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**TRANSFER OF THE NEW GUINEAN
ANTHOMYIA FUMIPENNIS STEIN, 1919 AND ITS ALLIED SPECIES
TO THE GENUS LASIOMMA (DIPTERA: ANTHOMYIIDAE)**

By MASA AKI SUWA

Abstract

SUWA, M., 2024. Transfer of the New Guinean *Anthomyia fumipennis* Stein, 1919 and its allied species to the genus *Lasiomma* (Diptera: Anthomyiidae). *Ins. matsum. n. s.* 80: 147–159, 44 figs.

Two New Guinean species, *Anthomyia fumipennis* Stein, 1919 and *Anthomyia acklandi* Vikhrev, 2022, are transferred to the genus *Lasiomma*. Redescriptions of these species are given on the basis of specimens of both sexes.

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INTRODUCTION

Anthomyia fumipennis Stein, 1919 is a species described from a single female specimen collected at Hellwigebb, alt 1700 m, New Guinea (Irian Jaya). The position of this species was considered by Ackland (1987) to be problematical. He examined male and female material of the species and gave a note "It is a typically black and grey patterned fly and has hairs on the propleuron. But the genitalia are more primitive in structure; ..."

Vikhrev (2022) examined anthomyiid specimens collected at highlands of Irian Jaya (Maoke Mountains), and described *Anthomyia acklandi* as new to science together with a redescription of *A. fumipennis*. By the black and grey patterned body and the setulose propleuron he made them belong to the genus *Anthomyia* Meigen.

Recently I have had a chance to examine some specimens collected in Papua New Guinea and referable to *A. fumipennis* and *A. acklandi*.

In the genus *Anthomyia* the male terminalia have basically the following features (cf. Suwa, 2024): pregenital sclerite polished; 6th sternite with a short process centrally; surstylus cleft apically and bearing a few or some spine-like setae on inner lobe; distiphallus with a short process dorsally. And in the *Anthomyia pluvialis* section the cercal plate bears a few or some short and flattened setae apically. These features all are not found in the present New Guinean species. It is difficult to assign these species to the genus *Anthomyia*.

A black and grey patterned body is often observed in other genera of the Anthomyiidae, for example in *Calythea*, *Eustalomyia* and *Emmesomyia*, and a setulose propleuron is sporadically found in some genera of the family, namely in *Emmesomyia*, *Eutrichota*, *Lasiomma* and *Paregle*. It may be reasonable to understand that the resemblance in the colour pattern of the body and the setulosity on the propleuron between the present New Guinean species and the *Anthomyia pluvialis* section is due to homoplastic phenomena.

The New Guinean species have the following features: distiphallus devoid of paraphalli, and terminated in a pair of narrow apices; surstyli without a cleft apically; male 5th sternite without a dense band of setae along inner margin of each process; ovipositor shortened; larviparous in reproduction. These species may form a distinct species group. Judging from the distiphallus devoid of paraphalli and the simple surstyli this New Guinean group may be placed near the *Lasiomma picipes* superspecies in the sense of Griffiths (2003) although larviparity has not been known among the genus *Lasiomma* Stein. The New Guinean group is, however, different from the *L. picipes* superspecies in having the wing-costa setulose ventrally and the ejaculatory apodeme not expanded distally (not fanshaped).

In the following lines the two species of the present New Guinean group are redescribed in the genus *Lasiomma*.

Terminology is the same as in Suwa (2024).

Before going further I wish to express my sincere thanks to S. Shinonaga (Tokyo Medical and Dental University) who collected the valuable material used in the present paper.

KEY TO THE NEW GUINEAN SPECIES OF *LASIOMMA*
(males and females)

1. Mesonotum with presutural black marking widely separated from postsutural black band (Fig. 5); t_3 with apical *pv* well developed, much longer than the tibial diameter; wings with costal thorns developed and longer than *h* cross-vein (Fig. 8). *L. acklandi*
- Mesonotum with presutural black marking joined to postsutural black band around *prst* (Fig. 25); t_3 without apical *pv*; wings with costal thorns small and much shorter than *h* cross-vein.
..... *L. fumipennis*

DESCRIPTIONS

Lasiomma acklandi (Vikhrev, 2022) comb. nov.
(Figs 1–20)

