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THE GENUS *PTECTICUS* LOEW FROM AUSTRALIA,  
NEW GUINEA AND THE BISMARCK AND SOLOMON  
ARCHIPELAGOS  
(DIPTERA: STRATIOMYIDAE)

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ABSTRACT

Fourteen species of the genus *Ptecticus* Loew are recognised and described or redescribed from Australia, New Guinea and the Solomon Islands and a key for their identification given. *P. albitarsus* de Meijere is established as a synonym of *P. quadrifasciatus*. *P. tritus* is proposed as a replacement name for *P. salomonensis* Lindner. The new species, *P. amplior* (from Australia and New Guinea), *P. queenslandicus* (Australia), *P. helvolus* (New Guinea), *P. spatuloides* (New Britain), *P. gilvus* (New Ireland) and *P. substitutus* and *P. eximius* (Solomons) are described. The male terminalia of thirteen species are illustrated.

Attention is drawn to the posttegula, a thoracic appendage medial to the base of each haltere. Its application as a character for the separation of the superfamilies Tabanoidea and Asiloidea is briefly discussed.

INTRODUCTION

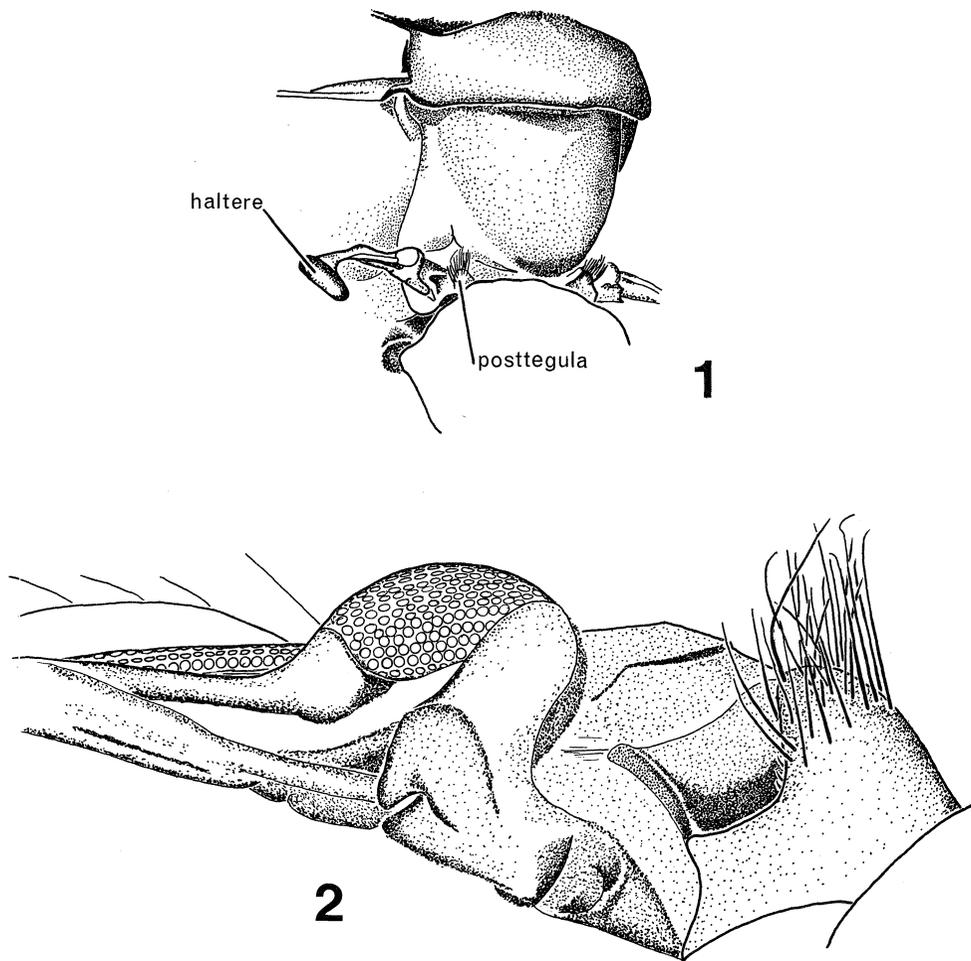
This study of *Ptecticus* from New Guinea, Australia, the Bismarcks and the Solomons, is the outcome of the collection and subsequent efforts to identify over 30 specimens of the genus from Australia, where it was previously unrecorded (Nagatomi, 1975).

Previous authors, such as Lindner, van der Wulp, Bigot and de Meijere, have each recorded small numbers of specimens and species from various localities in New Guinea. With the generous loan of material housed in the Bishop Museum it became apparent that little was known regarding the distribution of the genus within the area and that several new species were represented in this material.

The last revision involving New Guinea species was by Brunetti (1923) who dealt with all species known to him from the "Oriental" region. The present study, based mostly on material housed in the Bishop Museum, places the number of species from the area at 14 of which 5 are described as new. It is scarcely likely that this represents the total number of species, especially from New Guinea, and more intensive collecting will undoubtedly result in the discovery of further species. Study of available types has revealed a number of misidentifications and some new synonymy has also been found, all of which is discussed below.

Whilst reviewing *Ptecticus*, it was found that a useful species grouping character was the presence of a tuft of either orange or black hairs, placed medially and basally to each haltere (Fig. 1). Further investigation showed the appendage from which these hairs arose, named the posttegula, has affinities with the squama or tegula of the wing and in fact is possibly the remnant of one of these lobes of the hindwing or haltere.

The subfamilies of Stratiomyidae examined have the posttegula well developed and haired, Lophatellinae and Pachygasterinae being exceptions in having a predominance of genera with the posttegula bare, or rarely, sparsely haired.



Figs 1, 2. *P. quadrifasciatus* (Walker): (1) Subcutellar area and haltere showing location of posttegula; (2) Base of haltere and posttegula.

Amongst the Brachycera: Orthorrhapha, the posttegula is best developed and readily examined in Stratiomyidae, as the abdomen is rarely enlarged or basally flush with the thorax. Preliminary investigation has shown that in some families, notably Asilidae, Mydidae and Therevidae the posttegula is completely wanting. The genera examined of Pelecorhynchidae, Tabanidae and Nemestrinidae have the posttegula present, but not as well developed as in the Stratiomyidae, and usually elongated and reduced in height. Present indications show the posttegula developed amongst Tabanoidea and absent in Asiloidea (definition of Colless and McAlpine, 1970). The Bombyliidae could be an exception. Placed by Colless and McAlpine in the Asiloidea, the Bombyliidae appear to have some genera with a reduced posttegula and absent in others. Hennig (1973) placed the Bombyliidae in the infraorder Homoeodactyla (=Tabanoidea). Present indications are that the Bombyliidae are better placed in the Asiloidea. A more detailed investigation as to the presence or absence of the posttegula amongst the Orthorrhapha is in progress.

The posttegula shows some degree of interspecific variation in *Ptecticus* and its shape, length and density of hairs, could be of some value at specific level. The only character referred to in this paper is the colour of the dorsal tuft of hairs.

Viewed dorsally the posttegula is seen to be positioned basally and medially to the halteres and consists of a flat appendage with a semi-cylindrical basolateral lobe. Viewed laterally (Fig. 2), the lobe is seen to be convex dorsally, with a group of numerous, relatively stout hairs arising from the dorsal surface.

Material was examined from the following collections, abbreviated as follows:

AM	Australian Museum, Sydney
ANIC	Australian National Insect Collection, C.S.I.R.O., Canberra
BPBM	Bernice P. Bishop Museum, Hawaii
GD	Author's collection.
SAM	South Australian Museum, Adelaide.
ZMA	Instituut voor taxonomische Zoologie (Zoologisch Museum), Amsterdam.

For convenience New Guinea is divided into quadrants as defined in Gressitt and Szent-Ivany (1968).

#### Genus *Ptecticus* Loew

*Ptecticus* Loew 1855: 142. Type-species *Sargus testaceus* Fabricius, by original designation.

Eyes separated in both sexes, sparsely haired; facets larger towards inner margin. Frons divided into upper and lower sections, both of which are elongate-triangular in male (rarely elongate-trapezoidal) and elongate-trapezoidal in female; lower frons bulbous; narrowest point of frons situated just above bulbous portion of lower frons. Ocellar triangle situated distinctly before a line drawn between uppermost corner of each eye. Face divided into upper and lower parts, the lower face membranous, but broadly sclerotized medially. Palpi straplike, greatly reduced, concealed under the enlarged labellum. Antennal segment 2 conspicuously produced forward on apical inner margin; apical margin of segment 3 straight or nearly so; arista arising dorsoapically from segment 3. Humeral callus bare. Subscutellum enlarged. Posttegula densely and finely haired dorsally. Base of vein  $R_{2+3}$  situated at or slightly basal to r-m crossvein. Males with enlarged empodium. Pile of abdomen short and fine. Posterior margins of abdominal tergites 1-5 fused laterally. Tergites 7 and 8 of males reduced to a narrow sclerotized band anteriorly and laterally, membranous medially (Fig. 3). Male hypopygium rotated 90 degrees (except in *isabelensis*, with only slight medial reduction in tergite 7). Aedeagus

consisting of a single eversible duct; basal half moderately sclerotized, distal half membranous with minute reclinate hook-like processes (Fig. 3) in most species.

*Ptecticus* is widely distributed over the world, but is not present in Europe, Micronesia or Polynesia, although 31 species are reported from the Oriental region (James, 1975). *Ptecticus* is closely related to *Sargus* Fabricius, and may be distinguished by the following characters: Squama without strap-like process; section of Rs between r-m crossvein and  $R_{2+3}$  absent or almost as long as r-m; lower frons bulbous, sharply separated from upper frons; second antennal segment conspicuously produced forward apically on inner margin.

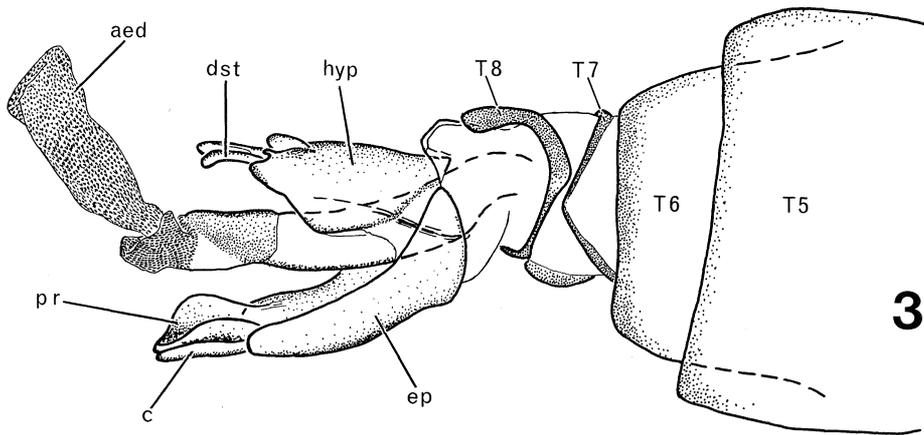


Fig. 3. *P. amplior* sp. n.: hypopygium viewed dorsally. *aed*, aedeagus, *c*, cerci; *dst*, dististyle; *ep*, epandrium; *hyp*, hypandrium; *pr*, proctiger, *T*, tergite.

