

## Checklist and Illustrated Key to Species of Brentidae from Fiji (Coleoptera: Curculionoidea)<sup>1</sup>

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**ABSTRACT.** A checklist of 22 species of the weevil family Brentidae (subfamilies Cyladinae, Brentinae, Cyphagoginae, Trachelizinae) recorded from Fiji is given, with notes on distribution, biology, and faunal composition. *Aneorhachis fijiana* n. sp. is described by A. Mantilleri. An illustrated key to the 22 species is provided. *Eubacrus metallicollis* Fairmaire is transferred to the genus *Miolispa* Pascoe, with *Miolispa fijiana* Kleine as a new synonym. *Cerobates angustipennis* Senna, *Cerobates laevipennis* Senna, and *Ithystenus muelleri* Kleine are removed from the Fiji faunal list.

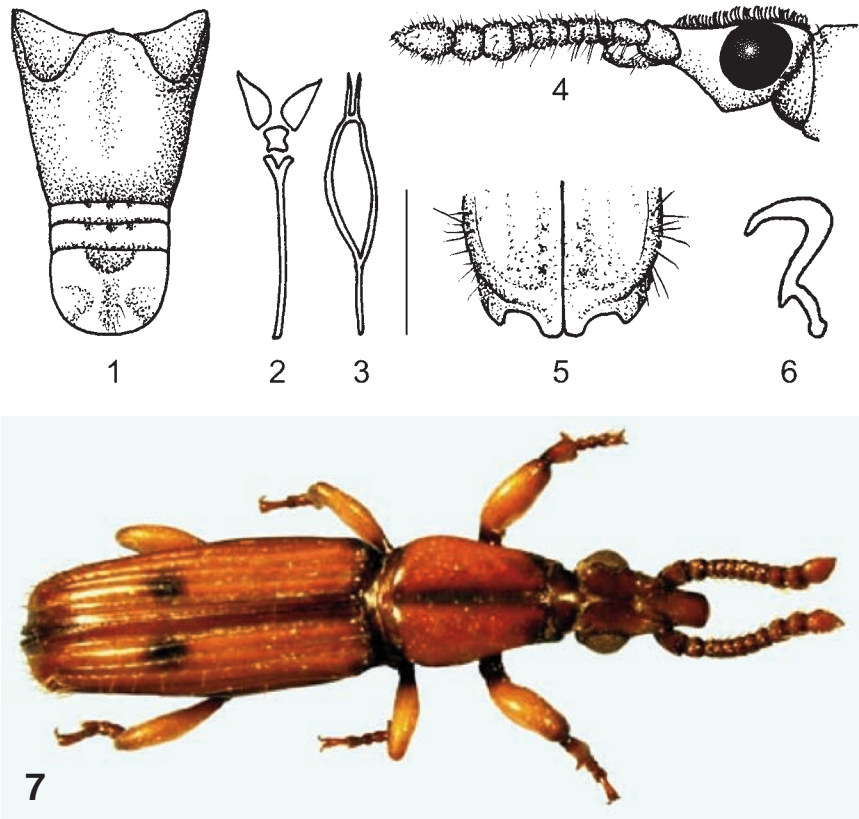
### INTRODUCTION

The Brentidae is a family of weevils (Coleoptera: Curculionoidea), including about 1750 species, the majority associated with dead wood in the tropical rain forests of the world. The taxonomic extent of the family has been subject to some recent controversy (e.g., Anderson & Kissinger, 2002; Sforzi & Bartolozzi, 2004). In this paper we follow Zimmermann (1994) and the recent catalogues of Alonso-Zarazaga & Lyal (1999, 2002) and Sforzi & Bartolozzi (2004) and include the subfamily Cyladinae within the Brentidae, but exclude the Apionidae and Nanophyidae. Kleine (1935) listed 12 species recorded from Fiji as part of a list of brentid species from Oceania. Since that time there has been no updated checklist, although there have been fairly numerous taxonomic changes, and a number of additional species have been described from Fiji. This paper provides for the first time an illustrated key to the Fijian species, together with a checklist with notes on distribution, and, when available, the plants on which the species have been found. Although not all specimens can presently be identified below tribal or generic level, we hope that the paper may encourage studies of the family in Fiji, particularly the biology and ecology of the endemic species.

The study is based for the most part on a large collection of Fijian Brentidae in the Bishop Museum, Honolulu (BPM), including specimens collected since 2001 as part of

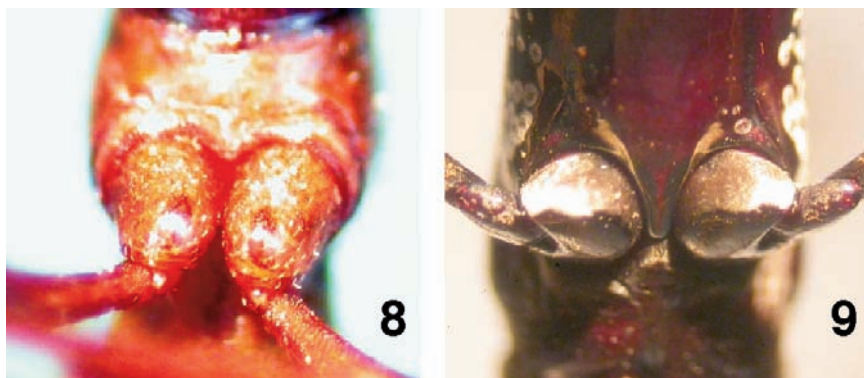
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**Figures 1–7.** *Aneorhachis fijiana* Mantilleri n. sp. 1. Abdomen (male, ventral view). 2. *Spiculum gastrale*. 3. Tegmen. 4. Head (male, lateral view). 5. Apex of elytra. 6. Spermatheca. Scale: 0.5 mm except fig. 6: 0.25 mm. 7. Dorsal view

the Terrestrial Arthropod Survey of Fiji project. This collection includes many specimens from the main islands of Viti Levu and Vanua Levu, as well as material from the islands of Kadavu, Ovalau, Taveuni and a few other outer islands. Further specimens were collected by the senior author in 1973 and from 1981–1988. These are in his private collection (RAB). The majority of these were collected in lowland tropical rain forest on the island of Viti Levu, near Wailoku (18°04'S, 178°26'E), 10 km North of Suva. The identifications have been checked against type and other identified specimens in the Muséum National d'Histoire Naturelle, Paris (MNHN), the Natural History Museum, London (NHML), and the New Zealand Arthropod Collection, Auckland (NZAC). The nomenclature of the brentids follows Sforzi & Bartolozzi (2004). In the checklist, details of specimens examined are given for the less common species, but not for the two most abundant species (*Bulbogaster stenostomoides* Lacordaire and *Eubactrus semiaeneus* Lacordaire), of which more than 100 specimens were examined from many different localities. For these two species only a



**Figures 8–9.** Procoxae. **8.** Contiguous, conical, prominent procoxae (*Cylas formicarius*). **9.** Separated procoxae (*Eubactrus semiaeneus*).

few records which add significantly to the known distribution of the species within Fiji are given. It is likely that the majority of the presently unidentified species are new to science, and these will be described after further study. The number before the name of the species in the key refers to the number of the species in the checklist that follows.

## SYSTEMATICS

### *Aneorhachis fijiana* Mantilleri, n. sp.

**Description.** Length from tip of rostrum to apex of elytra: 3.9–4.1 mm. Width at humeral callus: 0.6–0.7 mm. Body brown-red with darker spot on intervals 2–4 of elytra.

Head much larger than long, flat, base strongly incised medially with two protruding lobes on neck and two lines of thick setae on each side of the head above the eyes, those two lines reaching the meso-rostrum. Eyes slightly protruding, temples short without bulge behind the eyes. Vertex and frons furrowed, this furrow reaching the base of the pro-rostrum. Metarostrum foveate, with a longitudinal short line of thick setae on each side of the rostrum between the median furrow and the lateral lines of setae. No metarostral lateral grooves. Prorostrum flattened, short, 0.3 times the length of the head, metarostrum and meso-rostrum together. Antennae (Fig. 4) with long hair on the inner side of the antennomeres; antennomere 2 as long as wide, 3rd conical as long as wide, 4th to 8th cylindrical wider than long; antennomeres 9–11 clubbed, slightly flattened, 9th and 10th wider than long, 11th twice the length of the 10th. Underside of the head glabrous, bulging, with a transverse carina forming an angle beneath the head when viewed laterally (Fig. 4).

