Zygothrica desallei: A New Species of Drosophilidae (Diptera) from Ecuador

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ABSTRACT An unusual new species of *Zygothrica*, *Z. desallei*, is described from Ecuador. This species possesses three supernumerary crossveins extending from vein R2 + 3 to the costa. Such a phenotype, while observed in other drosophilid genera such as *Jeannelopsis* and *Scaptomyza* (*Tantalia*), has not been previously observed in *Zygothrica.*

KEY WORDS *Zygothrica*, Ecuador, systematics

Zygothrica IS PREDOMINENTLY a Neotropical genus, although some African and Indo-Pacific forms have been discovered recently (Grimaldi 1990). Although the first species in *Zygothrica* was described in 1830 by Wiedmann (1830), this name was not used as a generic designation until Loew (1873). Since then, many species have been added to this group. Wheeler (1981) listed 65 valid species names. Most recently, Grimaldi (1987, 1990) has added 62 new taxa and suggests that there may be as many as 60 more species remaining to be described in this genus. Here, we describe a single new species, *Z. desallei*, from the Ecuadorian Amazon. This species is particularly interesting because it possess between two and three extra crossveins extending from R2 + 3 to the costa. This condition, while not unknown in the Drosophilidae, is only found in a few species and has never been reported from the genus *Zygothirca.*

Zygothrica desallei O'Grady, sp. nov.
(Figs. 1–3)

Head. (from pinned material) *Male.* Flattened and elongate when seen in profile, ≈2× longer than high; slightly hypercephalic, moderately wider than thorax. Eyes bare, with few interfacetal setulae, with dark green tinges in pinned material. First and second antennal segments tannish brown on dorsum, darker brown on venter. Third antennal segment long, ≈3× longer than second, brown in color. Arista with six dorsal and two ventral branches, not including the terminal fork. Frons tannish brown along 1/3 of anterior margin. Orbital plate tannish brown in color. Ocellar triangle, vertex and upper 2/3 of frons black, subshining. Ocelli pale yellowish white. Ocellar triangle extends anterior to 1/2 between proclinate and anterior reclinate orbitals. Orbital setae inserted equidistant from one another; proclinate approximately equal in length to posterior reclinate; anterior reclinate ≈2/3 length of posterior reclinate. Carina prominent; off white in color. Gena wide, ≈1/6 width of eye at widest point; dark brown in color. Palps tannish brown; with single medioventrally directed apical seta and ≈4 strong setae on ventral surface. Clypeus and remainder of mouthparts dark brown to black.

Thorax. Shining dark brown to black on dorsum, pale off white on venter. Acrostichal setulae in ≈6 irregular rows. Anterior katepisternal seta thin, ≈1/3 length of posterior. Humeral callus dark brown to black, with two strong subequal setae. Acrostichal setulae in eight rows. Scutellum shining black; posterior scutellar setae cruciate Pleurae and halteres pale, yellow white. First pair of legs pale yellow brown; with short, curvate, indistinct cilia on tibia and tarsus (Fig. 1). Second and third set of legs darker yellow brown.

Abdomen. Shining dark brown to black on dorsal surface, off white on venter.

Wings. Apex of wing pigmented on apical ≈1/5, extending just past intersection of costa and M1 (Fig. 2). Two to three pigmented, supernumerary crossveins extending from costa to R2 + 3. Each specimen collected is asymmetrical with respect to this character, with two extra crossveins on one wing and three on the other. Crossvein dm-cu pigmented, sometimes with a short spur which entends into cell R4+5 (Fig. 2). Crossvein r-m pigmented, and distinct from pigmentation covering basal ≈1/4 of wing, almost to level of r-m (Fig. 2).

Measurements. A number of measurements traditionally used in Drosophilidae taxonomy have been made (after Grimaldi 1987). Definitions are as follows: costal index (CI) = length of costa from subcostal break to R2 + 3/length of costa from R2 + 3 to R4 + 5, fourth vein index (4V) = length of M1 from crossvein dm-cu to apex/length of M1 from crossvein r-m to crossvein dm-cu, 5× index = length of CuA1 from crossvein dm-cu to apex/length of crossvein dm-cu,

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Fig. 1. Posteroventral view of tibia and tarsi of *Z. desallei* (110X).

4C index = length of costa from R2 + 3 to R4 + 5/length of M1 from crossvein r-m to crossvein dm-cu, and M index = length of CuA1 from crossvein dm-cu to apex/length of M1 from crossvein r-m to crossvein dm-cu. $N = 3$ males. TL (thorax length) = 1.6 mm (1.5–1.8); WL (wing length) = 3.3 mm (3.3–3.4); TL/WL = 0.5; HW (head width) = 1.3 mm (1.2–1.4); HW/TL = 0.8; CI = 3.3 (2.8–3.8); 4V = 1.4 (1.0–1.6); 5X = 0.6 (0.5–0.7); 4C = 0.8 (0.7–0.8); M = 0.3 (0.2–0.3).

Type Material. ECUADOR, HOLOTYPE ♂, Estación Biológica Jatun Sacha (01° 33′ S, 77° 33′ W), 5 August 1997, O'Grady & Vela. TL = 1.5 mm; WL = 3.3 mm; TL/WL = 0.5; HW = 1.2 mm; HW/TL = 0.8; CI = 3.8; 4V = 1.6; 5X = 0.7; 4C = 0.7; M = 0.3. Two paratypes, both males, are also designated. All material is in the collection of the Museum of the Pontificia Universidad Católica del Ecuador (PUCE).

Distribution and Ecology. This species is known only from Ecuador (Fig. 3), where it has been collected on fungus. This species has yet to be reared from any substrate.

Diagnosis. *Zygothirca desallei* is easily differentiated by the presence of between two and three supernumerary cross veins extending from R2 + 3 to the costa (Fig. 2).

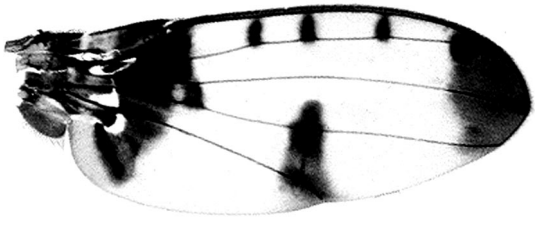

Fig. 2. Wing of *Z. desallei* (25×).

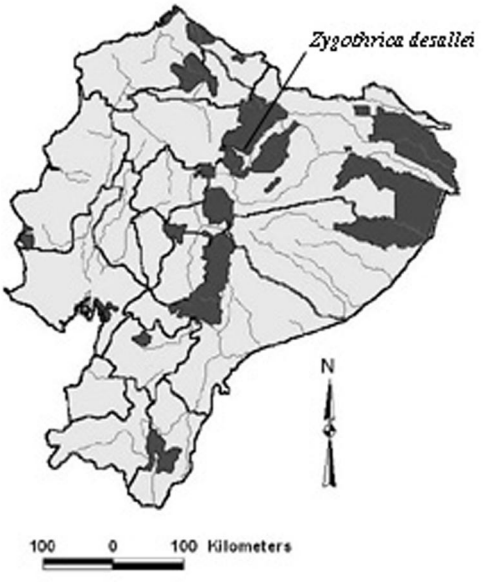

Fig. 3. Map of Ecuador showing the type locality of *Z. desallei.*

Etymology. This species is named in honor of Rob DeSalle, whose many systematic publications have helped determine the phylogenetic placement of the genus *Zygothrica* relative to the remainder of the family Drosophilidae.

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