

**THE GENERA *SALDUBELLA* AND *LOPHOTELES*  
IN NEW GUINEA AND THE BISMARCK ARCHIPELAGO  
(DIPTERA, STRATIOMYIDAE, PACHYGASTRINAE)<sup>1, 2</sup>**

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*Abstract:* The genera *Saldubella* and *Lophoteles* are redefined and keys to the species are presented. New species are as follows: *Saldubella albipluma*, *latimanus*, *scutellaris*, *pictipes*, *gressitti*, *longipennis*, *hardyi*, *missimensis*, *wauensis*, and *diffusa*, and *Lophoteles vittata*, *latipennis*, *elongata*, and *glabrifrons*, all from New Guinea; and *Saldubella abdominalis*, *brevis*, *obliqua*, and *tenuicornis*, from New Guinea, and *Lophoteles costalis* and *laticeps*, from New Britain. *S. tenuicornis* is also recorded from New Guinea. The male of *Lophoteles fascipennis* Kertész is described for the first time.

The genus *Lophoteles* was erected by Loew (1858: 110) for a single species, *L. plumula* Loew, from the Radak Chain of the Marshall Islands. It remained monotypic until Williston (1900: 250) added *L. pallidipennis*, from Mexico. Enderlein (1914) supposedly dealt with this genus, but his concept of it was shown to be in error by Kertész (1914: 510), who redescribed *Lophoteles* and its type-species in detail, synonymized *Salduba exigua* Wulp (1898: 413) with *L. plumula*, removed *L. pallidipennis* to another genus (*Cosmariomyia*), and described a new species, *L. fascipennis*, from New Guinea. Subsequently, James described 2 species, *L. dentata* from the Solomon Islands (1948: 213) and *L. cheesmanae* from New Caledonia (1950: 259) and referred *Saldubella vittipennis* Lindner (1937: 389) to this genus (James 1948: 212).

The genus *Saldubella* was erected by Kertész (1916: 142) for the type-species, *Salduba signatipennis* Wulp, and *Saldubella yombae* Kertész, n. sp. Lindner (1938: 435) added *S. margaritifera*, n. sp. All 3 are known only from New Guinea.

The purpose of this paper is to clarify the status of *Lophoteles* and *Saldubella* and to present a review of the species known to occur in New Guinea and the Bismarck Archipelago. Since no species of *Saldubella* have been recorded outside that geographical area, the treatment of this genus is a review of all its known species. *Lophoteles*, on the other hand, is represented by 3 known extralimital species, *L. fascipennis*, *L. dentata*, and *L. cheesmanae*. *L. plumula* occurs widely through Micronesia, New Hebrides, the Solomon Islands, and the Seychelles, but also in New Britain and New Guinea (James 1962: 77).

The relationship of *Saldubella* and *Lophoteles* to each other is indeed close. The distinction that has usually been made is based on the relative length and width of the antennal flagellum, about as long as broad in *Lophoteles*, longer than broad in *Saldubella*. On this basis the 2 genera trace in Kertész's key (1916: 127-40) to paragraphs 9 and 16, respectively. In some species of *Saldubella*, however, the flagellum is relatively short. Particularly in such cases, another antennal character, the separation between the pedicel and flagellum, is more useful for definition. In *Saldubella* these 2 antennal segments are discretely separated (cf FIG. 1-4); in *Lophoteles*, on the other hand, the pedicel is convex or produced apically, protruding into the

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flagellum and forming with it a compact, oval antennal unit (cf FIG. 5, 7).

Other distinctions between the 2 genera occur more in the form of tendencies than in clearly definable characters. In *Lophoteles* the face in both sexes is usually densely covered with white tomentum; in the male the frons is similarly tomentose except along the median line and in the female the tomentum occurs on the frons in the form of 2 conspicuous quadrate or rectangular patches. (Exceptions to the above are *L. latipennis* and *L. glabrifrons*, aberrant species which might need to be referred to another genus). In *Saldubella* the middle of the face is not tomentose; when it is (in *S. signatipennis* and closely related species), the orbits are much more densely tomentose than the middle of the face and the frontal patches of the female are absent.

The arista is relatively short in *Lophoteles*, where, even with the relatively short flagellum, it accounts for 65% or less of the antennal length (cf. FIG. 5, 7). In *Saldubella* it may account for 70-75% of the antennal length (cf FIG. 4); in those species in which it is less (*S. pictipes*, *S. signatipennis*, *S. margaritifera*, *S. albipluma*, *S. latimanus*, *S. scutellaris*, and *S. longipennis*, cf FIG. 1-3), only the antenna of *S. longipennis* approaches the *Lophoteles* type, that of the other species being more elongated.

Wing venation is of the same general type throughout the 2 genera, and even tendencies are difficult to trace. A well-developed stigma occurs in such *Lophoteles* species as *L. plumose* and *L. fascipennis*; in others it is more poorly developed or indistinguishable, and in *Saldubella*, though sometimes present, it is never prominent. Vein  $R_s$  tends to become angulate at r-m in *Saldubella* (cf FIG. 11, 13, 14) and bowed in *Lophoteles*, but individual species of both genera vary in this respect (cf FIG. 12, 16 for notable exceptions).

The choice of *S. signatipennis* as type of *Saldubella* was unfortunate since the characters of that species, particularly those of the head, tend more toward *Lophoteles* than in most other members of the genus. However, the only other choice would have been *S. yombae*, which might be unidentifiable. The type specimens of both species are lost.

The terminology used here is more or less standard. The antennal ratio is that of the lengths of the scape, pedicel, flagellum, and arista. The term *supra-alar hump* refers to the prominent convex area, on each side, behind the mesonotal suture and above the wing base; it is a useful term because the color of the mesonotal pile often varies here from that found elsewhere on the mesonotum.

Most of the material on which this study was based is from the collection of the Bishop Museum, Honolulu, Hawaii, and all holotypes will be deposited there. Other specimens are from the California Academy of Sciences, the Zoological Museum, Copenhagen, and Washington State University.

#### Genus SALDUBELLA Kertész

*Saldubella* Kertész, 1916, Ann. Hist. Nat. Mus. Nation. Hung. 14: 142. Type-species: *Salduba signatipennis* Wulp, by original designation.

The following key will separate the known species of *Saldubella* except *S. yombae* Kertész; concerning the status of that species, see discussion under *S. latimanus*.

1. Antennal arista white with white hair . . . . . *albipluma*, n. sp.  
Antennal arista black with black hair . . . . . 2
2. Front tarsus flattened, broader than other tarsi, black; wing uniformly deep brown. . . . . *latimanus*, n. sp.  
Front tarsus cylindrical, no broader than other tarsi, largely to wholly yellow; wing light brown, hyaline, or patterned hyaline and brown. . . . . 3
3. Abdomen predominantly reddish yellow . . . . . *abdominalis*, n. sp.  
Abdomen wholly black or brownish black unless discolored. . . . . 4
4. Apex and sides of scutellum distinctly yellow. . . . . *scutellaris*, n. sp.  
Scutellum wholly black . . . . . 5
5. Wing uniformly brown or hyaline. . . . . 6  
Wing hyaline with a distinct brown pattern, usually in the form of an area extending lengthwise

- over median 1/3 of wing ..... 10
6. Wing brown; scape, pedicel and arista, including its hairs, black; legs conspicuously marked with black. .... *pictipes*, n. sp.  
Wing hyaline; scape and pedicel bright yellow. .... 7
7. Legs yellow; abdomen 1.75 (♀) to 2.50 (♂) as long as wide (see also *diffusa*)..... *gressitti*, n. sp.  
Legs with conspicuous black or brown markings on femora; abdomen about 1.25 as long as wide. .... 8
8. Wing 2.0 to 2.3 as long as abdomen; upper part of sternopleuron with appressed white hairs which continue onto adjacent mesopleuron..... 9  
Wing about 3.0 as long as abdomen; upper part of sternopleuron and posterior part of mesopleuron with scattered erect hairs but without appressed ones..... *longipennis*, n. sp.
9. Patch of appressed hairs on sterno- and mesopleuron well separated from notopleural suture; dark markings of femora usually distinctly black ..... *brevis*, n. sp.  
Patch of appressed hairs on sterno- and mesopleuron reaching notopleural suture; dark markings of femora brown ..... *hardyi*, n. sp.
10. Antennae arising at or below middle of head in profile; eye broadly rounded below (FIG. 3); tomentose facial orbits broad or narrow, in either case coextensive with the less prominent tomentose area of middle of face ..... 11  
Antennae arising distinctly above middle of head in profile; eye narrowly rounded below (FIG. 4); tomentose facial orbits narrow, facial tomentum confined to orbits ..... 12
11. Cell R<sub>4</sub> wholly clouded or at most grading to subhyaline apically. .... *signatipennis*  
Cell R<sub>4</sub> hyaline except along veins, where it is clouded, the contrast conspicuous ..... *margaritifera*
12. Cell R<sub>4</sub> wholly clouded, moderately large (cf FIG. 10)..... *missimensis*, n. sp.  
Cell R<sub>4</sub> largely hyaline or subhyaline; if clouded, small ..... 13
13. Antennal scape brown to dark brown, usually contrasting in color with pedicel..... 14  
Antennal scape yellow, concolorous with pedicel ..... 15
14. Front tibia and most of apical 1/2 of front femur brown to black..... *wauensis*, n. sp.  
Front tibia yellow ..... *wauensis*, var.
15. Cell R<sub>4</sub> small (FIG. 14); legs wholly yellow; brown area of wing well defined. .... *obliqua*, n. sp.  
Cell R<sub>4</sub> of moderate size (cf FIG. 10, 11); femora usually distinctly banded with black or brown; brown area of wing well defined but more diffuse than in above ..... 16
16. Anterior part of mesopleuron bare and shining; patch of appressed hairs on sterno- and mesopleuron well separated from pile of pectus by a shining bare area; antennal scape about 2X as long as maximal width..... *tenuicornis*, n. sp.  
Anterior part of mesopleuron with a prominent patch of white hairs, confluent with those of sternopleuron and pectus; antennal scape about 1.50 to 1.75 X as long as maximal width ..... *diffusa*, n. sp.