Pronotum more or less strongly punctured, deeply furrowed, with few setae on the rounded fore angles. Prothorax glabrous without a fovea between the procoxae; odd prothoracic sclerite not distinct. Metathorax with a longitudinal median groove. Elytra with a concave base and long setae, mainly at the apex. Interstria 2 present only after the first half and reaching the apex; interstria 3 large, present on the total length of the elytra; interstria 4 beginning at the base and reaching the apical declivity; interstriae 5 and 6 con-

nected together to form a common humeral branch; interstria 7 very reduced and present only on the last third of elytra; interstria 8 complete and forming the external apical border of the elytra; interstriae 9 and 10 present. Elytra notched on each side at the apex (Fig. 5). Protibiae with a strong internal spur; mesotibiae and metatibiae of the female with two sharp spurs at the apex; male with one sharp spur and one blunted spur almost bifid.

Male: abdomen (Fig. 1) slightly furrowed, slightly depressed, glabrous; ventrites V–VI with three small basal notches; ventrite VII almost glabrous with a large semi-circular basal notch, a longitudinal depressed area, no apical fovea and two slight lateral depressions. Spiculum as in Fig. 2. Parameres reduced, filiform, separated (Fig. 3).

Female: abdomen smooth, strongly convex; ventrites V–VI as in the male; ventrite VII as in the male but without longitudinal depressed area. Spermatheca as in Fig. 6.

**Types.** *Holotype* ♂ (BPBM Type 17,140) FIJI: **Viti Levu:** Navai Mill nr. Nandarivatu, 2700 ft [2222 m], 7 Sep 1938, E.C. Zimmerman. *Paratypes:* 1 ♀, FIJI: **Ovalau:** nr. Vuma, 200 ft [61 m], 14 Jul 1938, rotten logs, E.C. Zimmerman (BPBM). **Vanua Levu:** 1 ♀, Kilaka, 16°48'S, 178°59'E, 154 m, 28 Jun–2 Jul 2004, Malaise, M.E. Irwin, E. Schlinger, M. Tokota'a [FBA153182] (MNHN). Holotype in BPBM.

**Discussion.** This species is the third to be described in the genus *Aneorhachis* Kleine. The two others were described from India (*A. stricta* Kleine) and Bhutan (*A. monticola* Damoiseau). From the rounded fore angles of the pronotum, *A. fijiana* seems to be closer to *A. monticola*, but many characters such as size, presence of a carina beneath the head, and incomplete elytral interstria 2 separate these two taxa very easily. It is surprising to see such a gap in the geographical distribution of the genus, but this may be because we lack material from Indonesia and Papua New Guinea. In the future, other species of this genus will be probably discovered in other islands of this region.

#### KEY TO SPECIES OF FIJIAN BRENTIDAE

1. Procoxae contiguous, conical, prominent (Fig. 8). Antennae 10-segmented, antennomere 10 longer than 2–9 together in the male, about as long as antennomeres 4–9 together in the female. Head, rostrum, metasternum and abdomen black, prothorax, mesosternum and legs reddish, elytra steely blue (Fig. 27) ..... 1. **Cylas formicarius** (Fabricius)
- . Procoxae separated (Fig. 9). Antennae 11-segmented, with antennomeres 9–11 forming a more or less distinct club. Colour pattern not as above ..... 2
2. Anterior sides of pronotum laterally compressed and concave for reception of femora when folded against body and/or hind femora pedunculate and strongly claviform (Figs. 24, 30) ..... 3
- . Anterior sides of pronotum not laterally compressed and concave. Hind femora not strongly claviform ..... 9
3. Apex of metafemur not reaching elytral apex (Fig. 25). Elytra glabrous. Interstriae 3 pale yellow except for a darker band in the basal third and on the declivity. Profemora with or without a ventral tooth ... (*Callipareius*) ..... 4
- . Apex of metafemur as long as or extending well beyond elytral apex (Fig. 28). Elytra with erect hairs or scales on interstriae. Interstriae 3 not pale yellow. Profemora without a ventral tooth ..... 5
4. Interstriae 2 complete. Bases of interstriae 2–5 pale yellow, interstriae 9 pale up to the declivity (Fig. 24). Elytral apices not appendiculate. Profemora with a ventral tooth (Fig. 11) ..... 4. **Callipareius planitarsus** (Perroud & Montrouzier)



**Figures 10–14.** Protibia and tarsus (10. *Cerobates vitiensis*. 11. *Callipareius planitarsus*). Metatibia and tarsus (12. *Bulbogaster ctenostomoides*. 13. *Bulbogaster juncea*). 14. Mesotibia of male with brush of hairs [arrow] (*Bulbogaster juncea*).

- . Interstriae 2 obsolete in middle part of elytra. Bases of interstriae 2, 4–5 not pale yellow, interstriae 9 dark brown (Fig. 25). Elytral apices appendiculate. Profemora without a ventral tooth ..... 5. **Callipareius** sp.
- 5. Metasternum longer than abdomen, hind coxae set far back and metafemora extending well beyond elytral apex. Interstriae 2 strongly narrowed after the basal quarter and obsolescent in the middle of the elytra. Elytra with a longitudinal, reddish-brown vitta extending from the suture to interstriae 3, and from the base to the apex (Fig. 30). All interstriae with long fine hairs ..... 6. **Cyphagogus fijianus** Kleine
- . Metasternum about as long as abdomen, metafemora extending to or slightly beyond elytral apex. Interstriae 2 present or absent. Uneven-numbered interstriae with erect or semi-erect scales or bristles, even-numbered interstriae glabrous ..... 6
- 6. Head with a median groove extending to the mesorostrum, the raised lateral margins with a dense covering of scales (Fig. 29). Gena without a tooth in front of eye. Pronotum very weakly concave at sides anteriorly, with a deep median groove, bearing setae similar to those on the head. Interstriae 1, 3, and 5 more strongly raised than the others, interstriae 2 and 4 varied ..... 7
- . Vertex of head and pronotum not grooved, weakly convex, bearing only a few scattered finer setae (Fig. 37). Gena with a pointed down-curved tooth in front of eye. Pronotum strongly concave at sides anteriorly, without a median groove. Interstriae

- 1, 3 and 5 not more strongly raised than the others, interstriae 2 absent, interstriae 4 raised throughout their length ..... 7. **Microsebus fijianus** (Damoiseau)
7. Pronotum convex on either side of median groove, about 1.5 times longer than wide. Interstriae 2 complete or interrupted in middle of elytra, interstriae 4 continuous ..... 8
- Pronotum dorsally forming a shallow ‘V’ with flattened, weakly sloping sides and a deeper median groove, about 1.7 times longer than wide (Fig. 40). Interstriae 2 absent or visible only at extreme base of elytra, interstriae 4 raised only close to base, obsolete posteriorly ..... 8. **Nesidiobrentus** sp.
8. Interstriae 2 complete. Elytra with a well-marked pattern of black spots and bands on a paler background (Fig. 28) ..... 9. Cyphagogini (Undetermined genus and species #1)
- Interstriae 2 interrupted in middle of elytra. Elytra with three transverse darker bands, the base of the elytra, two transverse maculae, and the apex, slightly paler (Fig. 29) ..... 10. Cyphagogini (Undetermined genus and species #2)
9. Rostrum with rounded tubercles above the antennal insertions (Fig. 16). Pronotum without a median furrow. Elytra regularly, coarsely punctate, the sutural interstriae strongly raised, interstriae 2–4 flat, narrower than striae, interstriae 5 with the base widened, raised or carinate posteriorly, interstriae 7–9 very narrow, carinate, the declivity with a preapical spine extending beyond the apex ... (*Anomobrentus*) .... 10
- Rostrum without rounded tubercles above the antennal insertions, or if present, elytra not as above. Pronotum often with a median furrow ..... 11
10. Pronotum bicoloured with sides darker than dorsal surface. Elytra with paler yellowish humeri, darker apically, but without a sudden change in colour after basal third (Figs 17, 18). Interstriae 5 raised but not carinate posteriorly, with a yellow vitta extending from base to declivity ..... 2. **Anomobrentus hamatirostris** Fairmaire
- Pronotum more uniformly brown-black, shining. Basal 1/3 of elytra yellow to yellow-orange, clearly distinct from brown-black apical half (Fig. 19). Interstriae 5 carinate posteriorly, distinctly yellow only in basal third ..... 3. **Anomobrentus kuscheli** Damoiseau
11. Protibia with a large, conspicuous emargination on its inner side between the middle and apex, the base of the emargination produced into a prominent process, its inner margin setose (Fig. 10). Ventral surface of head hairy at base, a line of trichobothria extending along the rostrum on each side (Fig. 15). Pronotum with a basal fovea. Interstriae 2 obsolete in middle third of elytra. Small, rather flattened species, 6–8 mm long (Fig. 26) ..... 11. **Cerobates vitiensis** Fairmaire
- Protibia without such a large, conspicuous emargination or prominent process. Ventral surface of head not as above. Mostly larger, more cylindrical species ..... 12
12. Elytra appendiculate, each with a posterolateral process formed by the fusion of the third and ninth interstriae. Last 3 antennomeres usually long and slender ..... 13
- Elytra without such processes. Last 3 antennomeres not elongate ..... 17





**Figures 15–16.** 15. Ventral view of head of *Cerobates vitiensis*. 16. Dorsal view of head of *Anomobrenthus hamatirostris*.