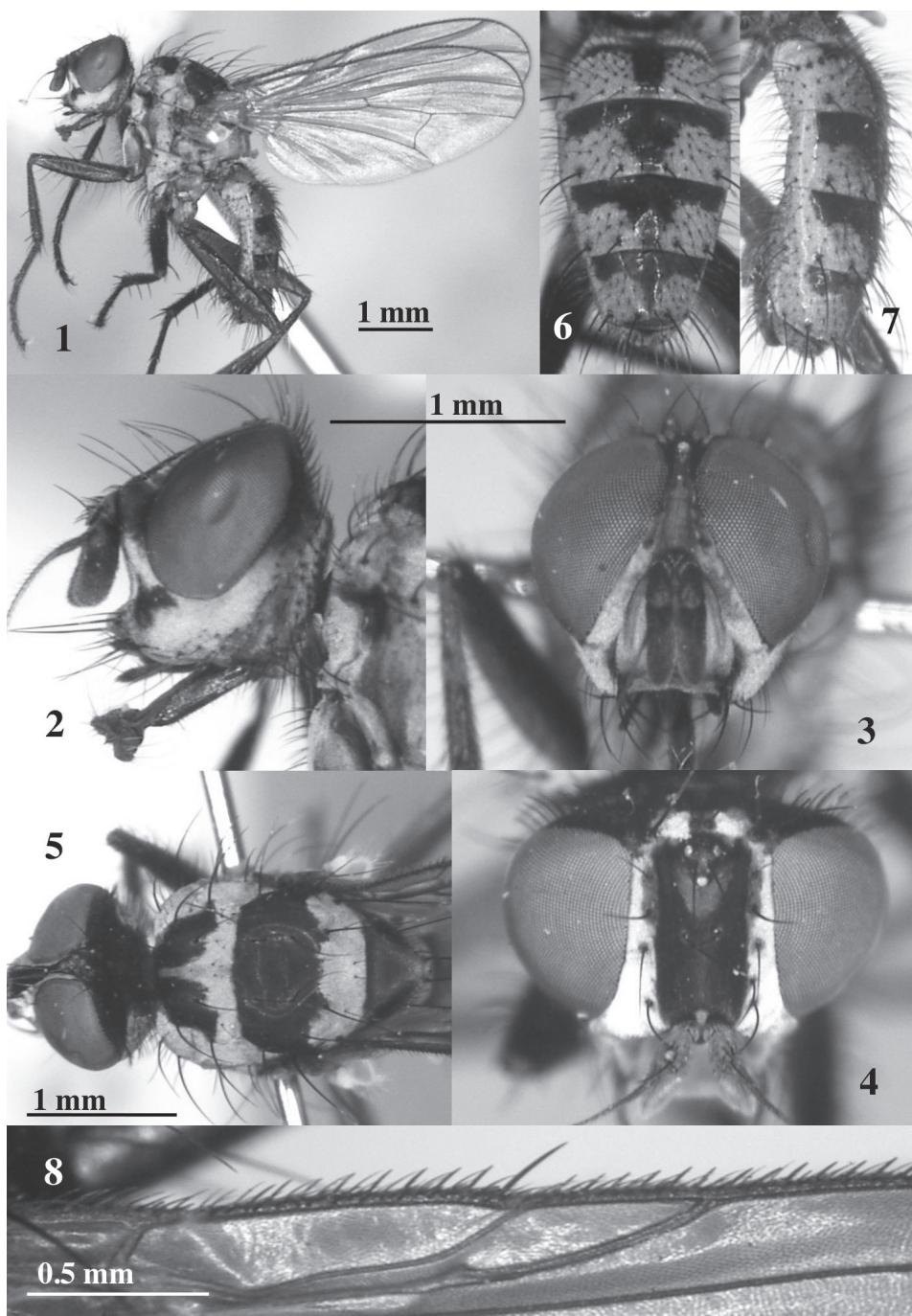
Anthomyia acklandi Vikhrev, 2022: 313.

Material examined. Papua New Guinea. Kakaitomba, alt. 2570 m, 26 km w. of Mount Hagen, W. H. Dist., 9♂, 4♀, 10.viii.1982 (S. Shinonaga).

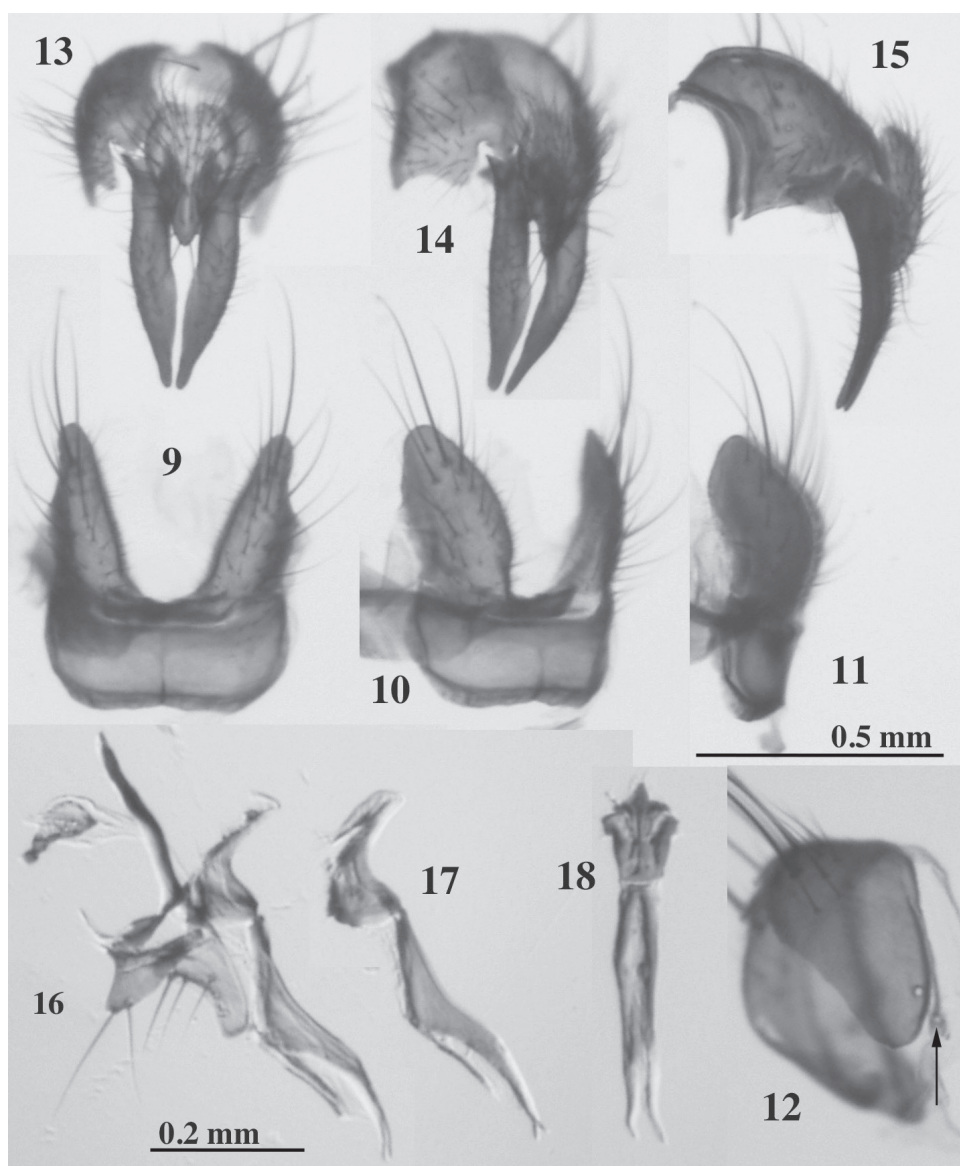
Distribution. Indonesia (Irian Jaya); Papua New Guinea.

