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The Clusiidae (Diptera: Schizophora) of Fiji, with redefinition of *Heteromeringia* Czerny and synonymy of *Tranomeringia* Sasakawa[1]

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Abstract. The Clusiidae of Fiji include five species in three clusiodine genera (*Craspedochaeta* Czerny, *Hendelia* Czerny, *Heteromeringia* Czerny), two of which (*Hendelia similis* **n. sp.** and *Hendelia amerinx* **n. sp.**) are described here as new. *Craspedochaeta sasakawai* Lonsdale & Marshall, the only Fijian species of Clusiidae not endemic to the islands, is newly recorded. The eggs of *Hendelia similis* and *C. sasakawai* are described. *Tranomeringia* Sasakawa **n. syn.** is found to be a junior synonym of a redefined *Heteromeringia*.

INTRODUCTION

We here record three genera and five species from Fiji, all of which belong to the subfamily Clusiodinae, of which two are newly described and one of which is new to Fiji. The material used for this revision is mostly from recent and historical surveys [see Evenhuis & Bickel (2005)] that have added material to the Fiji National Insect Collection, Suva (FNIC) and the Bishop Museum, Honolulu (BPBM).

Clusiids can be separated from other Fijian Acalyptratae by their porrect (not elbowed) antenna, dorsal subapical (not dorsobasal) arista, and angulate extension on the outer margin of the pedicel. They are relatively slender (Figs. 1, 2), 2.4–5.4 mm in length, and have an anterodistally infuscated wing with a complete subcostal vein. Although we have no biological or behavioral data on the Fijian Clusiidae, clusiid adults elsewhere frequently occur on leaves and dead wood and are often attracted to dung (Lonsdale & Marshall, 2006b, 2007a, 2007b).

MATERIALS AND METHODS

Specimen preparation and terminology follows that in Lonsdale & Marshall (2006b). Holotypes and paratypes of new species and vouchers of previously described species are deposited either in FNIC, BPBM, or the National Museum of Natural History, Washington, D.C. (USNM); one specimen of *H. kondoi* is in the University of Guelph Insect Collection (DEBU). M_{1+2} ranges are the length of the ultimate section of vein M

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Figs. 1–2. Dorsal (left) and lateral (right) photo; **1.** *Heteromeringia veitchi* Bezzi; **2.** *Hendelia similis*. Characters useful for separation of these two superficially similar species: a – anterior fronto-orbital bristle inclinate; b – hind (third) fronto-orbital bristle present; c – presutural (third) dorsocentral bristle present; d – arista densely plumose; e – both mid and hind tibiae with dorsal preapical bristles. Only females of *Hendelia similis* have bicoloured fore tarsi.

divided by the length of the penultimate section. Material collected after 1981 is preserved in 95% ethanol; the remaining specimens are air-dried and pinned.

KEY TO THE CLUSIIDAE OF FIJI

1. Anterior fronto-orbital bristle inclinate (Fig. 1). All tibiae without dorsal preapical bristles. One small lateral scutellar bristle. Phallus long, dark, coiled and double-ribbed (Fig. 14) ..…….....…… **Heteromeringia** Czerny … 2

–. Anterior fronto-orbital bristle reclinate (Fig. 2). Mid and hind tibiae with dorsal preapical bristles. Two well-developed lateral scutellar bristles. Phallus sac-like (Figs. 5, 8) .....……... 3

2. Bristles brown. First flagellomere usually dark brown to brownish-orange (rarely orange in males); pedicel neither large nor enclosing first flagellomere. Scutum with large anteromedial spot. Knob of halter white. Fore tibia brown. Length 3.1–4.1 mm. Surstylus much smaller than cerci (Fig. 12). Distiphallus with large dark distal sclerites (Fig. 14) ……...…… **Heteromeringia veitchi** Bezzi

–. Bristles black. First flagellomere orange, sometimes with brown outer and apical infuscations; partially enclosed by enlarged pedicel. Scutum with shoulders and postsutural stripe brown. Knob of halter brown. Fore tibia yellow. Length 4.7 mm. Surstylus as long as cerci (Fig. 15). Distiphallus without complex distal sclerites (Fig. 17) ..... **Heteromeringia kondoi** Sasakawa

3. Arista sparsely short-plumose. Second (of four) fronto-orbital proclinate and inclinate. Two dominant dorsocentral bristles, with small, but well developed setula immediately in front of anterior dorsocentral. Notum brown. Pleuron brown, or yellow with brown subnotal stripe. Ejaculatory apodeme mushroom-shaped (Fig. 5). Phallapodeme rod-like ...……. **Craspedochaeta sasakawai** Lonsdale & Marshall