**Saldubella albipluma** James, n. sp.

FIG. 1, 8

♂ *Head* in profile (FIG. 1) strongly receding. Eyes contiguous about 1/2 distance from anterior ocellus to antennal bases. Head black; ocellar triangle, vertex, and most of occiput shining to subshining, bare; lower part of occiput and gena with short white hairs; frontal triangle and narrow facial orbits with white tomentum which does not completely conceal ground color, orbits with an irregular row of semierect white hairs; face otherwise shining to subshining, with white hairs below antennal bases. Antennae set slightly above middle of head in profile; ratio 15:12:20:65; flagellum 1.5 x as long as high; scape shining black; pedicel shining, flagellum dull, both orange-yellow; basal flagellomere of arista short, brown, apical one elongated, white, with dense white hairs. Proboscis orange-yellow. *Thorax* black. Mesonotum and scutellum shining to dull with short appressed brassy hairs which become pale yellow to yellowish toward notopleural suture; upper parts of mesopleuron and sternopleuron shining and bare, most of pleura with silky, white, appressed to semierect hairs longer and more conspicuous than those of mesonotum. Legs mostly pale yellow; coxae rusty brown; the following brownish black to black - front femur except broadly at base, basal 1/3 to 1/2 of front tibia, apical 1/4 to 1/3 of middle and hind femora, and basal 1/4 to 1/3 of middle and hind tibia; tarsi slightly darker at extreme apex. Wing (FIG. 8) hyaline or uniformly very pale brownish; vein R<sub>1</sub> very short, ending in costa opposite cross-vein r-m; cell R<sub>4</sub> large; discal cell elongated, about 3x as long as wide. Halter

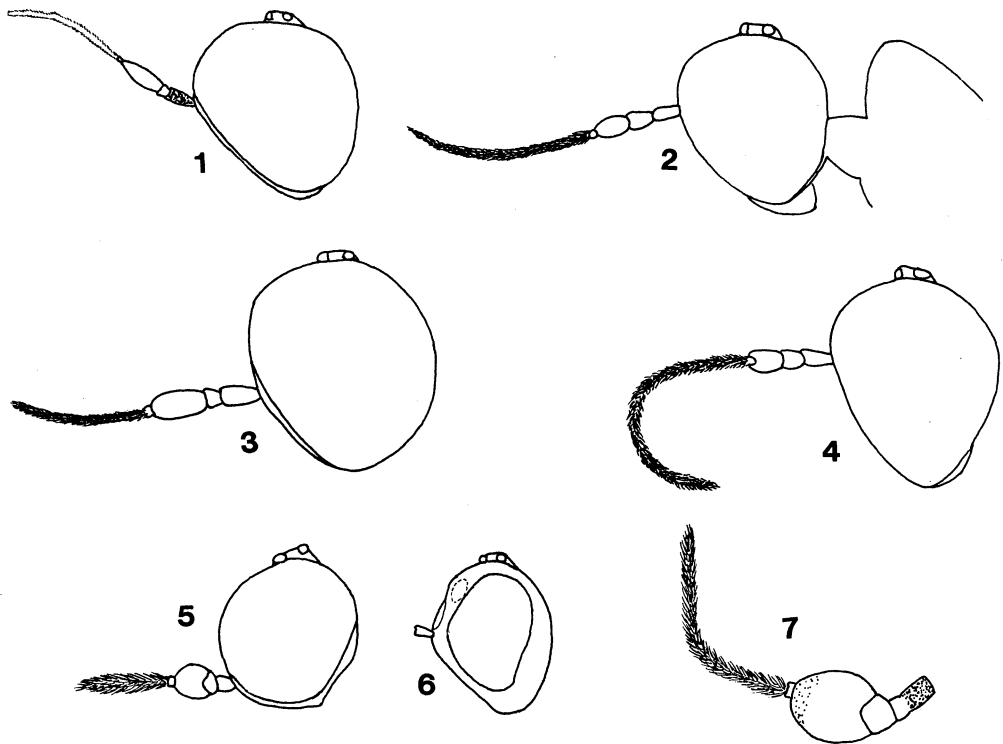


FIG. 1-7. (1-4). *Saldubella*, head of ♂ in profile; hairs omitted except on arista: (1) *albipluma*; (2) *pictipes*; (3) *margaritifera*; (4) *obliqua*. (5-6) *Lophoteles*, head in profile; hairs omitted except on arista: (5) *costalis*, ♂; (6) *glabrifrons*, ♀. (7) *Lophoteles latipennis*, antenna, inner view, hairs omitted except on arista.

mostly brown. Abdomen oval-spatulate, about 2X as long as wide, widest at apex of segment 4; black, with inconspicuous white to whitish pile. Length: 3.3-3.8 mm, of holotype 3.3 mm.

♀. Frons at narrowest 0.25 head width, widening to about 0.45 at vertex; upper angles of eyes, however, broadly rounded and upper occipital orbits not clearly separated from vertex and occiput, these areas fusing indistinguishably into convex posterior surface of head. Hairs of frons, vertex, occiput, and occipital orbits short, only slightly emerging from their punctures, white. Abdomen broader than in ♂. Ovipositor yellow. Length: 4.0 mm.

Holotype ♂ (BISHOP 10,476), PNG: NEW GUINEA (NE): Wau, Morobe Dist., 1700 m, 30.VII.1965, malaise trap, J. & M. Sedlacek. Paratypes: 1 ♀, same but 1750 m, 22.X.1965; 3 ♂♂, same but 1250 m, 13.X.1962, J. Sedlacek; 1 ♀, same but 1050 m, 4.X.1961, Malaise trap, J. & M. Sedlacek.

A distinctive species, well characterized by its white, relatively short arista. The narrow frons of the female is noteworthy.

#### *Saldubella latimanus* James, n. sp.

FIG. 9

♂ Head broadly rounded below; face moderately receding; eyes contiguous about 1/2 distance from anterior ocellus to antennal bases. Head black; upper 1/2 of frontal triangle and narrow facial orbits densely white tomentose; lower 1/2 of frons, from eye to eye, shining, bare; face thickly set with short, white, semi-erect hairs; occiput shining to subshining, with inconspicuous, short, white hairs. Antennae set at about 0.33 head height; ratio 25:10:30:95; flagellum ca 2x as long as wide; flagellum brown above and yellow below, antenna otherwise black. Proboscis black. Thorax black. Hairs of mesonotum short, appressed, behind suture and on scutellum brassy grading to black toward wing bases, before suture mostly black. Hairs of

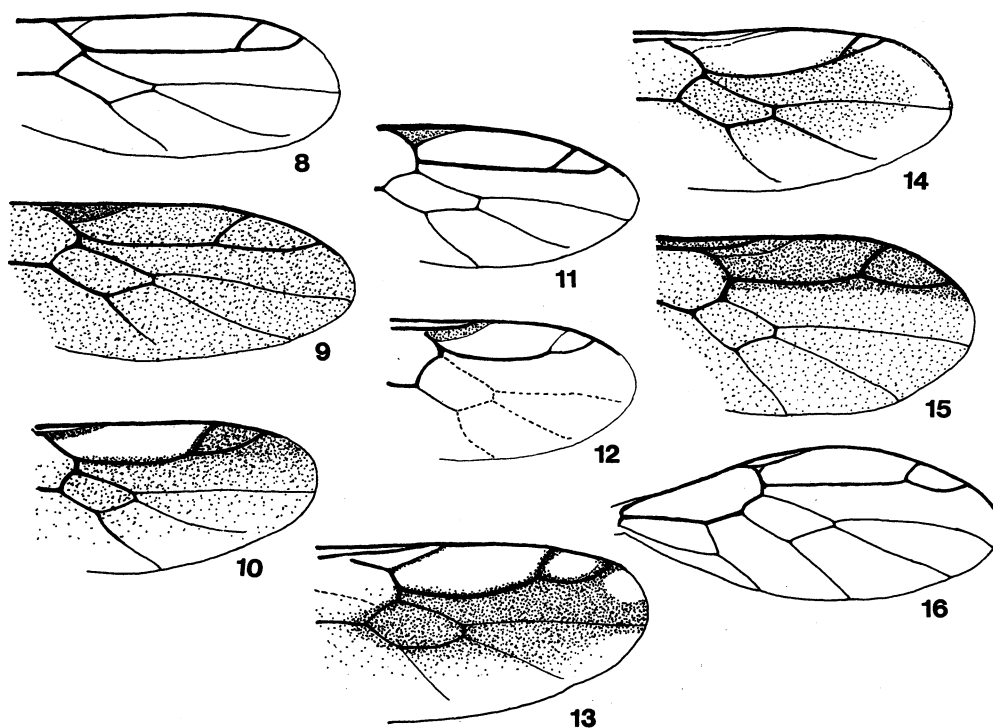


FIG. 8-16. (8-14) *Saldubella*, wing, basal part omitted: (8) *albipluma*; (9) *latimanus*; (10) *abdominalis*; (11) *pictipes*; (12) *brevis*; (13) *margaritifera*; (14) *obliqua*. (15-16) *Lophoteles*, wing: (15) *costalis*, basal part omitted; (16) *latipennis*.

pleura silky, white; a prominent patch extending across upper part of sternopleuron and posterior part of mesopleuron to notopleural suture; hairs of metapleuron prominent; a small patch on propleuron; hairs of pectus shorter. Following parts of legs brown to dark brown: anterior surface of front coxa, front femur except broadly at base, front tibia, apical 1/3 of middle femur, basal 1/3 and extreme apex of middle tibia, apical 1/2 of hind femur, and hind tibia; front tarsus broad and flattened, at least as broad as its tibia, black; other parts of legs yellow (middle tarsi missing, but yellow in ♀). Wing (FIG. 9) brown, less intensively so toward apex and posterior margin; cell  $R_4$  large, length along  $R_5$  0.75 distance from r-m to origin of vein  $R_4$ . Halter yellow, becoming brown toward base of stalk and brownish yellow on upper surface of knob. *Abdomen* oval-spatulate, broadest at apex of segment 4, 2.25 as long as broad; black, terga shining to subshining laterally, at incisures, and on most of 5, with scattered, erect, yellow to white hairs; terga 1-4 dull, with appressed, short, brassy hairs; venter subshining, with scattered whitish hairs. *Length*: 4.5 mm.

♀. Frons at narrowest 0.30 head width, widening to 0.37 at vertex and to 0.40 across antennal bases. Frons shining, with a very few short, erect, yellow hairs; some erect black hairs just below antennal bases. Arista a little shorter than in ♂ (ratio of flagellum and arista 3:8). Front tarsus as in ♂; brown areas of legs paler and not clearly defined. Abdomen broader and more distinctly oval, 2.1 as long as broad; pile of terga black; except laterally. *Length*: 3.8 mm.

Holotype ♂ (BISHOP 10,477), IRIAN: NEW GUINEA (NW): Hollandia area, W Sentani, Cyclops Mts, 200-1000 m, 22-25.VI.1959, sweeping, T. C. Maa. Paratype: 1 ♀, PNG: NEW GUINEA (SE): Kokoda-Pitoki, 400 m, 23.III.1956, J. L. Gressitt.

This species is possibly *S. yombae* Kertész, but the unique type (♀) of that species has been destroyed and there are too many discrepancies in the original description for one to be even reasonably sure that such is the case. The frons is described as "mattschwarz (oder ölig?)"; if the former, the dull color will separate *S. yombae* from all other known species in the genus.

The front tarsus is described as dark brown, but no mention is made of its being broad and flattened, and, though in both species the legs are extensively darkened, Kertész's description of them does not fit *S. latimanus*. Unless further material that might throw light on this matter is forthcoming, *S. yombae* will have to be considered a questionable species.