- 13. Pronotum with a complete median furrow. Elytra nearly parallel-sided, only weakly laterally compressed in the middle; both striae 1 and 2 impressed for the whole length of the elytra ... (*Ithystenus*) ..... 14
- . Pronotum without a median furrow or with only a short impression at the base. Elytra either strongly laterally constricted in middle, or with convex sides and constricted only just before apex; only striae 1 impressed for the whole length of the elytra ..... 15
- 14. Pronotum dorsally with a reddish to yellowish band on either side of black median furrow, dark laterally and ventrally. Interstriae 1–2 usually black, the remainder of the elytra reddish or reddish black, with the strial punctures often surrounded by dark spots (Fig. 34) Rostrum with scattered minute punctures, lacking a dorsolateral groove. Apical processes of elytra in male approximately cylindrical, tapering slightly to blunt tips ..... 17. ***Ithystenus nigrosulcatus*** Fairmaire
- . Pronotum and elytra almost uniformly dark reddish brown to black, the elytra lacking black spots around the punctures. Metarostrum with coarse punctures beneath a dorsolateral groove. Apical processes of elytra in male laterally flattened, more strongly tapering to a more acute tip. (Figs. 35, 36) ..... 18. ***Ithystenus*** sp.
- 15. Last 3 antennomeres long and slender. Elytra strongly laterally constricted in the middle ... (*Bulbogaster*) ..... 16
- . Last 3 antennomeres not long and slender. Elytra with convex sides, constricted only just before apex (Fig. 33) ..... 19. *Ithystenini* sp.(Undetermined genus and species)
- 16. First metatarsal segment extremely elongate, as long as metatibia (Fig. 13). Male pro-rostrum not expanded towards apex (Fig. 23), and with brushes of fine hairs ventrally on the peduncle of the mesofemora (Fig. 14) and on the metasternum; brushes absent in female ..... 16. ***Bulbogaster juncea*** Damoiseau
- . First metatarsal segment not more than half as long as metatibia (Fig. 12). Male pro-rostrum expanded towards apex (Fig. 22), lacking brushes of hairs below mesofemora and on metasternum in both sexes ..... 15. ***Bulbogaster ctenostomoides*** Lacordaire
- 17. Head broadly grooved with a ridge on each side extending onto the rostrum bearing erect, flattened setae (Fig. 7). Protibial spur enlarged to form a calcar. Elytra with long, erect hairs, sparse on the disc, denser on the declivity, with a row on striae 2

- and 4 on the disc, and further hairs on the outer interstriae. Elytral interstriae strongly convex; interstriae 2 beginning at about the middle of the elytra, strongest on the upper part of the declivity ..... 20. **Aneorhachis fijiana** Mantilleri, **sp.n.**
- Head not broadly grooved or ridged, lacking erect, flattened setae. Elytra glabrous or almost so, lacking long hairs; interstriae 2 present only at base ..... 18
18. Striae 1 and 5–9 impressed. Interstriae 3 with a paler, reddish yellow vitta, broken in the middle, and not reaching the apex (Figs. 38, 39) ..... 12. **Miolispa metallicollis** (Fairmaire)
- Only striae 1 and/or 2 impressed. Elytra without a vitta of contrasting colour ..... 19
19. Both interstriae 1 and 2 impressed on elytral disc ..... 20
- Only interstriae 1 impressed on elytral disc ..... 21
20. Body strongly shining, finely punctured, the punctures not tomentose (Fig. 42). Interstriae 1 joining interstriae 9 at apex of elytra, interstriae 3 not reaching apex ..... 13. **Tracheloschizus castaneicolor** (Kleine)
- Body weakly shining, coarsely punctured, the punctures tomentose (Fig. 20). Interstriae 3 strongly raised posteriorly and joining interstriae 9 at apex ..... 21. **Atenophthalmus fuscojanthinus** (Fairmaire)
21. Body blackish with dark metallic reflections (Fig. 41). Base of head without a dorsal impression at base. Tomentose punctures extending to front of pronotum dorsally, median sulcus narrow ..... 14. **Trachelizini** (Undetermined genus and species)
- Body chestnut-brown, without obvious metallic reflections (Figs. 31, 32). Base of head with a large, tomentose depression dorsally. Anterior third of pronotum without tomentose punctures dorsally, the punctures very fine and scattered, median sulcus wide ..... 22. **Eubactrus semiaeneus** Lacordaire

## CHECKLIST OF FIJIAN BRENTIDAE

### Subfamily Cyladinae

#### 1. *Cylas formicarius* (Fabricius) (Figs. 8, 27)

*Brentus formicarius* Fabricius, 1798: 174.

This is the notorious sweet potato weevil, an important pest of *Ipomoea batatas*, the sweet potato, and related wild species of *Ipomoea* (Convolvulaceae). As a result of introductions, it has a circumtropical distribution. The feeding activities of the larvae can render the tubers inedible to both humans and cattle. Waterhouse & Norris (1987) give an account of its biology, pest status, natural enemies and control measures, and Zimmerman (1994) gives further details.

*Material Examined:* FIJI: **Viti Levu:** Sigatoka Prov., Sigatoka Sand Dunes N.H.P, 177°30'E, 18°10'S, 10 m, Malaise, 1–13 Dec 2003, M. Irwin, E. Schlinger, M. Tokota'a (1) [FB036150] (BPBM); Suva, USP [University of the South Pacific], swept on waste ground, 1 Apr 1985, 22 Oct 1988, 6 Nov 1988, R.A. Beaver (3) (RAB).



## Subfamily Brentinae

## Tribe Arrhenodini

2. *Anomobrenthus hamatirostris* Fairmaire

(Figs. 16–18)

*Anomobrenthus hamatirostris* Fairmaire, 1881a: 349.

Recorded from Fiji and Vanuatu (Damoiseau, 1989b; Sforzi & Bartolozzi, 2004). The species has been collected on the islands of Ovalau, Taveuni, Vanua Levu and Viti Levu. One male and two females were collected on the bark of a small felled tree (*Commersonia bartramia* - Sterculiaceae) in the Namosi area of Viti Levu by RAB. The species was common in Malaise traps of the Fiji Arthropod Survey. Damoiseau (1989b: 55, Fig. 6) provided a dorsal view of the male.

