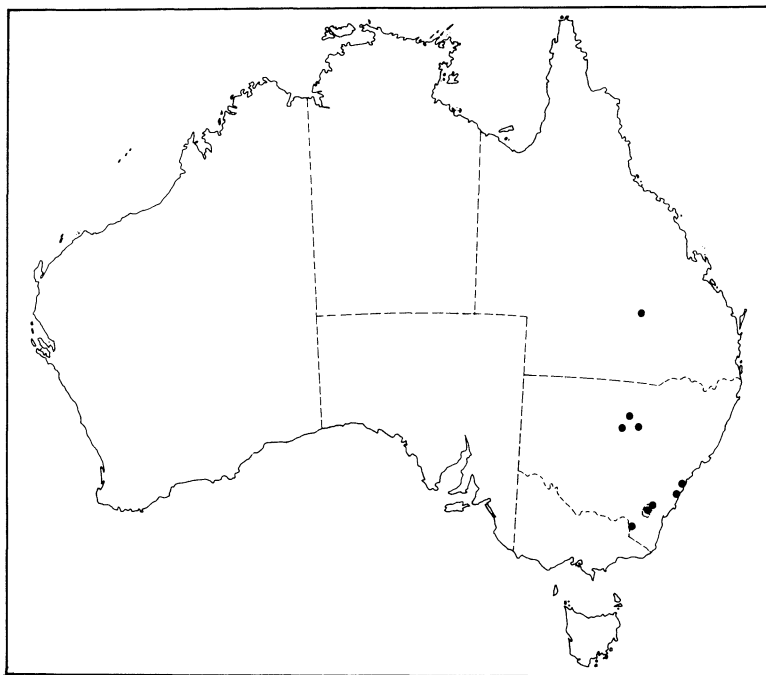


FIG. 14. Map of Australia, showing distribution of *Geron flavociput*.

Holotype ♀, SOCIETY IS: Tahiti: Papeete, III.1959, N.L.H. Krauss (BISHOP 11,391).

Relationships. This species is closest in appearance to *G. aaptis* from the Loyalty Is and can be separated from it by the location of the r-m crossvein beyond the middle of the discal cell.

***Geron (Geron) flavociput* Evenhuis, new species** FIG. 13–14

♂. *Head*: face and oral margin brown, bare; frons black, bare; vertex black, black pilose; occiput black, black hair posterior to vertex, pale yellow elsewhere, white scales ventrolaterally; gula gray, white pilose; antennal segment I with brown pile $\frac{2}{3}$ as long as segment; segment II with brown pile $\frac{1}{2}$ as long as segment; segment III bare; antennal ratio: 2.5:1:4. *Thorax*: scutum and scutellum black, white to pale yellow pile overlying recumbent golden tomentum; pleura gray to black, white pilose and tomentose; halter stem yellow, knob dark brown. *Legs*: coxae gray, white pilose and tomentose laterally; fore femur black, sparse white scales; mid and hind femora orange basally becoming black apically, black hair ventrally, orange scales dorsally; tibiae and tarsi black to brown, bare. *Wing*: hyaline; veins brown; r-m crossvein at middle of discal cell; vein closing apex of discal cell sigmoid; R_4 curved upward at wing margin; squama brown, fringe white. *Abdomen*: tergites black, white to pale yellow pile overlying mat of golden recumbent pile; sternites gray, white pile overlying white tomentum; apex black, intermixed black and white pilose. *Genitalia* (FIG. 13): basistylus linear-ovate, membranous at apex with short hairs ventrally and laterally at contact with dorsolateral rami; dorsolateral rami broad at contact with basistylus, thin near epiphallus; epiphallus slender, straight to aedeagal tip; tip of aedeagus truncate; basal apodeme club-shaped.

Length. 5.8–7.3 mm.

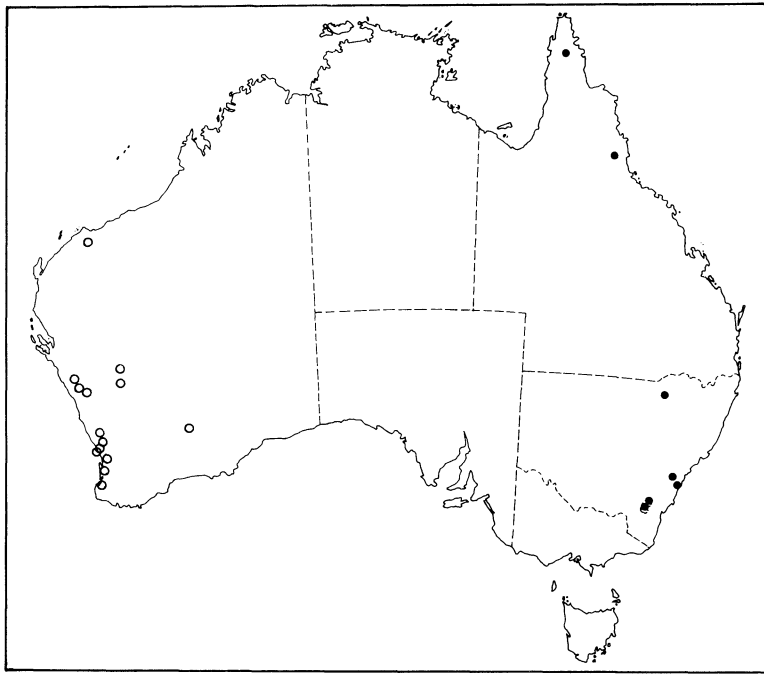


FIG. 15. Map of Australia, showing distribution of *Geron fumipennis* (dots) and *G. karakara* (circles).

♀. Similar to ♂ except for following: frons, face and oral margin gray; frons sparse white tomentose; antennal segment I with white pile; halter knob lighter brown than in ♂.

Holotype ♂, AUSTRALIA: Australian Capital Territory: Canberra, 20.II.1959, Z. Liepa (ANIC); allotype ♀, New South Wales: Trangle-Nyngan, 21.X.1949, S.J. Paramonov (ANIC). Paratypes: AUSTRALIA: Australia Capital Territory: 1♂, Black Mt, 23.I.1930, L. Graham (ANIC); 1♀, Black Mt, Exp. Plots, 26.III.1930, A. Tonnoir (ANIC); 2♂, Blundell's, 23.III.1930, 13.II.1948, M. Fuller, S. J. Paramonov (ANIC); 4♂ ♀, Canberra, 15.I.1934, 20.II.1959, I.M. Mackerras, Z. Liepa (ANIC); 1♂, Uriarra State Forest, 14.II.1965, Liepa (ANIC); New South Wales: 1♂, nr Bourke, 26.X.1949, Paramonov (ANIC); 1♀, Como Bay, 21.XII.1931 [no further data] (ANIC); 1♂, Mt Boppy, nr Cobar, 25.XI.1949, Paramonov (ANIC); 1♀, National Park, 4.XII.1925, Mackerras & Gundamair (ANIC); 1♂, Wilson's Val, Snow Mts, 16.II.1963, D.K. McAlpine (AMS); Queensland: 1♂, Meteor Downs nr Springsure, 18.XI–3.XII.1930, Mackerras (ANIC). Undetermined states: 2♂ ♀, Broadmeadows, 17.I.1919, 18.I.1921, F.P. Spry (ANIC); 1♂, Coree Crk, 5.III.1930, J.W. Evans (ANIC).

Distribution (FIG. 14). Australia (Australian Capital Territory, New South Wales, Queensland).

Relationships. *Geron flavocciput* can be separated from its apparent closest relative,

G. chrysonotum, by the hind leg coloration and scale color as well as by the yellow occipital pile.

Geron (*Geron*) *fumipennis* Evenhuis, new species FIG. 15–16

♂. *Head*: face, frons and oral margin brown, bare; vertex black, black pilose; occiput black, black pilose posterior to vertex, white pilose elsewhere; antennae brown; segments I and II with short black and white pile; segment III bare; antennal ratio: 2:1:4. *Thorax*: black, sparse white to yellow pilose; halter stem brown, knob yellow. *Legs*: coxae black, white pilose; femora brown, white pilose ventrally; tibiae and tarsi brown, bare. *Wing* (FIG. 16): tinted smoky brown; veins yellow brown; r-m crossvein at middle of discal cell; vein closing apex of discal cell sigmoid; squama brown, fringe white. *Abdomen*: tergites black, sparse white pilose; sternites brown to black, sparse white pilose. *Genitalia*: not dissected.

Length. 2.3–2.9 mm.

♀. Similar to ♂ except for following: frons and face black; halter stem and knob brown.

Holotype ♂, AUSTRALIA: Queensland: Redlynch, 13.X.1938, Papuan-Australian Exped. (BMNH); allotype ♀, X.1913, E. Brunetti [no further data] (BMNH). Paratypes: AUSTRALIA: Queensland: 4♂ ♀, same data as holotype; 6♂ ♀, same data as allotype; 1♀, Claudie Riv, 1 mi [1.6 km] W of Mt Lamont, 20.XII.1971, McAlpine, G.A. Holloway & D.P. Sands (AMS); Australian Capital Territory: 2♀, Black Mt, 10.XII.1930, A.L. Tonnoir (ANIC); 2♀, Blundell's, 18.II.1931, 6.I.1961, L.F. Graham & D.H. Colless (ANIC). New South Wales: 1♀, Dandahara Crk, Gwydir Hwy, 1000 m, 29.XI.1962, E.S. Ross, D.Q. Cavagnaro (CAS); 1♀, National Park, 18.I.1964, D.K. McAlpine (AMS); 1♀, Wentworth Falls, Blue Mts, 22.I.1963, McAlpine (AMS).

Distribution (FIG. 15). Australia (Australian Capital Territory, New South Wales, Queensland).

Relationships. *Geron fumipennis* can be separated from its congeners by its small size and by the smoky brown tinting of the wings.

Geron (*Geron*) *fusciscelis* Evenhuis, new species

♀. *Head*: black; vertex and ocellar tubercle with few black hairs; frons with intermixed black and white scales; base of antennae with tuft of pale yellow to golden scales; oral margin dusted gray, bare; occiput sparse gold and white tomentose, white to pale yellow pilose; antennae black; segment I with short black hair as long as 2nd segment; segment II with short black hair at apex; segment III bare; antennal ratio: 2:1:4. *Thorax*: scutum and scutellum black; scutum with short white pile overlying sparse golden tomentum; scutellum with sparse long white pile overlying golden tomentum; pleura gray, white pilose above and anteriorly, bare elsewhere; halter yellow. *Legs*: brown to black; coxae and femora with white scales, white pilose ventrally; tibiae and tarsi bare. *Wing*: hyaline; veins brown; R_4 parallel with R_5 to wing margin; r-m crossvein at middle of discal cell; vein closing apex of discal cell slightly sigmoid; squama yellowish, fringe white. *Abdomen*: tergite I and lateral portion of tergite II gray; tergites II–VII black; tergum sparse golden tomentose and white pilose; sternites brown with white pile overlying white tomentum; apex brown with yellow hair. *Genitalia*: not dissected.

Length. 3.0 mm.

♂. Unknown.

Holotype ♀, unique, SOCIETY IS: Tahiti: Papeete, III.1969, N.L.H. Krauss (BISHOP 11,392).

Relationships. *G. fusciscelis* is separated from its closest apparent relative, *G. mysticus*, n. sp., by the presence of intermixed black and white tomentum on the frons.

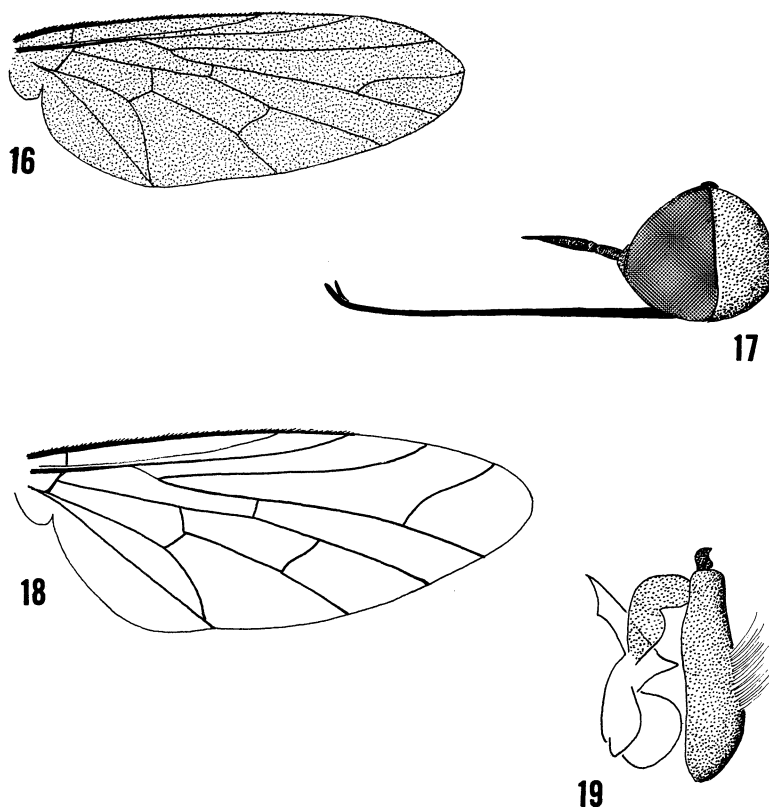


FIG. 16-19. 16, *Geron fumipennis*, wing. 17, *Geron inflatus*, ♀ head. 18-19, *Geron karakara*: 18, wing; 19, ♂ genitalia.