–. Arista long-plumose, with hairs sparsely or densely arranged. Both fronto-orbitals reclinate. Three long, widely separated dorsocentral bristles. Notum yellow with dark anteromedial spot. Pleuron yellow-orange. Ejaculatory apodeme long and thin with apex only slightly widened (Fig. 8). Phallapodeme flat and thin with medial keel .....……. **Hendelia** Czerny … 4

4. Arista sparsely plumose. Interfrontal bristle absent. Fore tibia brown. Surstylus and cerci small and rounded (Figs. 6, 7). Ventral projection of hypandrium+pregonite with several distal setulae (Fig. 8) ..... **Hendelia amerinx** Lonsdale & Marshall, **n. sp.**

–. Arista densely plumose. Interfrontal bristle present. Fore tibia yellow. Surstylus and cerci very long and slender (Figs 9&10). Ventral projection of hypandrium+pregonite densely setulose (Fig. 11) …… **Hendelia similis** Lonsdale & Marshall, **n. sp.**

SPECIES DESCRIPTIONS

Craspedochaeta sasakawai Lonsdale & Marshall
(Figs. 3–5, 19, 20)

Czernyola pleuralis Curran, 1936: 54. Sasakawa, 1971: 60; 1990: 59.

Czernyola palliseta pleuralis Curran. McAlpine, 1960: 80. Soós, 1962: 449.

Tonnoiria palliseta pleuralis (Curran). Steyskal & Sasakawa, 1966: 248.

Craspedochaeta pleuralis (Curran). Sasakawa, 1974: 162. Pitkin & Evenhuis, 1989: 536. [Preoccupied by Williston, 1896.]

Craspedochaeta sasakawai Lonsdale & Marshall, 2006b: 47. Replacement name.

Description. Body length 2.4–3.9 mm.

Male: Bristles light brown. Two dorsocentral bristles plus additional small bristle in front of anterior dorsocentral. Acrostichal bristle absent. Arista sparsely short-plumose, with hairs not much wider than diameter of central filament. Ocellar bristle well developed. Interfrontal bristle absent. Four fronto-orbital bristles (second pair from front inclinate and proclinate, others reclinate), with posterior bristle minute. Two pairs of lateral scutellar bristles. Mid and hind tibiae with dorsal preapical bristles (relatively far from apex). Notum dark brown. Pleuron yellow with proepisternum and dorsal margin of anepisternum brown. Legs light yellow with coxae and base of femora white and dorsal tip of mid and hind femora brownish. Frons dark brown with anteromedial margin orange; head light yellow below antenna with gena and anterior half of occiput white and silvery tomentose (posterior margin of occiput brown); antenna (excluding arista) light yellow with infuscation at base of arista; back of head (excluding ventral margin) dark brown. Abdomen dark brown. M_{1+2} ratio 3.9–4.8. Wing dusky on distal half (fading posteriorly).

Female: As described for male except as follows: first flagellomere evenly brown; gena, occiput, clypeus and palpus dark brown; face dirty white; femora and tibiae brown (excluding knees and bases of femora); terminalia yellow.