***Saldubella abdominalis* James, n. sp.**

FIG. 10

♂ *Head* broadly rounded below; eyes contiguous almost 1/2 distance from anterior ocellus to antennal bases; genae narrow; occipital orbits well developed on lower 1/2, evanescent above. Head black; occiput mostly shining, almost bare above; lower occipital orbits, genae, facial orbits, and frontal triangle except narrowly along median line densely white tomentose; each facial orbit, in addition to tomentum, with a row of semierect, short white hairs; face otherwise with sparser white tomentum, best seen at an oblique angle, which becomes more noticeable toward the orbits where it grades into the denser tomentum. Some short white hairs on face, especially just below antennal bases; those of lower occiput longer, white. Antennae set at about 0.40 head height; ratio 10:10:10:95; flagellum about as high as long; antenna bright orange-yellow, arista black except brown at extreme base, hairs black. Proboscis bright orange-yellow. *Thorax* subshining to shining, black to dark brownish black, humerus medially brownish yellow. Hairs coarse, appressed, mostly yellow to brassy, largely black on supra-alar hump. Pleural hairs pale yellow to white, longer and silkier than on mesonotum, covering propleuron, mesopleuron except a large quadrate spot below notopleural suture, sternopleuron except a median spot, and pectus, the pilose areas confluent with one another. Legs including hairs bright yellow to orange-yellow, only hind coxa somewhat darkened. Wing (FIG. 10) infuscated medially, as in *S. signatipennis*, filling cell R<sub>4</sub> but grading into subhyaline at wing apex; cell R<sub>3</sub> hyaline. Cell R<sub>4</sub> large but vein R<sub>4</sub> strongly oblique. Halter yellow, knob concolorous with stalk. *Abdomen* oval, 1.8 as long as maximal width; reddish yellow to brownish yellow; terga paler yellow and glossy laterally; tergum 1 and basal part of sternum 1 dull and distinctly brown; tergum 4 largely dark brown but without a distinct pattern; sterna subshining. Hairs of abdomen yellow, mostly appressed, semierect laterally and apically. Genitalia brownish yellow; dististyle broadly oval. *Length*: 3.4-3.5 mm, of holotype 3.5 mm.

♀. Frons shining, at minimum 0.25 head width, widening to 0.35 at vertex; face across lower corners of eyes 0.42 head width. Tomentum of facial orbits produced upward onto frons about 1/3 distance from antennal bases to anterior ocellus; frons bare between these tomentose arms, above them medially with scattered, semierect, clearly noticeable, relatively long white hairs forming a triangular patch with its apex just before anterior ocellus; hairs arising from facial orbits longer than in ♂, most noticeably so toward antennal bases. Antennae set at middle of head in profile. Hairs of mesonotum paler yellow than in ♂; those of supra-alar hump wholly concolorous with others of mesonotum. Abdomen broader and more distinctly oval than in ♂, about 1.3 as long as broad; approximately median 1/2 of dorsal surface dark brown to brownish black from base to apex, forming a longitudinal band which is, however, not sharply margined. Ovipositor brownish yellow. *Length*: 3.0-3.5 mm.

Holotype ♂ (BISHOP 10,478), PNG: NEW BRITAIN: Gazelle Pen., Karawat, 60 m, 1.IX.1955, primary bush, J. L. Gressitt. Paratypes: 1 ♂, same, 4.IX.1955, Gressitt; 3 ♀♀, Gazelle Pen., Gaulin, 130 m, 28.X.1962, J. Sedlacek.

This is a very distinctive species, though clearly a *Saldubella*. Among its outstanding characters are the abdominal coloration, the narrow frons and relatively long frontal hair of the female, and the well developed lower occipital orbits of the male.

***Saldubella scutellaris* James, n. sp.**

♂ *Head* in profile broadly rounded below. Eyes contiguous for about 1/4 distance from anterior ocellus to antennal bases. Head black; frontal triangle shining just above and beside antennal bases, except on orbits, these and facial orbits densely white tomentose, concealing ground color; rest of face thickly white tomentose but ground color visible under favorable lights. Vertex and occiput subshining, with short and inconspicuous but fairly abundant, appressed to semierect, brown to reddish brown hairs. Antennae set slightly below middle of head height; ratio 15:7:20:70; flagellum about 2x as long as wide. Scape and pedicel variably yellow to brown; flagellum brown to black, becoming pale yellow below; arista and hairs black. Proboscis dark brown to black. *Thorax* black, immediate supra-alar regions tending to become dark reddish brown; scutellum distinctly reddish yellow to brownish yellow on apical and lateral margins, this color usually merging into black of disc. Pile of mesonotum short, appressed, broadly black on anterior part of prescutum and broad sides of pre- and postsutum, otherwise coppery. Hairs of pleura white, appressed; a few on propleuron and the usual well-spaced ones on pectus; a prominent patch extending across upper part of

sternopleuron onto posterior part of mesopleuron to notopleural suture. Legs, including coxae, yellow, except a brown to black annulus, of variable intensity and extent, sometimes barely noticeable, occupying approximately subapical 1/3 of each femur. Wing with longitudinal median area brown to pale brown, grading into hyaline anteriorly, posteriorly, and apically, sometimes almost hyaline. Cell  $R_4$  large. Halter sordid yellow to brown. *Abdomen* mostly black; terga mostly dull, with short, inconspicuous, appressed black hairs; sides of terga and entire tergum 5 polished, brownish black, almost bare; sterna shining, with scant, semiappressed white hairs. *Length*: 3.0–3.5 mm, of holotype 3.0 mm.

♀. Frons just above antennal bases 0.35–0.40 head width, widening only slightly to vertex; face between lower corners of eyes 0.50 head width. Antennal flagellum more robust than in ♂. Front coxa brown, at least anteriorly. Otherwise as described for the ♂. *Length*: 3.0–3.5 mm.

Holotype ♂ (BISHOP 10,479), PNG: NEW GUINEA (NE): Wau, 960 m, 23.VIII.1956, E. J. Ford, Jr. Paratypes: 2 ♀♀, Wau, 1200 m, 25.VII.1961, malaise trap, J. Sedlacek; 1 ♀, Wau, 10 km W of Bulolo, 780 m, 5–25. VIII.1967, malaise trap over stream; 2 ♀♀, Wau, Hospital Ck., 1250 m, 18 & 24.V.1965, malaise trap, J. L. Gressitt; 1 ♂, May River Patrol Sta., 100 m, 1.VI.1965, sweeping, R. Straatman; 1 ♀, Karimui, 2–3.VI.1961, malaise trap, J. L. & M. Gressitt, 2 ♀♀, 10 ♂♂, Maprik, 29.XII.1959 – 17.I.1960, T. C. Maa. IRIAN: NEW GUINEA (NW): 1 ♂, Waris, S of Hollandia, 450–500 m, 1–18.VIII.1959, T. C. Maa. NEW GUINEA (SE): 1 ♂, Bisianumu, 40 km E of Port Moresby, 3.IX.1959, Maa; 1 ♂, Kokoda, 400 m, 22.III.1956, J. L. Gressitt; 1 ♂, Kokoda-Pitoki, 400 m, 23.III.1956, J. L. Gressitt. Among the specimens not included in the type series is 1 ♂, PNG: NEW GUINEA (NE): Minj, Western Highlands, 8–13.IX.1959, Maa.

As indicated in the description, considerable variation occurs. However, only 1 species seems to be involved in the series described.

### *Saldubella pictipes* James n. sp.

FIG. 2, 11

♂ *Head* (FIG. 2) broadly rounded below; face strongly receding. Eyes contiguous about 1/2 distance from anterior ocellus to antennal bases. Head black; ocellar triangle and occiput shining to subshining, with scant, inconspicuous, whitish hairs; face subshining under sparse white pollen and a few subappressed white hairs, its orbits densely white tomentose, with a row of semierect white hairs, the tomentum extending onto and covering most of frontal triangle. Genae narrow but distinct, white pollinose; occipital orbits not developed. Antennae set at middle of head in profile; ratio 12:12:15:75; height of flagellum 13; scape shining black; pedicel black, sometimes becoming brown toward apex; flagellum brown, grading through brownish black to black toward apex; arista black. Proboscis brown to brownish black. *Thorax* in profile extending forward dorsally (FIG. 2), its anterior and dorsal margins, if projected, forming a distinctly acute angle; black to brownish black, dorsally shining to subshining, pleura mostly shining. Mesonotal hairs moderately abundant, appressed, presuturally mostly to wholly black, postsuturally broadly black above wing bases, brassy on median 1/2 and on scutellum. Hairs of pleura white, appressed to semiappressed, scant or lacking over much of area, conspicuous only on propleuron, pectus, upper part of sternopleuron, and adjacent lower hind part of mesopleuron. Legs long; hind femur clavate, distinctly longer than its tibia. Following parts of legs brownish black to black: hind coxa and trochanter, front femur except extreme base, approximately apical 1/3 of middle and hind femora and basal 1/4 to 1/2 of all tibiae; apices of tibiae variable, ranging from slightly darkened to distinctly brownish black, but tibiae always with a yellow median annulus; legs otherwise yellow. Wing (FIG. 11) uniformly pale brown; broad on apical 1/2, narrowing considerably basad of discal cell; discal cell about 3x as long as wide; cell  $R_4$  large. Knob of halter brownish yellow, stalk yellow. *Abdomen* spatulate, about 2.25X as long as maximum width and 4X as long as width at base, narrowest at apex of segment 1 and broadest at apex of 4; black to brownish black, dull and finely roughened on tergum 1 and base of sternum 1, subshining and transversely striated toward apex of sternum 1 and basal part of sternum 2, otherwise shining and smooth; hairs white, long and erect on sides of tergum 1, otherwise appressed, mostly black dorsally and white ventrally. Genitalia brown to black; dististyle curved, elongated, slender. *Length*: 2.6–3.3 mm, of holotype 2.9 mm.

♀. Frons at antennal bases 0.45 head width, widening to 0.55 between upper corners of eyes, shining, with only scattered, inconspicuous, appressed blackish hairs, those of vertex and occiput black, more conspicuous, and semierect, those of face whitish. Tomentum of facial orbits not extending above antennal bases; genae and lower occipital orbits well developed, shining. Antennal flagellum more robust than in ♂. Abdomen broader, 1.7 as long as maximum width; pile more conspicuous dorsally; terga 2–4 subshining medially. Ovipositor black. *Length*: 3.1–3.4 mm.