***Geron (Geron) inflatus* Evenhuis, new species** FIG. 17

♀. *Head* (FIG. 17): face, frons and oral margin gray, bare; vertex brown with few black hairs; occiput brown, expanded posteriorly more than normal, sparse white to pale yellow pilose and tomentose; gula gray, white pilose; antennae black; segments I and II orange-yellow pilose; segment III bare; antennal ratio: 2:1:3.5. *Thorax*: scutum and scutellum blackish brown; sparse white pilose; pleura gray-black, white pilose and tomentose; halter stem whitish yellow, knob yellow. *Legs*: coxae gray, white tomentose and pilose laterally and ventrally, bare elsewhere; fore and mid femora black with sparse white scales; hind femur brown with sparse white scales; tibiae and tarsi brown, bare. *Wing*: tinted light smoky yellow-brown; veins brown; r-m crossvein slightly beyond middle of discal cell; vein closing apex of discal cell sigmoid; R_4 curved upward at wing margin; squama tan with white fringe. *Abdomen*: tergites dark brown with sparse white pile overlying shorter recumbent white to pale yellow pile; sternites orange-brown, dense white pilose and tomentose; apex brown, pale yellow pilose. *Genitalia*: not dissected.

♂. Unknown.

Length. 2.0 mm.

Holotype ♀, and 6♀ paratypes, AUSTRALIA: Western Australia: Rottnest I, 23.II.1936, K.R. Norris (ANIC).

Distribution. Rottnest I, Western Australia.

Relationships. *Geron inflatus* is similar in appearance to many of the other smaller representatives of this subgenus in the Australian Region, such as *G. fumipennis* and *G. aaptis*, but can be separated from them by the prominent development posteriorly of the occiput.

Geron (Geron) karakara Evenhuis, new species FIG. 15, 18, 19

♂. *Head:* face and frons tan to gray; frons sparse white tomentose; face bare; oral margin gray-black, bare; occiput gray, whitish yellow pilose and yellow tomentose; gula gray, white pilose; antennal segment I tan, white pilose above, black below; antennal segments II and III black, segment II short black pilose distally, segment III bare; antennal ratio: 2:1:3.5. *Thorax:* scutum and scutellum blackish brown, white pile overlying sparse golden tomentum; pleura gray, white pilose and tomentose; halter stem yellow, knob yellowish brown. *Legs:* coxae gray, white pilose; femora gray-brown, white pilose ventrally and dense white scales along entire length; fore and hind tibiae and tarsi brown, sparse white scales; mid tibia orange-brown, sparse white scales; mid tarsi brown, bare. *Wing* (FIG. 18): hyaline; veins brown, r-m crossvein slightly beyond middle of discal cell; R_4 perpendicular to R_{4+5} at junction, slightly curved upward at wing margin; squama brown, fringe white. *Abdomen:* tergites blackish brown, white pilose and golden tomentose; sternites gray, dense white pilose and tomentose; apex brown, dense white pilose. *Genitalia* (FIG. 19): basistylus linear with long hairs ventrally; dististylus short, recurved ventrally; dorsolateral rami broad; epiphallus broad, straight; tip of aedeagus sharply truncate; basal apodeme short, broad.

Length. 5.0–5.3 mm.

♀. Similar to ♂ except for following: frons with dense argentous tomentum; scutum, scutellum and abdominal tergum dense pale yellow pilose, golden tomentum absent; legs more orange than in ♂; halter knob yellow-white.

Holotype ♂, AUSTRALIA: Western Australia: 30 mi (48 km) S of Mendurah, 13.I.1971, G.A. Holloway & H. Hughes (AMS). Paratypes: 5♂ ♀, topotypic, collected with holotype. Other paratypes: AUSTRALIA: Western Australia: 4♂ ♀, 37 mi (59.2 km) N of Ajana, 16.X.1970, D.H. Colless (ANIC); 1♀, 16 km N of Augusta, 21.III.1971, E.F. Riek (ANIC); 1♀, vic. Bindoon, 21.IX.1964, G.L. Bush (ANIC); 1♀, 45 mi (72.0 km) NW of Cue, 440 m, 5.X.1962, E.S. Ross & D.Q. Cavagnaro (CAS); 1♀, Dedari, 40 mi (64 km) W of Coolgardie, 11–21.I.1936, R.E. Turner (BMNH); 12♂ ♀, Fremantle, 3.II.1934, 6.X.1934, 14.X.1934, 3.II.1935, 10.II.1935, 23.II.1936, K.R. Norris (ANIC); 1♂, 6 mi [9.6 km] NE of Geraldton, 17.III.1953, J.H. Calaby (ANIC); 1♀, Millstream, 26.X.1970, Colless (ANIC); 1♀, 6 mi [9.6 km] W of Mullewa, 11.X.1969, H.E. Evans; 1♀, Perth, 25.II–12.III.1936, R.E. Turner (BMNH); 1♀, Perth, King's Park, 15.I.1934, Norris (ANIC); 1♀, Perth, Reabold Hill, 27.III.1971, Upton & Mitchell (ANIC); 3♂ ♀, Yanchep, 32 mi [51.2 km] N of Perth, 3–19.XII.1935, 29.I–8.II.1936, R.E. Turner (BMNH); 1♀, Rottneest I, 23.II.1936, Norris (ANIC); 1♂, Red Bluff, 15.XI.1971, N. McFarland (ANIC); 1♀, Serpentine Falls, Darling Ranges, 21.I.1971, Holloway & Hughes (AMS).

Distribution (FIG. 15). Western Australia.

Relationships. *Geron karakara* is closest in appearance to *G. chrysonotum* and can be separated from it by the absence of golden tomentum on the occiput and by the tan color of antennal segment I.

Remarks. One specimen determined as *G. karakara* in this study is recorded by Evans & Matthews (1973) as being prey of *Bembix mundurra* Evans & Matthews.

***Geron* (*Geron*) *malekulanus* Evenhuis, new species**

♀. *Head*: face and oral margin gray, bare; frons black, with triangle of gray from base of antennae to just below vertex, pale yellow tomentose above, tufts of argentous tomentum lateral to antennal bases; gula gray, white pilose; vertex black bare; occiput black, gray laterally, yellow pilose, white tomentose laterally; antennal segments I and II black with black pile; segment III missing; antennal ratio: 2:1:–. *Thorax*: scutum and scutellum black, sparse yellow pile overlying dense recumbent pile; pleura gray, white to pale yellow pilose and tomentose; halter stem brown at base becoming yellow apically, knob yellowish white. *Legs*: coxae gray, white pilose and tomentose; fore femur black with white scales; mid and hind femora orange basally, black apically; mid femur with white scales, white pilose ventrally; hind femur with yellow scales; tibiae and tarsi brown; fore and hind tibiae with sparse white scales; mid tibia bare; tarsi bare. *Wing*: hyaline; veins brown; r-m crossvein slightly beyond middle of discal cell; vein closing apex of discal cell sigmoid; squama brown, fringe white. *Abdomen*: tergites black; segment I dense yellow pilose; segments II–VII with sparse yellow pile overlying dense yellow recumbent pile; sternites gray with yellow pile overlying yellow tomentum; apex gray with short black spines. *Genitalia*: not dissected.

Length. 6.0 mm.

Holotype ♀, NEW HEBRIDES: Malekula I: Lakatoro, 0–200 m, II.1973, N.L.H. Krauss (BISHOP 11,393). 1 ♀ paratype, same data as holotype (BISHOP).

Distribution. New Hebrides.

Relationships. This species is closest in appearance to *G. karakara* and *G. chrysonotum*, both from Australia, and can be separated from both by the presence of dense pale yellow to white tomentum on the lateral gray portion of the occiput.

***Geron* (*Geron*) *mononesensis* Evenhuis, new species**

♀. *Head*: face and oral margin gray, bare; vertex brown, bare; frons gray, white tomentose lateral to antennal bases, becoming sparser toward vertex; occiput blackish brown, pale yellow pilose and sparse white tomentose; gula gray, white pilose; antennal segments I and II brown; segment I with brownish red pile ventrally, bare dorsally; segment II short brownish red apically; segment III black, bare; antennal ratio: 2:1:5. *Thorax*: scutum black, sparse white pile overlying golden yellow recumbent pile; scutellum dark brown, white pile overlying white recumbent pile; pleura gray, sparse white pilose and tomentose; halter stem yellow, knob white, darker dorsally. *Legs*: coxae gray, femora, tibiae and tarsi orange-yellow; coxae with white scales and pile laterally; femora with sparse white scales, white pile ventrally; tibiae and tarsi bare. *Wing*: hyaline; veins brown; r-m crossvein at middle of discal cell; vein closing apex of discal cell sigmoid; squama tan with white fringe. *Abdomen*: tergites brown; segment I dense white pilose; segments II–VII sparse white pilose overlying sparse white to pale yellow recumbent pile; sternites tan, sparse white pile overlying white tomentum; apex brown with short white pile.

Length. 6.5 mm.

Holotype ♀, INDONESIA: MOLUCCAS IS: Larat I, XII.1907, F. Muir (BISHOP 11,394). 1 ♀ paratype, same data as holotype (BISHOP).

Distribution. Moluccas Is.

Relationships. *Geron mononesensis* can be separated from its congeners by the brownish red antennal pile and by its relatively large size.

***Geron* (*Geron*) *mysticus* Evenhuis, new species** FIG. 20–21

♂. *Head*: face and oral margin gray, bare; frons gray-brown, pale yellow tomentose at antennal bases; vertex black, black hair; occiput black, predominantly black pilose, few yellow hairs mixed in below; gula black, white to pale yellow pilose; antennae black; segments I and II black pilose; segment III bare; antennal ratio: 2:1:5. *Thorax*: scutum and scutellum black, with pale yellow pile overlying sparse yellow

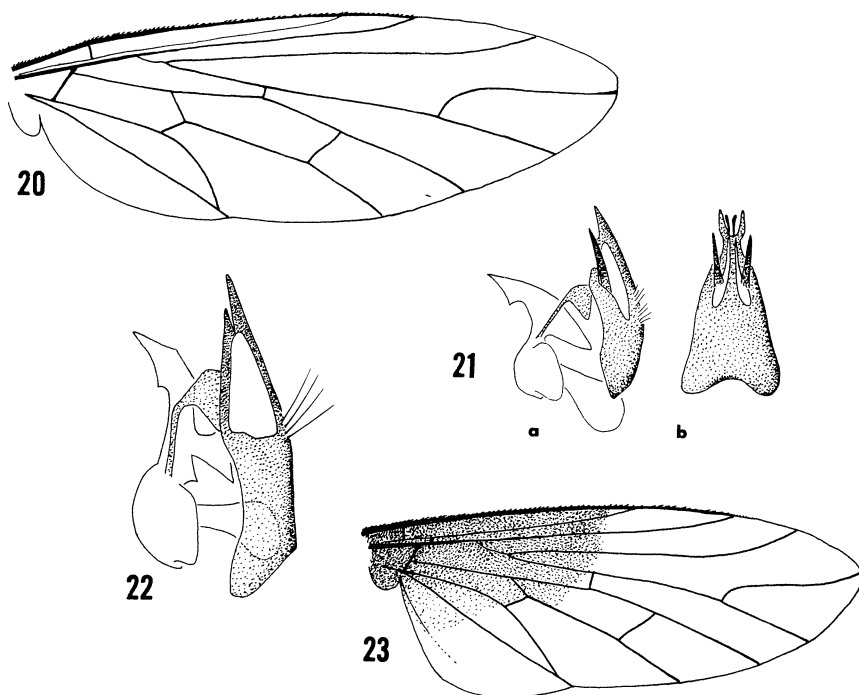


FIG. 20-23. 20-21, *Geron mysticus*: 20, wing; 21a, ♂ genitalia, lateral view; 21b, basistyli, ventral view. 22, *Geron neutralis*, ♂ genitalia. 23, *Geron paramonovi*, wing.

recumbent pile; scutellum with few black hairs on posterior margin; pleura gray-black, white to pale yellow pilose and white tomentose; halter yellow. *Legs*: coxae gray-black, white pilose and tomentose; femora black, with sparse white scales, white pilose basally, short black hair ventrally to apex; fore tibia blackish brown, bare; mid and hind tibiae and all tarsi brown, bare. *Wing* (FIG. 20): hyaline; veins brown; r-m crossvein at middle of discal cell; vein closing apex of discal cell sigmoid; R_4 curved upward at wing margin; squama brown, fringe white. *Abdomen*: tergite I gray-black, white pilose; tergites II-VII black, pale yellow pilose overlying yellow recumbent pile; sternites brown, white pile overlying sparse white tomentum; apex black, white pilose. *Genitalia* (FIG. 21): basistylus linear-ovate with pair of spines lateral to dististyli; dististyli short, tapered to apex, $\frac{1}{2}$ the length of basistylar spines; dorsolateral ram thin at junction with epiphallus, enlarging dorsally at contact with basistylus; lateral rami short, flat; aedeagus tapered at tip; basal apodeme ovate.

