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The Genus *Mesoleptogaster* Frey in Fiji (Diptera: Asilidae: Leptogastrinae)[1,2]

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Abstract. Four new species of the leptogastrine asilid genus *Mesoleptogaster: M. levusara,* **n. sp**., *M. loaloa,* **n. sp.,** *M. meriel,* **n. sp. ,** and *M. vitiensis*, **n. sp.** are described and illustrated. The previously only known Fijian leptogastrine, *Leptogaster pacifica* Bezzi, is transferred to *Mesoleptogaster* (as *Mesoleptogaster pacifica*, **n. comb**.) and the male terminalia described for the first time. With the addition of these four new species there are currently five leptogastrines known from the Fiji Islands.

INTRODUCTION

Leptogastrines, or grass flies, are nearly cosmopolitan with an abundance of species from tropical regions including oceanic islands. Adults inhabit grasslands, hence their common name, as well as the undergrowths of forests where they prey on mostly small soft-bodied invertebrates. The leptogastrines are easily distinguished from other Fijian asilids by the absence of pulvilli and an alula and by the long thin abdomen and legs, the hind femora of which are commonly swollen apically. In this respect, they are very wasp-like in appearance, yet no known cases of mimicry with an identified model have been recorded from Fiji.

Only one species of Leptogastrinae had been previously described from Fiji: *Leptogaster pacifica* Bezzi (1928) from Ovalau and Viti Levu. Examination of that species as well as a number of others from the Melanesian region by Torsten Dikow (as part of his worldwide study of Leptogastrinae) and by myself during this study, shows that the leptogastrine species from Fiji all belong to the genus *Mesoleptogaster* Frey.

This study, based primarily on the extensive Malaise trap collections of the Schlinger Fiji Bioinventory of Arthropods (FBA) and the NSF-Fiji Terrestrial Arthropod project (NSF) and supplemented by hand collections by others, records four new species of the genus *Mesoleptogaster* Frey and transfers *L. pacifica* to *Mesoleptogaster*, bringing the total number of species of the genus in Fiji to five.

MATERIALS AND METHODS

Specimens in this study derive primarily from collecting and trapping conducted by the FBA and NSF projects, types and voucher specimens of which will be deposited in the Fiji National Insect Collection, Suva (FNIC). Where series numbers permit, paratypes and duplicates are deposited in the Bishop Museum, Honolulu (BPBM) and the Natural History Museum, London (BMNH). Descriptive terminology follows that of McAlpine

1. Contribution No. 2006-009 to the NSF-Fiji Arthropod Survey.
2. Contribution No. 2006-006 to the Pacific Biological Survey.

(1981) and Dikow (2003).

SYSTEMATICS

Mesoleptogaster Frey

Leptogaster (*Mesoleptogaster*) Frey, 1937: 39. Type species: *Leptogaster fuscatipennis* Frey, 1937, by original designation.
Mesoleptogaster Frey. Hsia, 1949: 45. Hull, 1962: 302. Oldroyd, 1975: 104. Lehr, 1988: 270.

Mesoleptogaster was originally described as a subgenus of *Leptogaster* by Frey (1937) but further study by Hsia (1949) prompted his raising it to generic status. This was followed by Hull (1962), Oldroyd (1975), and Lehr (1988). Dikow (in prep.) has corroborated its treatment as a full genus, which is followed here.

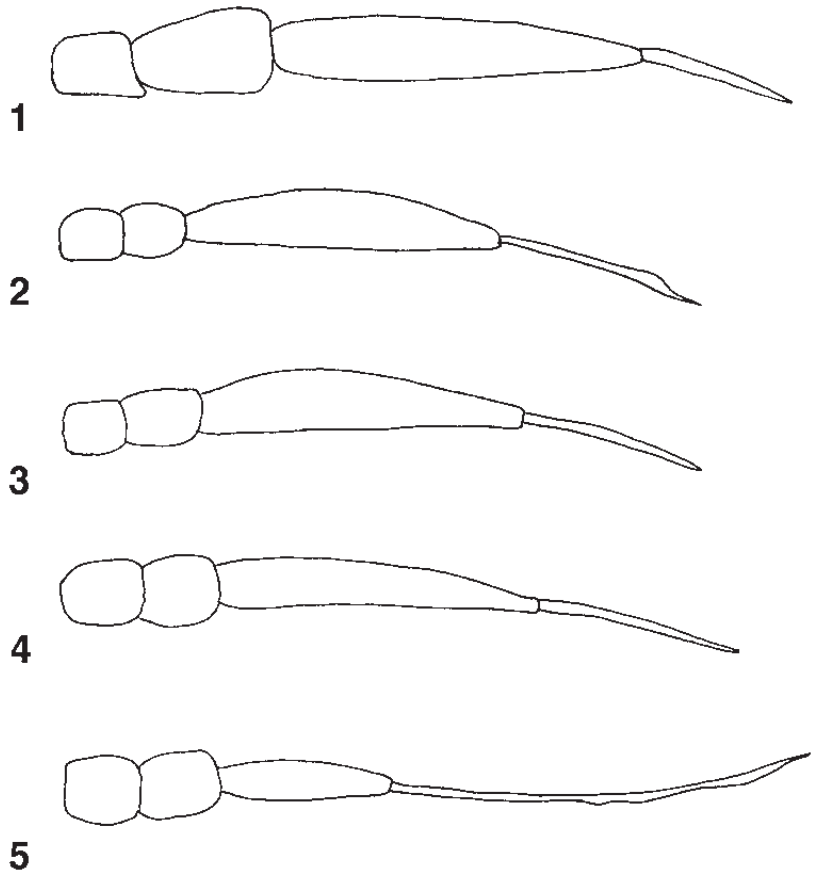
Frey (1937) separated *Mesoleptogaster* from *Leptogaster s. str*. by the following characters: hind tibia with row of more or less strong setae on its outer (lateral) surface and the first flagellomere four times longer than wide. Hsia (1949) further distinguished *Mesoleptogaster* from *Leptogaster s. str*. by the following characters: first antennal flagellomere spindle shaped, almost tapering to a point, longer than scape and pedicel combined; style shorter than first flagellomere; wing narrow, cubital branches short, convergent, or parallel, cells narrowly open at wing margin; legs slender, hind tibia with row of more or less strong bristles on external (posterolateral) surface. Hull (1962) added that species had a polished mesonotum. Except for style length (some in Fiji are longer than the first flagellomere), Hsia's characters seem to hold up fairly well in separating species of *Mesoleptogaster* and related genera, such as *Lobus* Martin, found in the Melanesian region. Hull's addition of the polished mesonotum holds for most species, but one new species described here has a distinctly matte mesonotum, not polished; otherwise it has all the salient characters of the genus.