♂. Wing length 4.2–5.1 mm. Body dark brown to blackish in ground colour, pale grey and slightly bluish in pollinosity, with distinct black markings, brownish pollinosity discernible on the black markings; legs dark brown to blackish, with coxae pale grey pollinose. Head mainly pale grey pollinose; interfrontalia and upper half of parafrontals brownish pollinose; genae with a dark spot between vibrissal angle and eye-margin (Fig. 2); occiput black on upper half and brownish pollinose there; antennae and palpi dark brownish; haustellar mentum dark brownish, scarcely or very thinly pollinose. Mesonotum (Fig. 5) often slightly tinged with brownish yellow on pale pollinosity; with a pair of large presutural spots joined to each other anteriorly, and with a broad postsutural band usually extending from suture to 3rd postsutural *dc*; scutellum almost black dorsally, and grey pollinose on lateral margin and ventral surface. Pleural regions almost grey pollinose, only narrowly blackish around anterior spiracle and wing base. Wings rather distinctly tinged with dark brown; calypteres whitish and faintly tinged with yellow; halteres dark brown basally and yellow at knobs. Abdomen (Figs 6–7) with median vitta and fore-marginal bands sharp; median vitta as wide as or a little narrower than tibial diameter on 1st tergite, broad and narrowing caudad on each of 2nd to 5th tergites, about as wide as f_3 -height on 3rd and 4th tergites anteriorly, narrower on 2nd and 5th tergites; fore-marginal bands extending laterally to near lateral margins of abdomen and not continuing to ventral side, narrow and occupying anterior fifth to fourth on 2nd tergite, broader and occupying anterior third on 3rd to 5th tergites, and scarcely to a little protruded posteriorly at lateral ends of the bands; pregenital sclerite pale grey pollinose; epandrium pale grey pollinose.

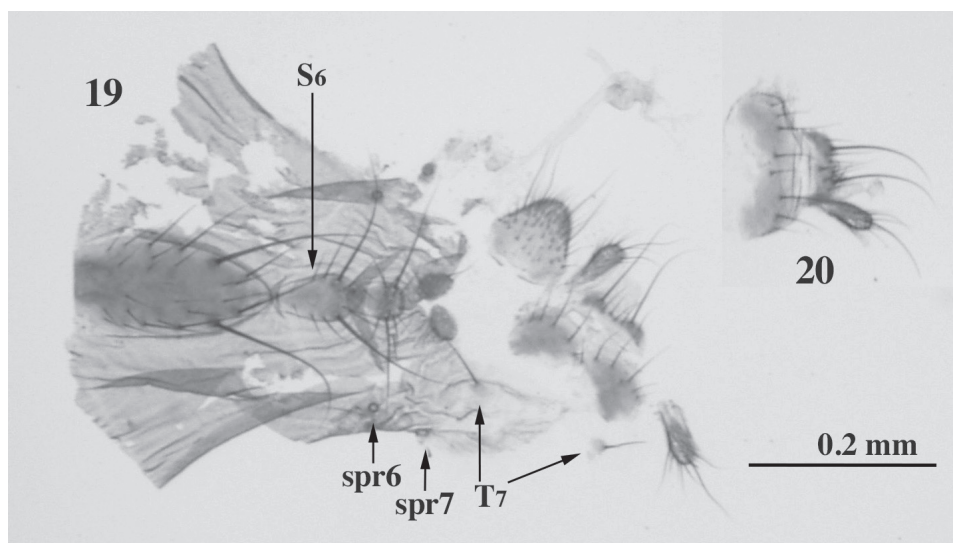
Head about 1.2 times as high as long; frons 1.8–2.7 times as wide as anterior ocellus; interfrontalia as wide as to distinctly wider than anterior ocellus, with a pair of strong *if*; 3 *ori*, one of them sometimes minute or fine, and no *ors*; A_3 2.0–2.2 times as long as wide; arista with longest hairs a little more than twice as long as basal diameter of arista; orbits at parafrontal angle as wide as or a little wider than A_3 ; genae 1.3–1.6



Figs 1–8. *Lasiomma acklandi*, ♂ (1–3, 5–8) and ♀ (4). 1, lateral habitus; 2, head, lateral view; 3, ditto, frontal view; 4, ditto, dorsal view; 5, head and thorax, dorsal view; 6, abdomen, dorsocaudal view; 7, ditto, lateral and a little dorsal view; 8, costal area of left wing, ventral view. Magnification same for Figs 2–4, and for Figs 5–7. Kakaitomba (1–3, 5; 4; 6–7; 8).



