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## A new species of *Anastrepha* (Diptera: Tephritidae) from *Euphorbia tehuacana* (Euphorbiaceae) in Mexico

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### Abstract

*Anastrepha tehuacana*, a new species of Tephritidae (Diptera) from Tehuacán, Puebla, Mexico reared from seeds of *Euphorbia tehuacana* (Brandege) V.W. Steinm. (Euphorbiaceae), is described and illustrated. Its probable relationship to *A. relicta* Hernández-Ortiz is discussed.

**Key words:** fruit flies, taxonomy, host plant

### Resumen

Se describe *Anastrepha tehuacana*, una especie nueva de Tephritidae (Diptera) de Tehuacán, Puebla, México criada de semillas de *Euphorbia tehuacana* (Brandege) V.W. Steinm. (Euphorbiaceae). Se discute su relación probable con *A. relicta* Hernández-Ortiz.

### Introduction

*Anastrepha* Schiner is the most diverse genus of fruit flies (Diptera: Tephritidae) in the American tropics and subtropics with more than 250 described species (Norrbom *et al.* 1999a, b, 2004a, Hernández-Ortiz 2008, Norrbom & Korytkowski 2012). It is also the most economically important genus of fruit flies in this region, including a number of major fruit pests (Norrbom 2004b). Despite its importance, many species remain undescribed, and the native host plant relationships are poorly known. In this paper we describe a new species from Mexico to make its name available for an interactive identification system being developed for the genus (see Norrbom *et al.* 2012) and to facilitate studies on natural history and behavior of poorly known species. We also report its host, a rare threatened xerophytic plant restricted to the Tehuacan-Cuicatlan Valley in central Mexico.

### Material and methods

We follow the morphological terminology of White *et al.* (1999). The names for the wing bands follow Stone (1942) and are shown in Figure 7. Wing length was measured from the base of the costa to the wing apex in cell  $r_{4+5}$ ; wing width was measured at the broadest part, distal to the apex of vein  $R_1$  to the margin of cell  $cu_1$ . The position of the apex of vein  $R_1$  is the ratio of the distance from the base of the costa to the apex of vein  $R_1$  divided by wing length. The width of cell  $r_{4+5}$  at the level of  $dm-cu$  was measured on a line directly anterior to the junction of vein  $M$  and  $dm-cu$ . Its apical width was measured on a line from the apex of vein  $R_{4+5}$  and the junction of vein  $M$

more dense setulae (unique); and subscutellum with dark brown spot laterally (this state occurs in some other *Anastrepha* species, for example, various species in the *fraterculus* group). Because both species are known only from single sites, it is difficult to speculate about their evolutionary origin, but the collection sites for the two species are separated by a linear distance of 150 km and separated by the Popocatepetl volcano, the Sierra del Tentzo (18°48'05"N, 98°02'27"W) mountains and the Sierra de Tecamachalco (18°43'34"N, 97°32'42"W) mountains. *Euphorbia tehucana* does not occur in Tetela del Volcán, which is located on the southern slope of Popocatepetl where oak-pine forests prevail.

The barcoding region of the COI gene was sequenced for three individuals of *A. tehucana* by Frey et al. (2013) (as '*Anastrepha* sp. nov.').

### ***Anastrepha relict*a Hernández-Ortiz**

*Anastrepha relict*a Hernández-Ortiz 2004: 761.

#### **Additional description.** Setae black.

Thorax: Mesonotum 3.01 (holotype)–3.13 (paratype) mm long; with following setae well developed: 1 postpronotal, 1 presutural supra-alar, 1 postsutural supra-alar, 2 notopleural, 1 postalar, 1 intra-alar, 1 acrostichal, 1 dosrocentral, and 2 scutellar.

Wing: Hyaline areas between S-band and V-band in cells  $r_{4+5}$ , dm and  $cu_1$  entirely microtrichose.

Male terminalia: Phallus 3.10 mm long, 1.03 times as long as mesonotum.

Female terminalia: Oviscape 3.10 mm long, 0.99 times as long as mesonotum; entirely orange; setulae on apical fourth more dense. Eversible membrane with 15–16 moderately developed hooklike dorsobasal denticles in a row.

**Distribution.** *Anastrepha relict*a is known only from the type locality in Mexico (Morelos).

**Biology.** The host plant and other aspects of the biology of this species are unknown.

**Type data.** Holotype ♂ and paratype ♀ (IEXA), MEXICO: Morelos: Tetela del Volcán, 30 Apr 1997, McPhail trap.

**Comments.** The above descriptive information was kindly provided by Vicente Hernández-Ortiz based on a reexamination of the holotype male and paratype female.

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