All *Mesoleptogaster* from Fiji thus far known are endemic, although one species (*M. meriel*, sp. nov.) fits with a complex of species in the Papuan/Malesian region with similar wing venation and microtrichial wing pattern typified by *Leptogaster trifasciata* (de Meijere) from Java, New Guinea, and the Philippines. Further study including comparisons of male genitalia (outside the scope of this Fiji study) may show that *trifasciata* and related species still placed in *Leptogaster s. lat.* need to be transferred to *Mesoleptogaster*.

Key to Species of *Mesoleptogaster* Frey of Fiji

1. Mesonotum matte, not polished, with admedian vittae ...(Viti Levu) .... **levusara** Evenhuis, **n. sp**.
–. Mesonotum polished yellowish brown, brown, or black, without vittae 2
•
2. Wing completely smoky yellowish brown to brown (Fig. 7) ... (Viti Levu) .... **loaloa** Evenhuis, **n.sp**.
–. Wing predominantly hyaline, infuscation restricted to tip of wing 3

3. Antennal scape and pedicel black; cell cup open narrowly at wing margin, much narrower in width than cell r4 at wing margin (Fig. 9); wing tip patch of microtrichia narrow at tip or imperceptible; hind femora black ... (Ovalau, Viti Levu) ..... **pacifica** Bezzi
–. Antennal scape and pedicel yellow to orange, not black; cell cup subequal in width at wing margin to cell r4 (cf. Fig. 8); wing tip patch of microtrichia as a narrow strip or triangles, distinctly more extensive than above; hind femora tan to

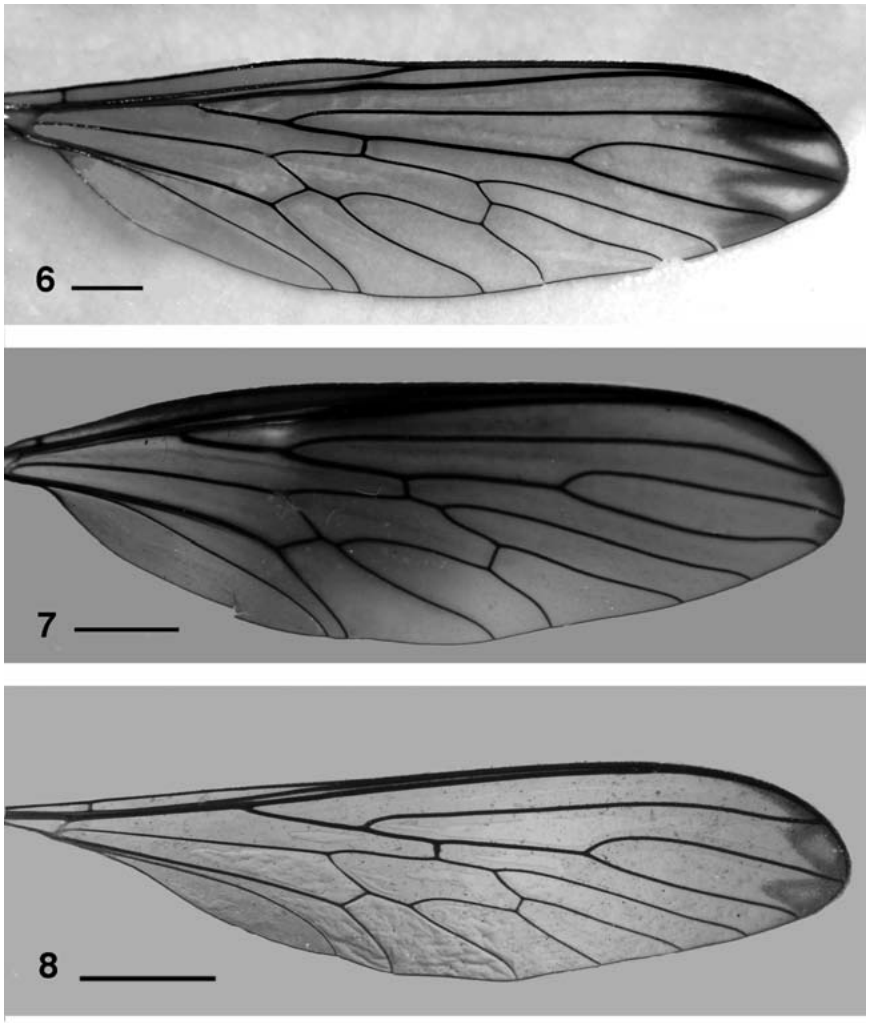


Figures 1–5. *Mesoleptogaster* antennae, diagrammatic, not to scale, to show comparative shapes. **1**. *M. levusara*. **2**. *M. loaloa*. **3**. *M. meriel*. **4**. *M. pacifica*. **5**. *M. vitiensis*.