♀. Similar to ♂ except for the following: frons gray, sparse yellow tomentose; legs dark brown; abdominal tergites black, gray laterally; apex of abdomen gray, black pilose.

Length. 2.7-4.3 mm.

Holotype ♂, NEW HEBRIDES: Efate I: Pango Pt, 0.50 m, 19.III.1970, N.L.H. Krauss (BISHOP 11,395); allotype ♀, Efati I: beach, forest, 21.II.1964, R. Straatman (BISHOP). Paratypes: NEW HEBRIDES: 6♂♀, topotypic, collected with the type; 1♀, Sivivi, 50-150 m, 27.II.1970, N.L.H. Krauss (BISHOP); 6♂♀, Vila, II.1970, II.1973, Krauss (BISHOP); 1♂, Havannah Harbor, 19.I.1973, Krauss (BISHOP); Aneityum I: 1♀, XI.1930, L.E. Cheesman (BMNH); Epi I: 1♂, 2.VII.1925, P.A. Buxton (BMNH);

Erromanga: 6♂♀, VII.1930, Cheesman (BMNH); Espiritu Santo I: 1♀, hill E of Luganville, 100 m, 6.IX.1957, J.L. Gressitt (BISHOP); Malekula I: 1♂, Atchin I, VII.1929, Cheesman (BMNH); 7♂♀, Lokotoro, II.1973, Krauss (BISHOP); 2♂♀, NE Malekula, VI.1929, VII.1929, Cheesman (BMNH); 7♂♀, Malua Bay, VI.1929, VII.1929, Cheesman (BMNH); Tanna I: 7♂♀, Lenakel, III.1970, I.1973, Krauss (BISHOP); 1♂, west coast, 7.III.1964, R. Straatman (BISHOP); Banks Is: Santa Maria I: 4♂♀, Nombur, 8.X.1922, 15.X.1922, 6.XI.1922, T.T. Barnard (BMNH); Vanua Lava I: 1♀, X.1929, L.E. Cheesman (BMNH).

Distribution. New Hebrides.

Relationships. Males of *Geron mysticus* are most similar in appearance to *G. neutralis*, n. sp., and can be separated by the predominantly black pile on the occiput. Females resemble females of *G. fusciscelis* from Tahiti, and are separated from those by the lack of black tomentum on the frons.

***Geron (Geron) neutralis* Evenhuis, new species** Fig. 22

♂. *Head:* face and oral margin gray, bare; frons gray, white tomentose at antennal bases; vertex black, brownish red pilose; occiput black, predominantly pale yellow to yellow pilose, few black hairs directly behind vertex; gula gray, white pilose; antennae black; segments I and II black pilose; segment III bare; antennal ratio: 2:1:5. *Thorax:* scutum and scutellum black, long white pilose overlying golden yellow recumbent pile, few black hairs intermixed on dorsum of scutum; pleura gray, white pilose and tomentose; halter brown. *Legs:* coxae gray, white pilose and tomentose; femora brownish black with white scales, white pile ventrally; tibiae and tarsi brownish black, bare. *Wing:* hyaline, veins brown; r-m crossvein slightly beyond middle of discal cell; vein closing apex of discal cell slightly sigmoid; squama brown, fringe white. *Abdomen:* tergite I gray, dense white pilose; tergites II–VII black, long white pilose overlying short recumbent yellow pile; sternites gray, white pilose; apex black; white pilose. *Gentalia* (FIG. 22): basistylus slender, tapering toward apex; dististylus long, blunt at tip; dorsolateral rami broad at contact with basistylus, thin near epiphallus; epiphallus short, broad, with dorsal projection near aedeagal tip; tip of aedeagus truncate; basal apodeme subrectangular.

♀. Similar to ♂ except for the following: frons white tomentose near vertex; scutum and scutellum with shorter white pile overlying sparse golden yellow recumbent pile; hind femur orange; abdominal segments IV–VII with dense mat of recumbent yellow pile.

Length. 2.7–4.3 mm.

Holotype ♂, NEW CALEDONIA: Plaine des Lacs, III.1959, N.L.H. Krauss (BISHOP 11,396). Allotype ♀, LOYALTY IS: Ouvea I: Fayaoue, 0–50 m, I.1969, Krauss (BISHOP). 5♂♀ paratypes, same data as allotype except XII.1968, I.1969. Other paratypes: NEW CALEDONIA: 9♂♀, Anse Vita, I.IV.1958, I.X.1958, 25.X.1958, I.XI.1958, 9.XI.1958, C.R. Joyce (BISHOP); 1♂, Canala, 11.XI.1958, Krauss; 4♀, Junction Humboldt and Kalouchola rivers, 100 m, 14.XII.1963, R. Straatman (BISHOP); 1♀, Mokoue to Dothio, 100–500 m, 20,22.III.1968, T.C. Maa (BISHOP); 9♂♀, Noumea, 20.II.1963, 28.II.1960, 23–26.II.1963, 22–23.XI.1963, J.L. Gressitt, Krauss, Straatman, C.M. Yoshimoto (BISHOP); 1♀, mt stream up Boulari Riv, 3.XI.1958, Joyce (BISHOP); 3♂♀, Thio, 11.XI.1958, Joyce (BISHOP); LOYALTY IS: Lifu I: 8♂♀, Cap des Pins, 18.XI.1949–18.I.1950, L.E. Cheesman (BMNH).

Distribution. New Caledonia and Loyalty Is.

Relationships. *Geron neutralis* is closest in appearance to *G. mysticus*. Males of *G.*

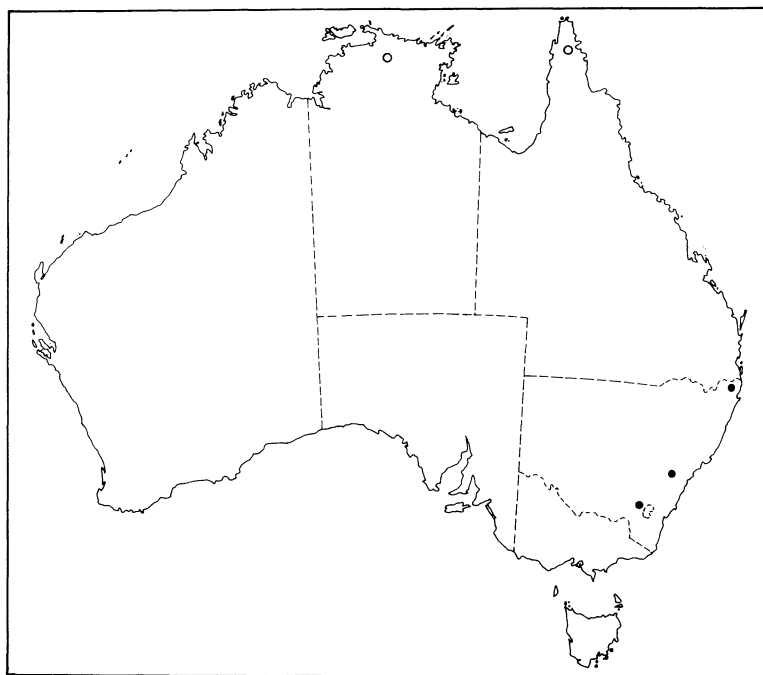


FIG. 24. Map of Australia, showing distribution of *Geron paramonovi* (dots) and *G. robustus* (circles).

neutralis can be separated from those of *G. mysticus* by the predominantly yellow pile on the occiput. Females can be separated by the hind femur coloration (orange in *G. neutralis*; black in *G. mysticus*).

Geron (*Geron*) *paramonovi* Evenhuis, new species FIG. 23–24

♂. *Head*: face and oral margin gray, bare; frons gray, silver-white tomentose lateral to antennal bases; vertex black, black pilose; occiput black, brown pilose; antennae black; segments I and II blackish brown pilose; segment III bare; antennal ratio: 2:1:4. *Thorax*: scutum and scutellum black, cinereous pile overlying sparse pale yellow tomentum; pleura gray, pale yellow to white pilose and tomentose; halter yellow. *Legs*: coxae gray, white pilose and tomentose; fore femur brown with white scales, white pile basally; mid femur orange with white scales; hind femur orange basally, black apically with white scales; fore and hind tibiae and tarsi brown, bare; mid tibiae and tarsi orange-brown, bare. *Wing* (FIG. 23): tinted brown basally extending to end of R_1 , r-m crossvein, and posterior crossvein; anal and axillary cells and rest of wing hyaline to wing margin; r-m crossvein slightly beyond middle of discal cell; vein closing apex of discal cell sigmoid; squama tan, pale yellow fringe. *Abdomen*: tergites black, gray laterally; tergite I white pilose; tergites II–VII sparse pale yellow erect pile overlying pale yellow tomentum; sternites gray, sparse pale yellow pilose and tomentose. *Genitalia*: not dissected.

♀. Similar to ♂ except for the following: frons shining black, silver tomentum at antennal bases and just below vertex, bare between; occiput black, yellow-brown pilose and golden tomentose; scutum and scutellum dense golden tomentose; halter orange-brown; abdominal segments I and II black, orange laterally; abdominal tergum dense golden tomentose, pale yellow laterally.

Length. 5.8–6.2 mm.

Holotype ♂ and allotype ♀, AUSTRALIA: New South Wales: Megalong, F.H. Taylor (ANIC). Paratypes: AUSTRALIA: New South Wales: 4♂♀, topotypic, collected with the types; 1♀, 20 mi [32.0 km] Glen Innes to Grafton H'way, 20.IV.1970, D.H. Colless (ANIC); 1♂, Wee Jasper, 29.I.1933, Fuller (ANIC).

Distribution (FIG. 24). Australia (New South Wales).

Relationships. This species is closest in appearance to *G. robustus*, n. sp., and is easily separated by the wing infuscation (extending up to the r-m crossvein in *G. paramonovi*, not quite reaching the r-m crossvein in *G. robustus*), by the hyaline anal and axillary cells, and by the scales on the frons limited to the antennal bases and to just below the vertex in females.

***Geron (Geron) robustus* Evenhuis, new species** FIG. 24, 25

♀. *Head*: face and oral margin gray-black, bare; frons gray-black, pale yellow to white tomentose at antennal bases becoming silver tomentose toward vertex; vertex black, black pilose; occiput black directly behind vertex, gray elsewhere, predominantly yellow pilose, few black hairs, fine white to yellow recumbent pile directly behind eyes; gula gray, white pilose; antennae black; segments I and II black pilose; segment III bare; antennal ratio: 3:1:5.5. *Thorax*: scutum and scutellum black; scutum with yellow erect pile overlying yellow recumbent pile, few black hairs intermixed on notum and postalar calli; scutellum yellow pilose and tomentose, black hairs on posterior margin; pleura gray, yellow pilose above, white pilose and tomentose elsewhere; halter stem yellow-orange, knob yellow. *Legs*: fore coxa gray-black, yellow-orange pilose and white tomentose; femora black; fore and mid femora with yellow and black pile intermixed ventrally, white and brown scales intermixed along entire length; hind femur with brown scales; tibiae and tarsi black, bare. *Wing* (FIG. 25): tinted brown basally; infuscation extending to end of Sc and just before r-m crossvein; anal and axillary cells infuscated light brown; rest of wing to margin hyaline; r-m crossvein just beyond middle of discal cell; R₄ curved upward at wing margin; squama brown with pale yellow fringe. *Abdomen*: tergites black, yellow to white pilose overlying yellow recumbent pile; sternites gray, yellow-orange and white pile intermixed, overlying intermixed yellow and white recumbent pile; apex black, white pilose. *Genitalia*: not dissected.

Length. 7.0 mm.

Holotype ♀, AUSTRALIA: Northern Territory: Baroalba Crk Gorge, 17–19 km E by N of Mt Cahill, 8.III.1973, D.H. Colless (ANIC). Paratypes: AUSTRALIA: 1♀, topotypic, collected with the type (ANIC); Queensland: 1♀, Claudie Riv, 3 mi [4.8 km] W of Mt Lamond, 13.I.1972, D.K. McAlpine, G.A. Holloway (AMS).

Distribution (FIG. 24). Australia (Queensland and Northern Territory).

Relationships. *Geron robustus* is similar in appearance to *G. paramonovi* and is easily separated from it by the basal tinting of the wing not quite extending to the r-m crossvein, the anal and axillary cells being infuscated brown, and the frons having scales along its entire length with no bare spot in between.