Holotype ♂ (BISHOP 10,480), PNG: NEW GUINEA (NE): Ahl Valley, Nondugl, 1750 m, 8.VIII.1955, J. L. Gressitt. Paratypes: 1 ♀, Wau, Morobe Dist., 1200 m, 29.VII.1961, malaise trap, J. Sedlacek; 1 ♀, 1 ♂, Wau, Nami Ck., 1700 m, XII.1965, J. Sedlacek; 1 ♀, Wau, 1750 m 18.X.1965, J. & M. Sedlacek; 1 ♀, Wau, Big Wau Ck., 1300 m, XI.1965, J. Sedlacek; 1 ♀, Murua R. (S side), 2-10 m, 21.XII.1964, L. & M. Gressitt; 1 ♂, Western Highlands, Baiyer R., 1150 m, 17.X.1958, J. L. Gressitt. IRIAN: NEW GUINEA (NW): 1 ♂, Nabire, S. Geelvink Bay, 10-40 m, jungle, 3.X.1962, H. Holtmann; 2 ♂♂, Vogelkop, Bomberi, 700-900 m, 4-5.VI.1959, J. L. Gressitt. PNG: NEW GUINEA (SE): 1 ♂, Owen Stanley Range, Goilala: Loloipa, 21-31.XII.1957, W. W. Brandt.

**Saldubella gressitti** James, n. sp.

♂ *Head* in profile (cf FIG. 4) narrowly rounded below, strongly receding. Eyes contiguous about 1/3 distance from anterior ocellus to antennal bases; upper frons and ocellar triangle subshining, bare; occiput shining above and mostly bare, becoming subshining with scattered, inconspicuous white hairs below; genae very narrow and occipital orbits not developed; frontal triangle and narrow facial orbits with white tomentum that virtually conceals background; face otherwise shining, except area immediately adjacent to orbital tomentum clothed with short, silky, white appressed pile which becomes more abundant toward oral margin but always allows background to show conspicuously. Antennae set at approximately 0.60 head height; ratio 15:10:20:125; flagellum about 1.6 as long as high; scape, pedicel, and flagellum bright orange, arista black. *Thorax* black. Mesonotum and scutellum subshining to dull, with abundant, short, appressed brassy hairs except broadly on sides of prescutum where they are semiappressed, more silky, and pale yellow to yellowish white; pile on anterior part of prescutum and that of supra-alar hump sometimes partly black. Pleura shining to subshining, bare or scantily haired on pteropleuron, upper part of mesopleuron except anteriorly, a spot on sternopleuron, and hypopleuron, otherwise with conspicuous, white, appressed to semiappressed hairs. *Legs* yellow, at most coxae brown at extreme bases. *Wing* hyaline; cell R<sub>4</sub> small, vein R<sub>4</sub> strongly oblique. *Halters* yellow. *Abdomen* almost parallel-sided to slightly oval, about 2.5 as long as wide; dark castaneous to black; terga dull on median 3/5, with very short, thickly set black hairs, shining and bare laterally. *Sterna* with scattered short white hairs. *Genitalia* castaneous to black; dististyles oval. *Length*: 3.3-4.1 mm, of holotype 3.5 mm.

♀. *Face* not as strongly receding as in ♂. *Frons* at narrowest 0.43 head width, almost parallel-sided, face widening to about 0.46 head width at oral margin. *Occipital orbits* and *genae* developed but narrow, upper orbits not sharply margined. *Head* shining to subshining; narrow tomentose facial orbits as in ♂ and extending a short distance above antennal bases. *Facial hairs* as in ♂ but those next to orbital tomentum subappressed and tending to form about 2 irregular rows. *White hairs* on occiput more abundant than in ♂, though still sparse. *Abdomen* oval. *Ovipositor* yellow. *Length*: 2.8-3.7 mm.

Holotype ♂ (BISHOP 10,481), PNG: NEW GUINEA (SE): Kokoda, 400 m, 22.III.1956, J. L. Gressitt. Paratypes: 11 ♂♂, 5 ♀♀, same data; 16 ♂♂, 1 ♀, Daradae Plantation, 80 km N of Port Moresby, 500 m, 6.IX.1959, sweeping, T. C. Maa; 1 ♂, NEW GUINEA (NE): W. Highlands, 8-13.IX.1959, Maa. A damaged ♀, not included in the type series, is from PNG: NEW GUINEA (SE): Kokoda-Pitoki, 450 m, 24.IX.1956, Gressitt.

Very closely related to *S. diffusa*; see discussion under that species.

**Saldubella longipennis** James, n. sp.

♀ *Head* in profile broadly rounded below, moderately receding; frons at antennal bases 0.36 head width, widening to 0.50 between upper angles of eyes; occipital orbits well developed but not margined, gradually rounding to occiput. *Head* black; mostly shining, narrow facial orbit from antennal bases to (but not including) genae, also an elongated area occupying most of lower 1/2 of occipital orbit, densely white tomentose. *Head hairs* mostly inconspicuous; some whitish ones on face and a few scattered ones on front; those behind ocellar triangle and on upper part of occiput much more abundant, yellow to yellowish. *Antennae* set at 0.60 head height; ratio 13:10:15:60; flagellum 1.25 as long as high; scape brownish yellow; pedicel and flagellum yellow; flagellum and hairs black. *Proboscis* brown to brownish black. *Thorax* black, humerus and postalar callus partly brown. *Mesonotal hairs* appressed, mostly brassy but black on anterior part of prescutum, over supraalar hump, and toward apex of scutellum. *Pleura* shining; pectus with whitish appressed hairs; a few scattered, rather long, erect white hairs on posterior part of mesopleuron and upper part of sternopleuron. *Legs* pale yellow except a broad black to brownish black preapical band occupying approximately 1/2 of each femur. *Wing* hyaline, conspicuously long, 3.4 as long as its maximum width and



2.8 as long as abdomen; cell R<sub>4</sub> large. Knob of halter pale yellowish brown, stalk becoming yellow. *Abdomen* brownish black, shining to subshining; ovipositor yellow. Pile scant, whitish. *Length*: 2.5 mm.

♂ unknown.

Holotype ♀ (BISHOP 10,482), PNG: NEW GUINEA (NE): E end Saruwaged Range 20 km SSW of Kabwum, 2550 m, 5–12.VIII.1966, malaise trap, G. A. Samuelson.

***Saldubella brevis* James, n. sp.**

FIG. 12

♂ *Head* in profile narrowly rounded below; face strongly receding. Eyes contiguous about 1/2 distance from anterior ocellus to antennal bases. Frontal triangle small. Head black; ocellar triangle, face, and vertex subshining, occiput mostly shining; face depressed medially, clothed with rather abundant but inconspicuous, short, white hairs; orbits densely white tomentose and bearing a row of short erect white hairs; upper extent of this tomentum variable, always reaching antennal bases but sometimes extending over frontal triangle which, consequently, varies from wholly shining to largely tomentose. Lower occipital orbits developed but narrow, white tomentose. Gena almost eliminated. Antennae set at 0.70 head height; ratio 8:9:9:75; flagellum as high as long. Antenna bright yellow, flagellum becoming somewhat brown toward apex; arista and hairs dark brown to black. Proboscis bright yellow. *Thorax* black, humerus and parts of pleura sometimes dark castaneous; mesonotum and scutellum dull to subshining with appressed brassy to golden hairs, becoming black on supra-alar humps and toward anterior margin of prescutum; pleura mostly shining with white, only moderately thickly set, hair patches on the following sclerites: propleuron; upper part of sternopleuron and extending onto middle of mesopleuron about 1/2 way to notopleural suture; notopleuron; and pectus; a few hairs on posterior margin of mesopleuron. Legs predominantly yellow; front coxa dark brown to brownish black anteriorly, sometimes largely so; each femur with a conspicuous broad dark brown to black preapical ring, that of front one occupying 1/2 or more of its surface. Wing (FIG. 12) hyaline; cell R<sub>4</sub> of moderate size, vein R<sub>4</sub> strongly oblique; veins forming discal cell and those emerging from it weak. Halter bright yellow. *Abdomen* oval, 1.25 as long as wide, broadening to base of segment 4 where it is 2X as wide as at base of abdomen; black to blackish brown or dark castaneous, shining dorsally and ventrally except medially on terga 1–4, the dull area occupying most of 1 and extending as an oval spot to a basal area on 5. Pile scattered, short, white, difficult to see in the dull areas. *Length*: 1.7–2.5 mm, of holotype 2.3 mm.

♀. Frons at narrowest (at antennal bases) 0.33 head width, widening to 0.42 across anterior ocellus, wholly shining, with only very sparse, inconspicuous, erect white hairs. Occipital orbits well developed but not sharply defined and bare above, wider below than in the ♂ and white tomentose, this tomentum continuing across the narrow but well-developed genae and connecting with that of the facial orbits. Appressed pile of prescutum largely black. Ovipositor bright yellow, apical segment brown. *Length*: 2.1–3.1 mm.

Holotype ♂ (BISHOP 10,483), PNG: NEW BRITAIN: Gazelle Pen., Kerawat, 60 m, 11.XI.1955, J. L. Gressitt. Paratypes: 1 ♂, 1 ♀, Gazelle Pen., Warengoi, 100 m, 24.V.1956, Gressitt; 5 ♂♂, Gazelle Pen., Bainings, St. Paul's, 350 m, 4, 7 & 9.IX.1955, Gressitt; 1 ♂, Gazelle Pen., Gaulim, 130 m, 28.X.1962, J. Sedlacek; 1 ♂, Sio, N Coast, 600 m, 24.VII.1956, E. J. Ford, Jr; 1 ♂, 2 ♀♀, Yalom, 1000 m, 21.V.1962, Noona Dan Expedition 1961–1962; 1 ♂ Vudal, SW of Kerawat, 13.XII.1959, T. C. Maa. NEW IRELAND: 4 ♂♂, 3 ♀♀, Gilingil Plain, 2 m, 4.VII.1956, Gressitt; 1 ♂, 1 ♀, Kavieng, 2.VII.1959, Gressitt; 2 ♂♂, 2 ♀♀, ridge above "Camp Bishop," 15 km up Kait R., 250–750 m, 13–14.VII.1956, Gressitt. DYAUL I: 2 ♂♂, 1 ♀, Sumuna, 9.III.1962, Noona Dan Expedition 1961–1962. DUKE OF YORK I: 1 ♀, Manuan, 18.VII.1962, Noona Dan Expedition 1961–1962. Additional specimens, not types, came from the same localities and from Rossum (6 km SE of Lorengau, Manus I), and Valoka, and S of Cape Hoskins Aerodrome, New Britain.

***Saldubella hardyi* James, n. sp.**

♀. Close to *S. brevis*, of which it may be a subspecies. It differs chiefly as follows: pile of prescutum largely pale, becoming white to yellowish white anteriorly and laterally, black only toward extreme anterior margin; white pile of pleura extending from sternopleuron completely across mesopleuron to notopleural suture; color of legs as in *S. brevis* but markings on femora less intense, brown to brownish black, that of anterior pair restricted to apical 1/2.

♂. Distinguishable from *S. brevis* by the pattern of mesopleural pile which is as described for the ♀.