brown, with or without subapical band 4

4. Wing tip infuscated, forming triangles of infuscation (Fig. 8); hind femora with subapical brown band; antennal style shorter than flagellomere; male second sternite without minute sclerite in fenestra (Fig. 11) ... (Viti Levu, Gau, Taveuni, Vanua Levu) ..... **meriel** Evenhuis, **n. sp**.

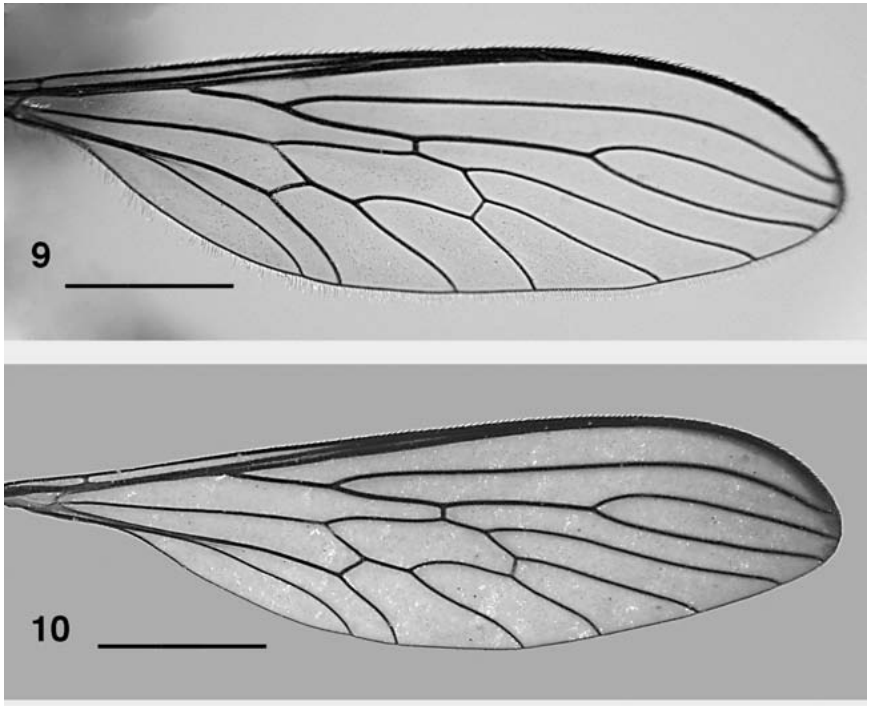
–. Wing tip narrowly infuscated, not forming triangles (Fig. 10); hind femora without subapical brown band; antennal style much longer than flagellomere; male second sternite often with minute heart-shaped sclerite in fenestra (Fig. 12) ... (Viti Levu [including Macuta I], Vanua Levu, Taveuni, Yasawa, Kadavu, Lakeba) ..... **vitiensis** Evenhuis, **n. sp**.



Figures 6–8. *Mesoleptogaster* wings. **6**. *M. levusara*. **7**. *M. loaloa*. **8**. *M. meriel*. Scale = 1.0 mm.

Mesoleptogaster levusara Evenhuis, **new species**
(Figs. 1, 6)

Diagnosis: *Mesoleptogaster levusara* is easily distinguished from the congeners in Fiji by its generally large size (greater than 15 mm), thick abdomen (girth much thinner in the other Fijian species) and its matte mesonotum dorsally (mesonotum polished in other Fijian species). The swollen costal cell (Fig. 6) is similar to that found in *loaloa*, n.sp., but



Figures 9–10. *Mesoleptogaster* wings. **9**. *M. pacifica* Bezzi. **10**. *M. vitiensis*. Scale = 1.0 mm.

it is separated from it by the more clear wing (the wing smoky black in *loaloa*), and the matte brownish body coloration (black in *loaloa*).

Description: Lengths: body: 17.2 mm; wing 12.0 mm. *Head*: Black; face golden brown pruinose; proboscis dark brown with short white hairs apically; palpus dark brown, setae white basally dark brown apically; ocellar tubercle black, scattered brown pruinose; occiput gray pruinose below, golden brown pruinose above, post ocular setae yellowish brown above, white hairs laterally. Antenna (Fig. 1) with scape and pedicel yellowish with brown setae, pedicel ca. 2 times length of pedicel; first flagellomere yellowish brown on basal 1/3, remainder brown; style 1/3 length of flagellomere, brown.

Thorax: Matte brown, gray pruinose, mesoscutum with pair of admedian tan vittae converging in prescutellar area; notopleural margin and pleura gray to silver pruinose; dorsocentral setae minute, restricted to anterodorsal and prescutellar areas; 1 notopleural seta, 1 supraalar seta; scutellum tan pruinose, scutellar setae black. Halter stem yellowish white to white, knob grayish brown.