Figs 9–18. *Lasiomma acklandi*, ♂. 9–11, 5th sternite, ventral to lateral views; 12, pregenital sclerite and linear 6th tergite, right lateral view, arrow indicating right 6th spiracle; 13–15, hypopygium, dorsal to lateral views; 16, aedeagus, lateral view; 17, basipallus and distiphallus, lateral view; 18, ditto, ventral view. Magnification same for Figs 9–15, and for Figs 16–18. Kakaitomba (9–11, 13–15, 17–18; 12, 16).



Figs 19–20. *Lasiomma acklandi*, ♀. 19, ovipositor, S₆: 6th sternite, T₇: 7th tergite, spr6: 6th spiracle, spr7: 7th spiracle; 20, 8th tergite, epiproct and left cercus. Kakaitomba (19; 20).

times as high as A₃-width, with 1 distinct and 1 or 2 fine or minute genal setae; epistoma projecting forward as far as or slightly beyond tip of parafrontal angle in lateral view; occiput setulose on postocular plains.

Mesonotum with 3 pairs of *pre-acr*, setae of 2nd pair rather strong and much closer to each other than to adjacent *dc*-row, sometimes 1 minute setula discernible between the rows of *pre-acr*; posterior *ph* not differentiated; posterior presutural *ial* discernible though fine and like an accessory setula; *pra* as long as or a little longer than anterior *ntpl*; propleuron rather sparsely setulose, with 2–10 setulae discernible; 1 distinct or sometimes fine anterior *mpl*; 1 strong and 1 weaker *pstg* and usually no associated setulae (a fine setula discernible in 1 specimen); *stpl* 2:2, lower anterior much weaker than the upper; scutellum almost bare on dorsal surface.

Mid femur usually with 1 distinct *av* near basal fifth and occasionally 1 additional *av* near basal third, and with 3–5 distinct and 1 or a few finer *pv* on basal half, the longest 1.4–1.7 times as long as height of the femur; f₃ with 5–6 distinct and often 1 or a few finer *av* except near base, the longest 1.5–1.7 times as long as height of the femur, and with 1 distinct *pv* near apex, 2–4 slender *pv* on median third and sometimes 1 fine *pv* near base; t₁ with 1 strong *ad* and 1 or sometimes 2 *pv*; t₂ with 1 (rarely 0 or 2) *av*, 1 (rarely 2) *ad*, 2 *pd* and 2 or sometimes 3 *p/pv*; t₃ with 1 strong and occasionally 1 additional *av*, 3 *ad*, 2 *pd* and some (3–8) fine *pv*, and with apical *pv* well developed. Wings with costa setulose ventrally; costal spinules distinct, longer than costal width; costal thorns (Fig. 8) developed and longer than *h* cross-vein; *dm-cu* more or less oblique and slightly to distinctly sinuate.

Abdomen depressed or half-depressed, rather thick posteriorly, 2.0–2.3 times as long as wide, tapering from 4th to 5th tergites; 6th tergite mainly fused with pregenital sclerite, only lateral areas discernible as linear fragments (Fig. 12); 5th sternite processes (Figs 9–11) blade-like and rounded apically, with no membranous lobes; left 6th spiracle in membrane near left anterolateral corner of pregenital sclerite; right 6th spiracle in membrane just near right anterolateral corner of pregenital sclerite or on right end of linear fragment of 6th tergite (Fig. 12); cercal plate shield-shaped (Fig. 13), about 1.5 times as long as wide; surstylus in dorsal view (Fig. 13) slightly broadened near apical third and narrowing apically, and in lateral view (Fig. 15) gradually downcurved, with no stout setae; distiphallus (Figs 17–18) connected with basiphallus without a petiole-like connection; acrophallus differentiated; pregonite (Fig. 16) with a long seta apically and a shorter seta near apex dorsally; postgonite (Fig. 16) with 1 distinct seta near base ventrally and 1 or 2 shorter setae near base to middle ventrally.

♀. Wing length 5.3–5.6 mm. Similar to male in black and grey pattern. Abdomen with median vitta triangulate on each tergite; fore-marginal bands a little more broadened than in male, rather distinctly protruded posteriorly at lateral ends of the bands on 3rd to 5th tergites.

Head 1.1–1.2 times as high as long; frons 0.38–0.41 times as wide as head at level of *if*; interfrontalia 3.0–3.3 times as wide as parafrontalia at level of *if*; parafrontals with 2 *ori*, the upper being variable from minute to distinct in development, and with 3 *ors*; orbits at parafrontal angle 1.2–1.3 times as wide as A_3 ; genae 1.3–1.7 times as high as A_3 -width.

Mid femur with 1–2 *av* in basal third, the setae as long as or slightly longer than height of the femur, and with 3–5 *pv* on basal half, the longest as long as or a little longer than the femur height; f_3 with 4–5 distinct *av* except on basal fifth, and with 1 distinct *pv* near apex, 0–2 weaker *pv* on median third, and 1 weak *pv* near base; t_2 with 1 *av*, 1 *ad*, 2 *pd* and 2–3 *p/pv*; t_3 with 1–3 fine *pv*.