***Geron (Geron) terminatus* Evenhuis, new species** FIG. 26

♂. *Head*: face and oral margin gray-black, bare; frons black, bare; vertex black, brown pilose; occiput black, sparse pale yellow pilose; gula gray-black, white pilose; antennae black; segments I and II black pilose; segment III bare; antennal ratio: 2:1:4. *Thorax*: scutum and scutellum black, pale yellow pile overlying sparse white tomentum, few black hairs posteriorly on notum; pleura black, sparse white pilose; halter stem yellow at base, brown apically, knob brown. *Legs*: coxae black, white pilose basally; femora black, orange ventrally, short black pile ventrally; tibiae and tarsi brown, bare. *Wing*: faint smoky brown;

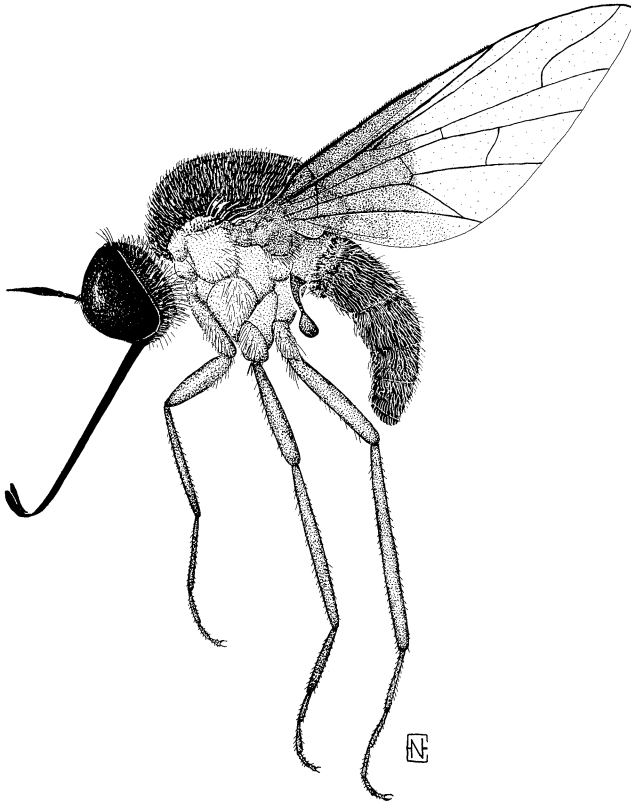


FIG. 25. Habitus of *Geron robustus*.

veins dark brown; r-m crossvein at middle of discal cell; vein closing apex of discal cell sigmoid; R_4 curved upward at wing margin; squama brown with white fringe. *Abdomen*: tergites black, sparse pale yellow pilose; sternites gray, sparse white pilose; apex black, black hairs. *Genitalia* (FIG. 26): basistylus linear-ovate, dististylus comprised of 3 short spine-like processes; dorsolateral rami uniformly thin from epiphallus to basistylus; tip of aedeagus truncate, sharp processes dorsally and ventrally at base; epiphallus broadly rounded.

♀. Similar to ♂ except for the following: frons black, sparse yellow tomentose; femora and tibiae brown-orange.

Length. 2.8–4.0 mm.

Holotype ♂, NEW HEBRIDES: Malekula I: Lakatoro, 0–200 m, III.1973, N.L.H. Krauss (BISHOP 11,397); allotype ♀, Efate I: Vila, II.1959, Krauss (BISHOP). Paratypes: NEW HEBRIDES: Efate I: 2♂, Pango Pt., 0–50 m, 19.III.1970, Krauss (BISHOP); 2♂♀, Vila, II.1959, II.1970, Krauss (BISHOP); Malekula I: 1♀, N of Lakatoro, 23–30.IX.1967, J. & M. Sedlacek (BISHOP); Tanna I: 1♂, Lenakel, 0–150 m, III.1970, Krauss (BISHOP); Banks Is: Santa Maria I, 1♀, Nombur, 1922, T.T. Barnard (BMNH).

Distribution. New Hebrides.

Relationships. *Geron terminatus* can be separated from its congeners by the all-black thorax and by the male genitalia.

***Plichtamyia* Evenhuis, new subgenus**

Characters distinguishing this subgenus from the nominate subgenus include 1st antennal segment more than $3\times$ length of 2nd segment; face below antennae shining brown; silver scales often present on frons above antennae and, less often, on occiput; male genitalia with apex of aedeagus rounded beaklike; basistylus usually more membranous apically than in *Geron* sensu stricto.

Species of this subgenus are found most commonly on the island groups surrounding Australia. Only 5 of the 13 species assigned to this subgenus are found in Australia. None of the Australian species in *Plichtamyia* or in *Geron* are found outside Australia. Interestingly, only 2 species of *Plichtamyia* are recorded from the relatively large land mass of New Guinea; however, this is most likely due to the lack of concentrated collecting for Bombyliidae.

Type of subgenus: *Geron dispar* Macquart, 1850: 122.

***Geron (Plichtamyia) albihalteris* Evenhuis, new species** FIG. 27

♂. *Head*: face shining black, bare; oral margin black, bare; frons black, pale yellow tomentum at antennal bases; vertex black, few black hairs; occiput black, black pilose above, light brown pilose elsewhere, few pale yellow scales laterally; gula black, yellow-brown pilose; antennae black; segments I and II short black pilose; segment III bare; antennal ratio: 3.5:1:5.5. *Thorax*: scutum and scutellum black; scutum with sparse white pile overlying intermixed yellow and silver recumbent pile; scutellum with long white pile overlying dense pale yellow recumbent pile; pleura black, sparse long white pilose; halter stem yellow, knob yellow-white. *Legs*: coxae black, white pilose and tomentose; femora black, fore femur with sparse white scales, white pile ventrally at base; mid and hind femora with sparse white scales; long white pile ventrally at base, short black hairs ventrally at apex; tibiae and tarsi brown, bare. *Wing*: hyaline; veins dark brown; r-m crossvein at middle of discal cell; vein closing apex of discal cell sigmoid; R_4 curved upward at wing margin; squama tan with white fringe. *Abdomen*: black; tergites long white pilose overlying short white recumbent pile; sternites with white pile overlying sparse white tomentum; apex black, white pilose. *Genitalia* (FIG. 27): basistylus linear-ovate with large ventrocaudal process; dististylus minute, hooked at tip; aedeagus beaked; dorsolateral rami strongly sclerotized at contact with basistylus, very thin toward contact with epiphallus.

♀. Similar to ♂ except for the following: frons shining black; scutum gray anteriorly and laterally; pleura and coxae gray; halter yellow-white.

Length. 5.0–5.3 mm.

Holotype ♂ (BISHOP 11,398), allotype ♀ (BISHOP), SOLOMON IS: Bellona I; western end, 0–100 m, 29.XII.1972, N.L.H. Krauss. Paratypes: SOLOMON IS: 3♂♀, topotypic, collected with the holotype; Guadalcanal I: 1♀, Honiara, 0–200 m, X.1972, Krauss (BISHOP); 1♀, Roroni, 35 km E of Honiara, 10 m, 10.V.1964, R. Straatman (BISHOP); Santa Isabel: 1♀, Kolotuve, Sukapisu, 20.VI.1960, C.W. O'Brien (BISHOP).

Distribution. Solomon Is.

Relationships. *Geron albihalteris* is closest in appearance to *G. bowdeni*, n. sp. from the Bismarck Arch. and can be separated from it by the hyaline wings and white to pale yellow halters.

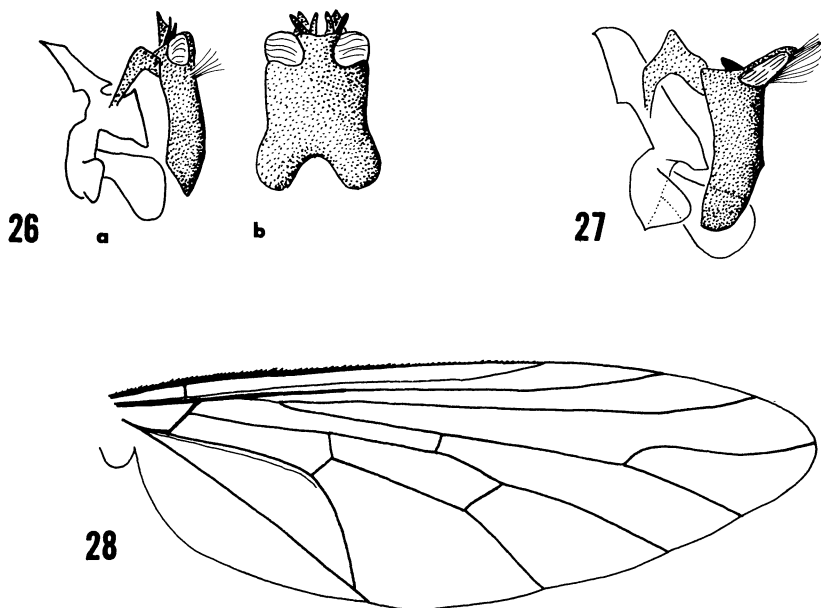


FIG. 26-28. 26, *Geron terminatus*, ♂ genitalia. 27, *Geron (Plichtamyia) albihalteris*, ♂ genitalia. 28, *Geron (Plichtamyia) bowdeni*, wing.

***Geron (Plichtamyia) amboinensis* Evenhuis, new species**

♀. *Head*: face shining black, bare; oral margin orange-yellow, bare; frons black, silver tomentose below vertex and along eyes becoming densest at antennal bases; vertex black, brown pilose; occiput black, yellow pilose, yellow tomentose laterally; gula gray, pale yellow to white pilose; antennal segment I orange-yellow, black pile above, white below; antennal segments II and III black; segment II with short black hair; segment III bare; antennal ratio: 3.5:1:5. *Thorax*: scutum and scutellum black, yellow pile overlying dense golden yellow recumbent pile; pleura gray, pale yellow pilose; halter stem yellow; knob tan. *Legs*: coxae gray, dense white pilose and tomentose; femora black with white scales, white pilose ventrally; fore tibia brown with dense white scales; mid tibia brown with sparse white scales; hind tibia orange with white scales; tarsi brown, bare. *Wing*: hyaline; veins yellow; r-m crossvein at a point $\frac{3}{5}$ beyond base of discal cell; vein closing apex of discal cell sigmoid; R_4 curved upward at wing margin; squama tan with white fringe. *Abdomen*: tergites black, yellow pile overlying dense golden yellow recumbent pile; sternites gray-black, white pilose and tomentose; apex black, pale yellow pilose.

♂. Similar to ♀ except for the following: pleura dense pale yellow to white pilose; scutum, scutellum and abdominal tergum without golden yellow recumbent pile.

Length. 6.0 mm.

Holotype ♀, INDONESIA: MOLUCCAS IS: Ambon I, XI.1908, F. Muir (BISHOP 11,399). **Allotype** ♂, same locality, III.1908 [no further data] (BISHOP).

Distribution. Ambon I.

Relationships. *Geron amboinensis* is closest in appearance to *G. sparsus* Bowden and can be separated from it by the dense white pile of the thorax, brown fore tibia and yellow to tan halter knobs.

***Geron (Plichtamyia) bowdeni* Evenhuis, new species** FIG. 28

♀. *Head*: face, frons and oral margin black, bare; vertex black, black pilose; occiput black, short black pilose above, white pilose elsewhere; gula gray-black, white pilose; antennal segments I and II brown, short black pilose; segment III black, bare; antennal ratio: 3.5:1:5.5. *Thorax*: black; scutum and scutellum sparse pale yellow pile overlying white recumbent pile; pleura sparse white pilose; halter stem brown, knob yellow-orange. *Legs*: coxae black, sparse white pilose, femora black, sparse white pilose; fore and hind tibiae brown, bare; mid tibia orange, bare; tarsi brown, bare. *Wing* (FIG. 28): tinted faint smoky brown; veins brown; r-m crossvein slightly before middle of discal cell; vein closing apex of discal cell sigmoid; R_4 curved upward at wing margin; squama dark brown with white fringe. *Abdomen*: black; tergites sparse white pilose; sternites sparse white pilose and tomentose; apex black, white pilose.

Length. 4.9–5.8 mm.

Holotype ♀, PNG: BISMARCK ARCH.: New Britain I: Rabaul, 0.50 m, XI.1971, N.L.H. Krauss (BISHOP 11,400).

Distribution. Bismarck Arch.

Relationships. This species can be separated from *G. albihalteris*, its closest relative, by the faint smoky brown tinting of the wings and the yellow-orange to orange halters. *G. albihalteris* is found in the Solomon Is.

***Geron (Plichtamyia) dispar* Macquart** FIG. 29–33

Geron dispar Macquart, 1850: 122.

Geron cothurnatus Bigot, 1892: 374.

♂. *Head* (FIG. 30): oral margin gray, bare; face gray-black, black pile at eye margins; frons black, dense silver tomentose at antennal bases; vertex black, black pilose; occiput black, black pilose along eye margin, yellow pilose elsewhere; gula black, intermixed yellow and black pilose; antennae black; segment I long black pilose; segment II short black pilose; segment III bare; antennal ratio: 4:1:6.5. *Thorax*: scutum and scutellum black, long dense yellow pile overlying golden yellow recumbent pile; black hairs on posterior margin of scutellum; pleura black anteriorly, gray elsewhere, yellow pilose; halter stem yellow, knob yellow ventrally, black dorsally. *Legs*: coxae gray, yellow pilose and white tomentose; fore femur black with white scales, black pilose ventrally; mid and hind femora black with yellow scales on anterior surface, long black pilose ventrally; fore tibia and tarsi black, bare; mid and hind tibiae and tarsi brown, bare. *Wing* (FIG. 29): tinted smoky brown to yellow; veins dark brown; r-m crossvein at middle of discal cell; vein closing apex of discal cell sigmoid; R_4 parallel with R_5 to wing margin; squama brown with yellow fringe. *Abdomen*: tergites black, yellow pile overlying dense yellow recumbent pile; sternites gray, white pile overlying sparse white tomentum; apex black, black pilose. *Genitalia* (FIG. 31): basistylus subrectangular; dististylus much reduced, vestigial; epiphallus as long as basistylus with pointed dorsal process extending backward from tip of aedeagus; aedeagus beaked; dorsolateral rami well developed at contact with basistylus.