KEY TO SPECIES OF *PTECTICUS* FROM AUSTRALIA, NEW GUINEA AND  
THE BISMARCK AND SOLOMON ARCHIPELAGOS

1. Vein  $M_3$  ending at least one third its length before wing margin; mesonotum and abdomen shining blue-black..... 2  
     Vein  $M_3$  ending almost at wing margin; mesonotum and abdomen orange-yellow or brownish, abdomen sometimes with black markings..... 3
2. Wing tips broadly infuscated; a large shining, blue-black lateral spot on anepisternite and sternopleuron (New Guinea) .....*archboldi* Lindner  
     Wings hyaline; anepisternite deep blue, dorsal margin with a distinct yellow line; remainder of pleura deep brown with a bluish sheen (New Guinea, Solomons) .....*tritus* n.n.
3. Vein  $M_1$ , in basal area of discal cell, convex; r-m opposite origin of  $M_3$ ..... 4  
     Vein  $M_1$ , in basal area of discal cell, sinuous; r-m distinctly proximal to origin of  $M_3$ ..... 7
4. Hind leg completely black; tergites 4-6 black (New Guinea) .....*papuanus* (Bigot)  
     Hind femur yellow or yellow-orange; hind tibia black; tergites variable ..... 5
5. Wings deep brown, almost black on costal margin; abdomen yellow-orange, shining and distinctly spatulate; males with relatively wide frons (New Britain).....*spatuloides* sp. n.  
     Wings hyaline, at most only slightly tinted along costal margin; abdomen never distinctly spatulate; frons of male variable ..... 6
6. Hind metatarsus black; tarsal segments 2-4 white, abdominal tergites 4-7 completely black (Solomon Islands) .....*isabelensis* Lindner  
     Hind tarsus black; abdomen orange-yellow without black markings (New Guinea, Manus Island, New Ireland) .....*ferrugineus* (Doleschal)
7. Tergites uniformly yellow or yellow-orange, without black markings, although black setae are sometimes present giving brownish markings; hairs on posttegula yellow ..... 8  
     Tergites with yellow or yellow-orange ground colour and distinct black bands; hairs on posttegula black..... 12
8. Upper frons shining yellow, darker than pale yellow lower frons; hind tarsus yellow or yellow-brown (New Guinea).....*helvolus* sp. n.  
     Upper frons shining black; other characters variable ..... 9
9. Costal wing margin deep brownish distally, yellow tinted proximally; fore and mid tarsal segments 3-5 with a few black setae, the general colour of these segments not sharply contrasting with basal segments (Australia, New Guinea) .....*amplior* sp. n.  
     Costal area not appreciably darkened, wing more or less uniformly yellow hyaline; fore and mid apical tarsal segments black setose, sharply contrasting with basal segments..... 10

10. Hind tarsus black, black setose (Australia).....*queenslandicus* sp.n.  
Hind metatarsus never black, but some black setae present..... 11
11. Upper frons and face below antennal bases with yellowish fine setae; fore and mid tarsal segments 3-5 black-setose (Solomons).....*substitutus* sp. n.  
Upper frons and face below antennal bases with fine black setae; fore and mid apical tarsal segment black-setose (New Ireland) .....*gilvus* sp. n.
12. Hind tarsus completely black, black-setose; tergites 2-5 black medially, distinctly surrounded by orange ground colour, though ground colour sometimes narrow anteriorly (New Guinea).....*complens* (Walker)  
Hind tarsus not completely black; tergites otherwise marked..... 13
13. Tergite 1 with a brownish basolateral mark; anterior half of tergites 2-5 black; tergite 6 orange; hind tarsus with at least segments 3-5 white, white setose (New Guinea, New Ireland, Australia).....*quadrifasciatus* (Walker)  
Tergite 1 without basolateral mark; anterior third of tergites black, except towards lateral margins. Hind tarsus brownish orange (Solomons) ..*eximius* sp. n.

#### ***Ptecticus archboldi* Lindner**

*Ptecticus archboldi* Lindner, 1957: 189.

I have not examined material of this species. Lindner's description of *P. archboldi* agrees extremely well with most of the characters in Brunetti's (1923: 140) redescription of *P. longipennis* (Wiedemann), the redescription being based on the ♂ "type". At present it would appear that *P. archboldi* is a synonym of *P. longipennis* but an examination of the types is necessary to confirm this. *P. archboldi* is known only from the type locality, Sigi Camp, 1500 m, N.W. New Guinea.

#### ***Ptecticus tritus* n.n.**

(Figs 4-6)

*Ptecticus longipennis salomonensis* Lindner, 1937: 372, not *P. salomonensis* Lindner, 1937: 370.

*Ptecticus salomonensis* Lindner. — James, 1948: 196.

*Head:* Width 1.3 height; frons at narrowest point 0.01 head width; relative width of frons: at narrowest point 1; at vertex 13; at antennal base 13-15. Upper frons and vertex shining blue-black, covered with fine hairs. Ocellar hairs black. Lower frons pale yellow, arising abruptly with almost straight dorsal and ventral margins, rounded apically with a few short fine pale hairs ventrally. Face yellowish with numerous fine pale yellow hairs on upper half, mostly as long as first antennal segment. Antenna orange; segment 1 dorsally and ventrally black haired; segment 2 distinctly convex on outer margin; with a row of apical black marginal hairs. Arista black. Labellum orange. *Thorax:* Mesonotum shining blue-black, with fine short pale hairs. Humeral callus, postalar callus and apical margin of scutellum brownish; mesonotal suture also indistinctly brownish. Subscutellum shining blue-black, brownish on anterior margin. Anepisternite shining blue-black, though not as deeply coloured as mesonotum, dorsal margin distinctly yellow, sharply differentiated from blue-black area. Pteropleuron and pleurotergite dark brown with a blue sheen, pale-haired. Sternopleuron deep brown, paler on dorsal margin and with a stronger blue sheen than pteropleuron and pleurotergite. Remainder of pleura variable, yellow-brown to deep brown. Posttegula brownish, pale-haired. Halteres with apical half black-brown,

basally brownish. *Legs*: including coxae, yellow-brown. Fore and mid femora, and posterior surface of hind femur yellow-haired; hind femur dark brown, black-haired dorsally and anteriorly. Fore and mid tibiae yellow-haired dorsally, black-haired ventrally, hind tibia black, black-haired. Fore and mid tarsi yellow-haired with a few black elements along dorso-medial line; segments 4 and 5 entirely black-haired; empodium and pulvilli yellowish; hind tarsi white, white-haired; metatarsus black on basal third, black-haired; apical hairs on apical segment black. *Wings*: hyaline, veins brownish, basally orange. Vein  $M_2$  and vein  $M_3$  almost straight, parallel,  $M_3$  ending about one third its length before wing margin. *Abdomen*: shining blue-black. Postero-lateral tergal margins sometimes with an orange-brown spot. Hairs mostly black, laterally white. *Hypopygium* (Figs. 4-6) black-brown.

♀: differs from ♂ as follows:

*Head*: Frons at narrowest point 0.1 width of head; relative widths of frons: at narrowest point 1, at vertex 1.6 and at antennae 1.7. Thorax generally with a deeper brown basal coloration on pleura. *Abdomen* also with a stronger brown basal colouring. Ovipositor deep brown; cerci black.

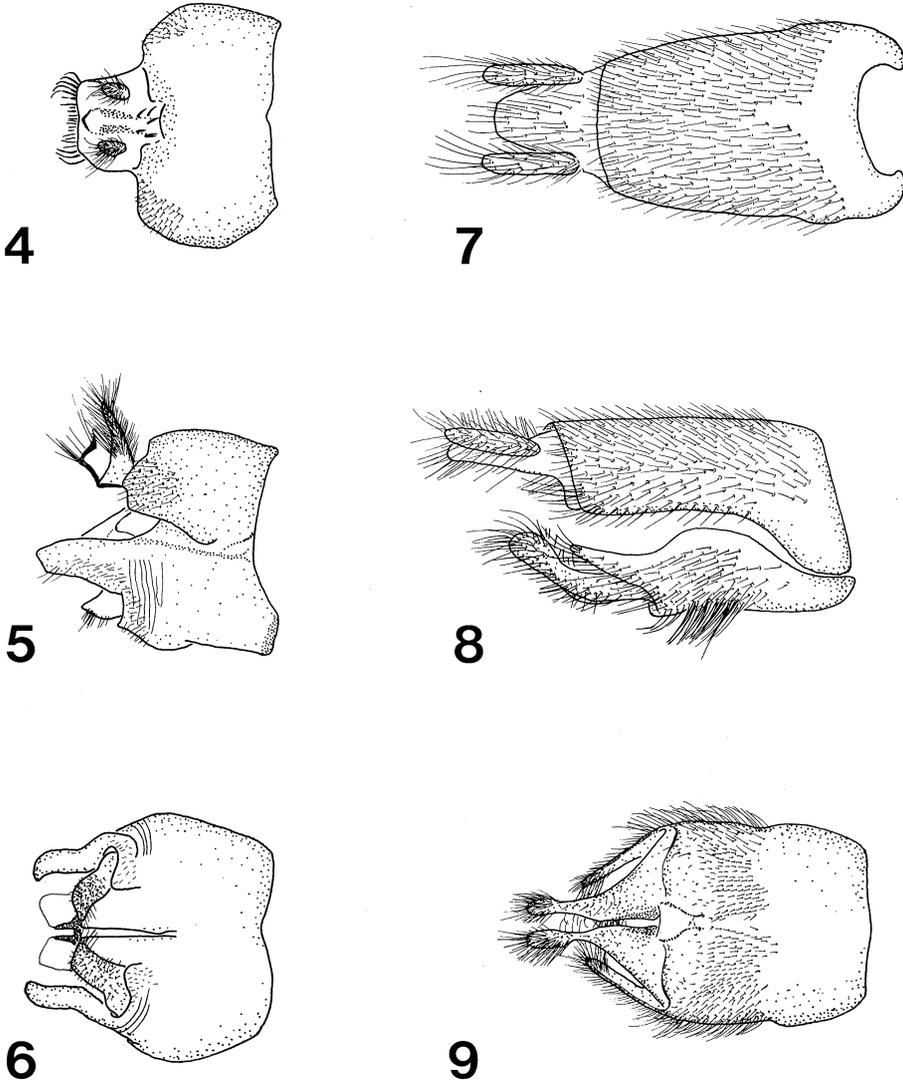
**DIMENSIONS**: body length, ♂ 10.0-12.8 mm, ♀ 9.5-12.1 mm; length of thorax, ♂ 2.7-3.8 mm, ♀ 2.6-3.5 mm; length of wing, ♂ 9.5-13.0 mm, ♀ 9.0-12.4 mm.