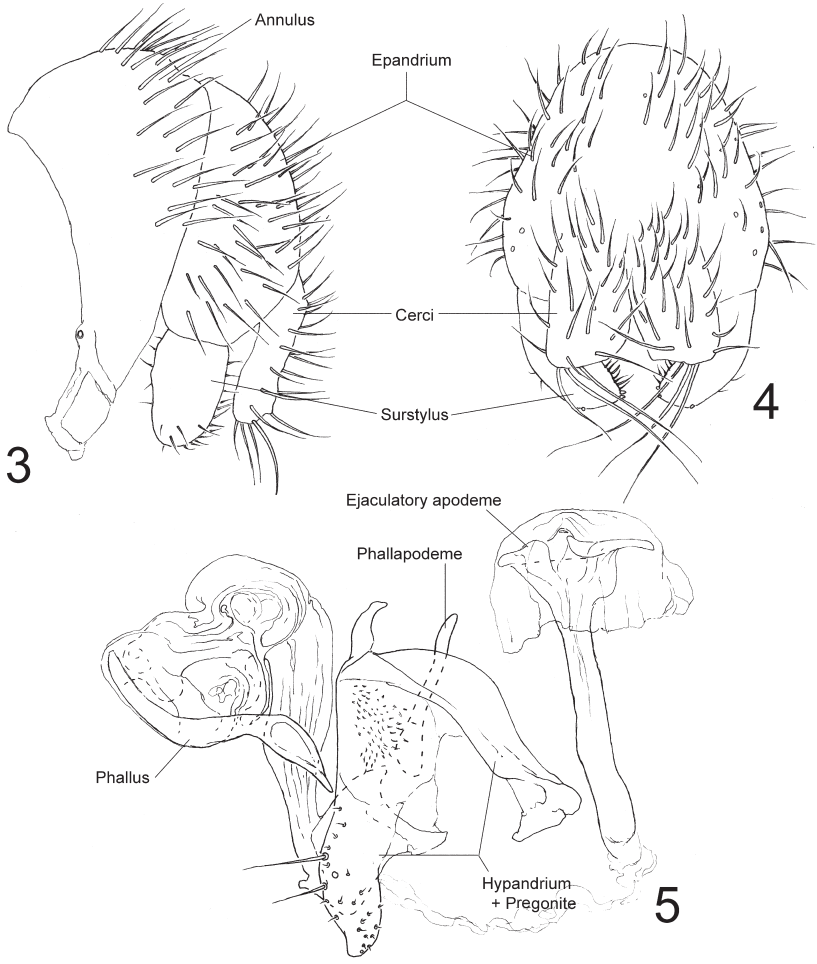
Male terminalia (Figs. 3–5): Annulus well-developed with sternite strongly convex. Length of epandrium slightly more than half width and height. Cerci truncated, setose, almost entirely divided, and as high as epandrium is long. Surstylus almost bare on both faces, with inner face densely short setose along posterior margin; twisted so that inner surface visible posteriorly; three small distal tubercles (two anterior and one posterior). Hypandrial arm weakly attached to hypandrium+pregonite; hypandrium+pregonite membranous and setose on basal half and well sclerotized, setose (two or three well developed bristles) and setulose on distal half; with acute posteromedial projection. Distiphallus long and weakly sclerotized, with basal half straight and distal half convoluted and sac-like with several interspersed sclerotized sections (including long, well-defined apical sclerite). Ejaculatory apodeme mushroom-shaped and as long as hypandrium+pregonite.

Female terminalia **(Fig. 20)**: Ventral receptacle relatively small with apex slightly recurved; subterminal flagellum thin at base, and broad and truncated apically. Spermatheca clear and cylindrical with base twisted, end broadly rounded and apex with thin rounded cone. Spermathecal duct nearly as long as spermatheca and connected to genital chamber via a small, spherical bulb.

Material examined: FIJI: **Kioa**: 1♀, S. coast to center, 0–60 m, 4 Oct 1979, M.K. Kamath, S.N. Lal, G.A. & S.L. Samuelson (BPBM). **Vanua Levu**: 1♂, 1♀, 0.6 km S of Rokosalase Village, 23 Apr–8 May 2004, Malaise in forest, Schlinger, Tokota'a, -16.5333°, 179.0181°W, 180 m (BPBM). **Viti Levu**: 1♂, Nausori Highlands, 500–600 m, 1 Oct 1970, N.L.H. Krauss (BPBM); 1♂, Lami, 20–200 m, Mar 1976, N.L.H. Krauss (BPBM).

Comments: *Craspedochaeta sasakawai* is a widely distributed species otherwise known from Australia, Sri Lanka, Malaysia, Vanuatu, New Guinea and the Solomon and Caroline Islands. The Fijian representatives largely match the description in Sasakawa (1971) but they are slightly larger and the female first flagellomere is more heavily infuscated (with the exception of the basal margin), making them more similar in appearance to *C. palliseta* (Curran), which may be conspecific.

While a subterminal flagellum is clearly visible on the ventral receptacle of the Fijian specimen examined here, it appears to be absent in the specimen from Papua New Guinea examined by Lonsdale & Marshall (2006b). This specimen from Papua New Guinea (which has been reexamined) is in poor condition, particularly compared to the alcohol-preserved material used here, making it likely that the flagellum has broken off and become lost amongst the rectal papillae and abdominal tracheae. The presence of this flagellum in both the *Craspedochaeta biseta* group and *Heteromeringia* (Fig. 22) is notable, because its absence in the *C. concinna* species group is now subsequently interpreted as a derived character, providing additional evidence for the monophyly of this otherwise poorly-defined clade.



Figs. 3–5. *Craspedochaeta sasakawai*, male genitalia; **3.** External, left lateral; **4.** External, posterior; **5.** Internal, left lateral.