♀. Similar to ♂ except for the following: frons shining black, silver tomentose below ocellar tubercle and at antennal bases; face shining black, bare; antennal segment I short black pilose; occiput black above, gray elsewhere with white pile and tomentum laterally, black pile restricted to behind vertex; pleura gray, white tomentose; mid and hind femora orange with white scales, white pile ventrally; abdominal tergite I gray to orange laterally; sternites dense white tomentose. *Genitalia* (FIG. 32): spermathecal reservoir loosely coiled; spermathecal duct extremely long, thin, flat; apical and basal valves subcylindrical; ejaculatory duct wider than basal and spermathecal ducts; basal duct $\frac{1}{2}$ as long as ejaculatory duct; vaginal apodeme as illustrated.

Length. 6.6–10.0 mm.

Holotypes of *G. dispar* and *G. cothurnatus* are deposited in the Muséum National d'Histoire Naturelle, Paris.

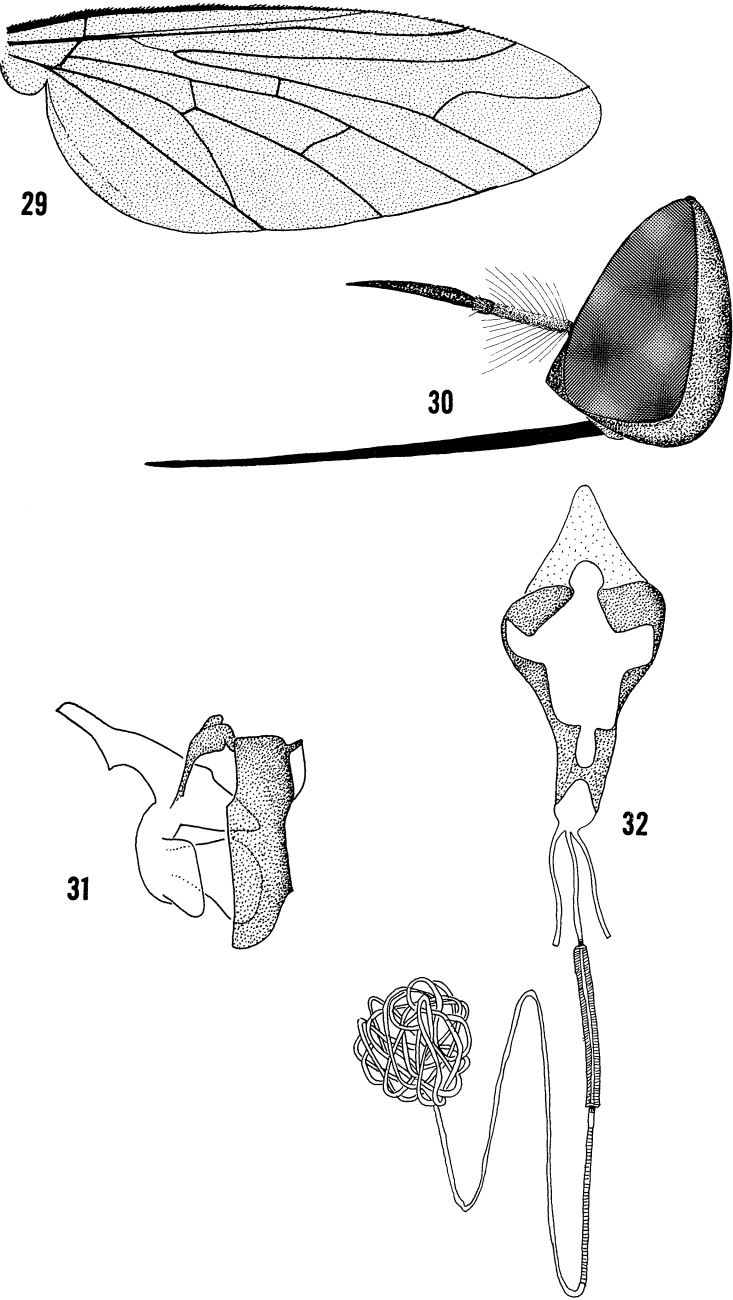


FIG. 29-32. *Geron (Plichtamyia) dispar*: 29, wing; 30, head; 31, ♂ genitalia; 32, ♀ genitalia.

Specimens examined. AUSTRALIA: Australian Capital Territory: 3♂♀, Bendora, 5.II.1952, 24.II.1959, S.J. Paramonov, Z. Liepa (ANIC); 7♂♀, Black Mt, 5.I.1959, 12.I.1968, 20.I.1963, 16.II.1959, 19.III.1968, 18.IV.1968, I.F.B. Common, Liepa, Bancroft & Mackerras (ANIC); 5♂♀, Blundell's, I.1931, 21.I.1931, 28.I.1948, 6.II.1948, T. Graves, W.K. Hughes, S.J. Paramonov (ANIC); 2♀, Canberra, 30.III.1961, IV.1950, A.W.G., K.R. Norris (ANIC); 2♂♀, 31 mi [49.6 km] N of Mt Coree, 3000 ft [914.4 m], 7.II.1957, Common (ANIC); 1♀, Corin Dam, 35 mi [56.0 km] W of Canberra, 9.III.1970, R.W. Matthews (ANIC); 1♀, 1 km N of Cotter Dam, Mt MacDonald, 29.III.1974, Liepa (ANIC); 1♀, Mt Gingera, 24.II.1959, Paramonov (ANIC); 1♂, Lee's Spring, 23.I.1952, Norris; 2♂♀, National Park, Gundamain, 12.IV.1924, 25.VI.1925, Mackerras (ANIC); 2♂♀, Uriarra State Forest, 14.II.1965, Liepa (ANIC); New South Wales: 1♂, Upper Allyn Riv, 1500 ft [458 m], 7.II.1961, Common & M.S. Upton (ANIC); 1♀, Brown Mt, Bega Distr, 10.III.1961, Liepa (ANIC); 2♂, Brown Mt, Rutherford Crk, 15.I.1969, 19.I.1961, J.C. Cardate & S.R. Curtis, D.H. Colless (ANIC); 1♂, 3 km S of Cooma, 30.I.1974, Norris (ANIC); 1♀, Jenolan Caves, 30.XII.1959, E.F. Riek (ANIC); 3♀, Kanagra Walls, 13–14.IV.1964, A.C. Dyce (ANIC); 1♀, Katoomba, Blue Mts, 3000–3300 ft [915–1003.2 m], I.1912, Dodd, Jr. (BMNH); 1♀, Narara, 3.II.1946, A. Burns (ANIC); 1♀, Nimmitabel, 18.I.1961, Colless (ANIC); 1♂, 4 mi [6.4 km] E of Nimmitabel, 8.III.1963, Liepa (ANIC); 6♂♀, experimental area, 3 mi [4.8 km] SE of Pilot Hill, Bago Forest, Batlow, 2.III.1957, 3.III.1956, 4.III.1957, 10.III.1957, 14.III.1957, T.G. Campbell (ANIC); 1♂, Royal National Park, 31.XII.1973, D.K. McAlpine (AMS); 2♀, Styx Riv, 21.XII.1959, Riek (ANIC); 1♀, Sydney, N.B. Tindale (SAM); 4♀, Mt Victoria, 6.XII.1953, Riek (ANIC); 1♂, Wee Jasper, 5.I.1936, Fuller (ANIC); Queensland: 3♀, Amiens, 18.XII.1967, C.F. Ashby (ANIC); 2♀, Bluff Range, Biggenden, X.1972, 7–10.I.1972, H. Frauca (ANIC); 1♀, Bluff Range, Biggenden, Mt Walsh, 2200 ft [670.5 m], 3.I.1972, Frauca (ANIC); 4♂, Bribie I, 29.VIII.1918, H. Hacker (QMFV); 3♀, Brisbane, 18.VIII.1962, 3.XII.1962, C.F. Ashby (ANIC); 1♂, Carnarvan Ra., II.1944, N. Geary (AMS); 2♂♀, Eidsvold, I.1923, IV.1962, Bancroft (ANIC); 1♀, Gladstone, J.E. Philip (SAM); Victoria: 1♂, 1912, C. French (BMNH); 1♀, Boolara, 8.I.1962, G. Bornemissza (ANIC); 4♂♀, Fern Tree Gully, 1.II.1915, 15.II.1919, F.S. Spry & C.E. Cole (ANIC); 2♂♀, Gunyah, III.1955, 6.III.1962, Bornemissza (ANIC); 2♂♀, Narra Warren, nr Melbourne (ANIC); 1♀, Tooradin (SAM); 1♂, Wingan, 2.III.1946, A. Burns (ANIC). TASMANIA: 6♂♀, [no further data] (SAM); 2♀, 7.I.1948, Riek (ANIC); 1♂, 12 mi [19.2 km] S of Deloraine, 2200 ft [670.5 km], 5.III.1963, Common & Upton (ANIC); 1♀, Eagle Hawk Neck, 20.I.1949, Riek (ANIC); 1♂, Hillwood, 7.II.1915 (SAM); 6♂♀, Hobart, 3.I.1923, 13.I.1917, 21.I.1917, 4.III.1917, 14.III.1917, A. Tonnoir, C.E. Cole (ANIC); 1♀, Launceston, 9.III.1914 (ANIC); 4♂♀, Launceston [no collectors] (SAM); 1♂, nr Oxford, 20.I.1948, Key, Carne, Kerr (ANIC); 1♀, St. Patricks Riv, 8.II.1914 [no collectors] (SAM); 1♀, Mt Wellington, 3200 ft [976 km], 12.I.1960, D.K. McAlpine (AMS); 1♂, Wilmot, 8.I.1923, A. Tonnoir (ANIC).

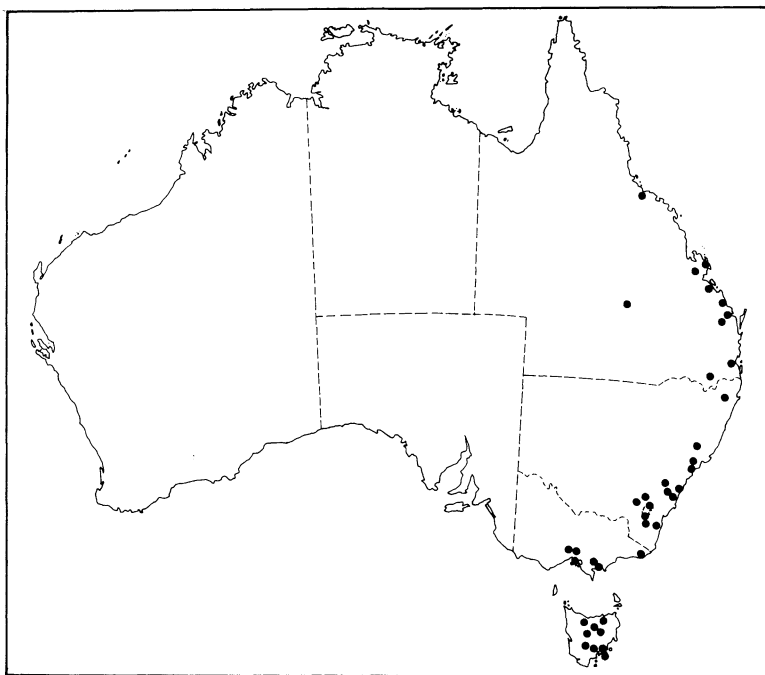


FIG. 33. Map of Australia, showing distribution of *Geron (Plichtamyia) dispar*.

Distribution (FIG. 33). Australia (Australian Capital Territory, New South Wales, Queensland, Victoria), Tasmania.

Relationships. *Geron dispar* appears closest to *G. nigrocciput*, n. sp. It is recognized by the pile on the face near the eye margins (the pile being absent in *G. nigrocciput*). Males of *G. dispar* also tend to have longer pile on antennal segment I than do males of *G. nigrocciput*.

Remarks. One specimen from Corin Dam, Australian Capital Territory, was identified in this study as *G. dispar* and was recorded by Evans & Matthews (1973) as being prey of *Bembix furcata*.