**MATERIAL EXAMINED**: NE NEW GUINEA: 1♂ Ambunti, Sepik River, 200 m, 5.v.1963 R. Straatman, night trap (BPBM); 1♂ May River, 100 m, 8.vi.1963, R. Straatman, night trap (BPBM); 1♂ Bulolo, 800-900 m, 19.xii.1961, S. and L. Quate (BPBM); 1♀ Finschhafen, 80 m, 16.iv.1968, J. Sedlacek, Malaise trap (BPBM). SE NEW GUINEA: 1♂ Brown River, 5 m, 23.v.1960, J. L. Gressitt (BPBM); 1♂ Milne Bay, 10 m, iii.1965, R. Straatman, night trap (BPBM); 8♂ 6♀ Mamai Plantation, E of Port Glasgow, 150 m, 6-16.ii.1965, R. Straatman, night trap (BPBM, 1♂, 1♀ AM). SOLOMON ISLANDS: MALAITA: 4♂ Dala, 24-25.vi.1964, R. Straatman, Malaise trap, (BPBM); 1♀ Auki, 20 m, 3-5.vi.1964, J. M. Sedlacek, MV light (BPBM). FLORIDA GROUP: 2♂ Haleta, 250 m, Nggela Is, 17.x.1964, R. Straatman, Malaise trap (BPBM); 1♂ Tanatan Cove, near Dende, Small Nggela, 17.ix.1960, C. W. O'Brien (BPBM). Vella Lavella: 5♂, 5♀ Kundurumbangara, 80 m, 19-23.xi.1963, P. Shanahan, Malaise trap, (BPBM, 1♂, 1♀ AM); 1♀ Malawari, 10 m, 23.xi.1963, P. Shanahan. (BPBM). GUADALCANAL: 1♂, 2♀ Tambahia, 30 km W Honiara, 25.v.1964, R. Straatman, Malaise trap (BPBM); SANTA ISABEL ISLAND: 1♀ Tatamba, 0-50 m, 2.ix.1964, R. Straatman, Malaise trap (BPBM); 1♂ Hageulu, 400-650 m, 13.ix.1964, R. Straatman (BPBM).

An immature ♂ in the BPBM labelled SW New Ireland, "Camp Bishop", 12 km up Kait R., 240 m, 11.vii.1956, E. J. Ford, possibly belongs to this species. Although the bluish metallic coloration is not developed, a bluish tinge is present and the anepisternite has a distinct yellow dorsal margin. Vein  $M_3$  finishes well before the wing margin.

Some confusion exists over the use of the name *P. salomonensis* Lindner. Lindner (1937: 370) obviously intended describing the new species, *P. salomonensis*, but the description of *P. salomonensis* in the same paper (p. 393) is obviously referring to *P. isabelensis* Lindner, making *P. salomonensis* a junior synonym of *P. isabelensis*. Simultaneously Lindner introduced the epithet *salomonensis* for a subspecies of *P. longipennis* (Wiedemann).

James (1948: 196) raised *P. longipennis salomonensis* Lindner to specific rank, incorrectly placing Lindner's original *P. salomonensis* as a junior homonym of the *P.*



Figs 4-9. *Ptecticus* sp. (4-6) *P. tritus* n.n.: (4) cerci, proctiger and epandrium, dorsally; (5) hypopygium, laterally; (6) dististyle and hypandrium, ventrally; (7-9) *P. papuanus* (Bigot): (7) cerci, proctiger and epandrium, dorsally; (8) hypopygium, laterally; (9) dististyle and hypandrium, ventrally.

*salomonensis* originally used for a subspecific taxon.

The replacement name, *P. tritus*, is here proposed under article 57 (e) of the International Code of Zoological Nomenclature.

***Ptecticus papuanus* (Bigot)**  
(Figs 7-9, 35)

*Sargus papuanus* Bigot 1879: 223.

*Ptecticus papuanus* (Bigot). — de Meijere, 1913: 319.

♂ *Head*. Width 1.4 height; frons at narrowest point 0.03-0.04 head width; relative width of frons: at narrowest point 1; at vertex 6.0-8.3; at antennae 4.7-7.0. Upper frons shining black with a row of fine proclinate hairs parallel to each eye margin; lower frons pale yellowish with indistinct fine reclinate pale hairs on ventral half. Ocellar hairs black. Face with long dense yellow hairs below antennal bases. Labellum pale yellowish. Antennae yellow, segment 1 with yellow hairs and a few black apical elements; arista black. *Thorax*. Orange, mesonotum and subscutellum with fine dense black setae, each arising from a small black tubercle; pleura with fine golden-yellow hairs, often sparsely covered. Pleurotergite with dense fine golden-yellow proclinate hairs. Posttegula orange, black-haired. Haltere orange; capitellum darkened. *Legs* orange. Fore and mid femora and fore tibia with golden-yellow hairs; hind femur blackish brown, black-haired. Mid tibia black-haired on basal half, golden-yellow distally; hind tibia and tarsus black, black-haired. Fore and mid metatarsi yellow-haired with some black elements along medial line; segment 2 black-haired dorsally, yellow ventrally; segments 3-5 completely black-haired. Pulvilli yellow. *Wing*. Uniformly brown, somewhat darker along costal margin; veins blackish. *Abdomen*. Lateral margin of tergite 1 with sparse, very long fine setae. Segments 1-3 orange, 4 and 5 black, all with black setae. *Hypopygium* (Figs 7-9) black, black-haired.

♀ : differs from ♂ as follows:

*Head*: Frons at narrowest point 0.07-0.09 width of head; relative widths of frons: at narrowest point 1; at vertex 2.0-2.2; at antennae 2.2-2.6. Lower frons and face orange-yellow, yellow haired. Antenna orange, yellow haired; arista black, orange on basal half. *Abdomen* (Fig. 35): Orange with variable black basal margins on tergites 2 and 3; tergites 4-6 black. Ovipositor brownish black, black-haired.

DIMENSIONS: body length, ♂ 11.5-12.2 mm, ♀ 10.5-11.2 mm; length of thorax, ♂ 4.1-4.6 mm, ♀ 4.0-4.2 mm; length of wing, ♂ 11.5-12.2 mm, ♀ 11.4-12.3 mm.

MATERIAL EXAMINED: NW NEW GUINEA: 1 ♂, 1 ♀ Bodem, 11 km SE Oerberfaren, 7-17.vii.1959, T.C. Maa (BPBM) (♂ with head missing); SE NEW GUINEA: 1 ♀ Kiunga, Fly River, 21-24.x.1957, W.W. Brandt (BPBM); 2 ♂ Kiunga, Fly River 35 m, viii.1969, J. & M. Sedlacek (BPBM).

The abdomen of this species appears very variable in coloration.

***Ptecticus complens* (Walker)**  
(Figs 10-12, 36)

*Sargus complens* Walker 1859: 81.

*Ptecticus complens* (Walker). — van der Wulp, 1896: 49.

♂ *Head*: Width 1.4 height; frons at narrowest point 0.02 width of head; relative widths of frons: at narrowest point 1; at vertex 5.3; at antennae 6.3. Upper frons shining black

with a row of proclinate hairs parallel to each eye margin; lower frons pale yellowish with indistinct fine pale hairs. Ocellar hairs black. Face with a group of long pale hairs below antennal base. Antenna orange-yellow, golden haired; arista black. Labellum pale yellowish. *Thorax*: Orange-yellow. Mesonotum and subscutellum with fine dense black setae, each arising from a small black tubercle. Pleura with fine yellow hairs, often sparse. Pleurotergite with dense, yellow proclinate hairs. Posttegula orange, black-haired. Haltere yellow-brown, capitellum black-haired posteriorly. *Legs*: orange-yellow. Coxae, fore and mid femora and tibiae, and basal 2 segments of fore and mid tarsi yellow haired. Hind femur black-haired dorsally, yellow ventrally. Hind tibia and tarsus black, black-haired. Basal half of fore tibia black-haired ventrally. Fore tarsal segments 2-5 distinctly darkened, almost black, with black hairs. Mid tarsal segments similar, but paler in ground colour. *Wings*: hyaline. *Abdomen* (Fig. 36): orange-yellow. Basal two thirds of tergites with short black hairs, remainder yellow-haired. Tergites 2-5 with a black dorsal spot; tergite 6 orange-yellow, black-haired dorsally, yellow laterally. *Hypopygium* (Figs 10-12) black, black-haired.

♀: similar to ♂ except as follows:

*Head*: Relative widths of frons: at narrowest point 1; at vertex 1.5; at antennae 2.0. *Abdomen*: Tergite 7 brown; tergite 8 black, black-haired. Cerci black-brown, black-haired on outer margin, yellow apically on inner margin.

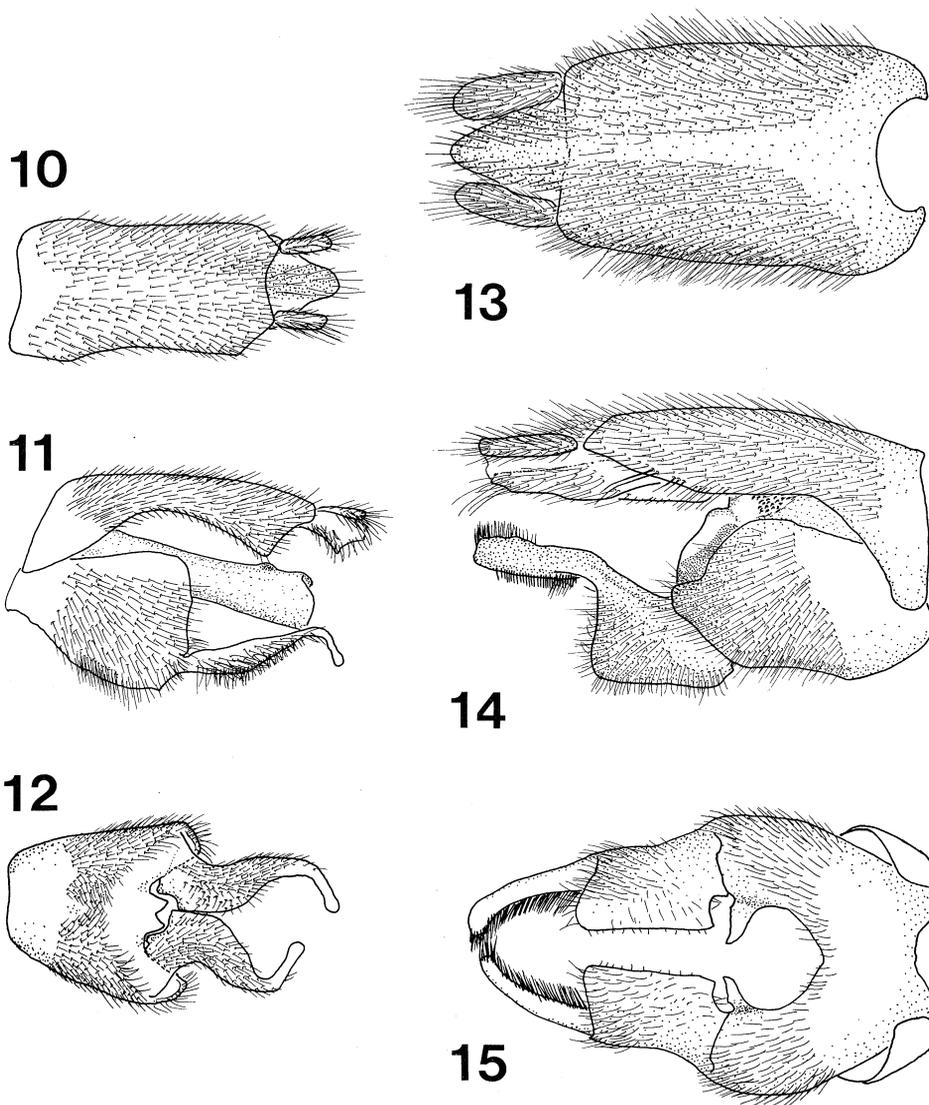
DIMENSIONS: body length, ♂ 11.3-11.8 mm, ♀ 10.8-11.2 mm; length of thorax, ♂ 3.6-3.8 mm, ♀ 3.8-4.1 mm; length of wing, ♂ 10.3-11.2 mm; ♀ 10.7-11.5 mm.