Legs: Coxae concolorous with pleura, gray pruinose; femora generally orange-colored, polished; hind femur swollen apically, with row of dense minute pale hairs ventrally, with brown streak laterally interrupted subapically by orange band; fore and mid tibia orange, pale yellow stripe anteriorly; hind tibia orange to black, with rows of 10 small spines along entire posterior surface, dense yellow hairs ventroapically; tarsi orange to brown, setae black; empodium distinct, 5/8 length of claws.

Wing (Fig. 6): Yellowish brown colored with microtrichae apically forming triangles of infuscation in cells r1, r2+3, r4, and r5, triangles in upper 3 cells with whitish color medially; r-m crossvein at basal one-third of cell d; M_3 beyond crossvein m-m much shorter than M_3 before crossvein; R_{2+3} almost straight to wing margin, only slightly bent at apex; cell cup narrowly open in wing margin, width less than opening of cell r4 at wing margin; anal lobe relatively broad basally, not reduced (cf. Figs. 6, 8).

Abdomen: Brown; tergites predominantly brown, anterior and posterolateral margins yellowish, brown pruinose, tergites II–VII with yellow transverse subapical and apical gray-brown transverse band; tergite I with yellow hairs along posterior margin; tergite II without setae; tergites III–IV with scattered minute black hairs; tergites V–VIII with admixture of yellow and black hairs dorsally and laterally; sternites grayish yellow pruinose, setae yellow.

Genitalia: Not dissected.

Types: Holotype ♀ from FIJI: **Viti Levu**: Koroyanitu National Heritage Park, Savuione Trail, 1 km E. Abaca Village, 800 m, 21 Oct–18 Nov 2003, 17°40'S 177°33'E, Malaise, L. Tuimereke (FBA505001). Holotype to be deposited in FNIC. Known only from the holotype female.

Etymology: The specific epithet derives from the Fijian *levu sara* = "very large, huge", referring to the large size (17 mm). It is one of the largest species in the genus.

Mesoleptogaster loaloa Evenhuis, **new species**
(Figs. 2, 7)

Diagnosis: *Mesoleptogaster loaloa* is easily distinguished from the congeners in Fiji by the all smoky brown wing (wing predominantly hyaline in all other species). Additionally, like *levusara*, n. sp., cell cup is narrowly open in the wing margin, less than the width of cell r4 at the wing margin (cell cup is more widely open in other Fijian species of the genus). It is separated from *levusara* by the smoky brown wing.

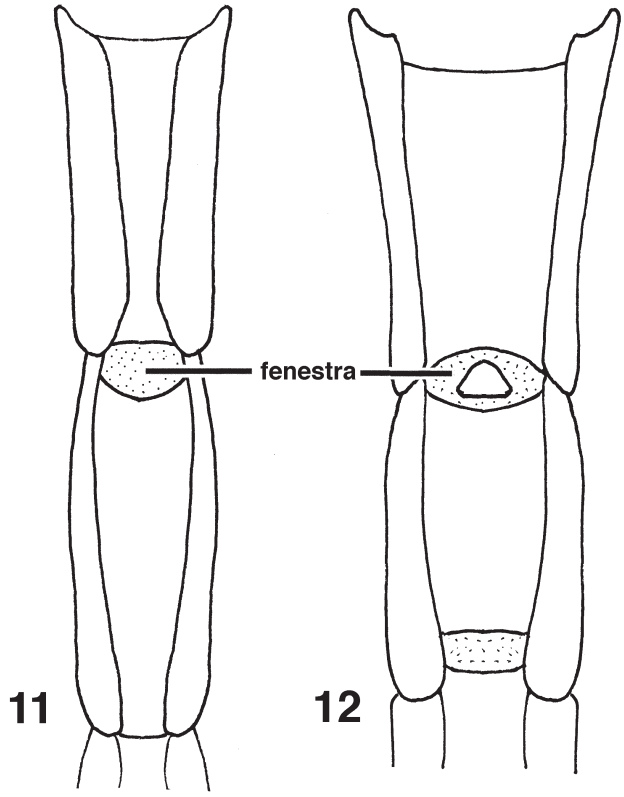
Description: Lengths: body: 8.5 mm; wing 8.0 mm. *Head*: Black; face gray pruinose; proboscis black with short white hairs apically; palpus black with white hairs; ocellar tubercle black, golden brown pruinose; occiput dense gray tomentose and pruinose, post ocular setae and hairs white. Antenna (Fig. 2) black, scape and pedicel with black setae; style 1/2 length of flagellomere.

Thorax: Mesoscutum polished black, gray pruinose laterally, brown pruinose in prescutellar area; notopleural margin gray pruinose; pleura brown, gray pruinose on upper half, brown pruinose on lower half; dorsocentral setae minute, brown, restricted to anterodorsal and prescutellar areas; 1 notopleural seta, 1 supraalar seta; scutellum densely gray pruinose, scutellar setae long, black. Halter dark brown.

Legs: Fore coxa tan, mid coxa brown, hind coxa black, all polished with sparse white to yellow pruinosity; hind femur slightly swollen apically, with row of short pale hairs ventrally on basal 2/3; fore and mid tibia brown, tan stripe anteriorly; hind tibia brown, black apically, with rows of 12 short black spines along entire posterior surface, dense orange-yellow hairs ventroapically; basitarsi orange basally, black apically; remainder of tarsi black, setae black; empodium distinct, 1/2 length of claws.