Holotype ♀ (BISHOP 10,484), IRIAN: NEW GUINEA (NW): Lake Sentani, 50 m, 12.VII.1957, D. Elmo Hardy. Paratypes: 1 ♀, Hollandia-Binnen, 100 m, 31.X.1958, light trap, J. L. Gressitt; 1 ♂, Bodem, 100 m, 1 km SE of Oerbefareh, 7-17.VII.1959, light trap, T. C. Maa; 1 ♂, Waris, SE of Hollandia, 450-500 m, 1.VIII.1959, sweeping, Maa; 1 ♀, PNG: NEW GUINEA (NE): Wau, Morobe Dist., 1000 m, 13.X.1961, malaise trap, J. Sedlacek.

***Saldubella margaritifera* Lindner**

FIG. 3, 13

*Saldubella margaritifera* Lindner, 1938: 435.

Lindner's illustration of the wing and brief description of this species seem to place it quite clearly. It can easily be recognized by the "pearlbearing" (*margaritifera*) pattern of the longitudinal brown area of the wing; the 2 rounded, hyaline spots interrupting this pattern (the 1st filling cell R<sub>4</sub> except for the prominent dark margins of the veins, the 2nd just beyond it and just before the wing apex, in cell R<sub>5</sub>) stand out much more prominently than in related species having a similar pattern. In contrast, cell R<sub>4</sub> in *S. signatipennis* is completely clouded or nearly so and the wing apex is usually hyaline or subhyaline, though sometimes clouded and with a less evident hyaline spot.

The frons of the female is wholly shining, that of the male largely so, in both *S. signatipennis* and *S. margaritifera*. In both species this shining area extends laterad of the antenna onto the face, slightly so in *S. signatipennis* but prominently so in *S. margaritifera*, where it extends as a narrow projection halfway or more to the gena. In both species the median part of the face is thickly white tomentose, though not as densely so as the orbits, and it allows the background to show clearly under certain lights. The tomentum of the orbits, consequently, is much more broadly confluent with that of the face in *S. signatipennis* than in *S. margaritifera*.

In the original description of *S. margaritifera* Lindner says, "Thorax ... mit einem deutlichen spitzen Höcher, der in die Kerbe des Hinterkopfes passt". This is the only discrepancy that I see in his description. The anterior part of the thorax does fit into the hind surface of the head, however, and the extent to which it may be produced appears to vary in this genus.

***Saldubella signatipennis* (Wulp)**

*Salduba signatipennis* Wulp, 1898: 412.

*Saldubella signatipennis*: Kertész, 1916: 143.

The type of this species has been lost but the description and illustrations of Kertész remove all reasonable doubt as to its identity. It can readily be determined by the characters given in the key.

*Material examined*: PNG: NEW GUINEA (NE): 2 ♀♀, Wau, Morobe Dist., 1200 m, 16.X.1961 and 30.I.1963, malaise trap, J. Sedlacek; 3 ♀♀, same but 1050 m, 4 & 16.X.1961: 1 ♂, Maprik, 150 m, 21.XII.1959-17.I.1960, T. C. Maa. IRIAN: NEW GUINEA (NW): 1 ♀, Wamena, 1700 m, 10-15.II.1960, Maa; 1 ♀, Wisselmeren, Kamo-Dabei Div., 1700 m, 14.VIII.1955, J. L. Gressitt; 2 ♀♀, Wisselmeren, Enarotadi, 1850 m, 12.VI-4.VII.1962 and 1900 m, 2-12.VIII.1962, malaise trap, Sedlacek; 1 ♀, Waris, S of Hollandia, 450-500 m, 1-17.VIII.1959, sweeping, Maa; 2 ♀♀, Biak, 25.IV.1945, G. E. Bohart. PNG: NEW GUINEA (SE): 1 ♂, Brown R., 5 m, 23.X.1960, J. L. Gressitt; 1 ♂, Daradae Plantation, 500 m, 80 km N of Port Moresby, 5.IX.1959, sweeping, T. C. Maa. NEW GUINEA (NE): 1 ♀, Angoram, Sepik R., 10.X.1959, B. Pullen.

*Material examined*: PNG: NEW GUINEA (NE): 14 ♀♀, Wau, Morobe Dist., 1050-1250 m, I, II, III, V, VII, VIII, IX, X, malaise trap, J. & M. Sedlacek; 1 ♀, Wau, Mt Kaindi, 1230 m, 5.X.1964, malaise trap, J. Sedlacek; 1 ♂, Sepik, Maprik Area, 160 m, 27.VIII.1957, D. Elmo Hardy; 1 ♂, East Highlands, Kundiava, 1-4.I.1965, malaise trap, J. Sedlacek; 2 ♀♀, 5 ♂♂, Maprik, 150 m, 29.XII.1959-17.I.1960, T. C. Maa; 1 ♂, Lae, 15 m, 6-7.VIII.1964, M. V. light trap, J. Sedlacek; 1 ♀, Torricelli Mts, Mokai Vill., 750 m, 1-23.I.1959, W. W. Brandt; 1 ♀, Huon

Pen., Pindiu, 860 m, 22.IV.1963, J. Sedlacek; 1 ♂, Madang, 5 m, 22.X.1958, J. L. Gressitt; 1 ♂, Finschhafen, 20.IV.1944, E. S. Ross. IRIAN: NEW GUINEA (NW): 3 ♀♀, Nabire, 5–50 m, 25.VIII–2.IX.1965, malaise trap, H. Holtman; 1 ♀, Nabire, S. Geelvink Bay, 0–30 m, 2–9.VII.1962, malaise trap, J. Sedlacek; 4 ♂♂, Waris, S of Hollandia, 450–500 m, 27–30.VIII.1959, sweeping, T. C. Maa; 1 ♂, Bokondini, 40 km N of Baliem Valley, ca 1300 m, 16–23.XI.1961, L. W. Quate; 2 ♂♂, Central Mts, Archbold L., 760 m, 26.XI–3.XII.1961, light trap, S. & L. Quate. PNG: NEW GUINEA (SE): 1 ♂, Kokoda, 1200 ft (ca 370 m), IX–X.1933, L. E. Cheesman; 1 ♂, Daradae, nr. Javarere, Musgrave R., 500 m, 4.X.1958, J. L. Gressitt.

*Distribution:* apparently throughout New Guinea, from sea level to 1300 m, and throughout the year.

#### **Saldubella missimensis** James, n. sp.

♀. *Head* in profile narrowly rounded below, face receding. Frons at narrowest 0.32 head width, widening to 0.35 between upper corners of eyes and to 0.40 at antennal bases; occipital orbits well developed but not margined, gradually rounded to occiput. Head black; frons and vertex shining, bare; face shining to subshining except narrow orbits which are densely white tomentose and set with a row of semierect, short, white hairs to approximately level of antennal bases; middle of face with inconspicuous short, white hairs over most of its area; occiput shining to subshining, its hairs short, white, inconspicuous above but more noticeable below, its orbits bare. Genae bare. Antennae set at 0.60 head height; ratio 12:8:25:105; flagellum about 1.5 as long as wide; scape dark castaneous; pedicel yellow to orange-yellow; flagellum yellow below, brown toward apex and above; arista and hairs black. Proboscis yellow. *Thorax* black; scutellum and median 1/2 of mesonotum, except anteriorly, with dense, appressed, brassy hairs; hairs above notopleural suture and before wing bases white; other mesonotal hairs black. Pleural hairs white; a patch on propleuron, a conspicuous patch crossing upper part of sternopleuron and extending dorsad on mesopleuron, but well separated from notopleural suture; pectus well set with short, appressed hairs. Legs, including coxae, pale yellow; fore and middle femora with a broad, indistinctly defined, preapical brown band. Wing as in *S. signatipennis* except cell R<sub>5</sub>, as well as R<sub>4</sub>, completely infuscated; cell R<sub>4</sub> relatively large. Halter yellow. *Abdomen* oval, 2X as long as wide, widest on segment 3; black, dull on most of terga 1–4, shining narrowly at incisures, broadly so on sides, on entire tergum 5, and on all sterna. Hairs appressed, thickly set but inconspicuous on dull dorsal areas, elsewhere less dense and more conspicuous against polished background, sordid yellow to brown or brownish black dorsally, white ventrally. Ovipositor brownish black, penultimate segment broadly yellow apically. *Length:* 3.4–4.5 mm, of holotype 4.3 mm.

♂ unknown.

Holotype ♀ (BISHOP 10,485), PNG: NEW GUINEA (NE): 7° 15' S, 146° 48' E. Mt Missim (Wau, Morobe Dist.), 1600 m, 5.V.1966, Malaise trap, J. L. Gressitt. Paratypes, 6 ♀♀, same but 27, 28, 29.IV, 1, 2, & 6.V; 2 ♀♀, Wau, 1700 m, 10.VI.1969, malaise trap, J. Sedlacek.

*Variation:* A ♀, Wau, Morobe Dist., 1220 m, malaise trap, J. Sedlacek, appears to be this species. The 1st antennal segment is yellow, however, and cell R<sub>4</sub> is not uniformly clouded, a poorly defined spot in it being almost hyaline.

#### **Saldubella wauensis** James, n. sp.

♀. *Head* black, mostly shining, middle of face subshining. Frons at narrowest 0.40 head width, widening only slightly toward vertex and antennal bases; face 0.50 head width across lower angles of eyes. Eyes narrowly rounded below. Frons with scattered, inconspicuous, whitish hairs; those of occiput more abundant but still sparse and inconspicuous, brown; those of face white. Facial orbits densely white tomentose to slightly above level of antennal bases. Antennae set at 0.70 head height; ratio 15: 12: 20: 120; length of flagellum about 1.35 width. Scape brown to brownish black; pedicel brownish yellow; flagellum brown, becoming yellow below, especially toward base; arista and hairs black. Proboscis yellow. *Thorax* black. Mesonotum subshining, on median 1/2 except anteriorly and on scutellum with abundant, pale yellow to yellow appressed hairs; sides of mesonotum with white hairs, most conspicuous in a triangle just before suture; mesonotum otherwise with appressed black hairs. Pleura shining, with white hairs; a conspicuous tuft on lower part of propleuron, just above coxa, and a conspicuous patch crossing upper part of sternopleuron and extending across mesopleuron to notopleural suture; some scattered hairs on posterior part of mesopleuron; those of pectus short, appressed. Legs mostly bright yellow; front coxa, especially on anterior surface, apical 1/2 of front femur, most or all of front tibia, and a preapical annulus on middle femur, dark

brown to black, this color sometimes paler brown on the tibia. Wing subhyaline toward anterior and posterior margins, brown medially on a longitudinal axis from near base to apex but leaving cells  $R_3$  and  $R_4$ , except along the veins, and a preapical spot in  $R_5$  clear. Halter yellow, knob becoming pale brown. *Abdomen* black, sometimes tinged with brownish black. Terga 1-4 medially dull with reddish brown tomentum; sterna, tergum 5, and sides of other terga shining, with scattered white to whitish hairs. Ovipositor brownish black; conjunctivae yellow. *Length*: 3.4-4.5 mm, of holotype 4.5 mm.