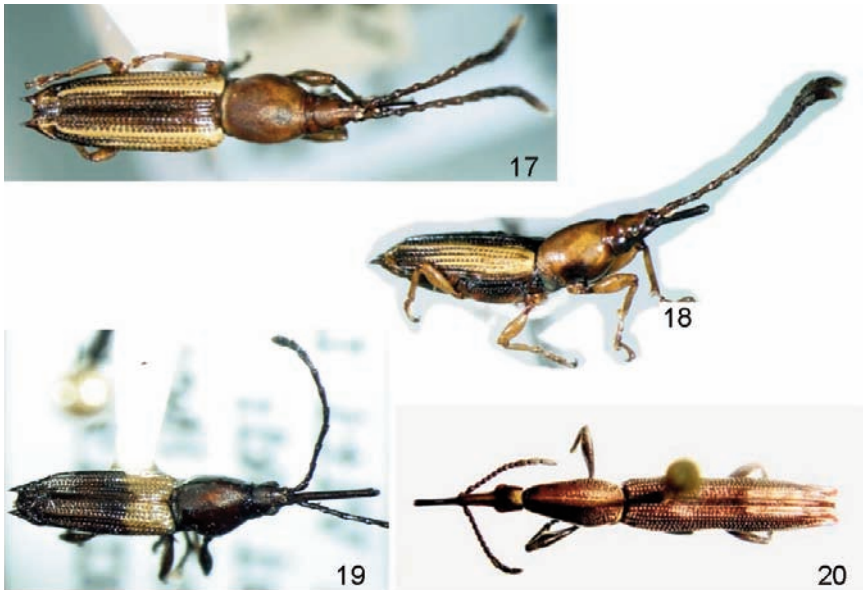
*Material Examined:* FIJI: **Ovalau:** Dreiba Trail, 800–1000 ft [244–305 m], ferns, 8 Jul 1938, E.C. Zimmerman (1). **Taveuni:** Devo Forest Reserve, 179°59'E, 16°50'S, 800m, Malaise, 10–17 Oct 2002, M. Irwin, E. Schlinger, M. Tokota'a (2) [FBA008376–008377]; Tavuki Village, Mt. Devo, 16.837°S, 179.973°W, 892 m, Malaise, 14–31 Jul 2004, E.I. Schlinger, M. Tokota'a (1) [FBA1515577]; 5.3 km SE Tavuki, Devo Peak, 16.8431°, 179.9681°, 1064 m, Malaise, 10–17 Oct 2002, Schlinger, Tokota'a (5) [FBA052829–052823]; 3.2 km NW Lavena Vlg., Mt. Koronibuabua, 16.855°S, 179.89°W, 217 m, Malaise, 24 Oct–4 Nov 2003, Schlinger, Tokota'a (1) [FBA153650]. **Vanua Levu:** Batiqere Range, 6 km NW Kilaka Village, 16.807°S, 178.988°E, 154 m, Malaise, 28 Jun–2 Jul 2004, Schlinger, Tokota'a (5) [FBA156308–156312]; Kilaka, 178°59'290"E, 16°48'412"S, 154 m, Malaise, 28 Jun–21 Jul 2004, M.E. Irwin, E. Schlinger, M. Tokota'a (2) [FBA029014–029015]; as previous except: 178°59'017"E (1) [FBA048741]; Savusavu, 100 m, Mar 1978, N.L.H. Krauss (1). **Viti Levu:** Colo-i-Suva, 29 Jun 1924, E.H. Bryan, Jr. (2); Colo-i-Suva, beating, 27 Jul 1938, E.C. Zimmerman (1); Nadarivatu, 3700 ft [1128 m], beating shrubbery, 10 Sep 1938, E.C. Zimmerman (1); Rdg W of Nadarivatu, 2800 ft [853 m], beating shrubs, 11.ix.1938, E.C. Zimmerman (1); Rdg. W of Vatuthere, Nadarivatu, 2600–3000 ft [792–914 m], beating shrubbery, 8 Sep 1938, E.C. Zimmerman (1); Namosi Rd, 3 km N Queen's Bay, 100 m, 3–7 Nov 1981, W.C. Gagné (1); Navai, Jan 1951, N.L.H. Krauss (1); Navai Mill, nr. Nadarivatu, beating, 2700 ft [823 m], 7 Sep 1938, E.C. Zimmerman (1); as previous except: 2500 ft [762 m], 15 Sep 1938 (3); as previous except: 17 Sep 1938 (1); Nakobalevu Mt, logging rd behind Suva, 178°25'E, 18°03'S, 340 m, Malaise, 22 Sep–9 Oct 2002, M. Irwin, E. Schlinger, M. Tokota'a (1) [FBA008948]; as previous except: Radio towers nr. Suva, 450 m (1) [FBA008221]; Navai Village, Eteni, 17°37'S, 177°59'E, 70 m, Malaise, 15 May–2 Jun 2003, M. Irwin, E. Schlinger, M. Tokota'a (1) [FBA041795]; as previous except: 7–26 Jan 2004 (4) [FBA044920–044923]; as previous except: 13–18 Feb 2004 (1) [FBA039512]; Sigatoka Sand Dunes N.P., 177°28'96.7"E, 18°09'93.9"S, 4 m, Malaise, 24 Nov–16 Dec 2003, M. Irwin, E. Schlinger, M. Tokota'a (1) [FB030444]; Koroyanitu N.H.P., Abaca Village, 17°40'S, 177°33'E, 400 m, Malaise, 21 Sep–7 Oct 2002, M. Irwin, E. Schlinger, M. Tokota'a (1) [FBA008232]; Koroyanitu Pk, 1 km E Abaca Vlg, Savuione Trl, 17°667'S, 177°55'E, 800 m, Malaise, 12–19 Oct 2002, Schlinger, Tokota'a (1) [FBA156182]; as previous except: near Abaca Vlg, 18 Oct–13 Dec 2003 (or 2004?) [sic] (1) [FBA166802] (all BPBM); Namosi Rd, on *Commersonia bartramia* trunk, 9 Mar 1985, R.A. Beaver (3) (RAB).

3. *Anomobrenthus kuscheli* Damoiseau

(Fig. 19)

*Anomobrenthus kuscheli* Damoiseau, 1989b: 55.

The species is endemic to Fiji, and is known only from Viti Levu. It may be noted here that there is an error in Damoiseau's (1989b) key to and description of the species. In the key to distinguish *A. kuscheli* from *A. hamatirostris*, and in the description, Damoiseau



**Figures 17–20.** *Anomobrenthus hamatirostris* (17. Male dorsal view, 18. Male lateral view). Dorsal view (19. Male *Anomobrenthus kuscheli*. 20. Female *Atenophthalmus fuscojanthinus*).

states that the apical part of the elytra is yellow or yellow-orange, and the basal part shining brown-black. The holotype of the species in NZAC is damaged (W. Kuschel, personal communication, 2005), but we have been able to examine conspecific male and female, and photographs of male and female paratypes of the species kindly sent by Dr. A. Sforzi. These clearly show a reverse pattern of elytral colouration, with the basal third yellow and the apical two-thirds dark brown. The distinction is weak in a very small specimen, but the identity of the species can be confirmed by the carinate interstriae 5 on the posterior part of the elytral disc.

*Material Examined:* FIJI: **Viti Levu:** Belt Rd, 20 mi [32 km] W of Suva, beating shrubs, 23 Jul 1938, E.C. Zimmerman (1) (BPBM); Namosi Rd, 15 km N Queen's Bay, on *Cyathea*, 3–7 Nov 1981, W.C. Gagné (1) (BPBM).

**Subfamily Cyphagoginae**  
**Tribe Cyphagogini**

**4. *Callipareius planitarsus* (Perroud & Montrouzier)**  
(Figs. 11, 24)

*Diastrophus planitarsus* Perroud & Montrouzier, 1865: 142.

Specimens varying from 3.0 mm (male) to 7.8 mm (female) in length have been examined. It is well known that intraspecific variation in size can be very large in brentids, related to environmental conditions during larval development (Johnson, 1982; Sforzi &



Figures 21–23. *Bulbogaster ctenostomoides* (21. Female dorsal view, 22. Male dorsal view). 23. Male dorsal view of *Bulbogaster juncea*.

Bartolozzi, 2004). The morphology of the species suggests that it could be a brood parasite of ambrosia beetles of the curculionid subfamilies Platypodinae and/or Scolytinae.

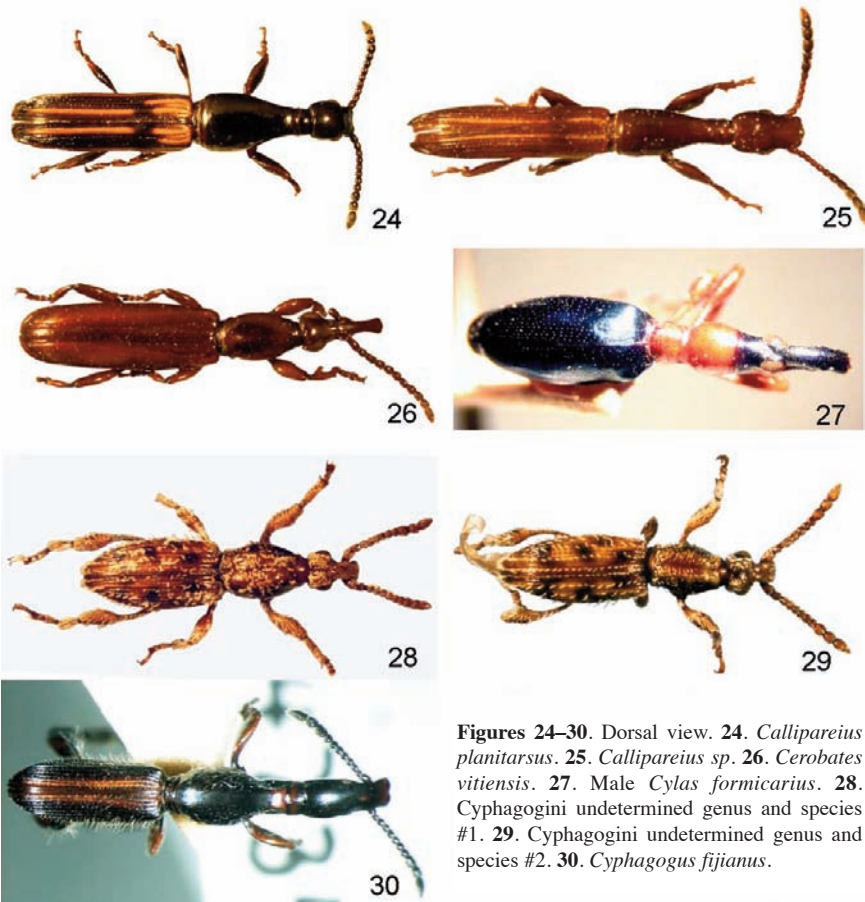
*Material Examined:* FIJI: **Kadavu:** Solodamu, 19°04'S 178°07'E, 128 m, Malaise in coastal limestone forest, 25 Aug–23 Oct 2003, M. Irwin, E. Schlinger, M. Tokota'a (2) [FBA017399]. **Taveuni:** Waiyevo, 0–100 m, Jan 1972, N.L.H. Krauss (1) (all BPBM). **Viti Levu:** Savura Ck, Malaise trap, 14–20 Sep 1981, 21–27 Sep 1981, 4–11 Oct 1981, R.A. Beaver (3) (RAB).

