

## A New Species of *Microsania* Zetterstedt from Fiji (Diptera: Platypezidae)<sup>1</sup>

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**Abstract.** *Microsania fijiensis*, n. sp. (Diptera: Platypezidae) is described and illustrated. This represents the first record of the genus and family from Fiji. The key to Oriental and Australasian *Microsania* is updated.

### INTRODUCTION

This paper describes a species of Fijian *Microsania* Zetterstedt collected by the Terrestrial Arthropod Survey of Fiji. The Platypezidae from the Australasian Region were revised by Chandler (1994), and species of *Microsania* were recorded from Australia, New Zealand, Papua New Guinea, Philippines, Sri Lanka and Vanuatu. This marks the first record of the family from Fiji.

*Microsania* is practically cosmopolitan in distribution, with 21 described species (Thompson 2006). They occur in a variety of habitats, including boreal forests, dry sclerophyll and tropical forests. Species of this genus are known as “smoke flies”, because of their attraction to smoke of wood fires (Chandler & Shatalkin 1998; Chandler 2001). All investigated species are attracted to smoke and are rarely found elsewhere. In the wet tropics where non-anthropogenic smoke would be extremely rare, there are presumably other swarm attractants, but this remains unknown. Chandler (2001) reported rare observations in Europe of swarming without presence of smoke, including a case where the topmost branches of a tree were used as a marker. Other Platypezidae develop in fungi but the development of *Microsania* has not been recorded, so whether the attraction to smoke has any bearing on this is also unknown.

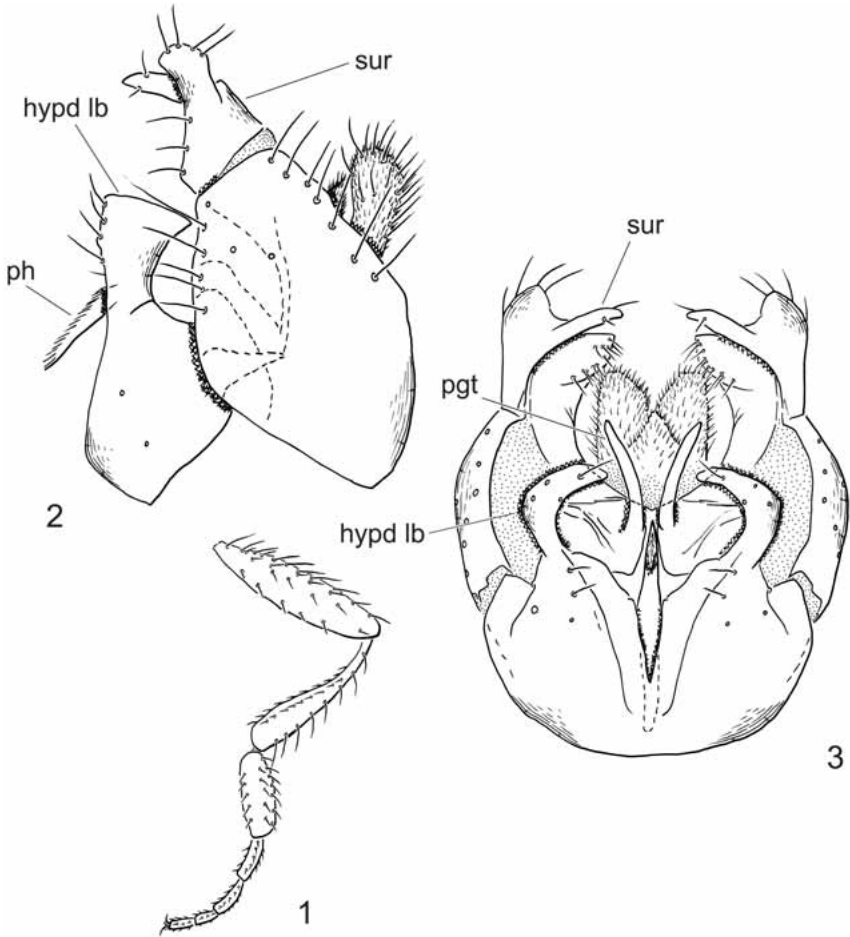
### MATERIALS AND METHODS

This study is based on material from the Fiji Arthropod Survey funded by NSF and the Schlinger Foundation, types and vouchers of which will be deposited in the National Insect Collection (FNIC), Suva. Terms used for adult structures primarily follow McAlpine (1981), except male terminalia where terms of Sinclair (2000) are used.