♂ unknown.

Holotype ♀ (BISHOP 10,486), PNG: NEW GUINEA (NE): Wau, Morobe Dist., 1200 m, 29.IX.1965, malaise trap, J. & M. Sedlacek. Paratypes: 3 ♀♀, same but 12.IV, 7.VIII, and 30.IX; 3 ♀♀, same but 1200 m, 4.IX.1961, 14.V.1962, and 30.I.1963, J. Sedlacek; 1 ♀, same but 1200 m, 6.I.1966, J. & M. Sedlacek; 2 ♀♀, Kunai Cr., Wau, 1200 m, 26.VIII.1963, malaise trap, J. Sedlacek.

One ♀, IRIAN: NEW GUINEA (NW): Bomberi, Vogelkop, 700-900 m, 7.VI.1959, T. C. Maa, appears to be this species. The areas of darker coloration on the antennal scape and pedicel and legs are paler brown; there is a pale brown preapical annulus on the hind as well as the middle femur.

A series of 17 ♀♀, Wau, 1200-1250 m, Aug. to Feb., agree essentially with the description of *S. wauensis* except that all tibiae are wholly yellow or but slightly brownish yellow. The best interpretation, based on material available, is that these represent an unnamable variant. Five additional ♀♀ of this form are from PNG: NEW GUINEA (NE): Finisterre Range, Saidor, Matoko, 29.VIII-5.IX.1958, W. W. Brandt; 22 km SE of Okapa, 2100 m, 28.VIII.1964, J. & M. Sedlacek; Karimui, 1000 m, 3.VI.1961, L. & M. Gressitt and 1081 m, 14.VII.1963, M. Sedlacek; and IRIAN: NEW GUINEA (NW): Bodem, 100 m, 11 km SE of Oerbefareh, 7-17.VII.1959, T. C. Maa.

Two ♂♂ appear to represent the variant: IRIAN: NEW GUINEA (NW): Central Mts, Archbold L., 26.XI-3.XII.1961, sweeping, L. M. Quate; and Waris, S of Hollandia, 450-500 m, 1-7.VIII.1959, T. C. Maa. In these the eyes are contiguous halfway from the anterior ocellus to antennal bases; the tomentose orbits extend dorsad of the face to the apex of the frontal triangle, the shining area of the latter being reduced to a small triangle just above the bases of the antennae. The antennae, general body form, and abdomen are more slender than in the female.

#### *Saldubella obliqua* James, n. sp.

FIG. 4, 14

Close to *S. gressitti* but separated from it chiefly as follows.

♂. Frontal triangle wholly shining, tomentose facial orbits ending at or slightly below level of antennal bases. That part of face clothed with silky hairs more restricted, bare areas next to orbits consequently more conspicuous. Antennal ratio 15:12:20:120; flagellum about 2x as long as high. Hairs of mesonotum and scutellum almost wholly brassy. Wing (FIG. 14) with a light but distinct brown infuscation over a median longitudinal area involving discal cell, usually cell  $R_4$ , and parts of  $M_3$  and  $Cu_1$  adjacent to discal cell; cell  $R_4$  unusually small, vein  $R_4$  strongly oblique. Abdomen as in *S. gressitti*. *Length*: 2.7-3.7 mm, of holotype 3.6 mm.

♀. Tomentose orbits of face very narrow and ending well below bases of antennae. Hairs of mesonotum and scutellum deep brassy to golden, somewhat paler laterally before suture. Wing as in ♂. *Length*: 3.3-3.5 mm.

Holotype ♂ (BISHOP 10,487), PNG: NEW BRITAIN: Keravat, 30 m, 2.IV.1956, J. L. Gressitt. Paratypes: 7 ♂♂, same data; 18 ♂♂, 2 ♀♀, Keravat, Gazelle Pen., 60 m, 11.IX.1955, Gressitt; 4 ♂♂, same but 4.IX; 1 ♂, same but 1.IX, primary bush; 1 ♂, same but 31.VIII. 3 ♂♂, 1 ♀, Gazelle Pen., Warongoi Valley, 100 m, 24.V.1956, Gressitt; 5 ♂♂, Vudal, SW of Keravat, 13.XII.1959, T. C. Maa.

#### *Saldubella tenuicornis* James, n. sp.

♂ *Head* in profile narrowly rounded below; face strongly receding. Eyes contiguous about 1/2 way from

anterior ocellus to antennal bases. Head black, mostly shining to subshining; frontal triangle mostly bare, white tomentose only on upper part; very narrow facial orbits white tomentose, each with a row of short, white, subappressed hairs; middle of face with short, white, subappressed hairs on lower part; head hairs otherwise scant and inconspicuous. Antennae set slightly above middle of head height; ratio 20:8:22:110; scape slender, 2.5 as long as maximum width (near apex); flagellum about 1.7 as long as wide. Antenna yellow, flagellum becoming brown below at apex, arista black with black hairs. Proboscis mostly bright yellow. *Thorax* black. Mesonotum dull to subshining through dense punctures, only extreme anterior margin shining; pile dense, appressed, golden on median 1/2 from middle of prescutum to near apex of scutellum; a patch of longer, silkier hairs, mostly golden but becoming white below, laterally just before suture, on supra-alar and on postalar region; pile of mesonotum and scutellum otherwise black. Pleura largely shining; a prominent patch of appressed, silky, white hairs extending across upper part of sternopleuron and onto mesopleuron but ending well ventrad of notopleural suture; some scattered hairs on posterior part of mesopleuron and on metapleuron; pectus with short, white hairs. Legs mostly pale yellow to yellow; front coxa and a preapical annulus on each femur brown to dark brown. Wing subhyaline with a longitudinal brown area occupying its median 1/3 but leaving a spot at apex of cell R<sub>5</sub> clear; cell R<sub>3</sub> and R<sub>4</sub> hyaline but their veins distinctly, though not sharply, bordered with brown. Halter brown, its stalk yellow. *Abdomen* black, in holotype becoming dark reddish brown on tergum 5; terga subshining laterally, with scattered, appressed, reddish brown hairs, dull over most of its area, with dense, appressed, reddish brown hairs, shorter than the lateral ones. Genitalia yellowish brown to brownish black; dististyle slender, cylindrical. *Length*: 3.5–3.8 mm, of holotype 3.8 mm.

♀. Frons at narrowest 0.35 head width, widening slightly above and to 0.40 across bases of antennae; wholly shining and bare except for a few short, inconspicuous hairs. Tomentose facial orbits narrow but a little broader than in ♂; the row of semiappressed hairs of orbits set mesad of tomentose areas. Facial hairs less prominent than in ♂. Occipital orbits undeveloped except near genae. Antennal flagellum more robust than in ♂. Pale mesonotal pile yellow. Ovipositor dark brown, conjunctivae brownish yellow. *Length*: 2.6 mm.

Holotype ♂ (BISHOP 10,488), PNG: NEW BRITAIN: Keravat, 5 m, jungle, 9.X.1957, J. L. Gressitt. Paratypes: 4 ♂♂, Vudal, SW of Keravat, 13.XII.1959, T. C. Maa; 1 ♀, NEW IRELAND: Ridge above "Camp Bishop," 15 km up Kait R., 250–750 m, 14.VII.1956, Gressitt.

The following specimens, not types, are referred to this species. PNG: NEW GUINEA (NE): 2 ♀♀, 1 ♂, Wau, Morobe Dist., 1050 m, 4.IX.1961, 1200 m, 5.X.1962, and 1250 m, 13.X.1962, malaise trap, J. Sedlacek. 1 ♂, Maprik, 150 m, 29.XII.1959–17.I.1960, T. C. Maa; 1 ♂, Bulolo, 730 m, 20.VIII.1956, E. J. Ford, Jr.; 1 ♂, Finschhafen, 6.V.1944, E. S. Ross. NEW GUINEA (SE): 1 ♀, Kokoda-Pitoki, 450 m, 24.III.1956, J. L. Gressitt; 1 ♂, Brown R., 30.IX.1959, T. C. Maa; 1 ♂, Daradae Plantation, 500 m, 80 km N of Port Moresby, 6.IX.1953, sweeping, T. C. Maa.

#### **Saldubella diffusa** James, n. sp.

♂ *Head* in profile narrowly rounded below; face strongly receding. Eyes contiguous about 2/5 distance from antennal bases to anterior ocellus; height of frontal triangle slightly less than distance from its apex to anterior ocellus. Head black; frontal triangle on upper 1/2 or more with white tomentum; facial orbits very narrowly white tomentose and with an irregular row of short, white, semierect hairs; face otherwise shining, with a few short white hairs near antennae and with more abundant but shorter ones below; occiput shining to subshining, with scant, inconspicuous white hairs which become more abundant, longer, and more noticeable below; genae with some black hairs intermixed with the white. Antennal ratio 17:10:15:125; scape slender, in the holotype 1.7 as long as maximum width; length of flagellum 1.25 its height; scape and pedicel yellow, flagellum brown, more yellowish toward base; arista and hairs black. Proboscis brown to dark brown, becoming yellowish brown to yellow on labella. *Thorax* black. Mesonotum shining to dull, with abundant, short appressed hairs, mostly golden to coppery but black on anterior part of prescutum and over supra-alar hump; hairs above notopleural suture paler than those on middle of mesonotum and sometimes separated from them by a narrow band of black hairs. Pleura shining to subshining, bare or scantily haired on pteropleuron, upper part of mesopleuron except anteriorly, a spot on sternopleuron, and hypopleuron, otherwise with conspicuous, white, silky, appressed to semiappressed hairs. Legs mostly yellow; anterior coxa brown; femora on apical 1/2 broadly ringed with dark brown to brownish black, front femur sometimes mostly brown. Wing pattern pale, consisting of a light brown, poorly defined, median longitudinal area, most noticeable in the discal cell and cells R<sub>5</sub> and M<sub>1</sub>, extending into R<sub>4</sub> but leaving most of the wing apex clear. Halter with stalk yellow and knob brown to dark brown, more intensely so toward its base. *Abdomen* suboval, almost parallel-sided, 2.0–2.4 as long as maximum width; black, in holotype becoming brown on

tergum 5, polished laterally, terga 1-4 and base of 5 dull to subshining medially; pile short, black, appressed, abundant, especially medially, but inconspicuous. Pile of venter scattered, inconspicuous, white. Genitalia missing in type, in other ♂♂ poorly preserved. *Length*: 3.3-3.7 mm, of holotype 3.3 mm.

♀. Frons polished, at minimum 0.40 head width, slightly broader at vertex and across antennal bases; face across lower corners of eyes 0.45 head width. Pile of middle of mesonotum yellow, paler than in the ♂. Abdomen distinctly oval to spatulate, broadest at base of segment 4, there 1.2 to 1.4 as broad as length. *Length*: 3.0-3.5 mm.