##### 5. *Callipareius* sp.

(Fig. 25)

A single male specimen of a species of *Callipareius* was caught on Viti Levu. It probably belongs to a new species, but further studies on the genus are needed to confirm its status.

*Material Examined:* FIJI: **Viti Levu:** Savura Ck, Malaise trap, 14–20 Sep 1981, R.A. Beaver (1) (RAB).

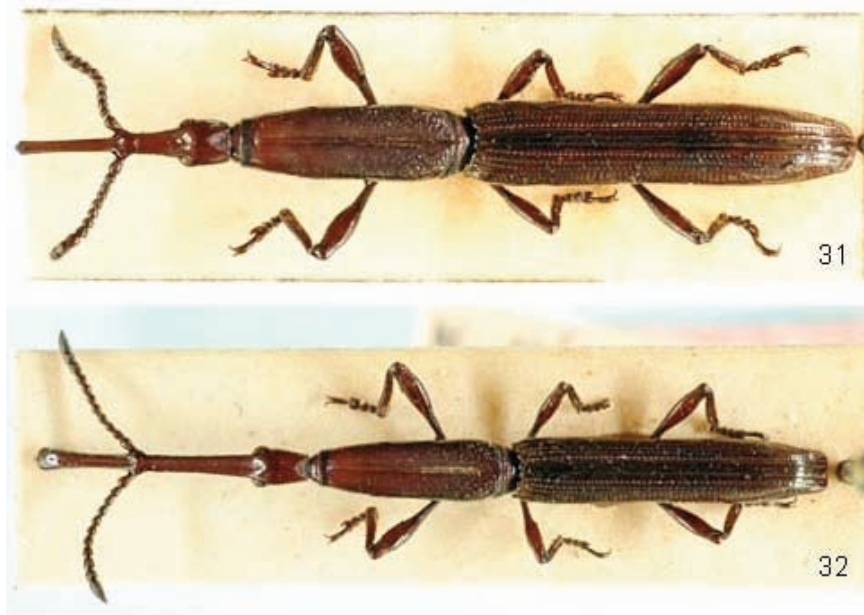


**Figures 24–30.** Dorsal view. 24. *Callipareius planitarsus*. 25. *Callipareius* sp. 26. *Cerobates vitiensis*. 27. Male *Cylas formicarius*. 28. Cyphagogini undetermined genus and species #1. 29. Cyphagogini undetermined genus and species #2. 30. *Cyphagogus fijianus*.

6. *Cyphagogus fijianus* Kleine  
(Fig. 30)

*Cyphagogus fijianus* Kleine, 1928a: 48.

The species is endemic to Fiji, where it has been recorded from Viti Levu and Taveuni (Damoiseau, 1989a). It was redescribed by Damoiseau (1989a). The species was collected by RAB most frequently in a Malaise trap in the rain forest at Savura Creek, close to Suva, but also on the bark of *Myristica chartacea* (Myristicaceae) investigating the entrance to scolytine weevil galleries. It is more commonly associated with the galleries of platypodine weevils, and Roberts (1977) recorded it as a probable nest parasite of *Crossotarsus externedentatus* (Fairmaire) and *Platypus yasiyasi* Roberts. Although Roberts (1977) did not observe breeding, he noted that the male platypodine, which usually remains close to the entrance of the gallery system, was missing when *C. fijianus* was



**Figures 31–32.** Dorsal view. **31.** Female *Eubactus semiaeneus*. **32.** Male *Eubactus semiaeneus*.

found in the gallery, and implies that it was killed or displaced by the brentid. The species has also been found associated with the following tree species (Roberts, 1977): *Canarium vitiense* (Burseraceae), *Cleistocalyx* sp. and/or *Syzygium* sp. (Myrtaceae), *Palaquium hornei* (Sapotaceae), and *Trichospermum richii* (Tiliaceae).

*Material examined:* FIJI: **Viti Levu:** Navai village, Eteni, 17°37'S, 177°59'E, 700 m, Malaise, 24 Oct–8 Nov 2003, M. Irwin, E. Schlinger, M. Tokota'a (1) [FBA036823]; Sigatoka Sand Dune N.P., 18°09'93.9"S, 177°28'96.7"E, 4 m, Malaise, 24 Nov–18 Dec 2003, (same collectors) (7) [FBA156205–156210]; Koroyanitu N.H.P., 17°40'S, 177°33'E, 400 m, Malaise, 21 Sep–7 Oct 2002, (same collectors) (1) [FBA008231] (all BPBM); Savura Ck, Malaise trap, various dates from 4–10 Jun 1981 to 22 Feb 1985, R.A. Beaver (32) (all RAB).

### 7. *Microsebus fijianus* (Damoiseau)

(Fig. 37)

*Eusebus fijianus* Damoiseau, 1989a: 156.

The species is endemic to Fiji and known only from Viti Levu. It was transferred to *Microsebus* by Sforzi and Bartolozzi (2004). We examined the female holotype (NZAC) collected on *Albizzia falcataria* (Leguminosae) at Colo-i-Suva near Suva (Damoiseau, 1989a). It is likely that it is a nest parasite of platypodine weevils. Damoiseau (1989a:156, Fig. 11) illustrated the species.

*Material Examined* (in addition to holotype): FIJI: **Viti Levu:** 40 km. E of Nadi, 26 Jul 1967, J. & M. Sedlacek (1) (BPBM); Savura Ck, 25–30 Jun 1981; 1–7 Sep 1981, R.A. Beaver (2) (RAB).





33



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35



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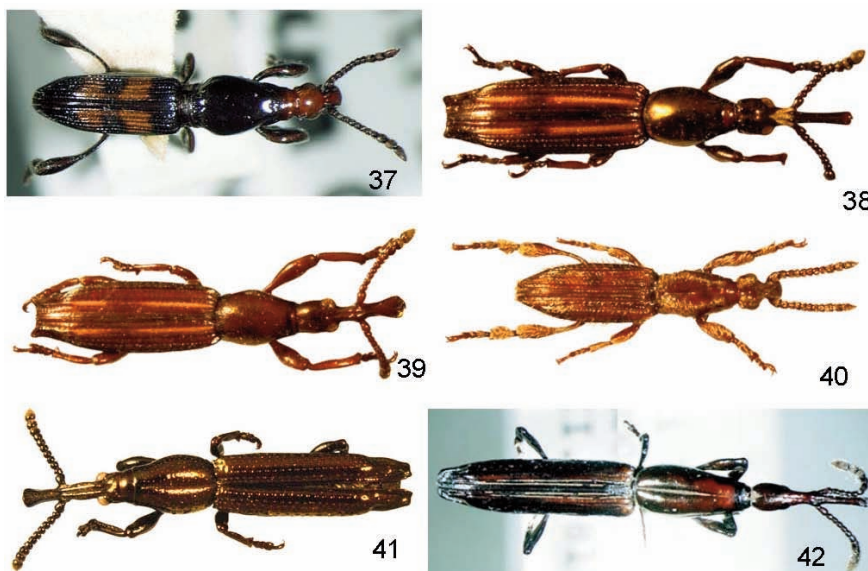
Figures 33–36. Dorsal view. 33. Ithystenini undetermined genus and species. 34. *Ithystenus nigrosulcatus*. 35. Male *Ithystenus* sp. 36. Female *Ithystenus* sp.