MATERIAL EXAMINED NW NEW GUINEA: 1♂ Waris, S of Hollandia, 450-500 m, 1-7.viii.1959, T.C. Maa (BPBM); 1♀ Cyclops Mountains: Ifar, 300 m, 4.xi.1959, J.L. Gressitt (BPBM); NE NEW GUINEA: 1♂ Dreikikir, Sepik District, 350-400 m, 23.vi.1961, J.L. & M. Gressitt (BPBM); 1♂ Imbia, nr. Maprik, 19.xii.1961, D.K. McAlpine (AM); 1♀ Karimui, 1080 m, 14.vii.1963, M. Sedlacek (BPBM); 1♀ Wau, Morobe District: 9.ix.1968, M. Sedlacek (BPBM); 1♀ 9.iv.1963, J. Sedlacek (BPBM); 1♀, 1.xii.1965, J. & M. Sedlacek (BPBM); 2♀, 1.xi.1965, P. Shanahan (BPBM); 2♀ Finschaffan, Huon Peninsula, 80 m, 13.iv.1963, J. Sedlacek (BPBM); 1♂, 1♀ May River, 100 m, 6-8.vi.1963, R. Straatman, light trap (BPBM); 1♂ 3.2 km S. Vanapa, Brown River Rd., 24-26.v.1965, W.A. Steffan, Malaise trap (BPBM); SE NEW GUINEA: 13♂, 18♀ Mamai Plantation, E of Port Glasgow, 3-16.ii.1965, R. Straatman, light trap (BPBM).

### ***Ptecticus gilvus* sp. n.**

(Figs 13-15)

♂ *Head*: Height 0.7 width; frons at narrowest point 0.03 head width; relative widths of frons: at narrowest point 1; at vertex 6.4; at antenna 6.6. Upper frons shining black with a row of black proclinate hairs along each eye margin. Ocellar hairs black. Lower frons pale yellow, face pale yellow with a group of dark hairs below antennal bases. Antenna yellow, slightly darker than lower frons; yellow-haired; arista black, brownish basally. Labellum orange. *Thorax*: orange-yellow. Mesonotum and subscutellum with fine dense setae, yellow laterally, black medially; setae with basal tubercle orange-yellow. Pleura with sparse fine yellow hairs. Pleurotergite with long fine yellow proclinate hairs. Posttegula orange, black-haired. Haltere brownish (possibly discoloured). *Legs*: Orange-yellow. Coxae, femora, fore and mid tibiae and metatarsi yellow-haired, hind tibia black, becoming brownish orange apically; black-haired. Hind tarsus brownish orange, somewhat darker dorsally; hairs mostly orange-yellow, with some mixed black elements throughout. 4th and 5th tarsal segments mostly black-haired dorsally. Fore and mid tarsi



Figs 10-15. *Pecticus* sp. (10-12) *P. complens* (Walker): (10) cerci, proctiger and epandrium, dorsally; (11) hypopygium, laterally; (12) dististyle and hypandrium, ventrally; (13-15) *P. gilvus* sp. n.: (13) cerci, proctiger and epandrium, dorsally; (14) hypopygium, laterally; (15) dististyle and hypandrium, ventrally.

mostly yellow-haired but with a few black elements distally, 5th segment mostly black-haired. Fore and mid empodium and pulvilli yellow; hind pulvilli brownish. *Wings*: Hyaline. Veins orange-brown. *Abdomen*: Orange-yellow, black setose, but golden-yellow along wide lateral margin and narrowly along posterior margin. Sternites with golden-yellow hairs. *Hypopygium* (Figs. 13-15): Epandrium brownish black, black setose; cerci and proctiger orange-yellow, black setose along basal margin, golden-yellow distally. Hypandrium, basistyle and dististyle deep orange-brown; dististyle almost black along edges.

♀. Unknown.

**DIMENSIONS**: body length, 13.0 mm; length of thorax, 4.2 mm; length of wing, 11.5 mm.

**MATERIAL EXAMINED**: *Holotype* ♂: NEW ZEALAND: Ridge above "Camp Bishop", 15 km up Kait R., 250-750 m, 13.vii.1956, J.L. Gressitt (BPBM).

The pale fore tarsus and terminalia distinguish this species from *P. quadrifasciatus* and *P. complens*.

***Ptecticus quadrifasciatus* (Walker)**

(Figs. 1, 2, 16-18, 37)

*Sargus quadrifasciatus* Walker 1861: 146.

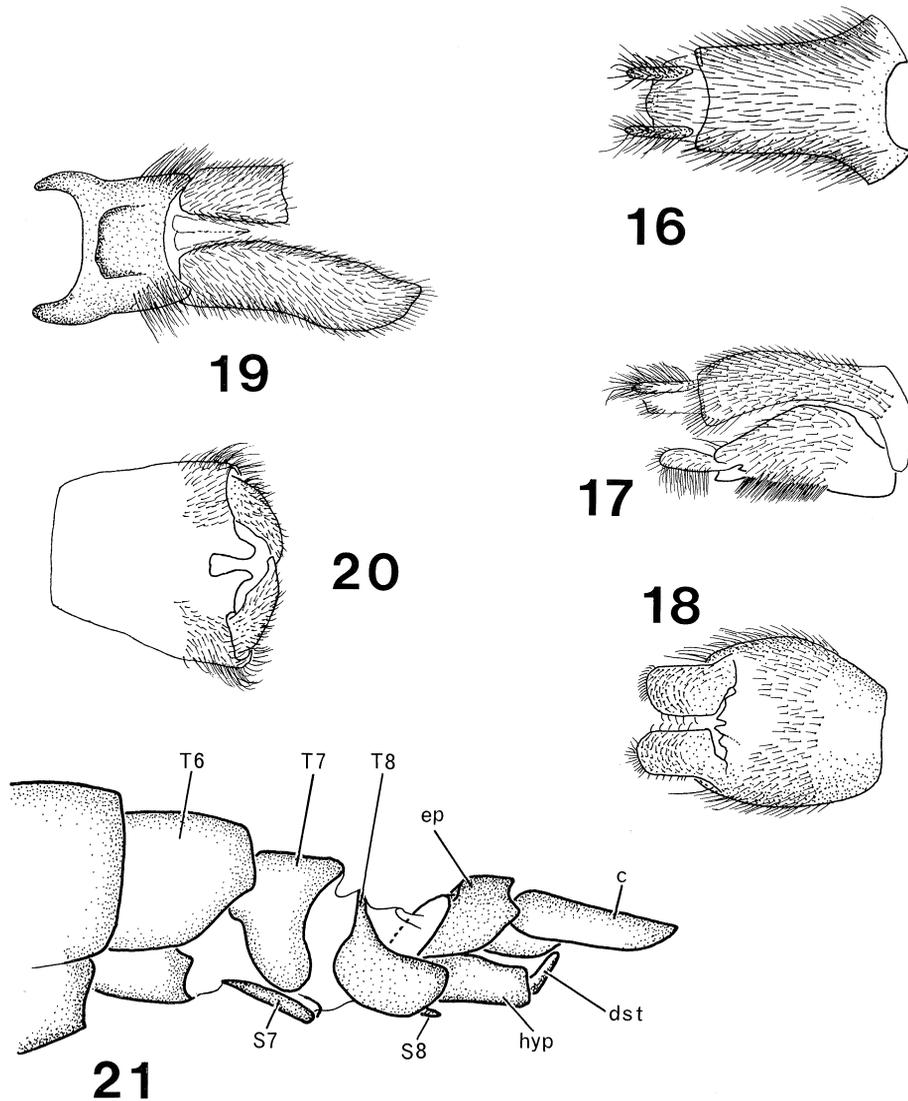
*Ptecticus quadrifasciatus* (Walker). — van der Wulp, 1896: 49.

*Ptecticus albitarsus* de Meijere 1913: 319, syn. n.

♂*Head*: Width 1.3 height; frons at narrowest point 0.02-0.04 head width; relative widths of frons: at narrowest point 1; at vertex 4.2-9.0; at antennae 4.5-8.0. Upper frons shining black, with a row of fine erect black hairs bordering each eye margin; lower frons whitish, with indistinct white hairs. Face whitish, with a distinct group of long pale hairs below antennae, these denser than in *P. complens*. Lower eye margin with a row of whitish short fine hairs. Antenna orange-yellow, yellow-haired; arista black. Labellum white. *Thorax*: orange-yellow. Mesonotum and subscutellum with fine black setae, each arising from a small black tubercle. Pleura with fine golden-yellow hairs; pleurotergite with dense yellow proclinate hairs. Haltere yellow-orange, capitellum darkened with black hairs on posterior margin. Posttegula (Figs. 1, 2) orange, black-haired. *Legs*: yellow-orange. Coxae, fore and mid femora, tibiae and tarsi yellow-haired. Hind femur black-haired dorsally, yellow ventrally. Hind tibia and metatarsus black, black-haired. Mid tibia black-haired ventrally on basal half. Fore and mid tarsal segment 2 black-haired basally, segments 3-5 black-haired. Hind tarsal segment 2 white, sometimes black-haired basally; segments 3-5 white, white-haired; apical segment with some yellow and a pair of black hairs apically. Empodium yellow. *Wings*: suffused brownish. *Abdomen* (Fig. 37): Tergites mostly black-haired, yellow laterally. Tergite 1 with a blackish brown basolateral spot; tergites 2-5 black basally; tergite 6 orange-yellow, black-haired. *Hypopygium* (Figs 16-18) black, black-haired.

♀: similar to ♂ except as follows:

*Head*: Width 1.4 height; frons at narrowest point 0.08 head width; relative widths of frons: at narrowest point 1; at vertex 2.0-2.1; at antennae 2.1-2.2. *Legs*: Tarsal segments 4 and 5 on fore and mid legs black haired, not as densely as in ♂; segment 3 apically black-haired. *Abdomen*: Tergite 6 deep orange yellow; segments 7 and 8 black, black-haired. Cerci black-haired, yellow apically.



Figs 16-21. *Plecticus* sp. (16-18) *P. quadrifasciatus* (Walker): (16) cerci, proctiger and epandrium, dorsally; (17) hypopygium, laterally; (18) dististyle and hypandrium, ventrally; (19-21) *P. isabelensis* Lindner; (19) cerci, proctiger and epandrium, dorsally; (20) dististyle and hypandrium, ventrally; (21) hypopygium laterally. Notation as Fig. 3. S. sternite.

DIMENSIONS: body length, ♂ 12.4-15.3 mm, ♀ 8.1-10.5 mm; wing length, ♂ 11.8-13.7 mm, ♀ 7.5-9.9 mm; length of thorax, ♂ 3.3-3.8 mm, ♀ 2.9-3.1 mm.

