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## A new species of *Tylparua* Edwards (Diptera: Keroplatidae) from the Big Island of Hawai‘i<sup>1</sup>

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**Abstract.** A new species of *Tylparua*, *T. troglodytes* **n. sp.**, is described and illustrated and marks possibly the first cave-adapted species of *Tylparua* from the Hawaiian Islands.

The keroplatid genus *Tylparua* is one of the more speciose mycetophiloid genera in Hawai‘i, with an estimated 70 species (mostly awaiting description). A recent review has begun on these endemic Hawaiian flies (Evenhuis 2022) in which four subgenera have been newly recognized. A species collected in a cave on the Big Island of Hawai‘i as part of an Environmental Impact Statement (PBR Hawaii 2009) and vouchered in the Bishop Museum is found to be a new species of the subgenus *Hardyplatyura* Evenhuis: *Tylparua* (*Hardyplatyura*) *troglodytes* Evenhuis, **n. sp.** and is here described and illustrated. It marks the first possible example of a cave-adapted species of *Tylparua* and is easily identified by its general lack of coloration.

### MATERIAL AND METHODS

The specimen derives from vouchered material held in the entomology collection of the Bishop Museum. Morphological terminology follows Cumming & Wood (2017).

### TAXONOMY

Genus *Tylparua* Edwards  
Subgenus *Hardyplatyura* Evenhuis

*Tylparua* (*Hardyplatyura*) *troglodytes* Evenhuis, **new species**  
(Figs. 1–2)

**Types.** *Holotype* ♂ (BPBMENT0000081269) from HAWAIIAN ISLANDS: Hawai‘i: North Kona, ‘O‘oma Homesteads, 250 m, 19°43'N 156°00'W, Cave 1, 22 May 2006, N. McDowell & K. White. Holotype (preserved in fluid) in the Bishop Museum.

**Diagnosis.** Easily separated from the congeners by the lack of coloration on the thorax and abdomen. It is not teneral as it has melanistic characters on both the thorax and terminal abdominal segments and internal structures.

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**Figure 1.** *Tylparua troglodytes* Evenhuis, n. sp., male habitus lateral.

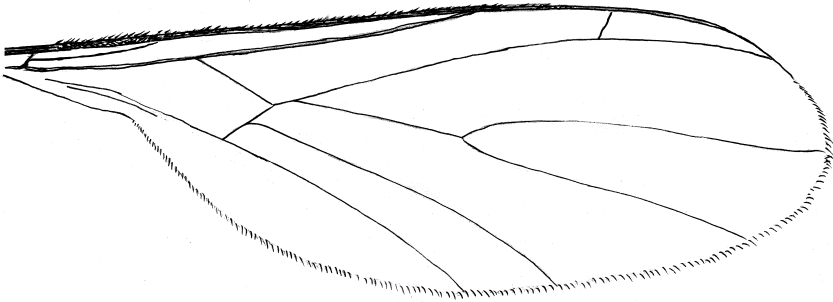
**Description.** Lengths: Body: 2.8 mm; wing: 3.0 mm. **Male** (Fig. 1). Generally white throughout. *Head.* Occiput and vertex brown. Antennae with flagellum segment 1 longer than wide; segments 2–14 squarish, each successive segment reduced in width apically as antennae slightly tapers to rounded apex. Flagellomeres white.

*Thorax.* Disc of mesonotum with pale yellowish brown, white laterally posteriorly and anterolaterally, with minute black setulae, setulae thickest on postalar calli. Propleuron brown with patch of minute setulae, bare. Mediotergite with minute setulae apically. Laterotergite bare. Halter stem and knob white with minute black setae.

*Legs.* Legs pale yellowish to white. Coxa I with row of short black setulae. Coxa III with smudge of brown posteriorly. Tibiae with setulae in regular rows. Hind tibial spurs subequal in length. Claws minute.

*Wing* (Fig. 2). Hyaline with veins brown to pale yellowish, without infuscation apically.  $M_4$  not effaced basally.

*Abdomen.* Generally white, pale brown medially and laterally on tergites I–IV, with black setulae distributed evenly on dorsum; tergites V–VI brown. Sternites with same pattern as tergites.



**Figure 2.** *Tylparua troglodytes* Evenhuis, n. sp., wing.

*Hypopygium.* Not dissected. Epandrium spherical, as high as wide, pale yellowish white.

**Remarks.** This species marks the first record of a *Tylparua* from a cave environment and the loss of pigment shows evidence of cave adaptation, albinism being a typical character found in cave arthropods (Porter & Crandall 2003). Because the eyes are not reduced and non-optic sensory organs remain normally-sized, it may not be a case of true troglomorphy.

#### REFERENCES

- Cumming, J.M. & Wood, D.M.** 2017. Adult morphology and terminology, pp. 89–133. *In:* Kirk-Springs, A.H. & Sinclair, B.J. (Eds.), *Manual of Afrotropical Diptera*. Vol. 1. Introductory chapters and keys to Diptera families. South African National Biodiversity Institute, Pretoria.
- Evenhuis, N.L.** 2022. The genus *Tylparua* in Hawai‘i (Diptera: Keroplatidae: Orfeliini). Part I: Introduction, new subgenera, and review of the subgenus *Bryanplatyura*, n. subgen. *Bishop Museum Occasional Papers* **149**: 1–29
- PBR Hawaii.** 2009. ‘O‘oma Beachside Village. Final Environmental Impact Statement. North Kona, Hawai‘i. 2 vols. Prepared for State of Hawai‘i Land Use Commission. Docket No. A07-774 & Petitioner. ‘O‘oma Beachside village, LLC.
- Porter, M. & Crandall, K.A.** 2003. Lost along the way: the significance of evolution in reverse. *Trends in Ecology and Evolution* **18**(10): 541–547. [↗](#)