Hendelia amerinx Lonsdale & Marshall**, n. sp.**

(Figs. 6–8)

Description

Male: As described for *H. similis*, except as follows: body length 3.0 mm; bristles brown; arista sparsely plumose; interfrontal bristle absent; fore tibia and tarsi brown; M_{1+2} ratio 3.3.

Female: Unknown.

Male terminalia (Figs. 6–8): Annulus short and sparsely setose. Epandrium relatively wide and bulbous, swelling above dorsal margin of annulus; perianal area longer than wide. Cerci very small, fused, rounded and setose, with one pair of longer central bristles. Surstylus longer than high, bare

on anterior half of outer face and with numerous small rounded tubercles along inner-distal margin. Hypandrium thin and straight with three medial setae. Hypandrium+pregonite thinnest apically with numerous terminal setulae. Keel of phallapodeme relatively shallow. Distiphallus rod-like on basal half and weakly sclerotized and sac-like on distal half. Ejaculatory apodeme slightly longer than hypandrium with end flat and abruptly widened.

Type material: *Holotype* ♂, FIJI: **Viti Levu**: 4 km WSW Colo-i-Suva Vlg., Mt. Nakobalevu, 372 m, Malaise 3, Schlinger, Tokota'a, 18.055°S, 178.424°E, 25 Feb–17 Mar 2003 (FNIC). *Paratype*: FIJI: **Viti Levu**: 1♂, Lami, 100–300 m, 1 Mar 1971, N.L.H. Krauss (BPBM).

Comments: See comments for *Hendelia similis*.

Etymology: The specific name adds the prefix "a" (Gr. *without*) to "merinx" (Gr. *hair*), denoting the absence of the interfrontal bristle in this species, as well as the relative lack of hairs on the arista.

Hendelia similis Lonsdale & Marshall, **n. sp.**
(Figs. 2, 9–11, 18, 21)

Description. Body length 2.9–3.6 mm.

Male: Bristles yellow to light brown. Three dorsocentral bristles (anterior bristle slightly shorter). Acrostichal bristle absent. Arista densely plumose (hairs more sparsely arranged apically), with hairs much longer than diameter of central filament. Ocellar bristle absent. Interfrontal bristle long. Two reclinate fronto-orbital bristles with anterior bristle half length of posterior bristle (hind fronto-orbital absent). Anterior lateral scutellar bristle minute and posterior bristle long. Mid and hind tibiae with dorsal preapical bristles. Thorax yellow with orange tint and anterior margin of scutum with large dark brown spot. Legs light yellow. Abdomen brown with tergite 1 yellow. Frons, back of head, occiput, parafacial, ventral margin of gena, clypeus and palpus dark brown to black; first flagellomere light yellow; face and gena dirty white; first flagellomere yellowish-white. M_{1+2} ratio 5.5. Wing dusky.

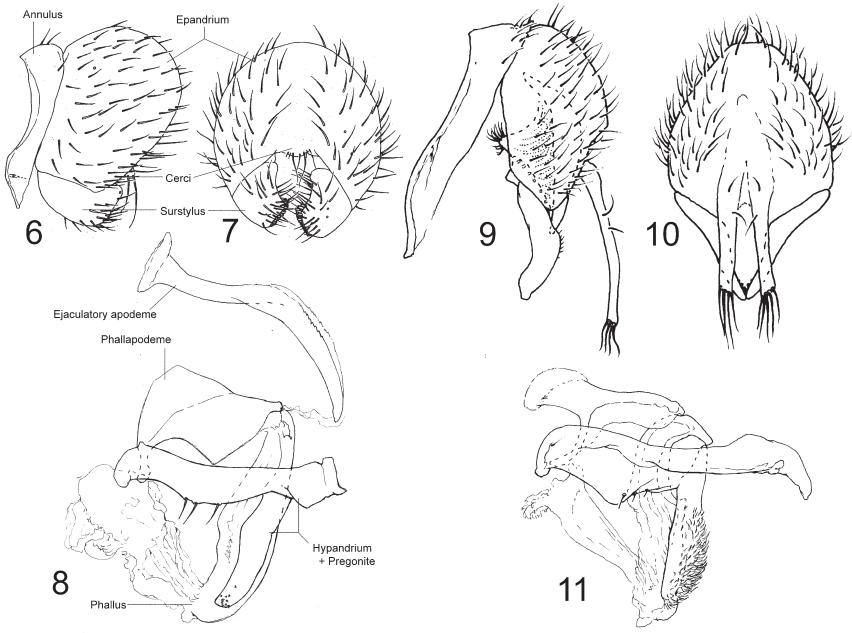
Female (Fig. 2): As described for male except as follows: gena black and shiny; fore tarsomeres 2(3)–5 white and tarsomere brown to light brown; first flagellomere sometimes with infuscation at base of arista; notal spot extending posteriorly as acute stripe; scutum with one pair of short faded postsutural stripes (not touching posterior margin).