#### 8. *Nesidiobrentus* sp.

(Fig. 40)

This species is related to *Nesidiobrentus samoanus* (Kleine) from Samoa, but probably represents a new species. It is left undescribed until further studies can be undertaken.





**Figures 37–42.** Dorsal view. **37.** *Microsebus fijianus*. **38.** Female *Miolispa metallicollis*. **39.** Male *Miolispa metallicollis*. **40.** *Nesidiobrentus* sp. **41.** Trachelizini undetermined genus and species. **42.** Male *Tracheloschizus castaneicolor*.

*Material Examined:* FIJI: **Moala:** 12 Jul 1924, E.H. Bryan, Jr. (1). **Viti Levu:** Korovou, Tailvu, at light, 24 Sep 1937, J.M. Valentine (1); Rewa, Apr 1906, Muir (1) (all BPBM); Savura Ck, Malaise trap, 9–12 May 1981, 1–7 Sep 1981, 8–13 Sep 1981, R.A. Beaver (3) (RAB).

### 9. Cyphagogini (Undetermined genus and species #1)

(Fig. 28)

The present species can not be satisfactorily included in any of the known genera of the tribe Cyphagogini. Despite the papers of Damoiseau (e.g. 1964, 1971a, 1979, 1989a) on the tribe, the present division into genera is unsatisfactory. We prefer to leave the species undescribed until further studies on it and other Cyphagogine genera can be undertaken. It has been included in the key so that it may be recognised if further specimens are found.

*Material Examined:* FIJI: **Kadavu:** Solodamu, 19°04'S 178°07'E, 128 m, Malaise in coastal limestone forest, 23 Oct–19 Dec 2003, M. Irwin, E. Schlinger, M. Tokota'a (1) [FBA044183]. **Taveuni:** Soqulu Hills, 300 m, 2 Oct 1979, M. Kamath, S.N. Lal, G.A. & S.L. Samuelson (1). **Viti Levu:** Belt Road, 20 mi W of Suva, beating shrubs, 23 Jul 1938, E.C. Zimmerman (1); Kalekana to Mt. Korobaba (nr. Lami), 10–250 m, dried leaves on dead tree, 30 Sep 1979, G.A. & S.L. Samuelson (1); Nadarivatu, Rdg W of, 2600–3000 ft [792–914 m], beating shrubbery, 9 Sep 1938, E.C. Zimmerman (1); Nausori, on noni, 24 Mar 1905 [no collector] (1); 3.8 km N Veisari, Waivudawa Logging Rd, 18.0792[°S], 178.3625[°E], 300 m, Malaise, 25 Apr–25 May 2003, Schlinger, Tokota'a (1) [FBA054962]; Colo-i-Suva, beating, 27 Jul 1938, E.C. Zimmerman (2) (all BPBM); Savura Ck, Malaise trap, 22–28 Jul 1981, 30 Apr 1983, R.A. Beaver (2) (RAB).

### 10. *Cyphagogini* (Undetermined genus and species #2)

(Fig.29)

This species is also left unidentified within the tribe *Cyphagogini* until further revisionary work can be undertaken.

**Material Examined:** FIJI: **Viti Levu:** Galoa, ex *Syzygium* sp., 8–9 Oct 1988, R.A. Beaver (1); Namosi, 13 km in, ex *Syzygium curvistylum* log, 24–30 Nov 1981, R.A.Beaver (1) (both RAB).

### Tribe *Stereodermini*

#### 11. *Cerobates vitiensis* Fairmaire

(Figs. 10, 15, 26)

*Cerobates vitiensis* Fairmaire, 1881c: 422.

The species was described from Fiji. The female holotype is located in MNHN and was redescribed by Mantilleri (2005).

**Material Examined:** FIJI: **Viti Levu:** Nausori Highlands, 500–600 m, 1 Oct 70 (N.L.H. Krauss) (16) (BPBM (14), MNHN (1), RAB (1)).

### Subfamily *Trachelizinae*

#### Tribe *Trachelizini*

#### 12. *Miolispa metallicollis* (Fairmaire), **comb.nov.**

(Figs. 38, 39)

*Eubactrus metallicollis* Fairmaire, 1881c: 421.

*Miolispa fijiana* Kleine, 1928b: 55. **Syn. n.**

This is an endemic species which from present records appears to be confined to the higher altitude forests on Viti Levu and Taveuni from 600–1300 m. Fairmaire's description of the species is short, and the location of the type material is unfortunately unknown (Sforzi & Bartolozzi, 2004). *M. metallicollis* appears not to have been recorded again since its description. However, the description applies very well to darker and more metallic specimens of *M. fijiana*, and to no other species known to occur in Fiji. The combination of size, lack of a pronotal groove, impressed striae, presence on interstriae 3 of a narrow elytral vitta interrupted in the middle and at the apex, and other characters all indicate the synonymy of the two species.

**Material Examined:** FIJI: **Taveuni:** 5.5 km SE Tavuki Vlg., Devo Peak, 16.843°S, 179.966°E, 1188 m, 30 Jun–14 Jul 2004, Malaise 1, Schlinger, M. Tokota'a (1) [FBA153181]. **Viti Levu:** Mt. Victoria, Colo North, West slope, 3000 ft [914 m], beating, 10 Sep 1938, E.C. Zimmerman (1); Mt. Victoria, track from Navai, 660–900 m, 2 Jul 1958, B. Malkin (1); Nadarivatu, 800–850 m, 7 Oct 1971, N.L.H. Krauss (1); Navai, Sep 1950, Jan 1951, N.L.H. Krauss (2); Navai mill, nr. Nadarivatu, 2500 ft [762 m], beating, 17 Sep 1938, E.C. Zimmerman (1); Yayu, nr. Nadarivatu, 650 m, 4 Jul 1958, B. Malkin (1) (BPBM, RAB).

#### 13. *Tracheloschizus castaneicolor* (Kleine)

(Fig. 42)

*Schizotrachelus castaneicolor* Kleine, 1933: 326.

This species is endemic to Fiji. It was described (Kleine, 1933) and then listed by Kleine

(1935) as *Schizotrachelus*, but recently transferred to *Tracheloschizus* by Sforzi & Bartolozzi (2004).

*Material Examined:* FIJI: **Kadavu:** Solodamu, 19°04'S, 178°07'E, Malaise in coastal limestone forest, 128 m, 23 Oct–19 Dec 2003, M. Irwin, E. Schlinger, M. Tokota'a (1) [FBA044183] (BPBM). **Ovalau:** Levuka, 0–200m, Dec 1978, N.L.H. Krauss (1). **Viti Levu:** Bulu, Mt Sovi, 21 Apr 1941, N.L.H. Krauss (1); Lami, Mar 1951, N.L.H. Krauss (1); as previous except: Jan 1955 (2); as previous except: Nov 1957 (1); as previous except, 0–20m, Mar 1981 (1); Navai Mill, nr. Nadarivatu, 2500 ft [762 m], under dead bark, 15 Sep 1938, E.C.Zimmerman (1); Rdg. W of Nadarivatu, 2800 ft [854 m], beating shrubbery, 11 Sep 1938, E.C. Zimmerman (1); Koroyanitu N.H.P., Kokabula Trail, 17°40'S, 177°33'E, 400 m, 26 Oct–5 Nov 2002, M. Irwin, E. Schlinger, M. Tokota'a (1) [FBA071833] (all BPBM); Savura Ck, on *Macaranga* sp. leaf, 20 Nov 1981, R.A. Beaver (1); Wailoku, Malaise trap, 13–17 May 1981, R.A. Beaver (1) (both RAB).

#### 14. *Trachelizini* (Undetermined genus and species)

(Fig. 41)

A single male specimen of this unidentified species of *Trachelizini* was collected on Taveuni I. during the Fiji Arthropod Survey.

*Material Examined:* FIJI: **Taveuni:** Taveuni Estate, 16°50'S 179°59'E, 140 m, Malaise in garden, 21–31 Oct 2002, M. Irwin, E. Schlinger, M. Tokota'a (1) [FBA008885] (BPBM).

### Tribe *Ithystenini*

#### 15. *Bulbogaster ctenostomoides* Lacordaire

(Figs. 12, 21, 22)

*Bulbogaster ctenostomoides* Lacordaire, 1866: 467

This is the commoner of the two species of *Bulbogaster* that occur in Fiji. We have seen specimens from the islands of Kadavu, Taveuni, Vanua Levu, and many from Viti Levu. Only those from the first three islands are listed in detail below. The species was redescribed and figured by Damoiseau (1989b). It also appeared on a 20-cent Fijian postage stamp issued in 1987. Although Sforzi & Bartolozzi (2004) indicated that the species is endemic to Fiji, it also occurs in Samoa (see below).