***Geron (Plichtamyia) erythroccipitalis* Evenhuis, new species** FIG. 34

♀. *Head*: face and frons shining black, bare; oral margin dull black, bare; vertex black, few black hairs; occiput black, reddish-brown pilose; gula gray-black, white pilose; antennal segments I and II brown, black pilose; segment III black, bare; antennal ratio: 4:1:7. *Thorax*: scutum and scutellum black, sparse yellow pile overlying golden recumbent pile; pleura gray-black, white pilose; halter brown. *Legs*: coxae gray, white pilose and tomentose; fore femur dark brown with white scales, white pilose ventrally at base; mid femur brown with sparse white scales; hind femur light brown with sparse white scales, white pilose ventrally; tibiae and tarsi light brown, bare. *Wing*: tinted light smoky yellow; veins brown; r-m crossvein at middle of discal cell; vein closing apex of discal cell sigmoid; R_4 slightly curved upward at wing margin; squama brown with white fringe. *Abdomen*: tergites black, sparse yellow erect pile overlying golden recumbent pile; sternites blackish brown; sparse short white pilose; apex gray-black, brown pilose.

♂. Similar to ♀ except for the following: occiput with no yellow pile; scutum and scutellum with short black pile intermixed with yellow pile; wing smoky yellow-brown. *Genitalia* (FIG. 34): basistylus subrectangular, squared apically, tapered basally; dististylus short, hooked; aedeagus beaked apically; dorsolateral rami strongly sclerotized at contact with basistylus, tapered toward contact with epiphallus.

Length. 5.0–5.8 mm.

Holotype ♀, SOLOMON IS: Guadalcanal I: Honiara, 0–200 m, X.1972, N.L.H. Krauss (BISHOP, 11,401); allotype ♂, Poha Riv, 5 m, 2.VII.1956, J.L. Gressitt (BISHOP). Paratypes: SOLOMON IS: Guadalcanal I: 2♀, Poha Riv, 5 m, 2.VII.1956, J.L. Gressitt (BISHOP); Rennell: 1♀, Te-Uhungango, 0–100 m, 28.VII.1972, N.L.H. Krauss (BISHOP); PNG: N SOLOMON IS: Bougainville: 1♀, Kokure, 690 m, 6.VIII.1956, J.L. Gressitt (BISHOP).

Distribution. Solomon Is.

Relationships. *Geron erythroccipitalis* can be separated from its congeners by the reddish brown occipital pile and brown ground color of antennal segments I and II. This species is one of the larger species found on islands outside of Australia. The only larger species are *G. malekulanus* and *G. monoesensis*, which belong to *Geron* sensu stricto.

***Geron (Plichtamyia) hemifuscis* Evenhuis, new species** FIG. 35

♀. *Head*: face rounded, shining blackish brown, bare; oral margin black, bare; frons black, silver tomentose lateral to antennal bases; vertex black, black pilose; occiput black, intermixed black and brown pilose; gula black, black pilose; antennae black; segment I long black pilose above, brown below; segment II short black pilose; segment III missing; antennal ratio: 6:1:–. *Thorax*: scutum and scutellum black; scutum predominantly reddish brown pilose, few black hairs intermixed on dorsum; scutellum predominantly black pilose, reddish brown pile intermixed; pleura blackish brown, intermixed black and brown pilose; halteres brown. *Legs*: coxae black, black pilose basally; fore and mid femora black with white scales, black pilose ventrally; hind femur brown, with white scales, black pile ventrally; tibiae and tarsi black, bare. *Wing* (FIG. 35): infuscated dark brown basally; tinting extending to end of Sc, r-m crossvein, and end of 1A veins; anal and axillary cells infuscated brown; rest of wing to posterior margin hyaline; veins dark brown; r-m crossvein at middle of discal cell; R₄ curved upward at wing margin; squama dark brown with brown fringe. *Abdomen*: black; tergites dense reddish brown pilose with black pile intermixed; sternites sparser reddish brown pilose than tergites; apex black, black pilose.

Length. 6.0 mm.

Holotype ♀, PNG: NEW GUINEA (NE): Madang Prov., Wanuma, 600–720 m, VIII.1968, N.L.H. Krauss (BISHOP 11,402).

Relationships. *Geron hemifuscis* is closest in appearance to the Australian *G. nigralis* Roberts and can be separated from it by the r-m crossvein being located at the middle of the discal cell and by the reddish brown pile of the 1st abdominal tergite.

***Geron (Plichtamyia) nigralis* Roberts**

Geron nigralis Roberts, 1929: 570.

The original type-series of *G. nigralis* Roberts consisted of just 4 males. No females of *G. nigralis* were known at that time. The material examined in this study provides 1 additional male and 3 females of this species. A redescription of the male and first

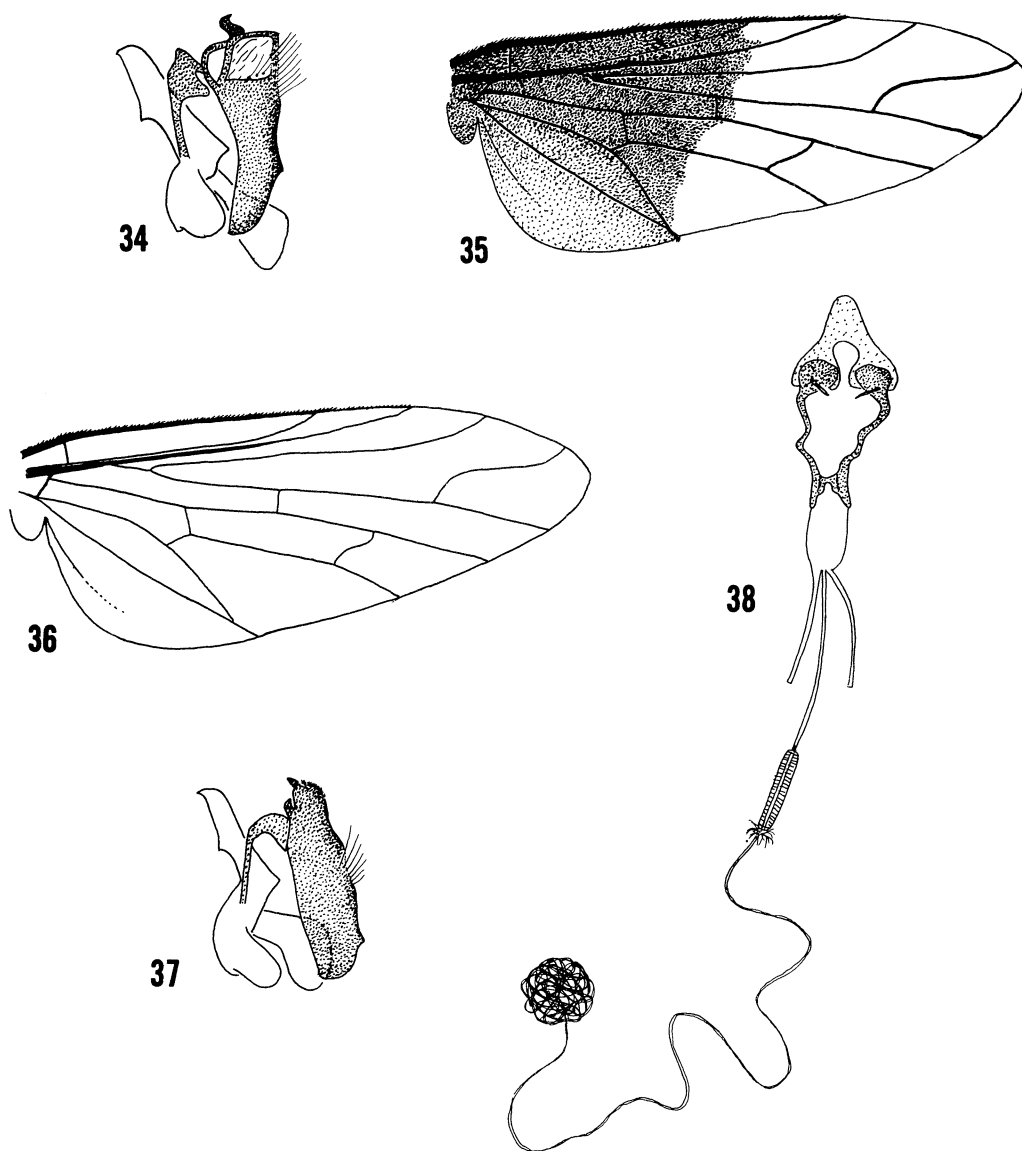


FIG. 34–38. **34**, *Geron (Plichtamyia) erythroccipitalis*, ♂ genitalia. **35**, *Geron (Plichtamyia) hemifuscis*, wing. **36–38**, *Geron (Plichtamyia) nigrocciput*: **36**, wing; **37**, ♂ genitalia; **38**, ♀ genitalia.

description of the female follow. The female specimen from Australia in the Zoological Museum, Copenhagen, described by Bowden (1971a) as possibly *G. nigralis* is not this species and fits closer to the description of *G. robertsi*, n. sp.

♂. *Head*: face rounded, shining black, bare; oral margin black, bare; frons black, silver tomentose lateral to antennal bases; vertex black, black pilose; occiput black, predominantly black pilose, sparse pale

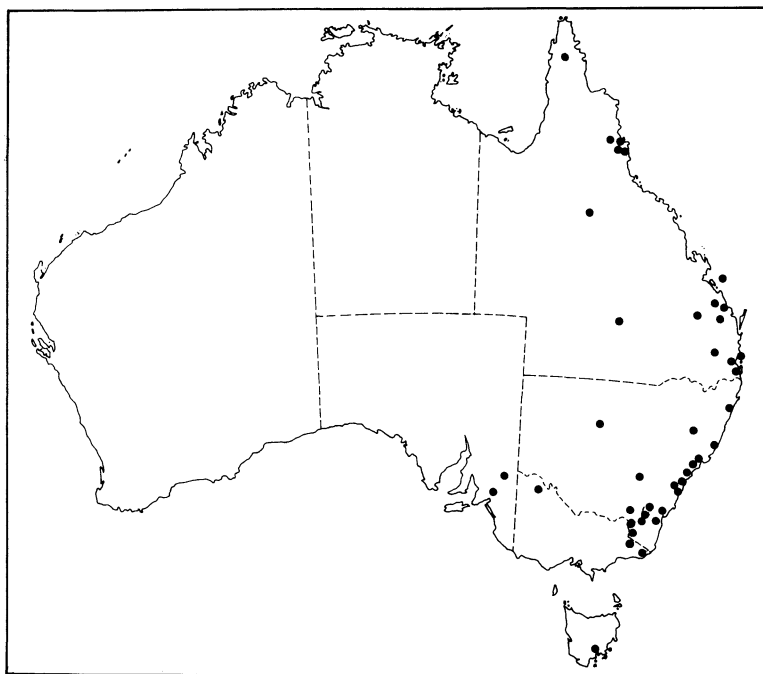


FIG. 39. Map of Australia, showing distribution of *Geron (Plichtamyia) nigrocciput*.

yellow tomentose ventro-laterally; gula black, black pilose; antennae black; segments I and II black pilose; segment III bare; antennal ratio: 4:1:5. *Thorax*: scutum and scutellum black, predominantly black pilose; few brown hairs intermixed; pleura black, intermixed black and brown pilose; halter stem brown, knob yellow. *Legs*: black; coxae black pilose; fore and mid femora with white scales, black pilose basally; hind femur with black scales, black pilose ventrally; tibiae and tarsi bare. *Wing*: infuscated dark brown basally, tinting extending to end of Sc, r-m crossvein, and 1A veins; hyaline beyond to wing margin; veins dark brown; r-m crossvein $\frac{3}{4}$ beyond base of discal cell; vein closing apex of discal cell sigmoid; R_4 curved upward at wing margin; squama dark brown, fringe blackish brown. *Abdomen*: black; tergites intermixed white and black pilose; sternites sparser intermixed white and black pilose; apex black, black pilose. *Genitalia*: not dissected.

♀. *Head*: face slightly rounded, shining black, dull gray laterally, bare; oral margin gray, bare; frons black, silver tomentose below ocellar tubercle and lateral to antennal bases, bare elsewhere; vertex black, short black pilose; occiput black above, gray elsewhere, white pilose, white tomentose above and laterally; gula gray, bare; antennae black; segments I and II black pilose; segment III bare; antennal ratio: 4:1:5. *Thorax*: scutum and scutellum black with gray margins, intermixed yellow and black pile overlying yellow recumbent pile; pleura gray, white pilose and tomentose; halter stem brown, knob yellowish white. *Legs*: coxae black, white pilose; fore femur black-brown; mid and hind femora orange; all femora white pilose ventrally; tibiae and tarsi brown, bare. *Wing*: same as in ♂. *Abdomen*: tergites black, dense white to pale yellow recumbent pilose; sternites gray, white erect pile overlying white recumbent pile.

Length. 5.0–5.6 mm.

Holotype deposited in ANIC, Canberra.

Specimens examined. AUSTRALIA: New South Wales: 1♀, Casula, 19.III.1965, M.I. Nitikin (BMNH); 1♀, Doonside, 15.XII.1968, R. Coveney (AMS); 1♂, 8 mi [12.8 km] N of Dubbo, 8.XII.1972, J. Bancroft (ANIC); 1♀, Sydney, XII.1908 (BISHOP).

Distribution. Australia (New South Wales and Queensland).

