



A new species and new records of *Downshelea* Wirth & Grogan in Neotropical Mexico (Diptera: Ceratopogonidae)

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In the revision of the Ceratopogonini of the World, Wirth & Grogan (1988) placed the species of the *Monohelea multilineata* group in the new genus *Downshelea*, which includes 33 species (Borkent, 2011), most of them known from the New World. Borkent and Spinelli (2000, 2007) listed 18 species from the Neotropical Region and Felipe-Bauer and Silva (2008) subsequently described *D. oliveirai* Felipe-Bauer from northern Brazil. From Mexico, only *D. multilineata* (Lutz) and *D. panamensis* (Lane & Wirth) have been reported.

The study of male specimens of *Downshelea* from the state of Oaxaca, Veracruz and Quintana Roo revealed the presence of an undescribed species, and the presence of *D. fluminensis* Felipe-Bauer that has been reported for only the type locality, Rio de Janeiro, Brazil. The study of additional material from Belize and Colombia revealed that the new species also is present out of Mexico.

In this paper, we describe and illustrate the new species, comparing it with related species of Neotropical *Downshelea*, which now includes 20 species for this biogeographical region, of which four inhabit Mexico.

Material and methods

The material was collected by means of CDC and Malaise traps in the mountain area of the state of Oaxaca and Veracruz, Mexico. The type specimens were mounted on microscope slides with Euparal following the technique of Borkent & Spinelli (2007). Measurements are given in millimeters. Specific terms and ratios currently used for the genus are those by Meillon & Wirth (1991). Terms for wing veins follow the system of the Manual of Central American Diptera (Brown *et al.*, 2009). The type material was deposited in the Collection of Arthropods of Medical Importance (CAIM), Mexico City, Mexico, in the Ceratopogonidae Collection of the Instituto Oswaldo Cruz (CCER), Rio de Janeiro, Brazil, in the Museo de La Plata (MLP), La Plata, Argentina, and in the U.S. National Museum of Natural History (USNM), USA. Meristic information is given as range, following by the mean and number of specimens examined. Illustrations were made with the aid of a drawing tube (camera lucida) attached to a compound microscope and drawn in inking perspective.

Downshelea grogani sp. nov.

Figs. 1–3

Diagnosis. Only species of *Downshelea* with following combinations of characters: r_3 with only one dark spot extending posteriorly from end of 2nd radial cell to M_1 , legs brown with knees yellowish, parameres connected basally by a sclerotized bar, each stem curved laterally, gradually tapering distally to pointed, posterolaterally directed apex, without apical, subapical or mid processes or lobes.

Male. Head (Fig. 1A). Brown, eyes bare, moderately separated. Antenna pale, except base of flagellomere 1, distal portion of flagellomere 10, flagellomeres 11–13 pale brown; flagellomeres 2–8 somewhat barrel-shaped; flagellomeres 11–13 elongate, lengths of flagellomeres 10–13 as in Fig. 1C; antennal ratio 0.92–0.97 (0.94, n=4); palpus (Fig. 1B)