Wing (Fig. 7): Brown colored with microtrichae restricted to extreme apex of cells r1, r2+3, and r4; r-m crossvein beyond middle of cell d; R_{2+3} almost straight to wing margin, only slightly bent at apex; cell cup narrowly open in wing margin, width less than opening of cell r4 at wing margin; anal lobe relatively broad basally, not reduced (cf. Figs. 6, 10).

Abdomen: Black; posterior margin of tergites II–IV gray; tergite I with long, black hairs along posterolateral margin; tergites II–VII with patch of white hairs posterolaterally; tergites VIII with black hairs; sternite I polished black, bare; sternites II–VII dark brown, grayish pruinose with scattered white hairs.



Figures 11–12. *Mesoleptogaster* male abdominal sternites I–II, diagrammatic, not to scale, showing fenestra of sternite II. **11**. *M. meriel*, n. sp. **12**. *M. vitiensis*, n. sp.

Genitalia: Not dissected.

Types: Holotype ♀ from FIJI: **Viti Levu**: Koroyanitu National Heritage Park, Savuione Trail, 1 km E. Abaca Village, 800 m, 21 Oct–18 Nov 2003, 17°40'S 177°33'E, Malaise, L. Tuimereke (FBA049321). Holotype to be deposited in FNIC. Known only from the holotype female.

Etymology: The specific epithet derives from the Fijian *loaloa* = "black", referring to the overall black color of the species and dark smoky wing.

Mesoleptogaster meriel Evenhuis, **new species**
(Figs. 3, 8, 11, 13, 16)

Diagnosis: *Mesoleptogaster meriel* is easily distinguished from the congeners in Fiji by the presence of dark dense microtrichia forming infuscated triangles at the tip of the wing (Fig. 2) [the wing is virtually hyaline in *M. pacifica* (Fig. 3)] and the brown subapical band on the swollen portion of the hind femora. The species is similar to the Javanese and

Philippine species, *Mesoleptogaster trimaculata* (de Meijere) and can be separated from it and most other species from the Melanesian islands by the lack of a triangular pattern of microtrichia in cell r5 (this patterned area is present in these other species).

Description: Lengths: body: 9.5–13.5 mm; wing 6.5–8.0 mm. *Head*: Black; face sparse brown pruinose; proboscis dark brown with short white hairs apically; palpus pale brown with white hairs; ocellar tubercle black, scattered brown pruinose posteriorly; occiput densely grayish white pruinose, post ocular setae yellowish above, white hairs laterally. Antenna (Fig. 3) with scape and pedicel yellowish, latter with brown setae, flagellomere short, black, slightly longer than length of scape and pedicel together; style long, thin, black, 2.5 times length of flagellomere.

Thorax: Polished brown, gray pruinose in prescutellar area; notopleural margin yellowish pruinose; pleura light brown with golden pruinosity; dorsocentral setae minute, yellowish; 1 notopleural seta, 1 supraalar seta; scutellum small (overlapped by prescutellar area), brown, brown pruinose, scutellar setae minute, black. Halter yellowish.

Legs: Coxae pale yellow, mid coxa with brown basally, all yellowish pruinose; fore and mid femora brown, polished, yellow apically, with whitish yellow stripe anteriorly; hind femur swollen apically, with row of small pale hairs ventrally, orange to yellow with subapical brown band; fore and mid tibia pale yellowish brown with whitish stripe anteriorly; hind tibia brown with rows of 7–10 small spines along entire posterior surface, row of yellow hairs ventrally, densest ventroapically; fore and mid tarsi yellowish, setae brown, hind basitarsi yellow basally, dark brown apically, remainder of hind tarsi brownish yellow, setae black; claws black; empodium distinct, 5/8 length of claws.

Wing (Fig. 8): Subhyaline with microtrichae apically forming triangles of infuscation in cells r1, r2+3, and r4, triangles in r2+3 and r4 with grayish to whitish color medially; r-m crossvein beyond middle of cell d; M_3 beyond crossvein m-m subequal in length to M_3 before crossvein m-m; R_{2+3} almost straight to wing margin, only slightly bent at apex; cell cup broadly open in wing margin, width subequal to opening of cell r4 at wing margin; anal lobe reduced basally.

Abdomen: Brown, subshining except basal half of tergite II and all of tergites III–IV polished, dorsum generally bare except scattered minute black hairs, golden yellow hairs laterally and lateroventrally; tergite I yellow basally, black apically; tergite II black basally, brown apically; tergites II–IV brown; tergites V–VIII dark brown to black, blackest on VII–VIII; sternites brown, yellow apically, setae golden yellow; fenestra of sternite II (Fig. 11) without minute sclerite.

Male genitalia (Figs. 13, 16): Surstylus with dorsal lobe long, thin, tapering to acute apex, darkly sclerotized on apical 2/3; ventral lobe long, thin, spatulate, yellowish with brown medially. Proctiger hemispherical, dark brown. Hypandrium relatively large, subrectangular, yellowish with medial brown spot, caudal margin with darkly sclerotized pointed projection at posterolateral corner.