*Material examined:* FIJI: **Kadavu:** Solo Tavine, 23 Apr 1941, N.L.H. Krauss (1); Solodamu, 178°07'E, 19°04'S, 128 m, Malaise in coastal limestone forest, 25 Aug–23 Oct 2003, M. Irwin, E. Schlinger, M. Tokota'a (3) [FBA156191–156192]; 0.25km SW Solodamu Vlg., Moanakaka Bird Sanctuary, 19.078°S, 178.121°E, 60 m, Malaise, 25 Aug–23 Oct 2003., Schlinger, Tokota'a (2) [FBA189554–189555]; Namalata, 178°11'058"E, 19°02'541"S, 100 m, Malaise, 15–28 Jul 2004, M.E. Irwin, E. Schlinger, M. Tokota'a (1); as previous except: 178°11'140"E, 19°02'318"S, 120 m (1) [FBA031852]. **Taveuni:** 5.5 km SE Tavuki Vlg., Devo Peak, 16.843°S, 179.955°W, 1188 m, Malaise, 30 Jun–14 Jul 2004, Schlinger, M. Tokota'a (1) [FBA153180]; Devo Peak, Malaise, 10–16 Jan 2003, M. Irwin, E. Schlinger, M. Tokota'a (1) [FBA038772]; Mt De Voex [= Devo Peak] summit, 1000–1100 m, sweeping, 9 Apr 1981, Pranish (1). **Vanua Levu:** Nakawanga, 9 Oct 1955, J.L. Gressitt (1) Trans-Insular Road, above summit, 500–550 m, forest, 6–9 Oct 1979, S.L. Samuelson (1); as previous except: forest, S.N. Lal, G.A. & S.L. Samuelson (1). **Viti Levu:** (111 specimens from various localities) (BPBM, RAB). SAMOA: **Upolu:** L. Lanoto'o Road, 22 May 1973, R.A. Beaver (1) (RAB).

### 16. *Bulbogaster juncea* Damoiseau

(Figs. 13, 14, 23)

*Bulbogaster juncea* Damoiseau, 1989b: 65.

The species is endemic to Fiji, where it occurs on Kadavu, Vanua Levu and Viti Levu. Damoiseau (1989b) illustrates the species. It is much less common than *B. ctenostomoides*. Damoiseau did not note in his description that, in addition to the tufts of fine hairs on the male mesofemora, there is a large patch of similar hairs on the metasternum, extending from between the mesocoxae for about one-third of its length, and divided posteriorly into lines of hairs on either side of the median sulcus.

*Material Examined:* FIJI: **Kadavu:** Solodamu, 19°04'S, 178°07'E, Malaise in coastal limestone forest, 128 m, 23 Oct–19 Dec 2003, M. Irwin, E. Schlinger, M. Tokota'a (1) [FBA044183] (BPBM); **Viti Levu:** Lami, Mar 1951, N.L.H.Krauss (1); Nadarivatu, 850 m, Malaise trap, 8–13 Mar 1963, C.M. Yoshimoto (1); Nakobalevu Mt, 18°08'S, 178°25'E, 340 m, rainforest, Malaise, 22 Sep–9 Oct 2002, M. Irwin, E. Schlinger, M. Tokota'a (1) [FBA071854]; Colo-i-Suva, under logs, 27 Jul 1938, E.C. Zimmerman (2) (all BPBM); Savura Ck, Malaise trap, 28 May–3 Jun 1981, 11–17 Jun 1981, R.A. Beaver (2); Savura Ck, on bark of *Xylopa pacifica*, 1 Aug 1982, R.A. Beaver (1) (all RAB).

### 17. *Ithystenus nigrosulcatus* Fairmaire

(Fig. 34)

*Ithystenus nigrosulcatus* Fairmaire, 1881c: 421.

The species is known from Fiji and Vanuatu (Sforzi & Bartolozzi, 2004). The species is easily recognised within the genus *Ithystenus* by the colouration of the pronotum: dark brown to black below and with a lighter reddish brown band on each side of the broad, black sulcus. Two specimens were found on the bark of *Syzygium* sp. (Myrtaceae) on Viti Levu.

*Material Examined:* FIJI: **Kadavu:** Namalata, 19°02'318"S, 178°11'140"E, 120 m, Malaise, 15–28 Jul 2004, M.E. Irwin, E. Schlinger, M. Tokota'a (1) [FBA031506]; Solodamu, 19°04'S, 178°07'E, Malaise in coastal limestone forest, 25 Aug–23 Oct 2003, (same collectors) (1 [FBA156193]). **Ovalau:** Adubangda, 1000–1500 ft [305–457 m], beating, 18 Jul 1938, E.C. Zimmerman (1). **Taveuni:** Koronibuabua, 16°51'283"S, 179°53'436"E, 233 m, Malaise, 11–26 Mar 2004, M. Irwin, E. Schlinger, M. Tokota'a (1) [FBA045308]. **Viti Levu:** Colo-i-Suva, under logs, 27 Jul 1938, E.C. Zimmerman (1) (all BPBM); Savura Ck, Malaise trap, 6–10 Aug 1981, 7–12 Nov 1981, R.A. Beaver (3); Savura Ck, on *Syzygium* sp. bark, 9 Dec 1981, R.A. Beaver (2) (all RAB).

### 18. *Ithystenus* sp.

(Figs 35, 36)

Thirteen specimens (6 males, 7 females) of an undetermined species of the large genus *Ithystenus* were studied. The species appears to be widespread, occurring on Kadavu, Taveuni, Vanua Levu and Viti Levu islands, but not very common. We have not been able to verify if it has been described previously. A revision of the genus is required.

*Material Examined:* FIJI: **Kadavu:** Namalata, 19°02'453"S, 178°11'050"E, 100 m, Malaise, M.E. Irwin, E. Schlinger, M. Tokota'a (1) [FBA051757]. **Taveuni:** 5.6 km SE of Tavuki village, 16.843°S, 179.965°E, 1187 m, rainforest, Malaise, 3–10 Jan 2003, Schlinger, Tokota'a (1) [FBA058778]. **Vanua Levu:** 0.6 km S of Rokosalase Village, 16.5333°S, 179.0181°E, 180 m, Malaise in forest, Schlinger, Tokota'a (1) [FBA055569]. **Viti Levu:** Belt Rd, 9 mi [15 km] W Suva, beating shrubs, 29 Jul 1938, E.C. Zimmerman (1); Lami, Mar 1951, N.L.H. Krauss (1); Lami, 20–200 m, Mar 1976, N.L.H. Krauss

(1); Nadarivatu, 3000 ft [914 m], beating shrubbery, 3 Sep 1938, E.C. Zimmerman (1); Navai Mill, nr. Nadarivatu, 2500 ft [305 m], beating, 15 Sep 1938, E.C. Zimmerman (1); Colo-i-Suva, under logs, 27 Jul 1938, E.C. Zimmerman (2); Tomaniivi summit, 1350 m, 17.6148[S], 178.0182[E], beating vegetation, 30 Nov 2002, D. Gruner (1) (all BPBM); Namosi Rd 6 km, 6 Nov 1981, R.A. Beaver (1); Nukuraa, light trap, 27 Oct 1987, M. Kamath (1) (both RAB).

### 19. *Ithystenini* (Undetermined genus and species)

(Fig. 33)

A single specimen belonging to the tribe *Ithystenini*, which can not at present be placed into a known genus, was collected on the island of Vanua Levu.

*Material Examined:* FIJI: **Vanua Levu:** Mt. Dalaikoro, summit area, 700–790 m, 10 Oct 1979, S.N. Lal, G.A. & S.L. Samuelson (1) (BPBM).

### Tribe *Microtrachelizini*

#### 20. *Aneorhachis fijiana* Mantilleri, n. sp.

(Figs. 1–7)

This is the first species of *Aneorhachis* found in the Pacific region. It has been collected on the islands of Ovalau, Taveuni, Vanua Levu and Viti Levu. One specimen was found on the bark of *Endospermum macrophyllum* (Euphorbiaceae) partly inside a gallery entrance of the scolytine *Eurwallacea destruens* (Blandford) [= *Xyleborus nandarivatus* Schedl]. However, it is not likely to be a predatory species.

