

A curious new species of Hawaiian *Campsicnemus* with modified hind legs (Diptera: Dolichopodidae)¹

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Abstract. A new species of endemic Hawaiian *Campsicnemus*, *C. anfractus*, n. sp., from the Big Island of Hawai‘i is described and illustrated. It is the only species in Hawai‘i with modified hind tibiae.

The genus *Campsicnemus* Haliday in Hawai‘i is currently known from 187 species (all endemic) and distributed on all the main islands (Evenhuis, unpubl.). Recent collecting on the Kona side of the Island of Hawai‘i recovered an unusual specimen with modified hind legs. Most Hawaiian and French Polynesian species of the genus have the midlegs modified with a few also having the hind femur modified. However, no known species have the most distinctive modifications on the hind tibia. The species, *Campsicnemus anfractus*, n. sp. is described and illustrated below. The new species does not fit into any of the species groups that have been found in Hawai‘i or French Polynesia (which are based primarily on mid-leg modifications) (cf. Evenhuis 2008, 2009, 2012, 2013, 2016; Goodman *et al.* 2014), thus it is here treated as *incertae sedis* within the Hawaiian *Campsicnemus*.

MATERIAL AND METHODS

Material derives from Malaise trap collecting conducted in the Papa area of South Kona on the Island of Hawai‘i. The holotype is deposited in the Bishop Museum (BPBM). Photographic images were accomplished by obtaining a series of stacked images using a Leica M165C stereo dissecting scope via the Leica Microsystems LASX Multifocus software (v. 3.0.14.23224) and using Zerene Stacker[®] stacked focusing software (v. 1.04) (Zerene Systems, LLC, Richmond, Washington, USA) to align and stack-focus each final image.

Morphological terminology, description format, and abbreviations used in the description follow Evenhuis (2012).

TAXONOMY

Campsicnemus Haliday

Campsicnemus Haliday in Walker, 1851: 187. Type species: *Dolichopus scambus* Fallén, 1823, by validation of I.C.Z.N., 1958: 351. *Nomen protectum* (see Evenhuis, 2003: 3).

Campsicnemus anfractus Evenhuis, new species

(Figs. 1–6)

Type. Holotype male (BPBM ENT 0000081261) from Hawaiian Islands: **Hawai‘i:** Pāpā mid road, 1,230 m, 19.2118°N, 155.8169°W, 4 Aug 2022, K.N. Magnacca, Townes Malaise trap, H22080401-102. holotype in BPBM.

1. Contribution No. 2023-001 to the Hawaii Biological Survey.

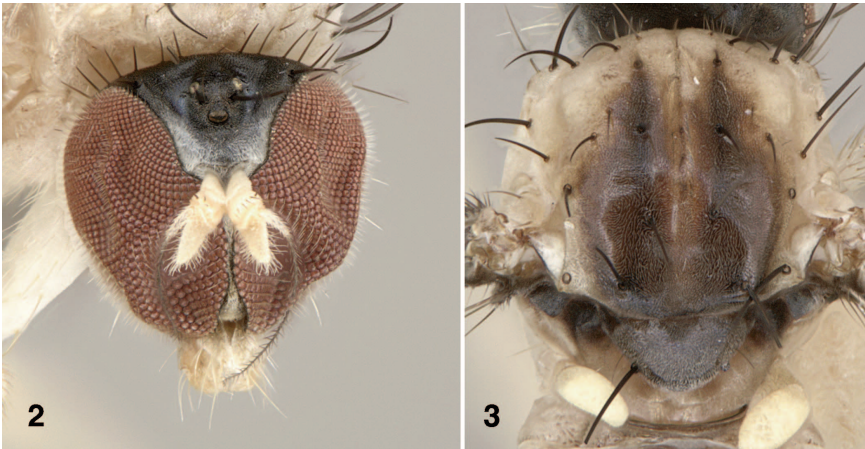


Figure 1. *Campsiconemus anfractus*, n. sp., male, habitus, lateral.

Diagnosis. Easily separated from the congeners in Hawai‘i by the strongly sinuate hind tibia (other species in Hawai‘i do not have this modification on the hind tibia).

Description. Male (Fig. 1). Body length: 2.5 mm. Wing length: 2.8 mm.

Head (Fig. 2). Black; oc and vt black, about one-half length of antennal arista; frons black with silvery tomentum laterally, tomentum extending almost to middle; face constricted at middle, eyes holoptic, contiguous below antennae for length of 6 ommatidia; palp small, white; proboscis pale brown, extending below eye in lateral view; antennal segments white; postpedicel linear-lanceolate, length about 3× greatest width; arista slightly longer than head height, basally pale yellow, brown distally.



Figures 2–3. *Campsicnemus anfractus*, n. sp. **2**, Head, frontal. **3**, Thorax, dorsal.