MATERIAL EXAMINED: NW NEW GUINEA: 1♂Kota Nica, Hollandia, 27.vii.1956, R. T. Simon Thomas (BPBM); 1♂Bodem, 11km SE Oerberfaren, 100 m, 7-17.vii.1959, T. C. Maa (BPBM); 1♂Kota Baru, Hollandia, 25-28.vi.1962, N. Wilson (BPBM); 1♂Genjam, 40 km W Hollandia, 100-200 m 1-10.iii.1960, T. C. Maa (BPBM); 1♂Eramboe, 29.i.1960, T. C. Maa (BPBM); Biak Island: 3♂27-29.v.1959, T. C. Maa (BPBM); 1♀18.ii.1963, R. Straatman, ex Malaise trap (BPBM); 1♂17.vii.1957, D. E. Hardy (BPBM). SW NEW GUINEA: 1♂Alkmaar, 2.ii.1910, (anon.) (ZMA). NE NEW GUINEA: 1♂Krisa, Vanimo, iv.1939, L. E. Cheesman (SAM); 1♂Imbia, nr Maprik, 22.xii.1963, D. K. McAlpine (AM); 13♂Umboi Is., approx. 8 km WNW Lab Lab, 300 m, 8-19.ii.1967, Samuelson and Colman (BPBM); 1♀Finisterne Range, Saidor: Sibong Village, 6-16.vi.1958, W. W. Brandt (BPBM); 1♂Amok, 165 m, 6.i.1960, T. C. Maa (BPBM); 1♂Huon Peninsula, Finschaffien, 80 m, 16.iv.1963, J. Sedlacek, ex Malaise trap (BPBM); 1♀May River, 100 m 8.vi.1963, R. Straatman, light trap (BPBM). SE NEW GUINEA: 2♂Daradae Plantation, 80 km N Port Moresby, 500 m, 7.ix.1959, T. C. Maa (BPBM); 1♀Brown River, nr Port Moresby, 10 m, 5.x.1958, J. L. Gressitt (BPBM); 1♂Lake Murray, 17.xi.1963, D. K. McAlpine (AM); NEW IRELAND: 1♂50 km from Kavieng, 50-130 m, 3.vii.1959, J. L. Gressitt (BPBM); 1♂Gilingil Plantation, SW New Ireland, 6.vii.1956, E. J. Ford (BPBM); 1♂Kavieng, 6.i.1971, G. Daniels (GD). AUSTRALIA: north Queensland: 1♂, 8♀, Middle Claudie River, 25.ix.-21.xi.1974, G. Daniels (GD); 1♂Claudie River, 5 ml W Mt Lamond, 24.xii.1971, McAlpine and Holloway (AM).

NOTES ON STATUS: De Meijere described *P. albitarsis* from Dutch New Guinea without making a comparison with *P. quadrifasciatus*, although he compared it with several not so closely allied species. In Brunetti's 1923 key to species he separates *P. albitarsis* from *P. quadrifasciatus* on the coloration of the abdomen, whilst in the text distinguishes *P. albitarsis* from *P. australis* Schiner on the dark brown coloration of the mesonotum. An examination of the ♂ holotype of *P. albitarsis* shows it to agree well in most characters with *P. quadrifasciatus*. Some degree of variation in the black coloration of the tergites exists, but the terminalia agree in all respects. The type of *P. albitarsis* has become very greasy, thus producing a dark brown thorax and abdomen. Another ♂ specimen examined, identified as *P. albitarsis* by de Meijere and in excellent condition agrees in all respects with *P. quadrifasciatus*.

### ***Ptecticus isabelensis* Lindner**

Figs. 19-21, 38, 39)

*Ptecticus isabelensis* Lindner 1937: 373.

*Ptecticus salomonensis* Lindner. — James 1948: 197.

♂ *Head*: Width 1.3 height; frons at narrowest point 0.05 head width; relative widths of frons: at narrowest point 1; at vertex 2; at antennae 3.3. Upper frons shining black, black-haired along each eye margin. Lower frons and face whitish. Face with black hairs below antennal bases. Antenna orange; segments 1 and 2 black-haired; arista black. Labellum yellow. *Thorax*: orange. Mesoscutum, scutellar margin and subscutellum yellow setose, each seta arising from a small black tubercle. Scutellar disc black-setose. Pleura yellow-haired. *Legs*: Coxae yellow; fore and mid coxae yellow-haired, hind coxa black-haired. Fore and mid femora yellow, yellow-haired; hind femur brownish anteriorly, yellowish apically, black-haired along dorsal and ventral margin except subapically, otherwise yellow-haired. Fore and mid tibiae yellow, yellow-haired on entire ventral surface, black antero-dorsally. Hind tibia and metatarsus black, black-haired;

tarsal segments 2, 3 and 4 ventrally white with white hairs; segment 4 darkened dorsally with black hairs; segment 5 deep brown, mostly with brown-black hairs. Fore and mid tarsi yellow-brown, black-haired dorsally, yellow ventrally. *Wings*: suffused brownish. *Abdomen* (Figs. 38, 39): Tergites 1-3 black, narrowly orange on apical margin, black-haired; lateral margin of tergites 1 and 2 orange; tergites 4-7 completely black, black-haired. Posterolateral corners of tergites 2 and 3 yellow-haired. Sternite 1 brownish basally, apically yellow; sternite 2 yellow, apical half brownish and posterior margin narrowly yellow; sternite 3 mostly deep brownish, yellowish on extreme margin; sternites 4-7 black. *Hypopygium* (Figs 19-21) black, black-haired.

**DIMENSIONS**: body length, 12.5 mm; length of thorax, 4.0 mm; length of wing, 11.2 mm.

**MATERIAL EXAMINED**: SOLOMON ISLANDS: 1♂(no date), G. M. Woodford, (AM); 1♂, 1924, W. W. Froggatt, (ANIC).

Related to *P. quadrifasciatus*, distinguished by the dark abdomen and the hind tarsal segments 2-4 being white. The AM specimen agrees well with Lindner's description. Another♂ in ANIC agrees with Lindner's description in all points except for the pattern on the abdomen, but appears to have no apparent differences in hypopygia with the AM specimen. Presumably the patterning of the abdomen is variable. The abdomen of the ANIC specimen differs from the AM specimen as follows: abdomen orange-yellow, tergites 2 and 3 with a medial black central band, surrounded by orange-yellow; tergite 4 mostly black with orange-yellow lateral and distal margins (see fig. 39).

***Ptecticus spatuloides* sp. n.**

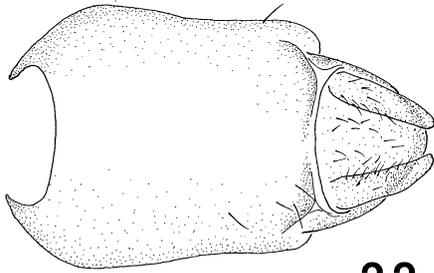
(Figs 22-24)

♂ *Head*: Width 1.3-1.5 height; frons at narrowest point 0.04-0.1 head width; relative widths of frons: at narrowest point 1; at vertex 1.3-2.8; at antennae 2.1-4.6. Upper frons shining black, with a row of proclinate hairs parallel to each eye margin. Lower frons orange with short yellow hairs on ventral two thirds. Ocellar hairs black. Face yellow-orange with a group of yellow hairs below antenna. Antenna yellow, yellow-haired; arista black. Labellum reddish brown. *Thorax*: Orange-yellow. Vestiture of mesoscutum golden yellow, with black elements medially, extending to scutellar suture. Pleura yellow-haired. Posttegula orange-yellow, with golden-yellow hairs. Haltere orange-yellow. *Legs*: orange-yellow. Coxae, femora and fore and mid tibia yellow-haired. Hind tibia black, black-haired. Fore tarsus yellow-haired with a few black elements dorsally on apical third; segments 2-5 black-haired; segments 3 and 4 with ground colour deep brown, especially so on 4th. Mid tarsus similar, metatarsus with black-hairs on apical two thirds. Hind tarsus black-brown, black-haired. *Wings*: Tinted deep brown; costal margin to apex of  $R_5$  and including second basal cell almost black. *Abdomen*: orange-yellow; vestiture entirely golden-yellow. Segments 3 and 4 wider than thorax and almost twice as wide as first segment, giving abdomen a distinctly spatulate appearance. *Hypopygium* (Figs 22-24) orange-yellow; epandrium black-haired.

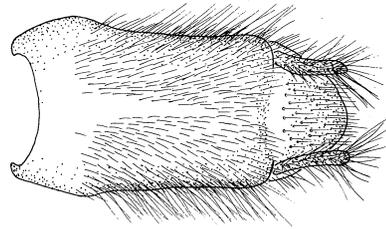
♀: similar to ♂ and differing as follows:

*Head*: Width 1.4-1.5 height; frons at narrowest point 0.06-0.09 width of head; relative widths of frons: at narrowest point 1; at vertex 1.2-2.1; at antennae 2.3-3.4. *Thorax*: Vestiture completely golden-yellow. *Legs*: Fore and mid metatarsi completely yellow-haired. Ovipositor orange, yellow-haired.

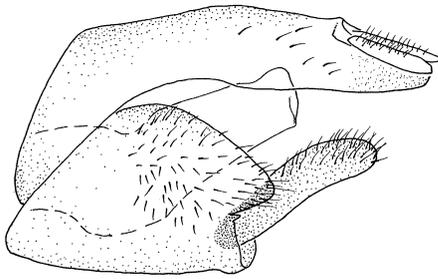
**DIMENSIONS**: body length, ♂ 10.5-12.8 mm, ♀ 10.5-11.5 mm; length of thorax, ♂ 3.8-5.1 mm, ♀ 3.5-4.2 mm; length of wing, ♂ 10.1-13.2 mm, ♀ 11.6-12.1 mm.



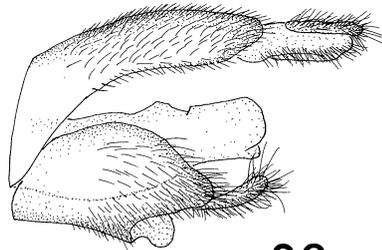
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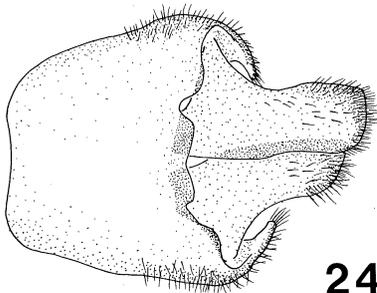
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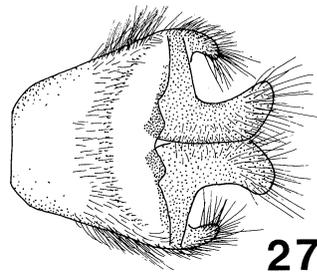
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27

Figs 22-27. *Peteticus* sp. (22-24) *P. spatuloides* sp. n.: (22) cerci, proctiger and epandrium, dorsally; (23) shypopygium, laterally; (24) dististyle and hypandrium, ventrally; (25-27) *P. ferrugineus* (Doleschall): (25) cerci, proctiger and epandrium, dorsally; (26) hypandrium, laterally; (27) dististyle and hypandrium, ventrally.