*Material Examined* (in addition to types listed above): FIJI: **Taveuni:** 5.5 km SE Tavuki Vlg., Devo Peak, 16.843°S, 179.966°W, 1188 m, 30 Jun–14 Aug 2004, Malaise, Schlinger, M. Tokota'a (1) [FBA153182]. **Viti Levu:** Namosi Rd, 6 km N Queen's Hwy, 250 m, UV light, 3–7 Nov 1981, B.H. & W.C. Gagné (1) (both BPBM); Namosi Rd, 13 km in, ex *Endospermum macrophyllum*, pt in *Xyleborus nandarivatus* gall[ery] s[ystem], 1 Jan 1982, R.A. Beaver (1) (RAB).

### Tribe *Pseudoceocephalini*

#### 21. *Atenophthalmus fuscojanthinus* (Fairmaire)

(Fig. 20)

*Eubactrus fuscojanthinus* Fairmaire, 1881b: 373.

The species is endemic to Fiji, and known only from the island of Viti Levu where it is apparently rare. It was transferred to *Atenophthalmus* Kleine by Damoiseau (1989b), who also redescribed and illustrated the species. A single female was collected on the bark of *Endospermum macrophyllum* (Euphorbiaceae).

*Material Examined:* FIJI: **Viti Levu:** Tailevu, on bark *Endospermum macrophyllum*, 29 May 1973, R.A. Beaver (1) (RAB).

#### 22. *Eubactrus semiaeneus* Lacordaire

(Figs. 9, 31, 32)

*Eubactrus semiaeneus* Lacordaire, 1866: 457.

The species is known from both Fiji and Vanuatu. In Fiji, it is one of the most commonly collected brentid species in the rain forest. We have seen many specimens from the islands

of Kadavu, Ovalau, Taveuni, Vanua Balavu, Vanua Levu, and Viti Levu. The male body length (including rostrum) can reach 48 mm, but the smallest examined male measured only 11.5 mm. Females range from 9.5–40mm. On Viti Levu it was frequently collected by RAB on the bark of *Endospermum macrophyllum* (Euphorbiaceae) and on *Gonystylus punctatus* (Thymelaeaceae), as well as at light, and in a Malaise trap. Roberts (1977) found it frequently breeding in *Myristica castaneifolia* (Myristicaceae) attacked by the platypodine, *Platypus gerstaeckeri* Chapuis, and in *Heritiera ornithocephala* (Sterculiaceae), as well as *E. macrophyllum*. Roberts (1977) gives a brief account of the biology of the species. He notes that both sexes are active during the day, and mating pairs are common in the morning (0900–1200 h). The female lays single eggs, and the larvae bore almost radial galleries 8–20 cm long, and 2–3 mm diameter in the host tree. Although oviposition takes place at about the same time as attacks by *P. gerstaeckeri*, the brentid takes longer to develop and emerges later than the platypodine. Roberts (1977) suggests that the larvae of this species are sometimes so abundant that there may be interspecific competition with the platypodines *P. gerstaeckeri* and *P. vitiensis* Roberts

*Material Examined:* FIJI. **Kadavu:** Wai Salima, 30 Apr 1941, N.L.H. Krauss (1). **Ovalau:** (67 specimens from various localities). **Taveuni:** Somosomo, 0–200 m, Jan 1972, N.L.H. Krauss (3); Taveuni Estate, 179°59'E, 16°50'S, 140 m, Malaise in garden, 10–17 Oct 2002, M. Irwin, E. Schlinger, M. Tokota'a (4) [FBA071772–071775]; as previous except: 31 Oct–21 Oct 2002 [sic] (1) [FBA008885]. **Vanua Balavu:** Loma Loma, 200–500 ft [61–152 m], beating shrubs, 5 Aug 1938, E.C. Zimmerman (1). **Vanua Levu:** Savusavu Bay, Balanga, Feb 1941, O. Degener (2); Savusavu, Mar 1966, N.L.H. Krauss (1); as previous except: 0–100 m, Mar 1978 (1) (all BPBM). **Viti Levu:** (145 specimens from various localities) (BPBM, RAB).

## DELETIONS FROM THE FIJIAN FAUNA

### 1. *Cerobates angustipennis* Senna

*Cerobates angustipennis* Senna, 1895: 182.

*Cerobates adustus* Senna, 1895: 184; Damoiseau, 1987: 70 (synonymy).

This species was listed as occurring in Fiji by Kleine (1935, as *Cerobates adustus*). Consequently Sforzi & Bartolozzi (2004) included Fiji in the distribution of this species. However, the species is known only from Java, Sumatra and Borneo (Mantilleri, 2005), and thus is here removed from the list of Fijian species.

### 2. *Cerobates laevipennis* Senna

*Cerobates laevipennis* Senna, 1896: 219.

*Cerobates aequalis* Kleine, 1922: 203; Damoiseau, 1971b: 270 (synonymy).

This species has a wide distribution from the Indian subcontinent to the Solomon Islands (Sforzi & Bartolozzi, 2004; Mantilleri, 2005). Kabakov (2001) includes Fiji in the species range, but does not list any record from there. As we know of no confirmed published record from the islands, and we have not seen any specimens among several hundreds examined, we believe that Kabakov's (2001) record is in error, and that *C. laevipennis* should be deleted from the list of Fijian species.



### 3. *Ithystenus muelleri* Kleine

*Ithystenus muelleri* Kleine, 1925: 53

The species was described from New Guinea. Sforzi & Bartolozzi (2004) gave the distribution as Fiji, New Guinea, Vanuatu. We have seen no specimens from Fiji, and Sforzi (pers. comm., Nov 2005) confirmed that the record from Fiji was a mistake.

### COMPOSITION OF THE FAUNA

The known brentid fauna of Fiji includes 16 apparently endemic species (73%), 3 species known also from Vanuatu, the island group closest to Fiji to the West (14%), 1 species known also from Samoa to the East, one known also from Australia, New Caledonia, New Guinea, and Vanuatu, and a single species, *Cylas formicarius*, with a wider distribution, introduced by man to Fiji with the sweet potato. All species except *C. formicarius* are presumed to be native to Fiji. Only four subfamilies [of nine recognised by Sforzi & Bartolozzi (2004)], and seven tribes are present (the Cyladinae includes only a single genus, and no tribal level is recognised). Of the 299 genera of Brentidae recognised by Sforzi & Bartolozzi (2004) worldwide, only 14 are certainly present in Fiji. This rather depauperate fauna with a high proportion of endemic species is what might be expected for a rather isolated island group. The fauna clearly originated from the West, and the closest affinities of most endemic species appear to be with species present in Vanuatu or the Solomon Islands. These island groups were probably in close proximity to Fiji until the late Miocene period (Burrett *et al.*, 1991), and this would have allowed relatively easy movement of flying insects between them. Later, the island groups rifted apart, and dispersal became more difficult. Further evolutionary changes are presumed to have continued within the Fijian archipelago giving rise to the many endemic species found today.

### BIOLOGY

When the Cyladinae are included, the brentids can be divided into four ‘biological groups’ (Beeson, 1961; Zimmerman, 1994; Sforzi & Bartolozzi, 2004). In the ‘true wood borers’, the female usually lays eggs in the sapwood, and the larvae develop in tunnels that they bore in the wood. It is likely that they feed largely on fungi growing on the walls of these tunnels, although sap may also be ingested. Pupation occurs in the larval tunnel, usually close to the original opening of the tunnel at the oviposition site, and the adult bites its way out to the exterior. The second group consists of ‘aggressors’ which exploit the tunnels of other wood-boring insects, often Scolytinae or Platypodinae, sometimes ejecting (and perhaps killing) the original occupants, and causing the death of their brood. Their eggs are laid in the walls of the tunnel, and the brentid larvae bore short tunnels into the surrounding wood. It is likely that the larvae feed largely on fungi growing on the wood. The new generation of adults emerges via the original wood-borer’s tunnel. In the third group, the Cyladinae, both larvae and adults feed on the living tissue of stems and tubers of *Ipomoea* and related Convolvulaceae. The fourth group comprises myrmecophile species, whose adults live in association with ants, and possibly with other social insects (Isoptera and Hymenoptera).

Only three of the four biological groups are present in Fiji. The species of *Callipareius*, *Cyphagogus* and *Microsebus* and the other unidentified species of the tribe Cyphagogini are all likely to be ‘aggressors’ taking over the galleries of platypodine or scolytine weevils. *Cylas formicarius* develops in the living tubers of the sweet potato, although the adults may also feed on the stems and leaves. The remaining species most probably belong to the ‘true wood-borers’ group. Myrmecophile species are not known from Fiji at present.

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