Abdomen with ovipositor (Figs 19–20) shortened; 6th tergite suppressed; 7th tergite represented by a pair of widely separated small sclerites, each with a short setula; 8th tergite broadly concave anteromedially, almost divided into two lateral sclerites in some cases, with some setae along posterior margin; 6th and 7th sternites, each with a pair of rather strong setae and some weak setulae; 8th sternite represented by a pair of small setulose sclerites; 3 spermathecae, one is a little smaller than the others.

Remarks. Judging from the colour pattern of the body and the structure of the hypopygium the specimens examined are referred to the New Guinean species described as *Anthomyia acklandi* by Vikhrev (2022).

This species is larviparous. A larva of 1st instar was observed in one of three dissected females. The shortened ovipositor and the larviparity may indicate the coprophagy in the larval stage of this species as shown in the genus *Hylemya* (Suwa, 1983, 1989; Griffiths, 2001).

Lasiomma fumipennis (Stein, 1919) comb. nov.
(Figs 21–44)

Anthomyia fumipennis Stein, 1919: 210; Colless, 1982: 82; Ackland, 1987: 40; Pont, 1989: 673; Pont and Ackland, 2009: 18; Vikhrev, 2022: 314.

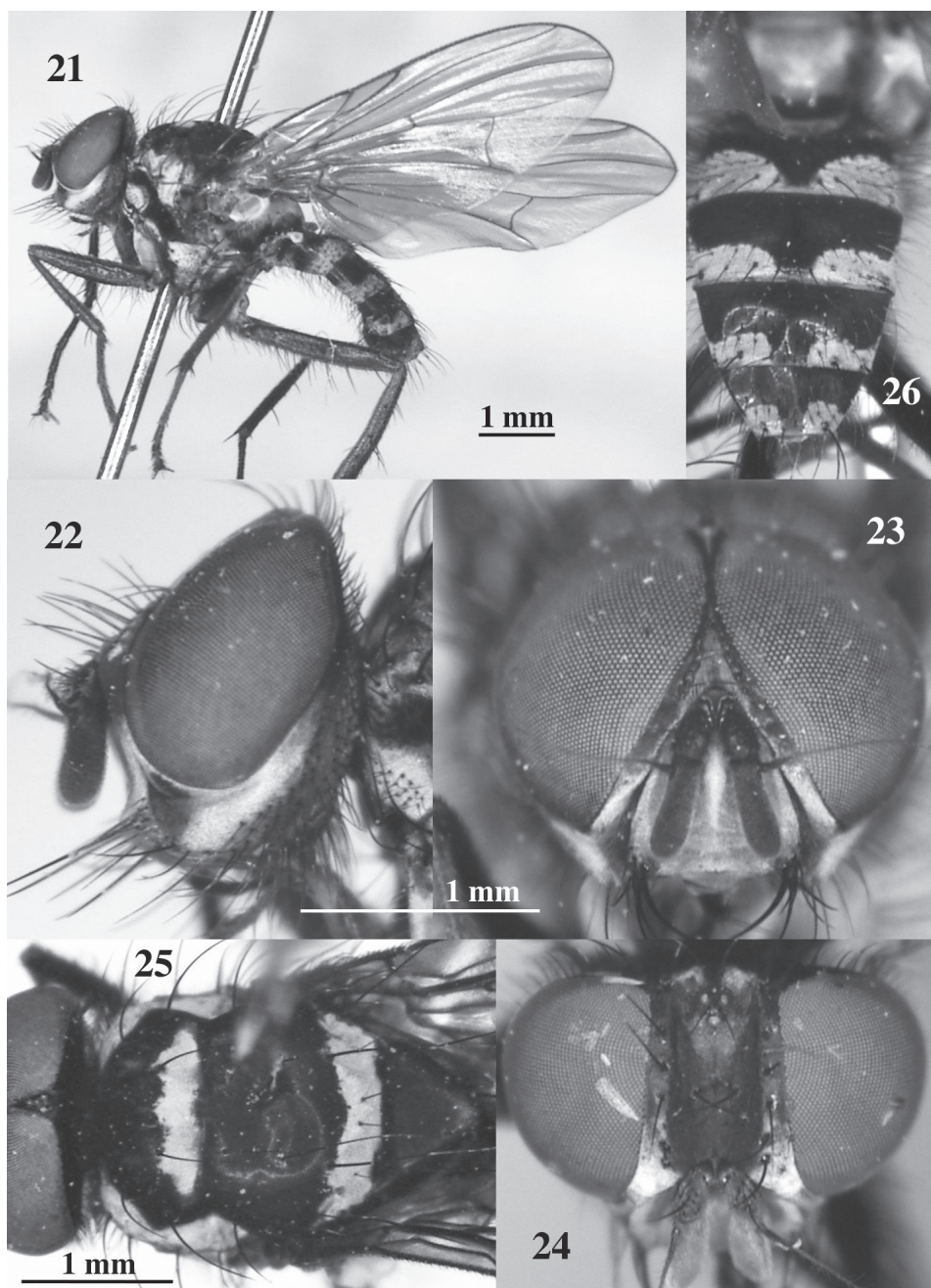
Material examined. Papua New Guinea. Daulo Pass, 2300 m, Goroka, 13♂, 3♀, 29.vii.1982 (S. Shinonaga); Baiyer Riber, 1200 m, Mt. Hagen, 3♂, 1♀, 4–8.viii.1982 (S. Shinonaga); Kuk, 1500 m, Mt. Hagen, 3♂, 13.viii.1982 (S. Shinonaga); Mt. Kaindi, Wau, 2♂, 1♀, 22.xii.1981 (S. Shinonaga).