MATERIAL EXAMINED: *Holotype* ♂: NEW BRITAIN: St. Pauls, Baining, Gazelle Peninsula, 300 m, 9.ix.1955, J. L. Gressitt (BPBM).

*Paratypes*: NEW BRITAIN: 2 ♂, 1 ♀ Upper Warangai, Gazelle Peninsula, 250-600 m, 28-30.xi.1962, J. Sedlacek (BPBM); 1 ♀ same data as holotype except 8.ix.1955 (BPBM).

The hypopygium appears to be partly recessed into the 5th segment. One ♂ has its frons wider than that of the widest ♀ frons.

The shape of the abdomen and the ♂ terminalia separates this species from *P. ferrugineus*.

***Ptecticus ferrugineus* (Doleschall)**

(Figs 25-28)

*Sargus ferrugineus* Doleschall 1858: 83.

*Ptecticus ferrugineus* (Doleschall): — van der Wulp 1898: 410.

*Ptecticus atritarsus* Edwards 1915: 396. Synonymized by Brunetti 1923: 145.

Related to *P. queenslandicus* and differing from the description given for that species as follows:

♂ *Head*: Height 0.71-0.78 width. Frons at narrowest point 0.05 width of head; relative widths of frons: at narrowest point 1; at vertex 2.6-3.6; at antennae 3.8-4.2. Lower frons orange, pale yellow or white. *Thorax*: orange-yellow. Mesoscutum with short yellow setae, a few scattered black elements medially. Scutellum and subscutellum black setulose. Haltere yellowish; capitellum darkened apically, yellow-haired posteriorly. *Legs*: Coxae, femora, tibiae and 2 basal tarsal segments of fore and mid legs yellow-haired. Hind femur yellow-haired with a few black dorsal elements. Hind tibia and tarsus deep brown. Tarsal segments 3-5 on fore and mid legs black-haired, sometimes yellow-haired with only a few black elements apically on each segment. *Wings*: hyaline. Anterior branch of *M* between origin and *r-m* crossvein convex, *r-m* being at middle of discal cell (inset, Fig. 28). Submarginal cell sometimes clouded brown. *Abdomen*: Pale orange-yellow. Tergites with variable black setae dorsally, often absent. *Hypopygium* (Figs 25-27): orange-yellow, or pale yellow, with black setae.

♀: similar to ♂ except as follows:

*Head*: Height 0.67-0.71 width. Frons at narrowest point 0.08-0.1 width of head; relative widths of frons: at narrowest point 1; at vertex 1.5-1.9; at antennae 2.0-2.5.

DIMENSIONS: body length, ♂ 8.5-12.5 mm, ♀ 9.7-12.8 mm; length of thorax, ♂ 2.9-4.9 mm, ♀ 3.5-4.5 mm; length of wing, ♂ 7.5-12.3 mm, ♀ 10.1-12.5 mm.

MATERIAL EXAMINED: NW NEW GUINEA: 2 ♂, 2 ♀ Hollandia, 8.iii.1958, R.T. Simon Thomas (AM); 1 ♂ Hollandia-Binne, 20-50 m, 27.vii.1959, T.C. Maa (BPBM); 1 specimen with abdomen missing, same locality, 100 m, 2.xi.1958, J.L. Gressitt (BPBM); 1 ♀ Wisselmeren, Enarotodi, 1800-1900 m, 27.vii.1962, J. Sedlacek (BPBM). NE NEW GUINEA: 1 ♂, 1 ♀ Lae, vii.1944, F.E. Skinner (BPBM); 1 ♀ Bulolo Gorge, c 800 m, 19.xii.1961, L.W. Quate (BPBM); 3 ♀ Maprik, 150 m, 29.xii.1959-17.i.1960, T.C. Maa (BPBM); 1 ♀ Bainyik, 21.xii.1963, D.K. McAlpine (AM); 2 ♀ Munum Waters, 15 ml W of Lae, 14 and 16.i.1971, G. Daniels (GD). 1 ♂ Bulolo Riv, 800 m, 30.iii.1970, N. Gough (BPBM); 2 ♂, May River, 6 and 8.vi.1963, R. Straatman (BPBM); 1 ♂ Bubia, nr Lae, 26.vii.1957, J.H. Ardley (BPBM). SE NEW GUINEA: 1 ♂ Milne Bay, 14-28.ii.1969, J. Sedlacek, (BPBM); 1 ♂ Mamai Plantation, E of Port Glasgow, 150 m, 10.ii.1965, R.

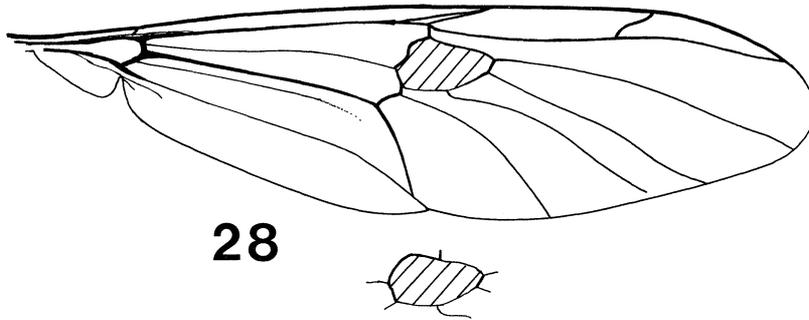


Fig. 28. *P. queenslandicus* sp. n.: wing. Insert shows discal cell of *P. ferrugineus* (Doleschall).

Straatman (BPBM); 1 ♂ Kiunga, Fly River, 21-24.xi.1957, W.W. Brandt (BPBM); 1 ♂ Mori River, Cape Rodney area, ix.1969, R. Pullen (ANIC); 1 ♂ Buna to Saputa, 5.vi.1921, E.O. Pockley (AM); 4 ♂ Mt. Lamington, v.1927, C.T. McNamara (AM); 1 ♂ Popondetta, 21.i.1971, G. Daniels (GD); BISMARCKS: NEW IRELAND: 1 ♂ Kandan, 1.i.1960, W.W. Brandt (BPBM); MANUS ISLAND: 3 ♂; 3 ♀, Los Negros Island, banana bait, 28.iii.1974, D.P. Sands (ANIC).

***Ptecticus queenslandicus* sp. n.**

(Figs 28-31)

♂ *Head*: Height 0.7 width; frons at narrowest point 0.03-0.05 head width; relative widths of frons: at narrowest point 1; at vertex 3.2-4.3; at antennae 4.0-5.0. Lower frons shining, pale yellow. Upper frons shining black with a row of black proclinate hairs along eye margin. Ocellar hairs black. Face pale yellowish with a group of pale hairs below antennal bases. Antenna yellow; arista black. Labellum pale yellow. *Thorax*: orange-yellow. Mesonotum and subscutellum mostly with fine dense yellow setae, some black elements medially, each arising from a small orange-yellow tubercle. Pleura with sparse fine yellow hairs. Pleurotergite with longer dense fine yellow proclinate hairs. Posttegula orange-yellow, yellow-haired. Haltere yellowish; capitellum with a few black hairs posteriorly. *Legs*: Orange-yellow. Coxae, femora, fore and mid tibiae and 2 basal tarsal segments yellow-haired. Hind tibia and tarsus completely black, black-haired. Fore and mid tarsi with segments 3-5 black-haired. *Wing* (Fig. 28): Hyaline, indistinctly clouded apically; veins black. Anterior branch of *M* between origin and *r-m* crossvein sinuous. *Abdomen*: Orange-yellow, more richly coloured than thorax. Tergites 2-5 with a variable medio-basal area of fine black setae, laterally yellow setose; tergite 6 yellow setose. Sternites yellow-haired. *Hypopygium* (Figs 29-31): yellowish brown, mostly covered with black setae.

♀: differs from ♂ as follows:

*Head*: Height 0.69-0.74 width; frons at narrowest point 0.08-0.1 head width; relative widths of frons: at narrowest point 1; at vertex 1.4-2.0; at antennae 1.8-2.6. *Legs*: Fore and mid tarsi with black hairs on segments 3-5 less dense and shorter apically. *Abdomen*: Ovipositor yellow-brown, with few setae.

**DIMENSIONS**: body length, ♂ 8.7-10.5 mm, ♀ 9.0-11.2 mm; length of thorax, ♂ 2.7-3.3 mm, ♀ 2.8-4.1 mm; wing length, ♂ 7.9-9.0 mm, ♀ 8.2-10.1 mm.

MATERIAL EXAMINED: *Holotype* ♂: AUSTRALIA, north Queensland: Middle Claudie River, 29.ix.1974, G. Daniels (AM).

*Paratypes*: 3 ♂, 21 ♀ same data except 13.ix.-1.xi.1974 (GD); 1 ♂ Cape Weymouth, 23.iv.1931, L. Wassel (AM); 1 ♂ 2 ml N Tully River bridge, Cardstone-Ravenshoe Rd, 16.i.1967, McAlpine and Holloway (AM); 1 ♂ Mulgrave River, 4 ml W Gordonvale, 2.i.1967, D.K. McAlpine (AM); 1 ♀ Crystal Cascades, near Cairns, 27.xii.1964, C.F. Ashby (ANIC).

***Ptecticus amplior* sp. n.**

(Figs 3, 32, 33, 41)

♂ *Head*: Height 0.72 width. Frons at narrowest point 0.05 head width; width of frons at vertex and antennal level subequal, only slightly wider than at level of lower margin of upper frons. Eyes bluish in life. Upper frons shining black, with a row of yellow hairs parallel to each eye margin and with a few scattered elements between. Ocellar hairs black. Vertex behind ocellarium orange-yellow. Lower frons yellow with golden-yellow hairs medially on lower half. Face yellow with fine golden-yellow hairs below antennae. Antenna orange-yellow; arista black. Labellum yellow. *Thorax*: brownish yellow. Mesoscutum yellow-setose anteriorly, black-setose posteriorly. Scutellum black-setose; subscutellum with yellow setulae, longer than in other species. Hairs on pleura yellow, not as fine as other species. Posttegula orange-yellow, yellow-haired. Haltere yellow; capitellum slightly darkened and with golden-yellow hairs anteriorly and posteriorly. *Legs*: orange-yellow. Coxae, femora, fore and mid tibiae and tarsi yellow-haired. Hind tibia black with black hairs, a few yellow hairs basally. Hind metatarsus blackened basally, becoming orange-yellow apically, black-haired basally, becoming golden-yellow apically; segments 2-5 yellow, with golden-yellow hairs and some black elements apically on each segment. Fore and mid tarsal segments 3-5 black-haired dorsally. *Wings*: Basally yellowish, apically brownish, especially in costal area. *Abdomen* (Fig. 41): yellow-orange, slightly more deeply coloured than thorax. Tergites 2-6 with black setulae on most of dorsal surface, some specimens with a very variable deep brownish band on dorsal surface. *Hypopygium* (Figs 3, 32, 33): orange-yellow, yellow-haired.

♀: similar to ♂.