Male terminalia (Figs. 9–11): Annulus well-developed, with few dorsal bristles. Epandrium slightly tapering dorsally; perianal area longer than wide; closely associated (or fused) with subepandrial sclerite (which projects past distal margin of epandrium), producing heavily setose inner anteromedial process. Cerci very thin, and elongate, with two medial bristles and 4–5 apical bristles. Surstylus thin, curved and nearly as high as epandrium; bare on outer face and setose on inner face, with stout row of bristles along inner-basal margin. Phallapodeme relatively high and narrow. Arm of hypandrium stout with three medial bristles; ventral process heavily setose along posterior margin.

Female terminalia (Fig. 21): Ventral receptacle sac-like basally and with long subterminal flagellum (not resembling other *Hendelia* but similar to *Craspedochaeta* and *Heteromeringia)*. Spermatheca darkly pigmented and strongly telescoped and wrinkled, with apex thin, pointed and invaginated; length twice width with base widest. Spermathecal duct approximately three times length of spermatheca.

Type material: *Holotype* ♂, FIJI: **Viti Levu**: Nukura Forest, 60–130 m, 15 Oct 1979, 260-in forest logging area, M.K. Kanath, S.N., Lal, G.A. & S.L. Samuelson (BPBM Type No. 16838). *Paratypes*: FIJI: **Viti Levu**: 1♀, 4 km WSW Colo-i-Suva Vlg., Mt. Nakobalevu, 372 m Malaise 3, Schlinger, Tokota'a, 18.055°S, 178.424°E, 12–25 Feb 2003 (BPBM); 1♀, 14-26 Jul 2003 (BPBM); (1♀, 25 Feb–17 Mar 2003 BPBM).

Comments: The closely related *Hendelia similis* and *H. amerinx* superficially resemble the Burmese *H. punctifrons* (Frey), which has a similar notal pattern, but the latter



Figs. 6–8. *Hendelia amerinx* male genitalia; **6.** External, left lateral; **7.** External, posterior; **8.** Internal, left lateral.
Figs 9–11. *Hendelia similis* male genitalia; **9.** External, left lateral; **10.** External, posterior; **11.** Internal, left lateral.

species has a sparsely short-plumose arista, a distally dark first flagellomere, a yellow frons and an anteromedially brown scutellum. Furthermore, although the characteristic white and brown fore tarsi of *H. similis* females (females are unknown for *H. amerinx*) are variably found in several Neotropical and Australian *Hendelia*, none of these taxa exhibit other features that would indicate a close phylogenetic relationship.

An unusual aspect of the Fijian *Hendelia* is that although they do not closely resemble congeners, they are strikingly similar in appearance to both Fijian species of *Heteromeringia* (Fig. 1), suggesting that there may be some selection pressure leading to a convergence in coloration. The superficially similar species of these two genera can be separated using the key and the characters highlighted in figures 1 and 2.

Phylogenetically important characteristics of *Hendelia similis* include relatively slender spermathecal ducts and a ventral receptacle without a subterminal disc, since both are synapomorphic of *Hendelia* plus *Clusiodes* (Lonsdale & Marshall, 2007b)). *Hendelia amerinx* also varies from the hypothetical *Hendelia* plus *Clusiodes* ground-plan in that the interfrontal bristles are absent. Although the absence of these structures indicates that the Fijian *Hendelia* could represent a lineage basal to *Hendelia*+*Clusiodes*, they are here retained in *Hendelia* pending further evidence.

Etymology: The specific name is Latin for "resembling", as the overall coloration of this species, particularly the female, is highly convergent with that of *Heteromeringia veitchi* (see Figs. 1, 2).

Heteromeringia kondoi Sasakawa
(Figs. 15–17)

Heteromeringia kondoi Sasakawa, 1966: 89. Pitkin & Evenhuis, 1989: 534.

Description. Body length 4.7–5.4 mm.