Distribution. Indonesia (Irian Jaya); Papua New Guinea.

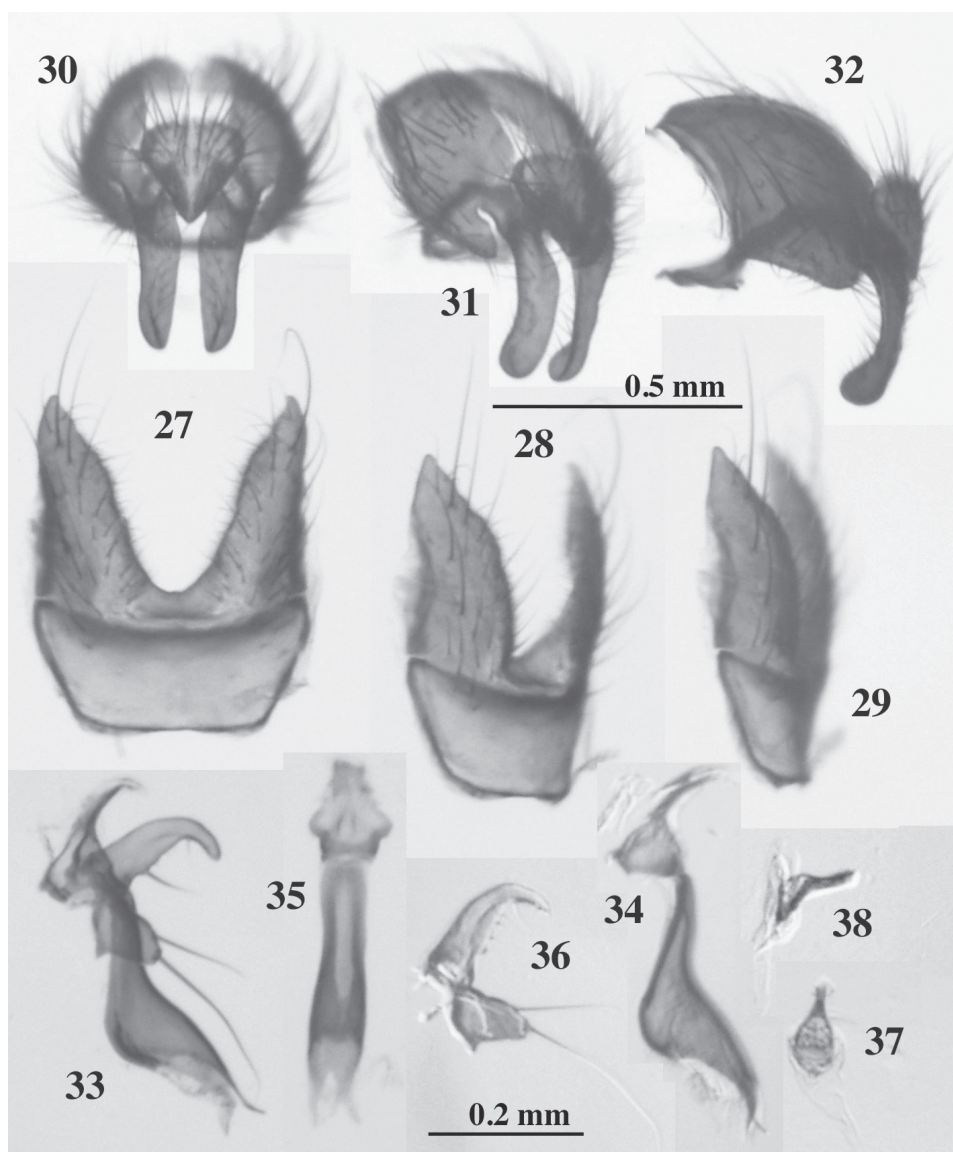
♂. Wing length 5.2–6.0 mm. Body dark brown to blackish in ground colour, pale bluish grey in pollinosity, with distinct black markings, brownish pollinosity discernible on the black markings; legs dark brownish, with coxae pale bluish grey pollinose. Head mainly pale bluish grey pollinose; interfrontalia and upper half of parafrontals brownish pollinose; genae with a dark spot between vibrissal angle and eye-margin (Fig. 22); occiput black on upper half and brownish pollinose there; antennae and palpi dark brownish; haustellar mentum dark brownish, thinly pollinose. Thorax on dorsum (Fig. 25) mainly black, and pale grey pollinose only on humeral calli and notopleura, between 2nd *pre-dc* and transverse suture and between 3rd *post-dc* and scutellum, the presutural and the postsutural grey areas being closed laterally near *prst* and near postalar calli respectively; scutellum entirely black, though sometimes slightly pale grey near apex ventrally; pleural regions black on lower half of humeral callus, mesopleuron except dorsomedian area, subalar area including greater ampulla and subalar sclerite, lower area of laterotergite, and lateral to posterior area of mediotergite. Wings distinctly tinged with dark brown; calypteres whitish and faintly tinged with yellow or brown; halteres dark brown basally and yellow at knobs. Abdomen (Fig. 26) wholly black on 1st tergite; median vitta broad, as wide as or a little narrower than f_3 -height at hind margin on 2nd tergite, a little wider to a little narrower than f_3 -height at hind margin on 3rd tergite, and much narrower on 5th tergite; fore-marginal bands occupying almost anterior half on 2nd tergite and more than anterior half on 3rd to 5th tergites, continuing to ventral side in maintained width on 2nd tergite and in much narrowed width on 3rd to 5th tergites, and scarcely to a little protruded posteriorly on 3rd to 5th tergites just near lateral margins of abdomen; pregenital sclerite grey pollinose; epandrium thinly grey pollinose.