Thorax (Fig. 3). Dorsum of mesoscutum, scutellum, and mediotergite shiny; mesoscutum yellow with brown on posterior half, broadly extending anteriorly along line of dc; scutellum dark brown; mediotergite pale brown; pleura white except anatergite black; thoracic setae long, strong, black: 3 dc; 2 np; 2 ph; 1 pa; 1+1 sc; 5 ac; halter stem and knob pale yellowish white.

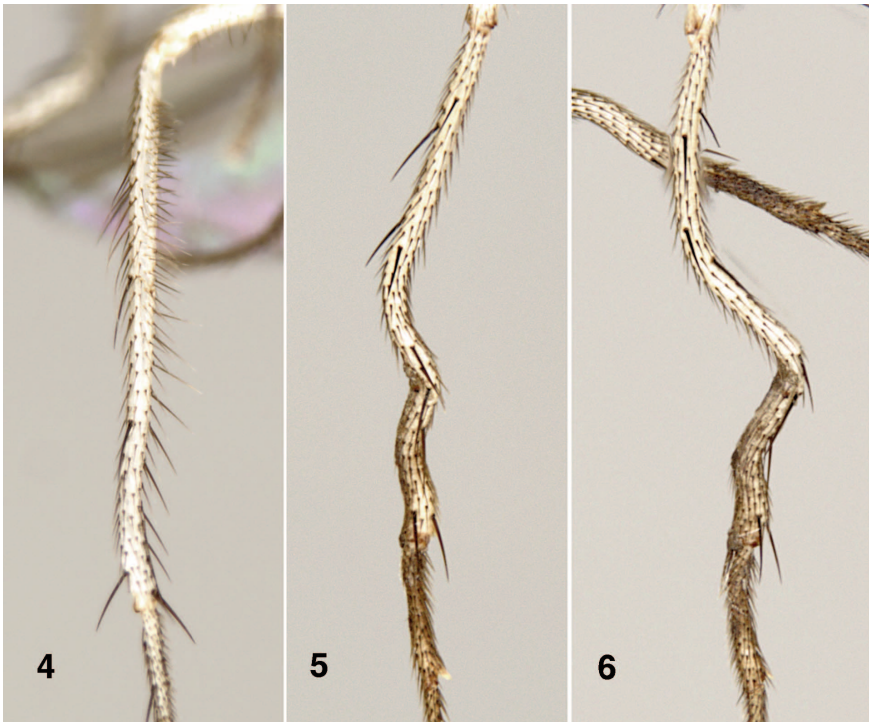
Legs. Yellowish white, except tarsi 3–5 brown; CI with two pale yellow setae apically, numerous smaller curved stiff white setae apically; foreleg unmodified, without MSSC; TiII (Fig. 4) slightly sinuous, with rows of fine black hairs anteriorly and laterally, lateral row short basally, becoming longer toward apex, anterior row with longest and thickest on subbasal third, short and finer elsewhere on that row; 3 strong long black setae on anterior row. IIt_{1–5} unmodified; TiIII (Figs. 5–6) strongly contorted on apical three-fifths, with short hairs in irregular rows, 7 strong black setae along anterior and lateral surfaces, 2 strong black apical setae; remainder of legs without MSSC.

Wing: pale smoky throughout.

Abdomen. Tergites black dorsally, white laterally, with short stiff curved black hairs dorsally on each tergite, uniformly distributed, a few longer hairs laterally, lateral hairs longest on tergite I; sternites white. Hypopygium yellowish white, not dissected.

Etymology. The specific name derives from the Latin, *anfractus* = bending, winding, crooked; referring to the distortion of the hind tibia.

Remarks. Although the phylogenetic study of Hawaiian and Pacific *Campsicnemus* by Goodman *et al.* (2014) analyzed molecularly most major species groups, only two species groups in Hawai'i have been defined and formally named (e.g., the *fumipennis* group (Evenhuis 2012) and the *ridiculus* group (Evenhuis 2016)). Many more groups are known but have not yet been formally named. Seven species groups have thus far been found in French Polynesia [see Evenhuis (2013) for a key to all French Polynesian groups]. A com-



Figures 4–6. *Campsicnemus anfractus*, n. sp., tibiae. 4, Mid tibia. 5, Hind tibia, lateral view. 6, Hind tibiae, anterior view.

parison of *C. anfractus* with all the species in Hawai'i and French Polynesia has failed to find a species group to which *C. anfractus* belongs. It has a mid tibia that is most similar in appearance to *Campsicnemus hardy* Tenorio and also *C. flexuosus* Hardy & Kohn, but does not have other characters that would place it in the groups to which each of those species belong; and no species yet have been found that have the hind tibia with such strongly sinuate modifications to its shape. Molecular analysis of additional specimens of *C. anfractus* will need to be done to properly assess its placement within the genus. Until then, it is treated as *incertae sedis* within the Pacific clade of *Campsicnemus* species.

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