Male: Bristles black. Two dorsocentral bristles plus a small bristle in front of anterior dorsocentral. Acrostichal bristle absent. Arista sparsely plumose, with hairs much longer than diameter of central filament. Ocellar bristle minute. Interfrontal bristle absent. Three fronto-orbital bristles (reclinate, with anterior bristle inclinate). Pedicel relatively large, somewhat enclosing first flagellomere. Gena relatively high (approximately 1/4 height of eye). Fore and hind tibiae with inner surface densely covered with short, erect setae; fore tibia with row of short, stout, pointed bristles on inner-basal half. One small lateral scutellar bristle. Tibiae without dorsal preapical bristles. Scutum yellow with central pointed notal stripe extending past suture, with postpronotum, notopleuron and anterolateral corners of scutum brown. Scutellum yellow with wide brown central stripe. Katatergite brown and anatergite yellow. Pleuron yellow with dorsal margin of anepisternum brown. Legs yellow with fore tarsi brown, excluding distal two tarsomeres, which are yellowish-white. Frons dark brown excluding lateral margins; first flagellomere lightly infuscated on anterior and lateral surfaces; back of head with one pair of thin dorsal stripes radiating from foramen; head light yellow below antenna; remainder of head yellow; upper 1/3 of gena and anterodorsal margin of occiput pilose. Knob of halter brown, excluding light apex. Abdomen dark brown with tergite 1 yellowish-orange. M_{1+2} ratio 5.7–5.9. Wing dusky on distal 1/3, darkest to costa.

Female: As described for male except shoulders mottled with yellow and pleuron with complete subnotal stripe.

Male terminalia (Figs. 15–17): Surstylus approximately 3/5 height of epandrium with slight inward curve at midpoint and six pointed tubercles apically; outer face sparsely setulose. Cerci widest subapically, narrowest at base and with shallow emargination apically. Phallapodeme slightly longer than surstylus with apex thin and more weakly-sclerotized. Pregonite bilobed, with two stout bristles on thinner lobe and several setulae on base and apex of shorter, wider lobe. Distiphallus not spit into segments and ribs of subequal length, membrane at apex with several thin, weakly-sclerotized sections.

Type material examined: *Holotype* ♂, FIJI: **Viti Levu**: Nandarivatu, 7 Nov 1938, 2700 ft, Y. Kondo (BPBM).

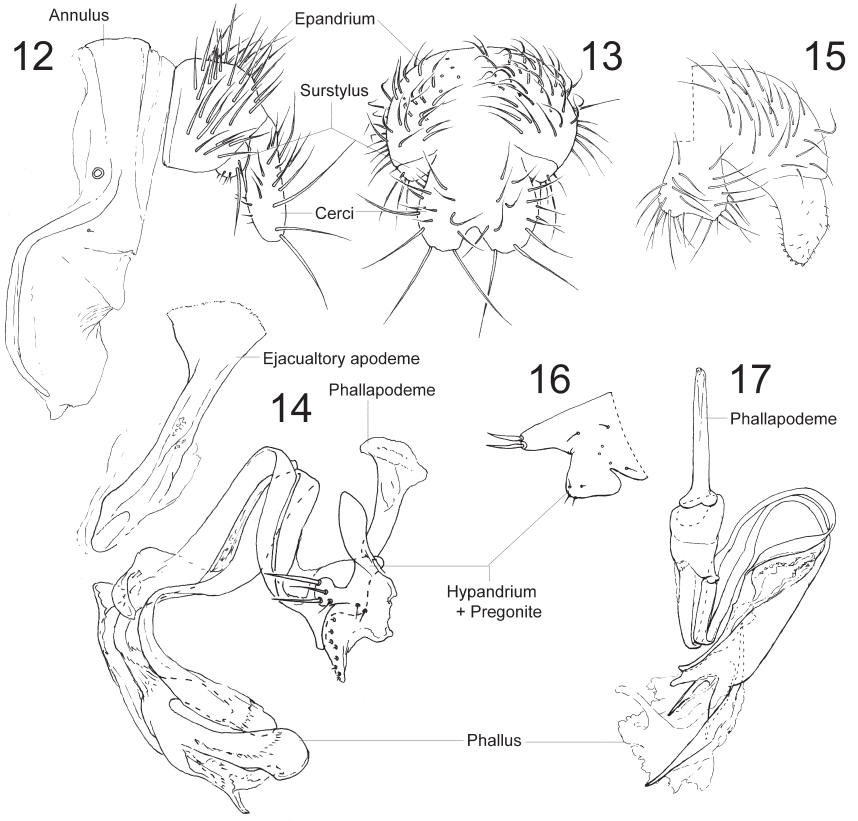
Additional material examined: **Viti Levu**: 1♀, Nandarivatu, Yoo Microwave Stn., 1000–1100 m, 16–23 Aug 1978, S. & J. Peck, forest dung (DEBU).

