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A revision of the *Anastrepha robusta* species group (Diptera: Tephritidae)

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Abstract

The *Anastrepha robusta* species group is revised to include the following 29 species: *A. amaryllis* Tigrero (Ecuador), *A. amazonensis*, **n. sp.** (Brazil: Amazonas), *A. bella*, **n. sp.** (Panamá), *A. binodosa* Stone (Brazil: Amazonas, Pará), *A. concava* Greene (Costa Rica to Ecuador and Brazil: Amazonia), *A. cordata* Aldrich (México to Venezuela), *A. cryptostrepha* Hendel (Peru, Surinam), *A. cryptostrephoides*, **n. sp.** (Perú), *A. disticrux*, **n. sp.** (Jamaica), *A. fenestrata* Lutz & Lima (Brazil: Amazonas, Pará), *A. fenestrella*, **n. sp.** (Costa Rica, Panamá), *A. furcata* Lima (Panamá, French Guiana, Brazil: Amazonas, Pará, Bahia, Espírito Santo), *A. fuscata*, **n. sp.** (Perú), *A. isolata*, **n. sp.** (Ecuador, Brazil: Amazonas), *A. jamaicensis*, **n. sp.** (Jamaica), *A. lambda* Hendel (Perú), *A. miza*, **n. sp.** (Venezuela), *A. nigra*, **n. sp.** (Panamá), *A. nigrifascia* Stone (Bahamas, USA: Florida), *A. nigrivittata*, **n. sp.** (Guyana), *A. partita*, **n. sp.** ("Amazon"), *A. phaeoptera* Lima (Brazil: Bahia, Rio Grande do Sul), *A. pittieri* Caraballo (Panamá, Venezuela), *A. pseudorobusta*, **n. sp.** (Perú, Trinidad, Venezuela), *A. rafaeli*, **n. sp.** (Brazil: Roraima, Venezuela), *A. robusta* Greene (México to Panamá), *A. rojasi*, **n. sp.** (Costa Rica, Panamá), *A. simulans* Zucchi (Brazil: Paraná, São Paulo, Rio de Janeiro), and *A. speciosa* Stone (Panamá). *Moutabea longifolia* is recorded as a host plant of *A. rojasi*, the first host record for *Anastrepha* species from the plant family Polygalaceae. The larvae feed on the seeds within the fruit. A key to the species and descriptions and illustrations for each species are provided, and their possible relationships are discussed.

Key words: *Anastrepha*, Tephritidae, fruit flies, taxonomy, Polygalaceae, *Moutabea*

Introduction

Anastrepha Schiner is the most diverse genus of fruit flies (Diptera: Tephritidae) in the American tropics and subtropics with more than 200 described species (Norrbom *et al*. 1999 a, b). It is also the most economically important fruit fly genus in this region, including a number of major fruit pests (Norrbom 2004). Despite its importance, many species remain undescribed and the native host plant relationships are poorly known. In this paper we revise the 29 species of the *robusta* group, including 13 species new to science, and report a host plant record for one of the new species, the first *Anastrepha* species discovered to feed in a member of the plant family Polygalaceae.

Materials and methods

We follow the morphological terminology of White *et al.* (1999). The names for the wing bands follow Stone (1942a) and are shown in Figure 21. Wing length was measured from the base of the costa to the wing apex in cell r_{4+5}; wing width 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 and the wing margin. The width of the distal part of the S-band was measured perpendicular to the band at the apex of vein R_{2+3}, and the width of cell r_{2+3} was measured along the same line. Oviscape length was measured medially on the ventral side from the concavity in the base to the apex, including the medial lobe. The length of the aculeus tip was measured ventrally from the inner margin of the sclerotized part to the extreme apex.

Label data for all examined specimens will be made available in the New World fruit fly specimen database on the Systematic Entomology Laboratory web site (www.sel.barc.usda.gov:591/diptera/Tephritidae/TephIntro.html). A USNM barcode label was added to most specimens that previously lacked a barcode label. These labels do not indicate ownership, they are unique specimen identifier numbers. In the Type data and Specimen examined sections the barcode number is listed following the depository acronym for each specimen or series.