DIMENSIONS: Body length, ♂ 16.3-17.0 mm, ♀ 11.8-14.8 mm; length of thorax, ♂ 5.2-5.4 mm, ♀ 3.6-4.8 mm; length of wing, ♂ 15.0-16.0 mm, ♀ 10.7-13.6 mm.

MATERIAL EXAMINED: *Holotype* ♂: AUSTRALIA, north Queensland: Middle Claudie River, 11.x.1974, G. Daniels (AM).

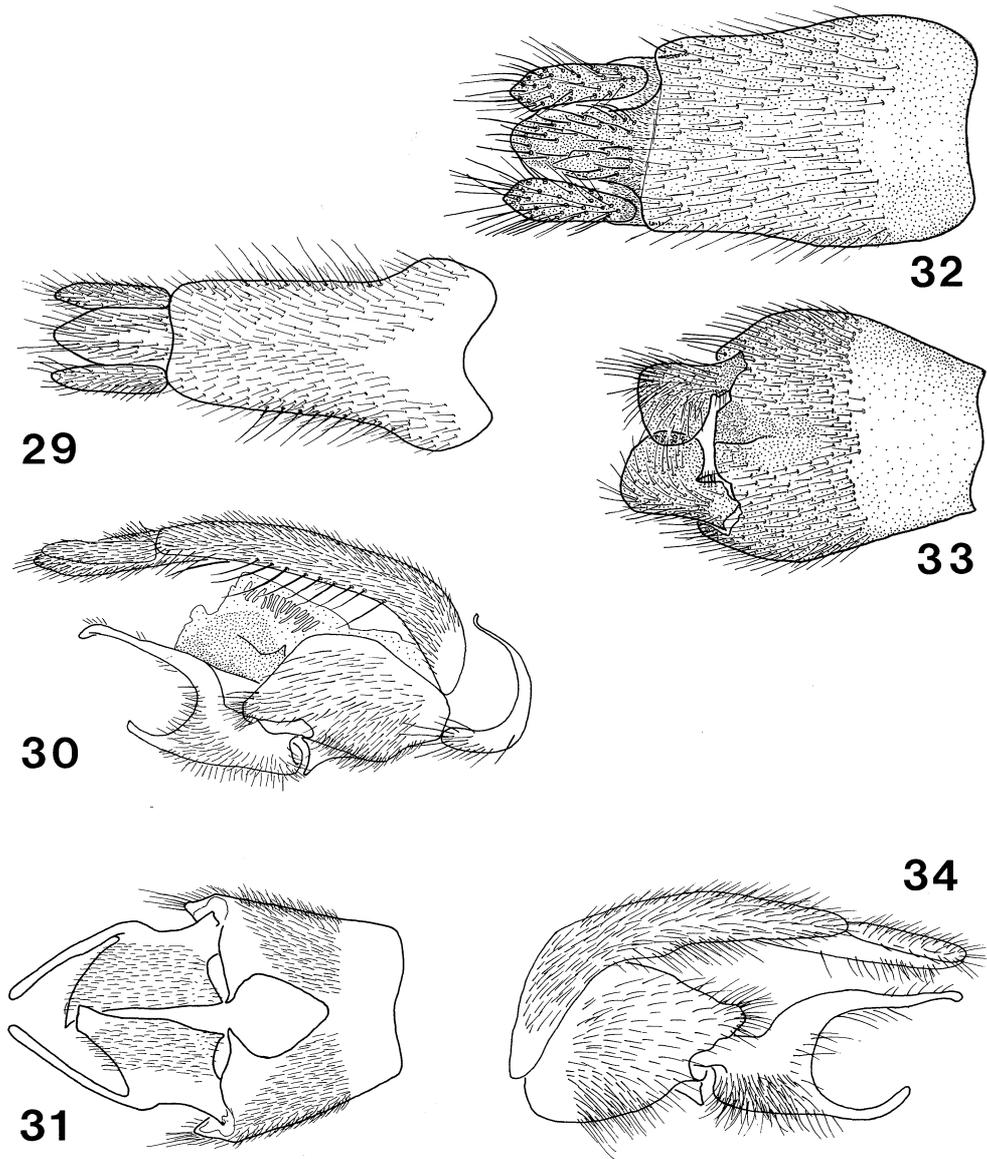
*Paratypes*: NW NEW GUINEA: 1 ♂ Ifar, Cyclops Mountains, 300-500 m, 28-30.vi.1962, J.L. Gressitt (BPBM); NE NEW GUINEA: 1 ♀ Lae, 27.vi.1956, E.J. Ford Jnr. (BPBM); SE NEW GUINEA: 1 ♀ Mamai Plantation, E of Port Glasgow, 150 m, 3.ii.1965, R. Straatman (BPBM); NORMANBY IS: 1 ♀ Wakaiuma, Seva Bay: 1-10.xii.1956, W.W. Brandt (BPBM); 1 ♂, 11.xi.1956, 1 ♂, 25-30.x.1956, (BPBM); WOODLARK IS: Kulumadau Hill, 1 ♀, 25.ii.1957, 1 ♀, iii.1957, 1 ♀, 27-30.iv.1957, W.W. Brandt (BPBM).

This species is easily recognised by its wing coloration, large size and reduced black setae of the fore and mid tarsi.

***Ptecticus helvolus* sp. n.**

(Fig. 34)

This species agrees very well with the description given for *P. ferrugineus*. However, it is distinguished by the yellowish upper frons and the male terminalia (Fig. 34), the



Figs 29-34. *Pcticus* sp. (29-34) *P. queenslandicus* sp. n.: (29) cerci, proctiger and epandrium, dorsally; (30) hypopygium, laterally; (31) dististyle and hypandrium, ventrally; (32, 33) *P. amplior* sp. n.: (32) cerci, proctiger and epandrium, dorsally; (33) dististyle and hypandrium, ventrally; (34) *P. helvolus* sp. n.: hypopygium, laterally.

terminalia being similar to *P. queenslandicus*. The shape of the discal cell is also similar to *P. queenslandicus*. The hind tibia is distinctly brown, with black hairs and the hind tarsus is yellow (yellow-brown in 1 specimen), yellow-haired anteriorly, black-haired posteriorly, the third and fourth segments are distinctly brown.

♂ *Head*: Height 0.73 width. Frons at narrowest point 0.03 head width; relative widths of frons: at narrowest point 1; at vertex 5.0; at antennae 5.1.

*DIMENSIONS*: Length of body, 10.0 mm; length of thorax, 3.5 mm; length of wing 10.5 mm. The wings are badly crumpled, the above dimension being estimated.

*MATERIAL EXAMINED*: *Holotype* ♂: NE NEW GUINEA: Torricelli Mtns, Nengian Village, 17-24.xi.1958, W. W. Brandt (BPBM).

Other material examined: NE NEW GUINEA: 1 ♂ Bubia, near Lae, 27.v.1957, J. H. Ardley (BPBM).

The Bubia specimen has the abdomen marked similarly to fig. 36 (*P. complens*).

A ♀ from Sio, north coast of New Britain (BPBM) doubtfully belongs to this species. The frons is yellow-brown, and the hind tibia is brownish basally, yellow-brown apically, but differs in having the wing veins completely yellow with some greyish suffusion apically.

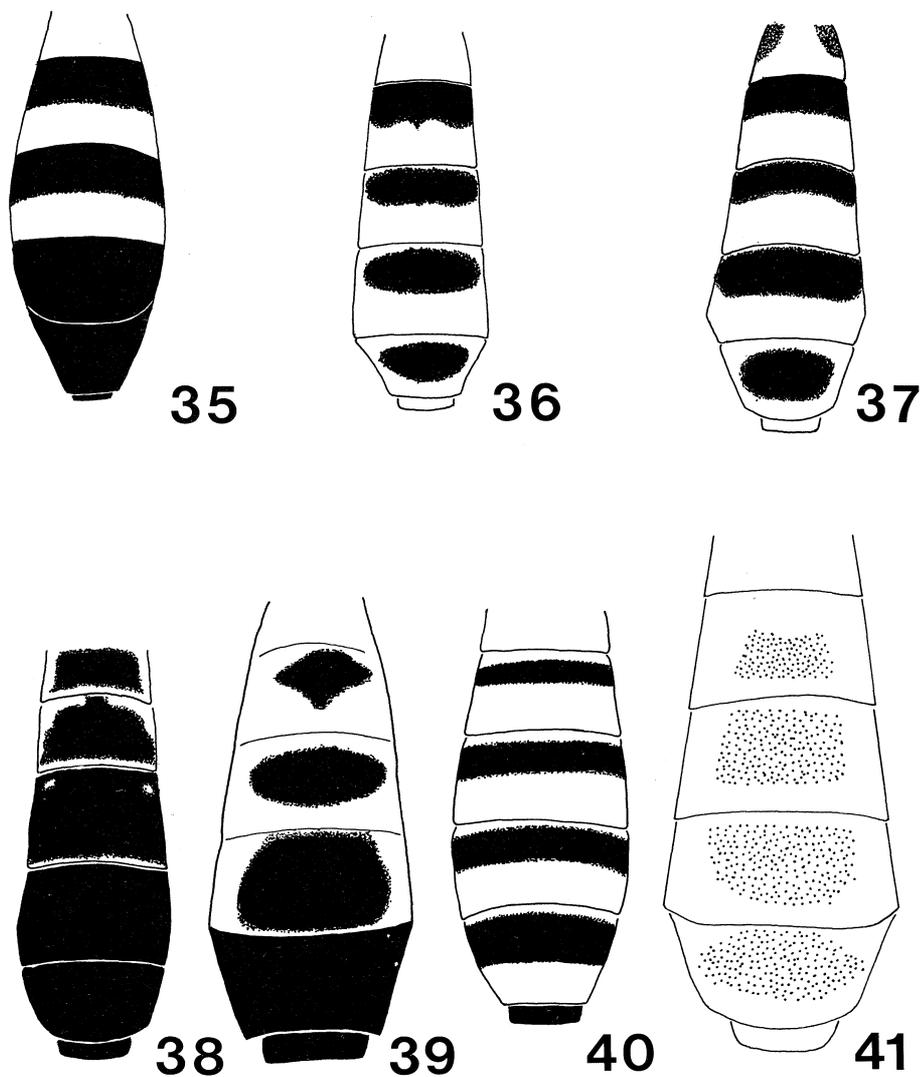
***Ptecticus substitutus* sp. n.**

(Figs 42-44)

*Ptecticus repensans* (Walker). — James 1948: 197 (misidentification).