Head 1.3–1.4 times as high as long; frons about half as wide as anterior ocellus; a pair of distinct *if*; parafrontals contiguous to each other, with 4–5 (sometimes 3) strong and often 1 or 2 fine or weak *ori* and no *ors*; A_3 2.1–2.5 times as long as wide; arista with longest hairs 3–4 times as long as basal diameter of arista; orbits at parafrontal angle usually a little narrower than, at most as wide as A_3 ; genae 1.3–1.5 times as high as A_3 -width, with a few upcurved genal setae in a row; epistoma situated behind tip of parafrontal angle in lateral view; occiput setulose on postocular plains.

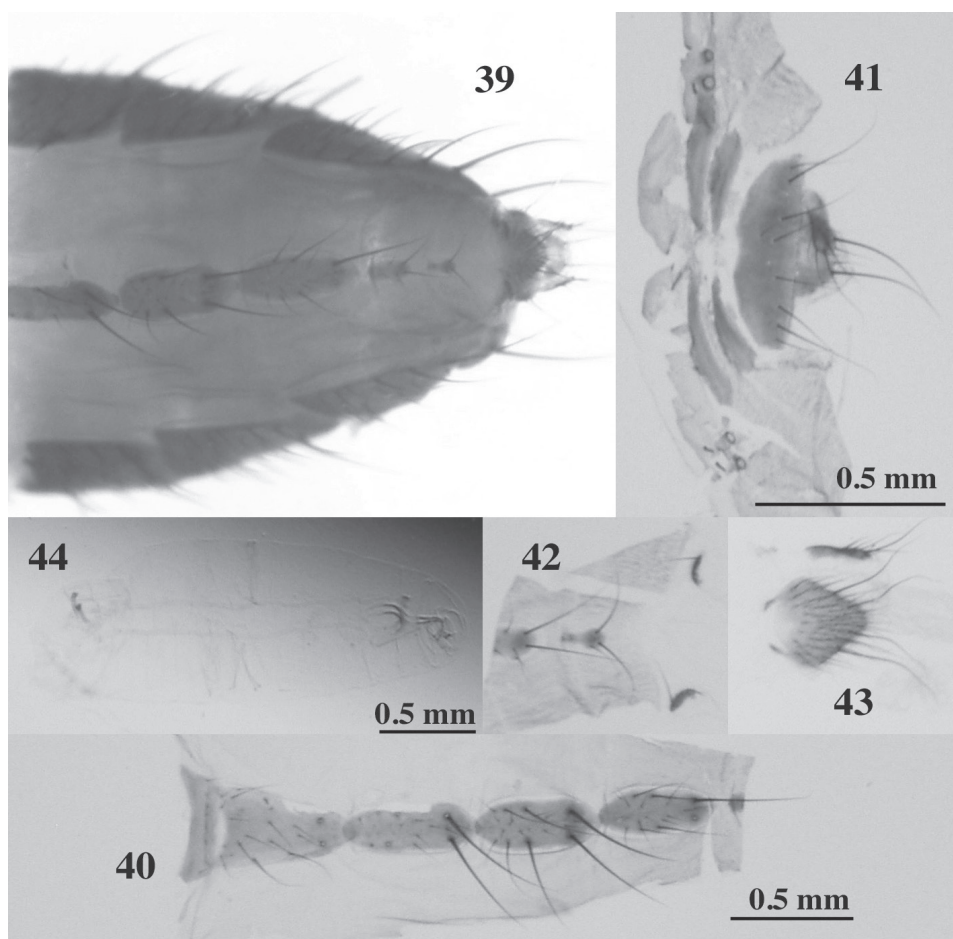
Mesonotum with 1 pair of *pre-acr*, the setae much closer to each other than to adjacent *dc*-row; posterior *ph* not differentiated; posterior presutural *ial* completely suppressed; *pra* shorter than anterior *ntpl*, though longer than posterior *ntpl*; propleuron rather densely setulose, with 10–20 setulae discernible; 1 distinct anterior *mpl*; 1 strong and 1 weaker *pstg* and no associated setulae; *stpl* 2:2, lower anterior much weaker than the upper; scutellum almost bare on dorsal surface.



Figs 21–26. *Lasiomma fumipennis*, ♂ (21–23, 25–26) and ♀ (24). 21, lateral habitus; 22, head, lateral view; 23, ditto, frontal view; 24, ditto, dorsal view; 25, thorax, dorsal view; 26, abdomen, dorsocaudal view. Magnification same for Figs 22–24, and for Figs 25–26. Daulo Pass (21–23, 25; 26); Mt. Kaindi (24),



Figs 27–38. *Lasiomma fumipennis*, ♂. 27–29, 5th sternite, ventral to lateral views; 30–32, hypopygium, dorsal to lateral views; 33, aedeagus, lateral view; 34, basipallus and distiphallus, lateral view; 35, ditto, ventral view; 36, left pregonite and postgonite (median ventral seta come off); 37, ejaculatory apodeme, frontal view; 38, ditto, lateral view. Magnification same for Figs 27–32, and for Figs 33–38. Daulo Pass (27–29, 33–38; 30–32).