Types: Holotype ♂ from FIJI: **Taveuni**: road to Devo Peak, ca. 680 m, 24 Jan 2006, 16°49'38.8"S, 179°58'57.3"W, swept from grass, S. Gaimari, N. Evenhuis, J. Skevington, M. Tokota'a. *Paratypes*: FIJI: **Gau**: 4♂, 4♀, 4.0 km SE Navukailagi Village, Mt. Delaco, 496 m, 17.98°S, 177.275°E, 29 Jan–7 Mar 2005, 19 Apr–2 May 2005, 2 –14 May 2005, 3–19 Aug 2005, 19–31 Aug 2005, 13–26 Sep 2005, Malaise, U. Racule (FBA505919, 504923–504925, 504945, 504949, 504952); **Taveuni**: 1♀, Tavuki village, Mt. Devo 892 m, 16.837°S, 179.973°W, 29 Nov 2004–14 Jan 2005, Malaise, P. Vodo (FBA504928); 1♂, 5.5 km SE Tavuki village, Devo Peak, 1188 m, 16.843°S, 179.956°W, 14–28 Jan 2005, Malaise, P. Vodo (FBA504922). **Vanua Levu**: 4♂, 2♀, 0.4 km S Rokosalase Village, 118 m, 16.532°S, 179.019°E, 31 Aug–14 Sep 2004, 5–29 Jan 2005, Malaise, I. Sakealevu (FBA504927, 504940–504944); 1♀, 1? [tip of abdomen broken off], same data except: 0.3 km S, 94 m, 29 Jan–7 Mar 2005, 14–31 Aug 2005 (FBA504929, 504934); 1♂, 2♀, same data except: 0.5 km S, 97 m, 27 Dec 2004–5 Jan 2005, 5–29 Jan 2005, 29 Jan–7 Mar 2005 (FBA504926, 504946, 504948); 4♂, 7♀, same data except: 0.6 km S, 150 m, 14–31 Aug 2004, 14–28 Sep 2004, 28 Sep–15 Nov 2004, 15 Nov–9 Dec 2004, 29 Jan–7 Mar 2005

(FBA504915–504916, 504921, 504931, 504935–504939, 504950–504951). **Viti Levu**: 1♂, 4 km WNW Colo-i-Suva village, Mt. Nakobolevu, 325 m, 18.056°S, 178.422°E, 4 Sep 12 Oct 2004, Malaise, Timoci leg. (FBA504917); 3♂, 13♀, Navai, 700 m, 17°37'S 177°39'E, 6 Jun–15 Jul 2003, 24 Oct–8 Nov 2003, 9–20 Dec 2003, 3 Feb–16 Mar 2005, Malaise, E. Namatalau (FBA002944, 029211, 032263–032267, 036407, 031537, 037175–037179, 504932–504933); 1♀, 1.8 km E Navai village, old trail, Mt. Tomaniivi, 700 m, 17.521°S 177.998°E, 23 Sep–18 Oct 2004, Malaise, E. Namalatau (FBA504953); 5♀, Koroyanitu National Heritage Park, Savuione Trail, 1 km E. Abaca Village, 800 m, 12–19 Oct 2002, 21 Oct–18 Nov 2003, 8 Oct–2 Nov 2004, 17°40'S 177°33'E, Malaise, L. Tuimereke (FBA006900, 049324–049325, 049327, 504918); 1♂, 4 km NW Lami Town, Mt. Korobaba, 260 m, 18.104°S, 178.381°E, 1–13 Dec 2004, K. Koto (FBA504930). Holotype to be deposited in FNIC. Paratypes in BPBM, FNIC, and BMNH.

Observations. After being captured and placed alive in a vial for observation, the holotype exhibited a curious habit of a posture much like a "hand-stand" with its head directed downward and its abdomen directed straight upward as it cleaned the abdomen with its hind legs. It initiated this behavior frequently whenever it was disturbed.

Etymology: This species is named for Meriel Grace Genevieve Olson. She has been a diplomat for the project, building trust and support within communities to facilitate the survey. The name is treated as a noun in apposition.

Mesoleptogaster pacifica Bezzi, 1928, **new combination**
(Figs. 4, 9, 14, 17)

Leptogaster pacifica Bezzi, 1928: 41. Daniels, 1989: 349.

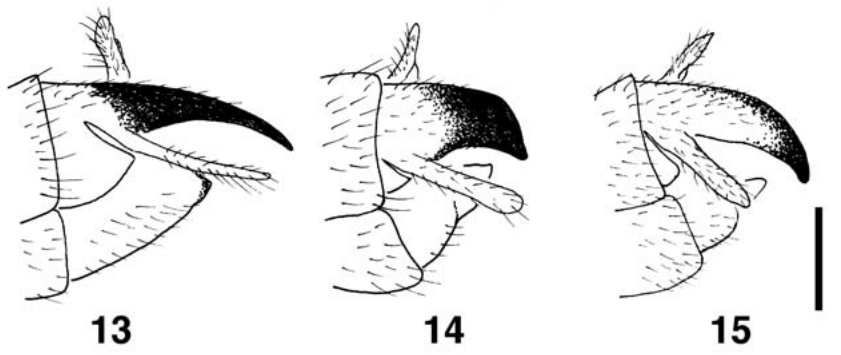
Mesoleptogaster pacifica was originally described by Bezzi (1928) based on two females: one from Ovalau and one from Viti Levu. The species is easily separated from the other species of the genus in Fiji by the all black antennae, predominantly black body color, and extremely reduced areas of microtrichia apically (or absent altogether) in the wing. Bezzi's (1928) description is detailed and accurate and serves to easily characterize the species. The antennae (Fig. 4) and wing (Fig. 9) are illustrated here for comparison with the other Fijian species and to further aid in identification. The salient characters of the male genitalia are here described and illustrated for the first time.