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**Figures 1–3.** *Microsania fijiensis*. 1. Male hind leg; 2. Male terminalia, lateral view; 3. Male terminalia, ventral view. Abbreviations: hypd lb – hypandrial lobe; pgt – postgonite; ph – phallus; sur – surstylus.

## SYSTEMATICS

### *Microsania* Zetterstedt

*Microsania* Zetterstedt, 1837: 30. Type-species, *M. stigmatalis* Zetterstedt (= *Cyrtoma pectipennis* Meigen, 1830) (monotypy).

**Diagnosis.** This genus is distinguished from other platypezids except the Nearctic genus *Melanderomyia* Kessel by the absence of crossvein dm-cu and from all except *Melanderomyia*, *Platypezina* Wahlgren and *Grossoseta* Kessel & Kirby by the presence of a stigma extending beyond vein  $R_1$  on the costa. It differs from these three genera in the stigma extending only narrowly beyond vein  $R_1$  and from *Melanderomyia* it also dif-

fers in having  $M_{1+2}$  forked but the anterior branch incomplete basally (Chandler 1994, 2001).

*Microsania fijiensis* Sinclair & Chandler, **new species**

(Figs. 1–3)

**Diagnosis.** This species is characterized by the trilobed surstylus with its slender pointed central lobe. It is distinguished from *M. unicornuta* Chandler by the medially arched hypandrial lobes when viewed ventrally.

**Description. Male. Head.** Postorbitals and occipitals pale.

**Thorax.** Chaetotaxy dark; 3 notopleural bristles.

**Legs.** Pale in contrast to thorax. Fore femur and tibia with short setae; posteroventral bristle on mid tibia less than half first tarsomere length. Hind leg (Fig. 1): femur with dorsal setae slightly shorter than femoral depth; tibia somewhat arched on basal half, progressively broadened apically, with approximately 8 stronger dorsal setae in series (at most only subequal to apical width of tibia); first tarsomere (basitarsus) slightly broader than tibia.

**Wing** (length 1.9 mm). Whitish, stigma yellowish. Halter light brown.

**Abdomen.** Setae of tergites dark. **Terminalia** (Figs. 2, 3): Surstylus trilobed, with broad flattened pair of outer lobes and central, slender pointed lobe directed perpendicular to outer lobes. Hypandrial lobe arched medially and tapered to rounded apex in ventral view; apex shallowly forked or bilobed in lateral view. Postgonite slender, arched gradually with narrow apex.

**Female.** Unknown.

**Type.** Holotype male (FBA 139604): FIJI: **Kadavu**: 0.25 km SW Solodamu Vlg., Moanakaka Bird Sanctuary, 60 m, 9–15.Feb.2003, Malaise 1, Schlinger, Tokota’a, 19.078°S, 178.121°E. Holotype to be deposited in FNIC.

**Etymology.** The specific name is in reference to the type locality.

**KEY TO MALES OF *MICROSANIA***

The key to Oriental and Australasian species of *Microsania* presented in Chandler (1994) is modified as follows to include *M. fijiensis*.

- 5. Hind tibia with 4 longer bristles in series; its first tarsomere (basitarsus) broadest near base. Surstyli with outer and middle lobes curved and pointed ..... **albani** Chandler
- Hind tibia with 6–8 longer bristles in series; its first tarsomere more evenly broadened at mid length. Surstyli with slender straight pointed lobe, lateral lobes broadly rounded ..... 5a
- 5a. Hypandrial lobes gradually arched medially in ventral view ..... **fijiensis** Sinclair & Chandler, **n. sp.**
- Hypandrial lobes strongly arched medially and with outer lateral projection ..... **unicornuta** Chandler

**DISCUSSION**

Little can be said of the habits of this species because it is based on a single male specimen. Further collection efforts are required, especially using wood smoke to attract additional specimens. The specimen was collected during the middle of the wetter season on

Kadavu, a mid-sized island (408 km<sup>2</sup>), which lies some 80 km to the south of the largest island, Viti Levu. The local habitat where this species was collected is a coastal limestone forest, with periods of moderate moisture to almost dry. The few running streams are mostly intermittent, flowing when there is wet weather (Evenhuis pers. comm. 2006).

This species is most closely related to *M. unicornuta* from Papua New Guinea. This sister group pairing is supported on the basis of the uniquely shaped surstylus, which bears a long slender pointed lobe medially. In fact, there is very little difference between these two species. Evenhuis & Bickel (2005) stated that this western Pacific affinity is the dominant pattern for the Fijian flora and very common among arthropod groups. The species from Vanuatu, *M. hebridensis* Chandler, is related to *M. arthuri* Chandler (Australia, Papua New Guinea) and *M. tonnoiri* (New Zealand) (Chandler 1994).

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