Figs 39–44. *Lasiomma fumipennis*, ♀. 39, abdomen, 3rd and following segments, ventral view; 40, 1st (leftmost) to 6th (anterior piece) sternites; 41, ovipositor, dorsal side, right cercus hidden under epiproct; 42, 6th (posterior piece) to 8th sternites; 43, hypoproct and left cercus; 44, 1st instar larva. Magnification same for Figs 39–40, and for Figs 41–43. Mt. Kaindi.

Mid femur with no *av* and on basal half with 3–4 distinct *pv*, the longest as long as or a little longer than height of the femur; f_3 with 6–8 distinct *av*, the longest 1.3–1.6 times as long as height of the femur, and no distinct *pv* except a rather distinct preapical one, sometimes with 1 or a few *pv* weakly differentiated near middle; t_1 sometimes with a weakly differentiated *ad* near apical third and always with 1 strong *pv*; t_2 with 1 *ad*, 2 *pd* and 1–2 *p/pv*; t_3 with 1 *av*, 3 *ad*, 2 *pd* and a few or some weak *pv*, and with apical *pv* not developed. Wings with costa setulose ventrally; costal thorns small though easily distinguishable from costal spinules; *dm-cu* oblique and slightly to rather strongly sinuate.

Abdomen depressed or half-depressed, 1.8–2.1 times as long as wide, tapering from 3rd to 5th tergites; 6th tergite narrow and unsetose, not fused with pregenital sclerite; 3rd

sternite more than twice as long as wide; 4th sternite about 1.5 times as long as wide; 5th sternite processes (Figs 27–29) blade-like and pointed apically, with no membranous lobes; both left and right 6th spiracles in membrane near anterolateral corners of pregenital sclerite; cercal plate cordate (Fig. 30), about as long as wide; surstyli (Figs 30–32) simple and slightly concave near apex inside, with no stout setae; distiphallus (Figs 34–35) connected with basiphallus without a petiole-like connection; acrophallus not differentiated; pregonite (Figs 33 & 36) with 2 distinct setae, lower one much longer; postgonite (Figs 33 & 36) on ventral margin with a distinct seta near middle, and with some minute setulae discernible between the middle seta and apex.

♀. Wing length 5.2–6.2 mm. Similar to male in black and grey pattern. Abdomen with median vitta distinctly wider than f_3 -height at hind margin on 2nd tergite, narrowing posteriorly, and pointed at hind margin on 5th tergite; fore-marginal bands distinctly protruded posteriorly just near lateral margins of abdomen on 3rd to 5th tergites.

Head 1.2–1.3 times as high as long; frons 0.33–0.36 times as wide as head at level of *if*; interfrontalia 3.0–3.8 times as wide as parafrontalia at level of *if*; parafrontals with 2 (3 in 1 specimen) *ori* and 3 *ors*; orbits at parafrontal angle as wide as or a little wider than A_3 ; genae 1.1–1.3 times as high as A_3 -width.

Mesonotum with *pre-acr* a little to much closer to each other than to adjacent *dc*-row; *stpl* with lower anterior and lower posterior much shorter than the uppers and variable from hair-like to seta-like.

Mid femur usually with 1 *av* near base, the seta shorter than height of the femur, and with 2–4 *pv* on basal half, the longest being shorter or at most as long as the femur height; f_3 with 2–4 *av* on basal half or two-thirds, the longest seta shorter to a little longer than height of the femur, and 1 preapical *av* as long as or a little longer than the femur height, and with 1 *v/pv* weakly differentiated near base, 1 preapical *pv*, and no or a few fine *pv* discernible on median third; t_1 with 1 distinct *ad* and 1 *pv*; t_3 with 1 *av*, 2 strong and 1 (2 on right tibia) short *ad*, 2 *pd* and 1–3 weak *pv*. Wing with *dm-cu* weakly oblique and scarcely to slightly sinuate.

Abdomen with ovipositor shortened; 6th and 7th tergites each divided into 2 narrow and bare lateral sclerites (Fig. 41); 6th sternite small and narrow, bearing some setulae; 7th sternite more reduced, bearing a few setulae (Fig. 42); 6th and 7th spiracles situated in membrane near lateral ends of 6th tergite (Fig. 41); 8th sternite represented by a pair of small fragments, each bearing some short setulae (Fig. 42); 3 spermathecae, one scarcely or slightly smaller than the others.

Remarks. Apart from the differences in the genital structures and in the colour pattern of the body *L. fumipennis* has many differences from *L. acklandi* as follows: Mesonotum with posterior presutural *ial* completely suppressed; t_2 with no *av*; t_3 without apical *pv*; wings with costal thorns small; in male, frons narrower than anterior ocellus, parafrontals contiguous to each other, t_1 with no distinct *ad*, distiphallus with acrophallus not differentiated; in female, 6th tergite represented by a pair of distinct plates.

This species is larviparous. A larva of 1st instar was observed in three of four dissected females (Fig. 44). The species may also be coprophagous in the larval stage.

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