Male genitalia (Figs. 14, 17): Surstylus with dorsal lobe broadly lanceolate, black, bent inwards distally; ventral lobe long, thin, yellow, rounded apically. Proctiger bifid, dark brown with whitish apices. Hypandrium small, subhemispherical, brown, black apically, polished.

Material Examined: FIJI: **Viti Levu**: 1♀, Koroyanitu National Heritage Park, Savuione Trail, 1 km E. Abaca Village, 800 m, 21 Oct–18 Nov 2003, 17°40'S 177°33'E, Malaise, L. Tuimereke (FBA049322); 1♀, same data except: 21 Oct–7 Nov 2002 (FBA 006950); 1♀, 4 km NW Lami Town, Mt. Korobaba, 400 m, 1–13 Dec 2004, Malaise, K. Koto (FBA504955); 1? [tip of abdomen broken off], 1.1 km SSW Volivoli Village, Sigatoka Sand Dunes, 55 m, 18.159°S 177.485°E, 29 Apr–27 Aug 2004, Malaise, S. Niusoria (FBA504954); 1♀, 4 km WNW Colo-i-Suva Village, Mt. Nakobolevu, 18.057°S, 177.42°E, 24 Sep–12 Oct 2004, Malaise, Timoci (FBA504956).

Discussion: I here transfer *Leptogaster pacifica* to the genus *Mesoleptogaster* based on its possessing short hairs on the hind femur and having male genitalia that are characteristic of species in the genus. It is a bit ironic that the only species of the genus described by Bezzi (1928) is one of the rarest found in this study of hundreds of specimens from many of the islands.

Distribution: Restricted to Viti Levu and Ovalau.



Figures 13–15. *Mesoleptogaster* male terminalia, lateral view. **13**. *M. meriel*. **14**. *M. pacifica*. **15**. *M. vitiensis*. Scale = 0.5 mm.

Mesoleptogaster vitiensis Evenhuis, **sp. nov**.
(Figs. 5, 10, 12, 15, 18)

Diagnosis: *Mesoleptogaster vitiensis* is closest to *M. meriel*, but is easily distinguished from it by the microtrichia forming a narrow infuscation at the tip (this infuscation forming triangles in *meriel*), the lack of a subapical brown band on the hind femora (present in *meriel*) and the presence of a minute sclerite in the membranous area of the anterior portion of sternite II (this minute sclerite absent in *meriel*) (cf. Figs. 11–12). It is also generally one of the smallest species in Fiji (ca. 4–9 mm in length).

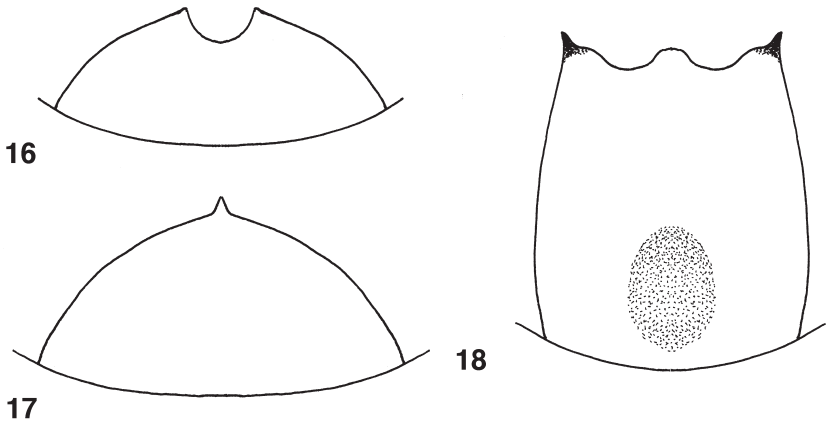
Description: Lengths: body: 4.1–9.3 mm; wing 3.0–6.2 mm. *Head*: Black; face golden brown pruinose; proboscis yellowish brown with short white hairs apically; palpus yellowish brown, setae white; ocellar tubercle black, sparse brown pruinose posteriorly; occiput gray pruinose, post ocular setae yellowish white, hairlike. Antenna (Fig. 5) with scape and pedicel yellowish with yellowish white setae, flagellomere brown; style subequal in length to flagellomere.

Thorax: Polished brown, gray pruinose in prescutellar area; notopleural margin yellowish pruinose; pleura brown, scattered white pruinose above; dorsocentral setae minute, yellowish; 1 notopleural seta, 1 supraalar seta; scutellum reddish brown, scutellar setae small, brown. Halter yellowish white.

Legs: Coxae yellowish, yellowish pruinose; remainder of legs yellowish orange, polished; hind femur swollen apically, with row of dense minute pale hairs ventrally; hind tibia with rows of 6–8 small spines along entire posterior surface, dense yellow hairs ventroapically; empodium distinct, 5/8 length of claws.

Wing (Fig. 10): Subhyaline with microtrichae restricted to extreme apex of cells r1, r2+3, and r4; r-m crossvein beyond middle of cell d; M_3 beyond crossvein m-m subequal in length to M_3 before crossvein m-m; R_{2+3} downcurved on distal one-third; width of cell cup opening in wing margin subequal in width to that of cell r4 at wing margin; anal lobe reduced basally.