♂ *Head*: Height 0.7 width. Frons at narrowest point 0.02-0.07 head width; relative widths of frons: at narrowest point 1; at vertex 8.5-12; at antennae 8.5-10. Lower frons shining pale yellow. Upper frons shining black tending to become brown around ocellar tubercle and with yellow proclinate hairs, being rather dense on lower half and sparse and in a single row parallel to eye margin on upper half. Ocellar hairs yellow. Face shining pale yellow with a group of yellow hairs just below antennal bases. *Antennae*: yellow, yellow-haired; arista black. *Thorax*: orange-yellow to yellow. Mesonotum laterally with fine short dense yellow setae, medially and submedially black-setose. Subscutellum with fine dense golden-yellow setae. Pleura with sparse fine yellow hairs. Pleurotergite with longer fine dense golden-yellow proclinate hairs. Posttegula yellow to orange, yellow-haired. Haltere yellowish, capitellum sometimes with a few black hairs posteriorly. *Legs*: Orange-yellow to yellow. Coxae, femora, fore and mid tibiae and 2 basal tarsal segments with golden-yellow hairs. Hind tibia brown to black, black-haired. Hind metatarsus yellow to white, black to brown-haired on basal third. Hind tarsal segment 2 yellow to white with a dorsal patch of black hairs apically. Segments 3-5 on all tarsi deep brown to black, black-haired. Hind tarsal segment 3 occasionally white to yellow, white to yellow-haired. *Wings*: Yellowish hyaline; veins yellow to yellow-orange. Microtrichia yellowish. Macrotrichia and setae on veins black. Anterior branch of *M* between origin and *r-m* crossvein sinuous. *Abdomen*: Yellow to orange-yellow, golden-yellow setose. Tergites 1-5 with a variable central area of black setae on medial line. *Hypopygium* (Figs 42-44): black, black-setulose, cerci and proctiger orange-yellow with golden-yellow hairs.

♀: differs from ♂ as follows:



Figs 35-41. Abdominal markings of *Ptecticus* sp. (35) *papuanus* (Bigot); (36) *complens* (Walker); (37) *quadrifasciatus* (Walker); (38, 39) *isabelensis* Lindner; (40) *eximius* sp. n.; (41) *amplior* sp. n.

*Head*: Height 0.7-0.75 width. Frons at narrowest point 0.07 head width. Relative widths of frons: at narrowest point 1; at vertex 1.6; at antennae 2.5. Upper frons with golden-yellow hairs dorsally along eye margin and on entire lower half. Ocellar hairs yellow. Lower frons brown. Antennae yellow to yellow-brown; arista black.

**DIMENSIONS**: Body length, ♂ 11.5-15.0 mm; ♀ 12.0-14.5 mm; length of thorax, ♂ 3.8-4.8 mm; ♀ 4.1-4.5 mm; wing length, ♂ 10.5-13.5 mm; ♀ 11.5-12.4 mm.

**MATERIAL EXAMINED**: *Holotype* ♂: SOLOMON ISLANDS: BOUGAINVILLE: Kukugai Village, 150 m, xii.1960, W. W. Brandt (BPBM).

*Paratypes*: SOLOMON ISLANDS: BOUGAINVILLE: 2 ♀ Buin, 27.xii.1970, G. Daniels (GD); 1 ♂ Kieta, 26.xi.1959, T. C. Maa (BPBM). SANTA ISABEL IS: 1 ♂ Tantamba 0-50 m, 14.ix.1964, R. Straatman (BPBM). NEW GEORGIA GROUP: 1 ♀ NE end of Rendova Island, 18.vii.1959, J. L. Gressitt (BPBM). GUADALCANAL IS: 1 ♂ Paripao 22.v.1960, C. W. O'Brien (BPBM); 1 ♀ Roroni, 35 km E of Honiara, 10 m, light trap, 18.v.1964, R. Straatman (BPBM); 1 ♂, 2 ♀ Betikama River, ix.1960, W. W. Brandt (BPBM). MALAITA IS: 1 ♀ Dala, light trap, 25.vi.1964, R. Straatman (BPBM). FLORIDA GROUP: 1 ♂ Gairava, 14.ix.1960, C. W. O'Brien (BPBM); 1 ♂, 1 ♀ Haleta, Nggela Is, 250 m, Malaise trap, 17.x.1964, R. Straatman (BPBM); 1 ♂, 1 ♀ Gairava M'boli passage, Big Nggela, 13.ix.1960, C. W. O'Brien (BPBM).

A camera lucida drawing of the discal cell of the type specimen of *P. repensans* kindly supplied by Mr K. G. V. Smith places *P. repensans* in the group with *r-m* opposite *M*<sub>3</sub>. *P. substitutus* differs from *P. repensans* in having *r-m* proximal to *M*<sub>3</sub>. Also the hind tarsus of *P. substitutus* differs in being black with black setae. Unfortunately the genitalia of the type are missing and a comparison is not possible.

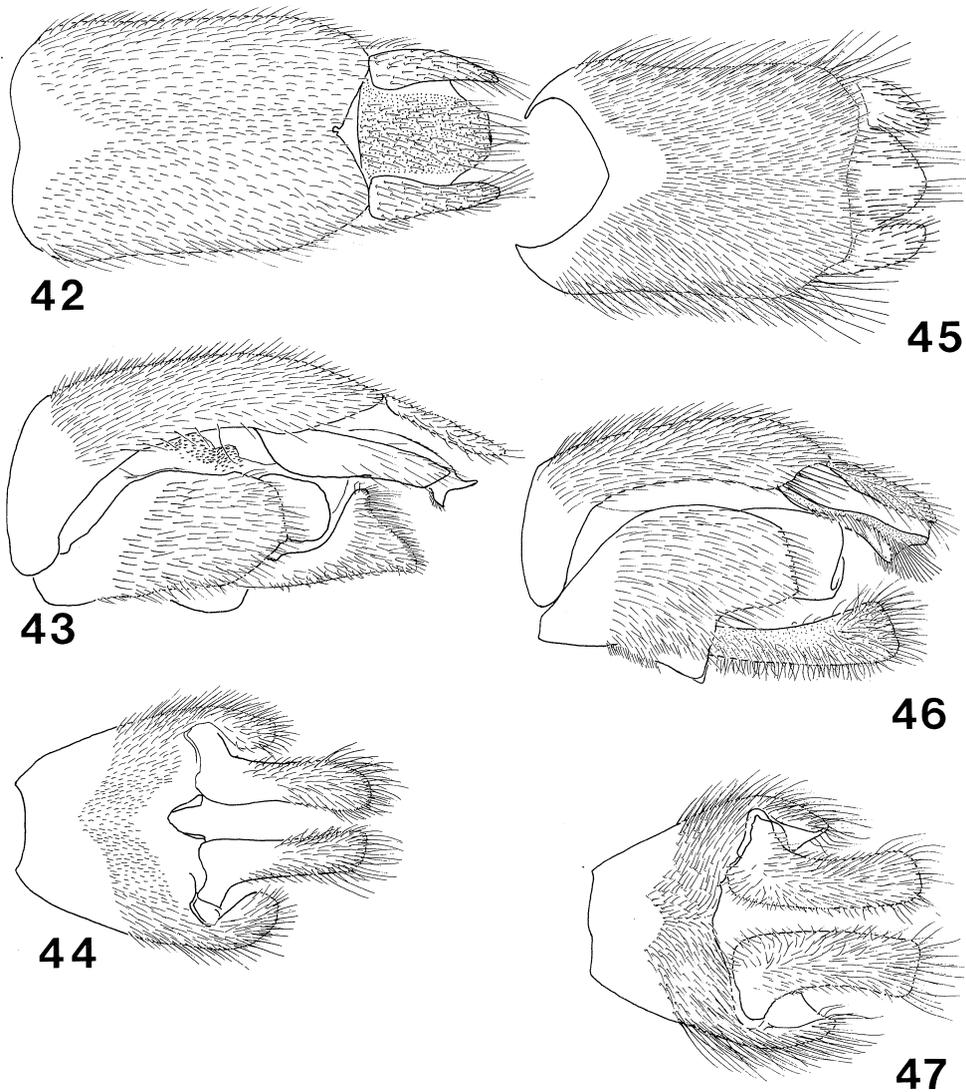
### ***Ptecticus eximius* sp. n.**

(Figs 40, 45-47)

*Head*: Height 0.75 width; frons at narrowest point 0.02 head width; relative widths of frons: at narrowest point 1; at vertex 7; at antennae 10. Upper frons shining black with a row of yellowish proclinate hairs along each eye margin. Ocellar hairs yellowish, lower frons pale yellow, face pale yellow with a group of yellow hairs below antennal bases. Antennae orange-yellow; arista brownish. Labellum orange-yellow. *Thorax*: Orange-yellow. Mesonotum and subscutellum with fine dense black setae; alveoli orange. Lateral margin of mesonotum and pleura with fine golden hairs, being sparse on pleura. Pleurotergite with long fine yellow proclinate hairs. Posttegula orange-yellow, black-haired. Haltere orange, becoming brown-orange towards capitellum. *Legs*: Orange-yellow. Coxae femora, fore and mid tibiae and metatarsus yellow-haired; hind tibia black, black-haired with a few yellow ventral hairs subapically. Hind metatarsus brownish orange, yellow-haired with a few basal black hairs. Remainder of hind tarsus missing. Fore and mid tarsi with segments 1 and 2 yellow-haired. Fore tarsus with segments 3-5 brownish, yellow apically and basally; black-haired. Mid tarsus with segments 3-5 yellow, black-haired. *Wings*: Hyaline. Veins orange-yellow. *Abdomen*: Orange-yellow, black-setose, but narrowly with golden-yellow setae along lateral margin. Sternites with golden-yellow hairs. Tergites 2-5 with a black-brown transverse band basally (fig. 40). *Hypopygium* (Figs 45-47) deep black-brown, black-setose.

♀: similar to ♂, except as follows:

*Head*: Height 0.74-0.75 width; frons at narrowest point 0.09 head width; relative widths of frons: at narrowest point 1; at vertex 1.6-1.8; at antennae 2.1-2.4. *Legs*: Tarsi orange-brown, black-haired dorsally, orange ventrally. *Abdomen*: Cerci brownish black, black-haired.



Figs 42-47. *Ptecticus* sp. (42-44) *P. substitutus* sp. n.: (42) cerci, proctiger and epandrium, dorsally; (43) hypopygium, laterally; (44) dististyle and hypandrium, ventrally; (45-47) *P. eximius* sp. n.: (45) cerci, proctiger and epandrium, dorsally; (46) hypopygium, laterally; (47) dististyle and hypandrium, ventrally.

DIMENSIONS: Body length, ♂ 11.2 mm, ♀ 8.8-9.5 mm; length of thorax, ♂ 4.0 mm, ♀ 2.8-3.0 mm; wing length, ♂ 10.8 mm, ♀ 7.3-8.5 mm.

MATERIAL EXAMINED: *Holotype* ♂: SOLOMON ISLANDS: SAN CRISTOBAL: Kira Kira, 0-50 m, 10.xi.1964, R. Straatman, Malaise trap (BPBM).

*Paratypes*: 2 ♀, same data as holotype except 15 and 20.xi.1964 (BPBM).

*P. eximius* can be separated from *P. substitutus* by the presence of dark transverse abdominal bands and male genitalia and from *P. complens* by the narrower black transverse abdominal bands and the orange-brown hind tarsus. Some specimens of *P. substitutus* have indications of transverse abdominal bands, but are formed by dense areas of short black setae. In no specimen of *P. substitutus* is the banding as strong or as well defined as in *P. eximius*.

The male terminalia of the two species are very similar, although the epandrium and cerci of *P. eximius* are much shorter than *P. substitutus*. Also the dististyle of *P. eximius* lacks the characteristic apical expansion of *P. substitutus*.

This species is closely allied to *P. substitutus*, also from the Solomons, and appears to occur only on San Christobal at the southernmost end of the Solomons. *P. substitutus* has been recorded from all the large islands in the Solomons except for San Christobal.

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