Holotype ♂ (BISHOP 10,489), IRIAN: NEW GUINEA (NW): Central Mts, Archbold Lake, 760 m, 26.XI-3.XII.1961, sweeping, L. W. Quate. Paratypes: 2 ♀♀, IRIAN: NEW GUINEA (NW): Hollandia-Binnen, 100 m, 2.XI.1958, J. L. Gressitt; 2 ♂♂, 1 ♀, PNG: NEW GUINEA (NE): Maprik, 150 m, 29.XII.1959-17.I.1960, T. C. Maa.

This species is very close to *S. gressitti*, and, because of the pale, diffused pattern of the wing, specimens may trace to that species in the key. Both have a similar pattern of pale pleural pile, covering the lower parts from the conspicuous propleural and anterior mesopleural patches, across the pectus and sternopleuron, interrupted only by a small bare area on the latter. In *S. gressitti* the femora are wholly yellow, the antennal scape and pedicel are more brilliantly yellow than in *S. diffusa*, and the pale pile of the mesonotum is usually more extensive. The 2 nominal species may prove to be subspecies of a polytypic species. The geographical pattern, so far as known, agrees with this interpretation.

#### Genus LOPHOTELES Loew

*Lophoteles* Loew, 1858, Berl. Ent. 2: 110. Type-species: *L. plumula* Loew, by monotypy.

The following key will separate the species of *Lophoteles* known to occur in New Guinea and the Bismarck Archipelago if allowance is made for the fact that most of these are known from 1 sex only.

1. Thorax yellow to reddish yellow with a prominent pair of dark brown to brownish black vittae extending its entire length (♀) . . . . . *vittata*, n. sp.  
Thorax entirely black, at most humeri and postalar callus castaneous . . . . . 2
2. Wing with a distinct pattern in the form of either a much darker costal margin or a transverse median band or cloud . . . . . 3  
Wing hyaline or pale brown, at most with a darkened, not well differentiated, median area . . . . . 4
3. Wing brown with a much deeper costal area beyond and including the stigma (♂, ♀) . . . . . *costalis*, n. sp.  
Wing hyaline with a transverse median area or cloud, including at least stigma, discal cell, and adjacent areas (♂, ♀) . . . . . *fascipennis*
4. Wing (FIG. 16) lanceolate (♀) . . . . . *latipennis*, n. sp.  
Wing of usual form, not lanceolate . . . . . 5
5. Cell R<sub>4</sub> exceptionally long (cf FIG. 9), measured along vein R<sub>5</sub> 0.75 as long as cell R<sub>3</sub> (♂) . . . . . *elongata*, n. sp.  
Cell R<sub>4</sub> of moderate length, not more than 0.60 as long as cell R<sub>3</sub> . . . . . 6
6. All femora with prominent preapical black rings; frons of ♀ wholly shining (♀) . . . . . *glabrifrons*, n. sp.  
Legs wholly yellow; frons of ♀ (unknown but presumably so in *laticeps*) with a pair of conspicuous tomentose areas above antennal bases . . . . . 7
7. Head of ♂ 1.6 as wide as high (♂) . . . . . *laticeps*, n. sp.  
Head of ♂ 1.3 as wide as high (♂, ♀) . . . . . *plumula*

#### *Lophoteles vittata* James, n. sp.

♀ *Head* mostly black, shining. A feeble transverse sulcus dividing upper and lower parts of frons; frons there about 0.25 head width, widening to 0.30 at vertex and to 0.35 across antennal bases; upper frons with a few scattered, erect, yellow hairs; lower frons castaneous to dark castaneous in background, subshining on median 1/3, with dense white tomentum laterally reaching transverse sulcus and continuous with the similarly

dense tomentum of the face. Genae and occipital orbits well developed but moderately narrow, except where latter is broadened medially making profile of posterior margin of eye concave; gena shining below, densely tomentose, as on face, next to eye, this ocular border extending with diminished density onto occipital orbit dorsad to its bulge. Occiput well set, though not densely so, with stiff, appressed to subappressed, yellow hairs, becoming erect below. Antennae set at 0.30 head height; ratio 10:10:20:55; flagellum as high as long; scape and pedicel yellow, flagellum bright orange-yellow, arista black with black hairs. Proboscis bright yellow to orange-yellow. *Thorax* yellow, becoming reddish yellow on mesonotum; a pair of broad, dark brown to brownish black vittae extending from extreme anterior margin to outer basal angles of scutellum but only barely encroaching on the latter, and farther apart on postscutum than on prescutum; these vittae clearly evident and strongly contrasting with color of rest of mesonotum though not sharply defined. Mesonotum with short, appressed, yellow hairs medially and laterally, with similar black ones on and adjacent to vittae; pleura with scattered, pale, yellow appressed to semierect hairs, not forming any noticeable tufts or thickly pilose areas. Legs wholly pale yellow with yellow hairs. Wing mostly hyaline; stigma dark brown; discal cell and immediately adjacent areas, particularly extreme bases of cells  $R_3$  and  $R_5$ , pale brown. Cell  $R_4$  moderately large. Halter yellow. *Abdomen* spatulate, maximum width (at base of segment 4) 2X width of base of abdomen, length 1.6 maximum width; mostly brownish black, outer 1/3 of terga 2 and 3, apical angles of 1, basal angles of 4, and narrow lateral margins of sterna, reddish yellow. Hairs short, appressed, concolorous with background on terga, yellow on sterna. Ovipositor bright yellow except last segment pale brownish yellow; cerci yellow. *Length*: 3.8 mm (holotype), 4.2 mm (paratype).

♂ unknown.

Holotype ♀ (BISHOP 10,490), PNG: NEW GUINEA (NE): 6 km W of Wau, Nami Ck, 1700 m, 15.VI.1962, malaise trap, J. Sedlacek. Paratype: 1 ♀, Wau, Morobe Dist., Mt Missim, 1800 m, 22.IV.1966, malaise trap, Gressitt & Wilkes.

#### *Lophoteles costalis* James, n. sp.

FIG. 5, 15

♂ *Head* black (FIG. 5); upper frons and ocellar triangle subshining, occiput shining. Eyes contiguous about 1/4 distance from anterior ocellus to antennal bases; genae narrow; occipital orbits developed, though narrow, on lower 2/3; eye broadly rounded below. Frontal triangle, face, genae, and lower occipital orbits with dense white tomentum concealing ground color. Antennae set at lower 1/4 of head height; ratio 10:6:16:65; flagellum slightly higher than long; in type, scape black, shining; pedicel brown; flagellum brownish yellow above, yellow below; arista black with black hairs; color variable in series, antenna sometimes wholly yellow except arista and hairs. Proboscis black. *Thorax* black, humerus and part of pteropleuron reddish brown; in profile slender, dorsal outline flat and in line with scutellum, anterior angle of mesonotum almost a right angle; supra-alar humps hardly noticeable. Mesonotum dull except its bare anterior margin, along with scutellum thickly set with short, inconspicuous, brassy hairs. Pleura shining (above) to subshining (below); no conspicuous hair patches but with inconspicuous, short appressed to semiappressed, well scattered hairs, especially ventrally; most of mesopleuron, pteropleuron, and sternopleuron bare. Legs yellow; middle and hind coxae sometimes brownish yellow to brown. Wing (FIG. 15) brown, much more intensely so toward costa, then abruptly paler and gradually diminishing in intensity toward posterior margin; extreme apex of wing almost white; cell  $R_4$  large; base of  $R_5$  bowed. Halter brownish yellow, knob paler than stalk. *Abdomen* subspatulate, widest at apex of segment 4, 2.50 as long and 0.70 as wide at base as maximum width; black, terga dull except shining lateral margins, mostly with short, appressed, inconspicuous black hairs which become whitish and semierect on lateral margins and toward incisures; sterna with inconspicuous, yellow, appressed to subappressed hairs. *Length*: 3.4–4.5 mm, of holotype 4.0 mm.

♀. Frons with transverse sulcus at position of callus and narrowest there, about 0.18 head width, widening to 0.25 at vertex and 0.32 across antennal bases; below sulcus densely white tomentose, as on face, except for a narrow longitudinal median line, and above it shining, with a few short inconspicuous white hairs. Pleural hairs more prominent than in ♂. Abdomen somewhat broader than in ♂. Ovipositor brown with yellow incisures; cerci dark brown. *Length*: 3.3–4.0 mm.

Holotype ♂ (BISHOP 10,491), PNG: NEW BRITAIN: Gazelle Pen., Kerawat, 60 m, 11.IX.1965, J. L. Gressitt. Paratypes: 2 ♂♂, same as holotype; 3 ♂♂, Kerawat, 30 m, 2.IV.1956, Gressitt; 1 ♂, Kerawat, 135 m, 20–25.XI.1959, T. C. Maa; 1 ♀, Kerawat, 5 m, jungle, 9.X.1959, Maa; 6 ♂♂, 2 ♀♀, Gazelle Pen., Bainings, St. Paul's, 350 m, 8.X.1955, Gressitt; 1 ♂, Yalom, 1000 m, 20.V.1962, Noona Dan Expedition, 1961–1962. MANUS I: Rossum; 1 ♂, SE of Lorengau, 180 m, 23.XII.1959, Maa.

**Lophoteles fascipennis** Kertész*Lophoteles fascipennis* Kertész, 1914: 514.

This species, based on a single female from New Guinea, without further locality, was described briefly through comparison with *L. plumula* Loew and a well-executed drawing of the wing. The most outstanding characters were the brown apices of the femora (the legs otherwise yellow) and the large maculation on the otherwise hyaline wing, forming a broad crossband ("breite Querbinde") extending from the stigma across the entire discal cell almost to the posterior margin and apicad to the base of cell R<sub>4</sub>. I have seen specimens which agree well with Kertész's figure. The intensity of the maculation is usually not so pronounced and its extent is usually less, though always including the area from the stigma across the discal cell and into the cells immediately adjoining it.

The tomentose spots above the antennal bases of the female are prominent, as in *L. plumula*, rounded to quadrate, and white; the tomentum of the face is white and dense on the orbits but medially it allows some of the ground color to show through. In the male (previously undescribed) the frons is almost wholly densely white tomentose; the face is as in the female; the eyes are contiguous about 2.5 the distance from the anterior ocellus to the antennal bases. The mesonotal pile was described by Kertész as paler than in *L. pallipes*. Actually it is tricolored: yellow (female) to brassy (male) on the median 1/2, white, longer, and silkier on the prescutum above the notopleural suture, and short and black on the supra-alar humps. The pile of the propleuron and metapleuron is white, silky, and semierect, more prominent in the former; that of the posterior part of the mesopleuron is appressed, dense, and extending to the notopleural suture; that of the pectus is short and scattered. The upper part of the sternopleuron is bare and shining. The halter is conspicuously bicolored, the stalk bright yellow and the knob dark brown, the colors strongly contrasting.