Relationships. *Geron hemifuscis* and *G. robertsi*, n. sp., are closest in appearance to *G. nigralis*. Characters separating *G. nigralis* from *G. hemifuscis* include the white pile on the abdominal tergites and the r-m crossvein located $\frac{3}{4}$ beyond the base of the discal cell. *G. nigralis* is separated from *G. robertsi*, n. sp. by the wing tinting extending only up to the r-m crossvein or slightly beyond.

Geron (*Plichtamyia*) *nigrocciput* Evenhuis, new species FIG. 36–39

♂. *Head*: face and oral margin brown, bare; frons brownish black, bare; vertex black, black pilose; occiput black, black pilose; gula black, reddish brown pilose; antennae black; segments I and II black pilose; segment III bare; antennal ratio: 3.5:1:5. *Thorax*: scutum and scutellum black, yellow pilose, black hairs and macrochaetae laterally and posteriorly, all overlying golden yellow recumbent pile; pleura brownish gray, pale yellow pilose; halter stem brown, knob yellow with brown microsetae subapically below swelling of knob on dorsum. *Legs*: coxae black, white pilose and tomentose; femora black; fore and mid femora with white scales, white pile basally; hind femur with tan scales, black hairs ventrally; tarsi and tibiae brown, bare. *Wing* (FIG. 36): tinted light smoky brown to subhyaline; veins brown; r-m crossvein slightly before middle of discal cell; R_4 curved upward at wing margin; squama brown with white fringe. *Abdomen*: tergites black, long erect pale yellow pile overlying short recumbent yellow pile; sternites gray, white pilose; apex black, black pilose. *Genitalia* (FIG. 37): basistylus subrectangular, small hooked process near contact with dorsolateral ramus; dististylus minute; aedeagus slightly beak-shaped; epiphallus slender, straight to tip of aedeagus; dorsolateral rami thin; ventrolateral rami broad, flat.

♀. Similar to ♂ except for the following: face shining brown, bare; frons with tuft of silver tomentum lateral to antennal bases; occipital pile intermixed black and yellow; sides of scutum with yellowish orange hair and macrochaetae; coxae gray; fore and midlegs brown; hind femur orange, brown at extreme apex; sides of abdominal tergites I–III red; pile of abdomen sparser than in ♂. *Genitalia* (FIG. 38): similar to *G. dispar* Macq. except for the following: spermathecal reservoir coiled tightly; apical valve with dense papillae; ejaculatory valve same length as basal duct; vaginal apodeme as illustrated.

Length. 5.3–5.7 mm.

Holotype ♂, AUSTRALIA: Queensland: Nindooibah, 3.II.1954, K.R. Norris (ANIC); allotype ♀, Queensland: Eidsvold [no further data] (ANIC). Paratypes: AUSTRALIA: Australian Capital Territory: 4♂♀, Black Mt, 12.I.1968, 10.II.1968, 12.II.1968, 26.III.1930, Z. Liepa, I.F.B. Common, A.L. Tonnoir (ANIC); 11♂♀, Blundell's, I.1931, 6.I.1961, 18.I.1931, 6.II.1948, 13.II.1950, T. Greaves, S.J. Paramonov, D.H. Colless (ANIC); 1♂♀, Canberra, 10.II.1976, 20.II.1959, A. Horridge, Liepa (ANIC); 1♂, Coree Crk, 14.XII.1960, Colless (ANIC); 1♂, 5 mi [8.0 km] NE of Coree Mt, 7.XII.1954, Common (ANIC); 1♂, Corin Dam, 35 mi [56.0 km] W of Canberra, 9.III.1970, R.W. Matthews (ANIC); 1♂, Cotter-M'bidgee R's Junc., 29.XI.1962, Colless (ANIC); 1♂, Lee's Springs, 5.II.1952, Liepa (ANIC); 1♀, Taree, 12.XI.1929, Wassel (ANIC); 1♂, Thompson's Corner nr Uriarra, 29.I.1962, E.B. Britton (BMNH); 3♂, Uriarra State Forest, 14.II.1965, Liepa (ANIC); New South Wales: 1♂, Bendalong, 9.I.1969, G. Daniels (GD); 1♂, Bungan Head nr Newport Sydney, 25.III.1973, Daniels (GD); 1♀, Casula, 20.XI.1957, M. Nikitin (BMNH); 1♂, Deep Crk, Narrabeen, 28.XII.1961, Colless (ANIC); 1♀, Duffy's Forest nr Sydney, 14.XI.1970, D.K. McAlpine (AMS); 1♂, Durras Lake, 22.II.1965, Colless (ANIC); 3♂, Cloe Heights, Purty Rd, 6.II.1968, D.H. Colless (ANIC); 1♀, Coolabah,

12.X.1963, Colless (ANIC); 2♀, Flat Rock Crk, Royal National Park, 16.IV.1970, Daniels (GD); 1♀, 5 mi [8.0 km] N of Hawkesbury r. br., 150 m, 3.XII.1962, E.S. Ross & D.Q. Cavagnaro (CAS); 1♀, Heathcote, 31.XII.1955, McAlpine (AMS); 3♂, Iluka Clarence Riv, rain forest, 24.XI.1930, McAlpine (AMS); 1♀, Laftus nr Sydney, 7.XI.1970, McAlpine (AMS); 1♀, Lane Cove, 13.I.1925, B. Bertram (AMS); 1♂♀, McGarr's Crk, Kuringai Chase, 13.I.1963, Colless (ANIC); 1♂, Moombi L'out, Moombi, 7.II.1968, Colless (ANIC); 1♂, Myall Lakes, 15.I.1932, Fuller (ANIC); 1♂♀, National Park, 18.I.1964, 19.III.1959, McAlpine (AMS); 1♂, 4 mi [6.4 km] E of Nimmatabel, 8.III.1963, Liepa (ANIC); 1♀, Palm Beach, Broken Bay, 19.III.1922, W. Blaxland (AMS); 1♂, Mt Kosciuskor, Sawpit Crk, 14.II.1963, McAlpine (AMS); 2♂, Thredbo Riv, Kosciusko Rd, 13.I.1967, Colless (ANIC); 1♀, Waterfall, 23.XI.1959, M. Nitikin (BMNH); 1♀, Wentworth Falls, Blue Mts, 22.I.1963, McAlpine (AMS); 1♂, Wee Jasper, 5.I.1936, Fuller (ANIC); 1♂, Yarrangobilly, 14–15.II.1938, A.L. Tonnoir (ANIC); Queensland: 1♀, IX.1913, E. Brunetti (BMNH); 1♀, Atherton Tablelands, Longlands Gap, 3.I.1959, McAlpine (AMS); 6♂♀, Biggenden, Bluff Ra., 18.VIII.1972, IX.1974, 1–19.XII.1971, 7–10.I.1971, H. Frauca (ANIC); 1♂, Bin Bin Range, W of Biggenden, 5.I.1975, Frauca (ANIC); 1♀, Bribie I. 6.IX.1935, I.M.M. (ANIC); 2♂, Brisbane, 14.V.1963, 5.X.1960, C.F. Ashby (ANIC); 1♀, Brisbane, The Blunder, 3.X.1966, Ashby (ANIC); 2♂, 14 mi [22.4 km] NW of Brisbane, Highvale, 10.I.1960, R. Straatman (ANIC); 3♂♀, N Bundaberg, 6.III.1972, Frauca (ANIC); 1♂, 3–15 mi [4.8–24 km] N of Cairns, 3–4.XI.1972, H.E. Evans (ANIC); 1♀, Carnarvon Ra., II.1944, N. Geary (AMS); 2♀, Childers, 5.IX.1973, 12.IX.1973, Frauca (ANIC); 2♀, Claudie Riv, 1 mi [1.6 km] W of Mt Lamond, 19.XII.1971, 21.XII.1971, McAlpine, G.A. Holloway, D.P. Sands (AMS); 9♂♀, Eidsvold, 9.VIII.1929, X.1927, 5.II.1963, "1924," A.P. Dodd, J. Bancroft (ANIC); 1♂, 5 mi [8.0 km] SW of Gordonvale, 8–14.XI.1972, H.E. Evans (ANIC); 1♂, Harlin, 7.II.1938 (ANIC); 2♀, 7–14 mi [11.2–22.4 km] W of Herberton via Watsonville, 1.V.1967, Colless (ANIC); 1♀, Highvale nr Brisbane, 7.I.1977, Daniels (GD); 1♂, Moore Pk., 22 km N of Bundaberg, 25.IX.1975, Frauca (ANIC); 1♂, Nindooibah, 3.II.1954, K.R. Norris (ANIC); 7 mi [11.2 km] NE of Ravenshoe, 975 m, 7.XI.1962, E.S. Ross & D.Q. Cavagnaro (CAS); 1♀, nr Rosedale, 27.X.1974, Frauca (ANIC); 1♂, Watalgan Ra., via Rosedale, 8.IV.1975, Frauca (ANIC); 1♂, Watten, 1.XII.1968, C.F. Ashby (ANIC); 1♂♀, Heron I, 17–22.XI.1955, I.M.M. (ANIC); South Australia: 1♀, Blanche Town, 25.XII.1966, Liepa (ANIC); 1♀, 1.6 km E of Morgan, 13.IX.1972, Liepa (ANIC); Victoria: 1♂, C. French [no further data] (BMNH); 1♂, Cann Riv, 21.III.1962, N. Dobrotworsky (ANIC); 2♀, Hattah, 4.II.1967, G.W. Anderson (ANIC); TASMANIA: 3♂♀, Hobart, 4.III.1917, 18.III.1917, C.E. Cole (ANIC); 1♂, Hobart, 21.I.1917, Cole (SAM).

Distribution (FIG. 39). Australia (Australian Capital Territory, New South Wales, Queensland, South Australia), Tasmania.

Relationships. *Geron nigrocaput* is most similar to *G. dispar*. The males of *G. nigroc-*

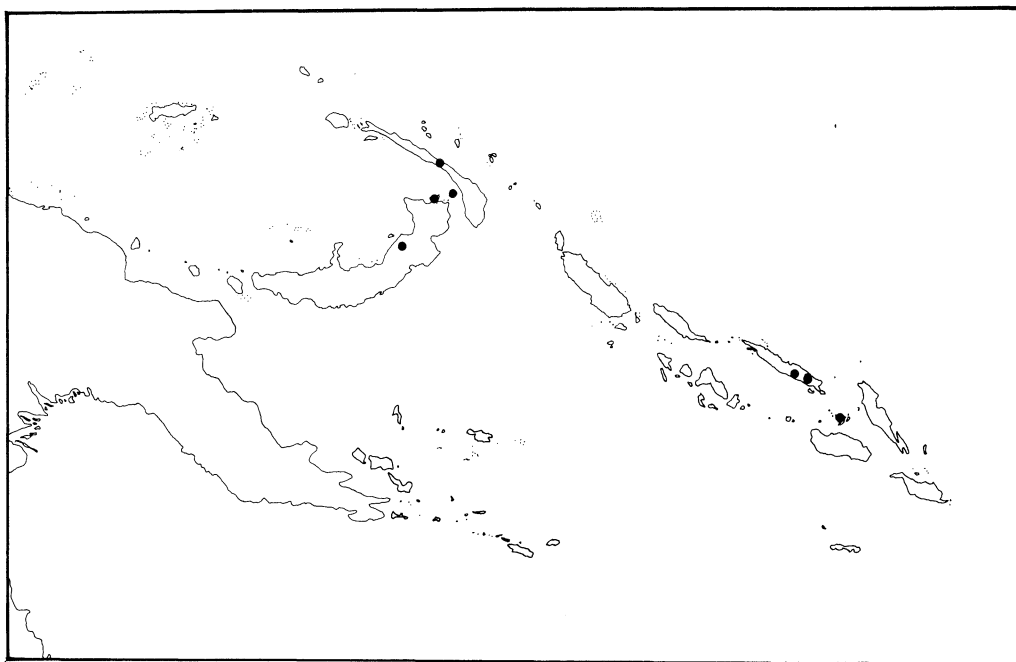


FIG. 40. Map of Solomon Is and Papua New Guinea, showing distribution of *Geron (Plichtamyia) opacus*.

ciput can be identified by the absence of facial pile, the shorter 1st antennal segment and the lighter wing tinting. Females may be separated by the shorter 1st antennal segment and the lighter wing tinting.

Remarks. Three specimens recorded by Evans & Matthews (1973) as being prey of *Bembix* wasps were identified in this study as *G. nigrocciput*. One species each was recorded as prey of *B. furcata*, *B. littoralis*, and *B. variabilis*.

***Geron (Plichtamyia) opacus* Bowden** FIG. 40–41

Geron opacus Bowden, 1971b: 310.

Four males and 3 females fitting the description of *G. opacus* Bowden were examined. The records presented here extend the distribution to include New Ireland, New Britain and the Solomon Is. Since the description is readily available, it is not repeated here.

This species can be easily identified from its congeners by the entirely infusate wings (FIG. 41). The specimens at hand show a gradation in tinting from light brown to brown.

Holotype ♂ deposited in the Zoological Museum, Copenhagen.