Heteromeringia veitchi **Bezzi**
(Figs. 1, 12–14, 22)

Heteromeringia veitchi Bezzi, 1928: 87. Frey, 1960: 25. Sasakawa, 1966: 92. Pitkin & Evenhuis, 1989: 534.

Description. Body length 3.1–4.1 mm.

Male (Fig. 1): Bristles brown. Two dorsocentral bristles plus small bristle in front of anterior dorsocentral. Acrostichal bristle absent. Arista sparsely short plumose, with hairs several times diameter of central filament. Ocellar bristle minute. Interfrontal bristle absent. Three fronto-orbital bristles (reclinate, with anterior bristle small and inclinate). One minute lateral scutellar bristle. Tibiae without dorsal preapical bristles. Body yellow with orange tint, and anterior margin of scutum (excluding postpronotum) dark brown with complete faded central stripe extending posteriorly onto scutellum and (sometimes) anatergites. Legs yellow with fore tibia and inner-distal tip of fore femur brown, fore tarsi brown with tarsomeres 4 and 5 white. Head dark brown with frons black, mouthparts pale, antenna sometimes yellow, gena dirty white to brown and pilose. Abdomen dark brown. M_{1+2} ratio 6.0–6.3. Wing dusky.



Figs. 12–14. *Heteromeringia veitchi*, male genitalia; **12.** External, left lateral; **13.** External, posterior; **14.** Internal, left lateral. **Figs. 15–17**. *Heteromeringia kondoi*, male genitalia; **15.** Posterior (portion of left side excluded); **16.** Hypandrium+pregonite, left lateral; **17.** Phallapodeme and phallus, anterior.

Female: As described for male except as follows: notal stripe usually stronger; gena shiny and dark brown; fore tarsomere 3 white.

Male terminalia (Figs. 12–14): Annulus large and ill-defined along anterior and posterior margins, with membranous ventral pouch enclosing phallus. Epandrium small and broadly rounded. Cerci as high as epandrium and with long setae; narrowest basally and emarginate apically. Surstylus rounded and very small with several short and two long bristles. Hypandrium+pregonite strongly arched anteriorly; medially with projection bearing two stout and two thin bristles; triangular and minutely setose distally. Phallapodeme nearly as long as hypandrium+pregonite. Distiphallus double-ribbed on basal half, with ribs blending into irregular medial and distal sclerites. Ejaculatory apodeme as long as combined length of phallapodeme and hypandrium+pregonite, with apex flared and rounded.

Female terminalia (Fig. 22): Ventral receptacle broadly rounded and recurved; subterminal flagellum present. Spermatheca darkly pigmented, transversely wrinkled on basal half, strongly telescoped, and subquadrate in shape. Spermathecal duct approximately four times length of spermatheca.

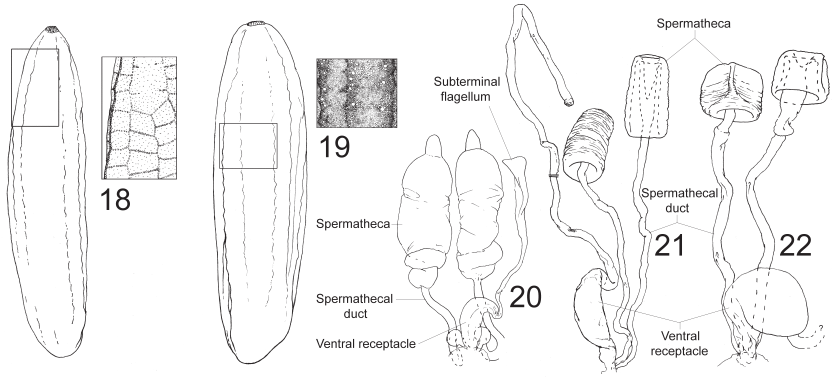
Type material: *Holotype* ♂, FIJI: **Viti Levu**: Lautoka, 4 Jul 1922, R. Veitch, in the Natural History Museum London (not examined).