**Material examined:** PNG: NEW GUINEA (NE): 2 ♀♀, 5 ♂♂, Finschhafen, IV.1944 and 2.V.1944, E. S. Ross; 2 ♂♂, 20 ♀♀, Wau, Morobe Dist., 1050-1250 m, various dates, I, II, III, V, VII, IX, X, XI. IRIAN: NEW GUINEA (NW): 1 ♀, Nabire, S. Geelvink Bay, 0-30 m, 2-9.VII.1962, light trap, J. L. Gressitt & J. Sedlacek; 1 ♀, same, 10-40 m, 10.X.1962, malaise trap, N. Wilson; 1 ♀, same, 5-50 m, 25.VIII-2.IX.1962, malaise trap, J. Sedlacek; 1 ♀, Ifar, Cyclops Mts, 300-500 m, 23-25.VI.1962, malaise trap, J. Sedlacek.

**Lophoteles latipennis** James, n. sp.

FIG. 7, 16

An aberrant species, characterized by the restricted tomentose areas of the head, the oddly shaped wing (FIG. 16), and the long, slender halter. The sole available specimen is in good condition but poorly mounted, the lower parts of the head and thorax being somewhat obscured by the adhesive.

♀ **Head** shining black. Eyes broadly rounded below. Frons at antennal bases 0.38 head width, widening to 0.50 across upper angles of eyes; occipital orbits and genae well developed, about 0.10 head width and of approximately equal width throughout. Frons bare except for a few, hardly noticeable, erect, yellow hairs and without tomentum; facial orbits white tomentose; middle of face apparently bare. Antennal ratio 15:8:22:65; flagellum 0.9 as high as long; pedicel extending angularly into flagellum (FIG. 7); scape shining black, becoming reddish toward apex; pedicel and flagellum orange-yellow, latter paler below at base, becoming brown above and at apex; arista and hairs black. Proboscis black. **Thorax** black. Mesonotum and scutellum uniformly with appressed brassy hairs; pleura obscured by adhesive but apparently without conspicuous hairs. Legs mostly yellow; apical 1/3 of each femur black, front tibia and median 1/3 of front femur brown; tarsi becoming brown apically. Wing (FIG. 16) oval, narrow at base, broadest medially; almost hyaline, uniformly light brown, somewhat paler basad of discal cell. Halter unusually long and slender, about 0.80 as long as hind femur, its knob elongated oval, about 0.15 as wide as length of entire halter. **Abdomen** spatulate, broadest at apex of segment 4, there 2x as wide as at base, length of abdomen 1.6 maximum width; dark reddish brown to black. Pile appressed, inconspicuous, mostly black dorsally, becoming reddish yellow toward apices of terga and on tergum 5; that of sterna yellow. Ovipositor brown, apices of segments and cerci yellowish brown. **Length:** 3.3 mm.



♂ unknown.

Holotype ♀, (BISHOP 10,492), PNG: NEW GUINEA (NE): E end Saruwaged Range; 20 km SSW of Kabwum, 2550 m, 5–12.VIII.1966, G. A. Samuelson.

*Lophoteles elongata* James, n. sp.

♂ *Head* black. Eyes contiguous about 2/5 distance from anterior ocellus to antennal bases; almost round in profile, about 0.9 as long as high. Frontal triangle and face densely white tomentose, background vaguely visible under oblique lighting on frontal triangle and adjacent to antennal bases. Genae and lower occipital orbits developed but very narrow. Occiput mostly with appressed black hairs, a few yellow ones below. Antennae set at 1/3 head height; ratio 12:8:18:60; flagellum as high as long; scape reddish yellow, pedicel and base of flagellum yellow, flagellum becoming dark brown toward apex; arista and hairs black. Proboscis brownish yellow, becoming black toward base. *Thorax* black, humerus dark castaneous surrounding a yellow spot, postalar callus dark castaneous. Mesonotum and scutellum with brassy appressed hairs. Pleura shining with scattered semierect hairs, nowhere forming noticeable tufts. Legs elongated, wholly pale yellow. Wing elongated, apex of discal cell reaching approximately apex of abdomen; hyaline, only stigma yellow; cell R<sub>4</sub> large, length along R<sub>5</sub> 0.75 distance from r-m to origin of vein R<sub>4</sub> (cf *Saldubella latimanus*, FIG. 9). Halter yellow, elongated as in *L. latipennis* but not unusually slender, knob about 0.25 as wide as entire halter. *Abdomen* spatulate, elongated, maximum width (at apex of segment 4) 1.6 width at base, length 2.4 maximum width; black, dorsally with short, appressed, black hairs, ventrally with semiappressed yellow hairs. *Length*: 4.4 mm.

♀. One specimen, not designated a type, from PNG: NEW GUINEA (NE): Mt Missim, 7° 15' S, 146° 48' E, is probably this species. Front at narrowest 0.33 head width, widening to 0.40 at vertex and 0.37 across antennal bases; glabrous, with a few semierect white hairs visible in profile; facial tomentum much less dense than in ♂ except on orbits, face becoming glabrous medially and toward antennal bases, there with a few hairs like those on frons; tomentum of orbits expanding into a pair of quadrate spots on lower frons. Antennae set at 0.45 head height. Hairs of thorax as described for ♂, those of lower pleura somewhat more noticeable but not forming tufts. Wing very pale brown; halter light brown above on knob, not as elongated as in ♂. *Abdomen* oval, 2X as long as maximum width (at apex of segment 4) and 3X as long as minimum width (at apex of segment 1); black and thickly punctate medially on dorsum, becoming dark castaneous and shining laterally; sterna dark castaneous to black, without any definite pattern; hairs mostly black dorsally, yellow to yellowish ventrally. *Length*: 4.3 mm.

Holotype ♂ (BISHOP 10,493), PNG: NEW GUINEA (NE): Daulo Pass, 2400 m (Asaro-Chimbu Div.), 16.VI.1955, J. L. Gressitt.

*Lophoteles glabrifrons* James, n. sp.

FIG. 6

This species bears a superficial resemblance to *Saldubella pictipes* but, in addition to the difference in antennal structure, it disagrees in the strongly-developed genae and lower occipital orbits, the impressions on the frons, the hyaline wings, the short, broad abdomen, and other details. Like *L. latipennis*, it is an aberrant species. Its reference to either *Lophoteles* or *Saldubella* might be questioned, but in a taxon like the Pachygastrinae, where so many monotypic genera have been described, new ones should be proposed with caution.

♀ *Head* black, strongly shining. Frons at antennal bases 0.43 head width, widening to 0.50 at vertex; near its median longitudinal axis with a pair of shallow, circular, crater-like depressions, 1 located adjacent to each eye, the diameter of each about 1/3 width of frons at that plane. Occipital orbits narrow but well developed above, exceptionally wide below; genae also exceptionally wide. A much sharper, deeper, subtriangular median depression just above but somewhat separated from antennal bases, reaching more than 1/2 distance to anterior ocellus. Frons appearing bare from frontal view but in profile showing a few short, semierect, black hairs; similar hairs present, but more abundant and more evident on upper face; narrow facial orbits white tomentose to level of antennal bases; no tomentum on frons or gena. Antenna set at 0.60 head height; ratio 8:8:17:50; flagellum 0.85 as high as long; scape, arista, and hairs black, pedicel reddish yellow, flagellum becoming dark brown, then almost black, toward apex. Proboscis blackish, yellow ventrally. *Thorax* black; mesonotum mostly subshining, with appressed, short, brassy hairs, shining laterally; scutellum set at a slight angle with mesonotum, with similar hairs; pleura mostly shining, hairs whitish to white, mostly sparse, most prominent on upper margin of sternopleuron. Legs yellow; a broad dark brown preapical band on each femur. Wing hyaline; stigma small, triangular, similar to that of *Saldubella pictipes* (FIG. 11); cell R<sub>4</sub> large. Halter yellow, knob brownish yellow. *Abdomen* ovate, maximum width (at apex of segment 4) about 2x width at base, length 1.4x maximum width; castaneous dorsally, dull to subshining medially, with short,

appressed, white hairs, becoming glabrous and almost bare laterally and on tergum 5; sterna subshining with short, appressed, white hairs. *Length*: 2.5 mm.

♂ unknown.

Holotype ♀ (BISHOP 10,494), PNG: NEW GUINEA (SE): Mt Giluwe, N. side, Malgi, 2500 m, 25-30.V.1961, J. L. Gressitt.

***Lophoteles laticeps* James, n. sp.**

♂. Similar to *L. plumula* but readily distinguishable by its wide, shallow head (1.6 as wide as high in type, about 1.3 in *L. plumula*). Eyes circular in profile, contiguous about 1/2 distance from anterior ocellus to antennal bases; genae very narrow and occipital orbits not developed. Frontal triangle and face densely white tomentose, orbits no more densely so than elsewhere, frontal triangle with only a very narrow median area bare and shining. Antennae set at 0.35 head height; ratio 10:10:15:60; flagellum slightly higher than long; mostly yellow, flagellum brown above, especially toward apex, arista black on basal segment, then brown and dark brown haired. Proboscis dark brown to black. *Thorax* black, below wing base tending to brownish black. Mesonotum and scutellum on a plane with each other, clothed with short, appressed, yellow hairs; pleura wholly shining and bare, some short white hair crossing posterior part of mesopleuron and extending across upper part of pteropleuron; pectus with short white hairs. Wing very pale yellowish brown, stigma much darker; cell R<sub>4</sub> relatively large. Stalk of halter yellow, knob gray. *Abdomen* subovate, 0.6 as wide at base and 2.0 as long as maximum width (at apex of segment 4); black; hairs mostly black, short, appressed, some long yellow ones laterally on terga 1 and 2. *Length*: 3.6 mm.

♀ unknown.

Holotype ♂ (BISHOP 10,495), PNG: NEW BRITAIN: Vudal, SW of Keravat, 3.XII.1959, T. C. Maa.

***Lophoteles plumula* Loew**

*Lophoteles plumula* Loew, 1858: 111.

*Material examined*: PNG: NEW BRITAIN: 1 ♂, 1 ♀, Vunakanau, Gazelle Pen., 22.V.1956, on *Alpinia*, J. L. Gressitt; 1 ♀, Gaulim, Gazelle Pen., 130 m, 28.X.1962, J. Sedlacek; 1 ♀, Lindenhafen, S. Coast, 2 m, 27.IV.1956, J. L. Gressitt. NEW IRELAND: 1 ♂, Gilingil Plantation, 2m, 5.VII.1956, Gressitt; 1 ♀, Schleinitz Mts, Lelet Plateau, X.1959, W. W. Brandt. MUSSAU I: 2 ♀♀, Talumalaus, 19.I.1962, Noona Dan Expedition 1961-1962. DYAUL I: 1 ♀, Sumuna, 8.III.1962, Noona Dan Expedition 1961-1962.

Kertész (1914: 513) has recorded this species from Erima, Astrolabe Bay, New Guinea.

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