Specimens examined. PNG: BISMARCK ARCH.: NEW BRITAIN: 1♂, Rabaul, 0–50 m, XI.1971, N.L.H. Krauss (BISHOP); 1♀, Talalo, Nakanai Mts, 900 m,

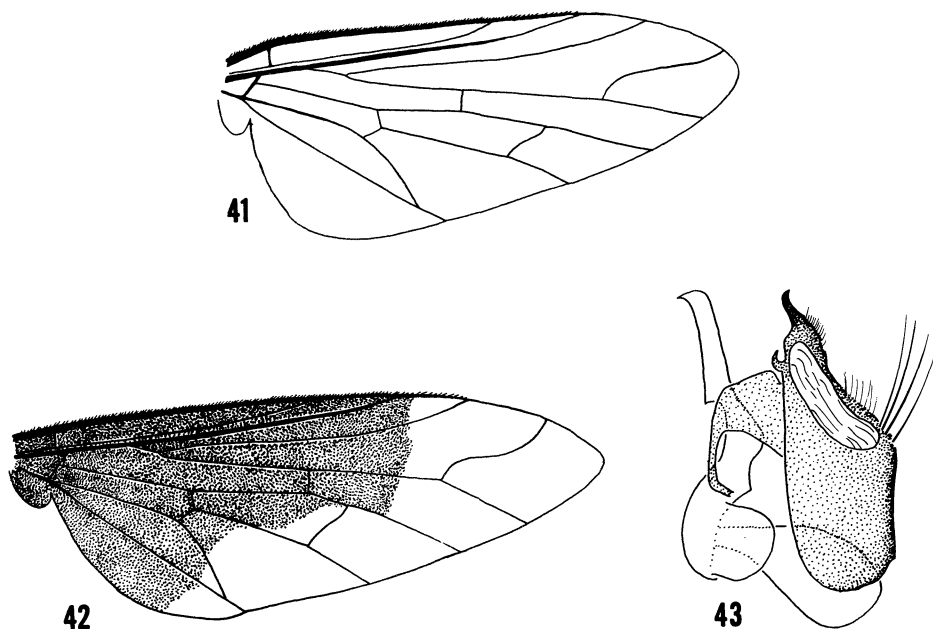


FIG. 41–43. 41, *Geron (Plichtamyia) opacus*: wing. 42–43, *Geron (Plichtamyia) robertsi*: 42, wing; 43, ♂ genitalia.

27.VII.1956, E.J. Ford, Jr. (BISHOP); NEW IRELAND: 1 ♀, Kamong, 0–50 m, X.1968, Krauss (BISHOP). SOLOMON IS: Florida Group: 1 ♂, Tulagi, 8.IX.1960, C.W. O'Brien (BISHOP); Santa Ysabel: 1 ♂ ♀, Kolotuve, Sukapisu, 20.VI.1960, O'Brien (BISHOP); 1 ♂, Tatamba, 6.VI.1960, O'Brien (BISHOP).

Distribution (FIG. 40). Bismarck Arch. and the Solomon Is.

***Geron (Plichtamyia) paraustralicus* Evenhuis, new species**

♂. *Head*: face and oral margin shining dark brown, bare; frons black, tuft of silver tomentum lateral to antennal bases; vertex black, black pilose; occiput black, pale yellow to white pilose, white tomentum laterally along posterior eye margin; gula black, white pilose; antennal segments I and II black dorsally, brown ventrally, black pilose; segment III black, bare; antennal ratio: 3.5:1:5. *Thorax*: scutum and scutellum black; scutum with pale yellow pile overlying sparse, minute yellow recumbent pile, few black hairs laterally anterior to wing base; scutellum with pale yellow pile overlying sparse recumbent yellow pile; pleura gray, sparse white pilose and tomentose; halter stem light yellow, knob yellow ventrally, black-brown dorsally. *Legs*: brown; coxae white pilose; femora with sparse pale yellow to white scales, white pile ventrally; tibiae and tarsi bare. *Wing*: hyaline, veins dark brown; r-m crossvein just before middle of discal cell; R₄ curved upward at wing margin; squama brown with white fringe. *Abdomen*: black; tergites pale yellow pilose overlying sparse pale yellow recumbent pile; sternites with sparse pale yellow pile; apex black, white pilose. *Genitalia*: not dissected.

Length. 5.0 mm.

Holotype ♂, INDONESIA: MOLUCCAS IS: Larat I, XII.1907, F. Muir (BISHOP 11,403).

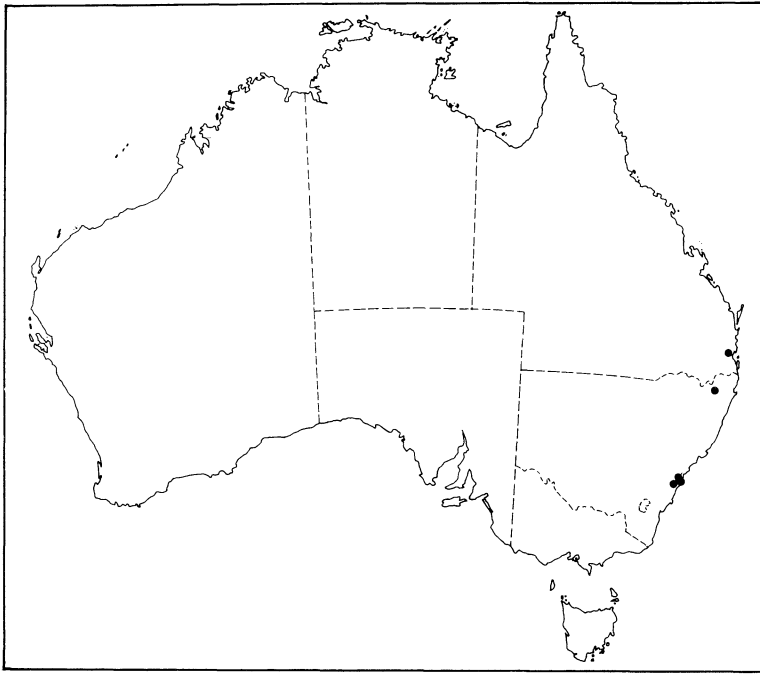


FIG. 44. Map of Australia, showing distribution of *Geron (Plichtamyia) robertsi*.

Distribution. Larat I.

Relationships. This species can be separated from its congeners by the sparse distribution of scales on the legs and by the 1st and 2nd antennal segments being black above, brown below. *G. paraustralicus* is the only species of subgenus *Plichtamyia* found on Larat I.

***Geron (Plichtamyia) robertsi* Evenhuis, new species** FIG. 42–44

♂. *Head*: face, frons, and oral margin brown, bare; vertex black, black pilose; occiput black, yellow pilose; gula black, dense yellow pilose; antennae brown; segments I and II brown pilose; segment III bare; antennal ratio: 3.5:1:4.5 *Thorax*: scutum and scutellum black, yellow pilose, black hair posteriorly; pleura brown, black pilose on mesopleuron, brown pilose elsewhere; halteres brown. *Legs*: fore coxa orange-brown; mid and hind coxae dark brown; all coxae yellow to brown pilose; femora brown, intermixed yellow and black pilose; tibiae and tarsi brown, bare. *Wing* (FIG. 42): tinted dark brown basally, infuscation extending to end of R_1 just before end of R_{2+3} ; and just beyond r-m and posterior crossveins; anal, axillary and $\frac{1}{2}$ of 1st and 3rd posterior cells infuscated; r-m crossvein $\frac{4}{5}$ beyond base of discal cell; vein closing apex of discal cell sigmoid; R_4 curved upward at wing margin; squama brown with black fringe. *Abdomen*: tergites black, white pilose; sternites dark brown, white pilose; apex black, white pilose. *Genitalia* (FIG. 43): basistylus broad basally, tapering toward apex, small hooked projection dorsally near apex; dististylus long, tapering toward apex, recurved ventrally; dorsolateral rami very broad at contact with basistylus, filamentous near epiphallus; epiphallus extremely long, slender to aedeagal tip; tip of aedeagus beaklike; basal apodeme large, club-shaped.

♀. Similar to ♂ except for the following: face and oral margin gray-black, bare; frons shining black,

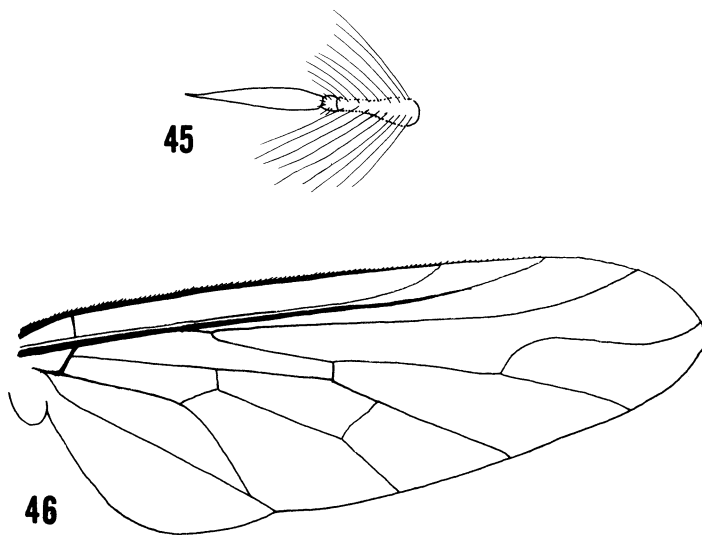


FIG. 45–46. *Geron (Plichtamyia) westralicus*: 45, antenna; 46, wing.

silver tomentum lateral to antennal bases; occiput black, gray laterally, white pilose; gula gray, white pilose; antennal segment III black, bare; pleura gray, white pilose and tomentose; coxae gray, white pilose and tomentose; mid and hind femora yellow with white scales; mid tibia yellow.

Length. 5.8–6.5 mm.

Holotype ♂, AUSTRALIA: New South Wales: Gordon, 4.XII.1949, D.H. Waterhouse (ANIC); allotype ♀, 40 mi [64.0 km] N of Sydney, 12.XII.1951, E.F. Ried (ANIC). Paratypes: AUSTRALIA: New South Wales: 1♀, Collaroy, 3.II.1928, M. Fuller (ANIC); 1♂, Otford Roy. Natl. Park, 31.XII.1962, D.H. Colless; 1♀, Otford Roy. Natl. Park, 31.XII.1962, D.K. McAlpine (AMS); 1♀, Pymble, 23.I.1963, A.L. Dyce (ANIC); Queensland: 1♂, Highvale, 14 mi [22.4 km] NW of Brisbane, 23.I.1960, R. Straatman (ANIC).

Distribution (FIG. 44). Australia (New South Wales and Queensland).

Relationships. *Geron robertsi* is most similar in appearance to *G. paramonovi* and can be easily separated from it by the tinting of the wing extending beyond the r-m crossvein to the end of R_1 as well as by the more elongate wing.

***Geron (Plichtamyia) sparsus* Bowden**

Geron sparsus Bowden, 1971b: 312.

No specimens of this species were seen in this study; however, the description given by Bowden shows it to be a representative of the subgenus *Plichtamyia*. Bowden's type-series consisted of 1 ♂ and 17 ♀ from the Bismarck Is, Duke of York I.

Holotype ♀ deposited in the Zoological Museum, Copenhagen.

Relationships. The description given by Bowden shows this species to be most sim-

ilar in appearance to *G. amboinensis*. It can be separated from *G. amboinensis* by the sparse body pile, yellow fore tibiae and dark brown halter knob.

Geron (*Plichtamyia*) *westralicus* Evenhuis, new species FIG. 45–46

♂. *Head*: frons and oral margin black, bare; face black, black pilose below eyes to gula, bare elsewhere; vertex black, dense black pilose; occiput black, long black pilose; gula black, black pilose; antennae (FIG. 45) black; segment I with black pile 2× as long as segment I; segment II with short black pile; segment III bare; antennal ratio: 3.5:1:6. *Thorax*: scutum and scutellum black, long, dense yellow pilose; pleura gray-black, yellow pilose; halter stem yellow, knob dark brown. *Legs*: coxae gray-black, white pilose; fore and mid femora black-brown with white scales, intermixed white and brown pile ventrally; hind femur black-brown with white scales, white pilose ventrally; tibiae and tarsi brown, bare. *Wing* (FIG. 46): hyaline, veins light yellow to yellow; r-m crossvein $\frac{3}{4}$ beyond base of discal cell; vein closing apex of discal cell sigmoid; R_4 parallel with R_5 to wing margin; squama pale yellow with white fringe. *Abdomen*: tergites black, long white pilose; sternites gray-black, white pilose. *Genitalia*: not dissected.

♀. Unknown.

Length. 5.2 mm.

Holotype ♂, AUSTRALIA: Western Australia: 30 mi [48.0 km] NE of Menzies, 400 m, 20.IX.1962, E.S. Ross & D.Q. Cavagnaro (CAS).

Relationships. This species can be separated from its congeners by the presence of pile on the face below the eyes. In this respect, *G. westralicus* resembles somewhat its Ethiopian relatives in the subgenus *Geron*. However, the length of the 1st antennal segment and the shining face below the antennae put it in *Plichtamyia*. Examination of a large series of this species would be desirable in order to assess its affinities with the Australian and Oriental representatives of this genus.

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