Material examined: FIJI: **Ovalau**: 2♀, Levuka, 0–150 m, Mar 1969, N.L.H. Krauss (BPBM). **Taveuni**: 1♂, 5.6 km SE of Tavuki Village, Malaise, rainforest, 3–10 Jan 2003, Schlinger, Tokota'a, -16.843°, -179.965°, 1187 m (BPBM); 1♂, Taveuni Estate, 31 Oct–21 Nov 2002, Malaise in garden, M. Irwin, E. Schlinger, M. Tokota'a, 179°59'E, 16°50'S, 140 m (BPBM). **Vanua Levu**: 1♂, 0.6 km S of Rokosalase Village, 23.iv–8 May 2004, Malaise in forest, Schlinger, -16.5333°, 179.0181°, 180 m (BPBM). **Viti Levu**: 1♀ 1♂, Suva, vi.1963, M.R. Wheeler (USNM); 1♂, Belt Road 42, 44 mi W of Suva, 23 Jul 1938, beating shrub, 300 ft, E.C. Zimmerman (BPBM); 1♂, Lami, 0–200 m, N.L.H. Krauss, Mar 1981 (BPBM); 1♀, Feb 1981 (BPBM); 1♂, 1 km E Abaca Vlg., Koroyanitu Ntl. Pk., 800 m, Gavuione Trail, 17°40'S, 177°33'E, 19-26 Oct 2002, Malaise, E. Schlinger, Tokota'a (BPBM); 1♂, Sigatoka Sand Dunes N.P., Malaise, 11 Jun–9 Jul 2003, 44 m, M. Irwin, E. Schlinger, N. Tokota'a, 177°28'910"E, 18°9'99"S (BPBM); 1♂, Sigatoka Sand Dunes N.P., Malaise, 1.1 km SSW of Volivoli, 55 m, 6–17 Apr 2004, Schlinger, Tokota'a, -18.1694°, 177.4847° (BPBM); 1♂, Nakobalevu Mt., 12–24 Mar 2003, 178°25'E, 18°03'S, S rainforest, M. Irwin, E. Schlinger, N. Tokota'a, Malaise, 340 m (BPBM); 1♀, 4 km WSW Colo-i-Suva Vlg., Mt. Nakobalevu, 325 m, Malaise 2, 14–26 Jul 2003, Schlinger, Tokota'a, 18.056°S, 178.422°E (BPBM).

DISCUSSION

Immature Stages

The eggs of *Craspedochaeta sasakawai* and *Hendelia similis* differ from those described from other clusiids (Lonsdale & Marshall, 2006a, 2006b) in that they are more shallowly tuberculate and furrowed, and the surface is more elaborately textured with thin scalloped ridges and more variation in tubercle size (Figs 18&19). In *H. similis* (Fig. 18), minute irregularly-spaced tubercles are arranged within staggered quadrilateral cells bordered by single rows of slightly larger tubercles. In *C. sasakawai* (Fig. 19), irregular rows of large tubercles intersperse rows of contiguous circular patches containing smaller and more densely-arranged tubercles.



Figs. 18–19. Eggs, with enlarged detail of microtexture: **18.** *Hendelia similis*; **19.** *Craspedochaeta sasakawai*. **Figs. 20–22**. Female internal genitalia; **20.** *C. sasakawai*; **21.** *Hendelia similis*; **22.** *Heteromeringia veitchi*.

Synonymy of *Tranomeringia* with *Heteromeringia*

Tranomeringia (including *T. zosteriformis* Sasakawa, the type, and *T. melasoma* Sasakawa) was described as a close relative of *Heteromeringia*, differing in having a short propleural bristle, a bifurcated basiphallus and extremely pronounced male vibrissae (Sasakawa, 1966). We have examined individuals of *T. zosteriformis* (Tel Aviv University, Israel), an undescribed *Tranomeringia* (Royal Ontario Museum, Toronto), and most *Heteromeringia* species, and we can see no evidence to support this genus as distinct and separate from *Heteromeringia*. Although the male vibrissae are certainly derived, the propleural bristle is as large as that seen in any other *Heteromeringia* and the basiphallus is not significantly different. Furthermore, these species are strikingly similar (and almost certainly related) to other *Heteromeringia* with small ocellar bristles, brown bristles (black in *H. kondoi*), no anepisternal disc, and black and white fore tarsi, including the two Fijian species described above, supporting its placement within that genus.

For these reasons, *Tranomeringia* **n. syn.** is included here as a junior synonym of *Heteromeringia*, which can now be redefined using the following distinct and often easily-observed synapomorphies: anterior fronto-orbital bristle inclinate; one (not two) pair of small lateral scutellar bristles; acrostichal bristle absent; tibiae without dorsal preapical bristles; distiphallus elongate and with one pair of heavily-sclerotized lateral "ribs"; annulus (male sternites 6–8) with enlarged ventral membranous pouch to enclose the distiphallus when at rest; apex of ejaculatory apodeme fan-like.

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