Abdomen: Brown; tergites predominantly brown, anterior and posterolateral margins yellowish, brownish pruinose, golden yellow hairs laterally and ventrolaterally; tergites III–VII with whitish transverse apical band; tergite I with yellow hairs along posterior margin; tergite II without setae; ter-



Figures 16–18. *Mesoleptogaster* male hypandria, diagrammatic, not to scale, ventral view. **16**. *M. meriel*, n. sp. **17**. *M. pacifica* Bezzi. **18**. *M. vitiensis*, n. sp.

gites II–VIII with scattered minute black hairs; sternites brown, grayish yellow pruinose, with yellow hairs; fenestra of sternite II (Fig. 12) with small rounded or heart-shaped sclerite .

Male genitalia (Figs. 14, 18): Surstylus with dorsal lobe broadly lanceolate, bent inwards distally, darkly sclerotized apically. Proctiger subrectangular, flared apically with whitish apices. Hypandrium subshining, yellow, small, subhemispherical with roundish concavity posteromedially.

Types: Holotype ♂ from FIJI: **Vanua Levu**: [S of Rokosalase Village, ca. 90 m], 14–28 Sep 2004, Malaise, I. Sakealevu (FBA 504908). *Paratypes*: FIJI: **Kadavu**: 2♀, 1.3 km E Kadavu Air Strip nr. Namalata Village, 120 m, 19.05°S, 179.159°E, 5 Sep–18 Sep 2004, 18 Sep 2004–11 Jan 2005, Malaise, M. Reece (FBA504899, 504910); 1♀, same data except: 130 m, 19.05°S 179.157°E, 8 Jul–10 Aug 2004 (FBA504901); 1? [tip of abdomen broken off], same data except: 100 m, 19.058°S 179.159°E, 5–18 Sep 2004 (FBA504900); 10♂♀, Solodamu, 128 m, 19°04'S 178°07'E, 25.viii–23.x.2003, Malaise in coastal limestone forest (FBA014613–014619, 010803, 016844–016845); 1♀, 1? [tip of abdomen broken off] Namalata, 100 m, 19°02'54.1"S 178°11'05.8"E, 15–28 Jul 2004, (FBA031743–031744); 1♂, 2♀, same data except: 150 m, 19°02'55.8"S 178°11'02.1"E, 15–28 Jul 2004 (FBA 031948–031950). **Lakeba**: 1♂, Lakeba, 3.2 km NE Tubou Village, 100 m, 18.229°S 178.867°E, 8–20 Aug 2005, Malaise, D. Gaubaleinayau (FBA504957). **Taveuni**: 1? [tip of abdomen broken off], 3.2 km NW Lavena Village, Mt. Koronibuabua, 220 m, 16.856°S 179.880°W, 31 Jul–13 Aug 2004, Malaise, E. Soroalau (FBA504912); 1♀, Koronibuabua, 233 m, 16°51'28.3"S 179°53'43.6"W, 24 Sep–19 Nov 2003, Malaise in rainforest, E. Soroalau (FBA 022573); 3♂, 4♀, Taveuni Estate, 140 m, 16°50'S 179°59'E, 10–17 Oct 2002, Malaise in garden, E. Ratu (FBA051674–051677, 051680–051682). **Vanua Levu**: 3♀, 0.3 km S Rokosalase Village, 94 m, 16.531°S 179.019°E, 28 Sep–15 Nov 2004, 20 Jan–7 Mar 2005, Malaise, I. Sakealevu (FBA504903–504904, 504911); 2♀, same data except: 0.6 km S, 180 m, 16.333°S 179.018°E, 15 Nov–9 Dec 2004, 5–20 Jan 2005 (FBA504907, FBA504909); 2♂, same data except: 0.4 km S, 118m, 16.532°S 179.019°E, 5–29 Jan 2005 (FBA504913–504914). **Viti Levu**: 1♂, 2♀, Navai Village, 700 m, 15 Jun–2 Jul 2003, 13–18 Feb 2004, E. Namatalau (FBA039538, 041748–041749); 3♂, Koroyanitu Eco Park, 1 km E Abaca Village, 800 m, 17.557°S 177.55°E, 5 Jul–9 Aug 2004, 9–23 Aug 2004, Malaise, L. Tuimereke (FBA504902, 504904–504905); 1♀, same data except, 450 m, 28

Sep–18 Oct 2003, (FBA049327); 1♀, 8 mi. up Sigatoka Valley, 6 Aug 1972, D.E. Hardy (BPBM). Macuata I (offshore island on northwest coast): 2♀, 4 m, 17.353°S 178.033°E, 26 Jun–8 Jul 2005, Malaise in dryland forest, V. Tavualevu (FBA504997–504998); 1♀, same data except 8–20 Jul 2005 (FBA504999); 1♀, same data except: 10 m, 17.354°S 178.033°E, 26 Jun–8 Jul 2005 (FBA505000). **Yasawa Group** (Yasawa I): 2♂, 1♀, 2 km SE Nabukeru Village, Yawasa-i-Lau Cave, 16°50'13.4"S 177°26'42"E, 10–24 Aug 2005, 7–21 Sep 2005, 21 Sep–3 Oct 2005, Malaise in dry forest, J. Veibete (FBA505808–505810). Holotype to be deposited in FNIC. Paratypes in BPBM, BMNH, and FNIC.

Discussion: The mesonotum can vary in coloration from translucent pale tan (muscle bundles can be seen through the cuticle) to brown with a dark brown pattern medially. Abdominal coloration varies from pale brown to dark brown, but the banding pattern is consistent among specimens examined.

Etymology: The species epithet derives from the Fijian "*viti*" = Fiji; referring to the type locality of Fiji.

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