



Two new species of *Rhaphiomidas* (Diptera: Mydidae)

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Abstract

Two new species of Mydidae, *Rhaphiomidas pachyrhynchus* **sp. nov.** and *Rhaphiomidas moapa* **sp. nov.** are described and illustrated here for the first time. *Rhaphiomidas pachyrhynchus* represents the southeastern most record of the genus. Notes on the adult ecology of *R. moapa* are given.

Key words: Diptera, Mydidae, *Rhaphiomidas*, Nuevo Leon, Moapa, sand dune

Introduction

The genus *Rhaphiomidas* Osten Sacken, now consists of 22 known species and 5 subspecies. Cazier (1985) did the most recent revision of the genus. There have been two *Rhaphiomidas* species added to the genus after his review (Rogers 1993). Another two species have been discovered recently and are described in this paper. The genus *Rhaphiomidas* was moved out of the Apiceridae and placed in the Mydidae (Ovtshinnikova 2003, Yeats and Irwin 1996). *Rhaphiomidas* is distributed throughout the deserts of the Southwest United States and Northern Mexico (Rogers and Mattoni 1993, Cazier 1985).

Many species of *Rhaphiomidas* feed on floral nectar. *Rhaphiomidas* species fly between spring and fall and are most active according to spring and fall bloom. Many species are absent in dry years and can have huge emergences in wet years (pers. obs. Van Dam, Rogers, Ballmer, Osborne). It is unknown if mass emergences are due from the diapauses of larvae or pupa from multiple years or from a single productive year. Adults are active for only a few weeks. Multiple studies have been conducted on the adults' behavior (Kingsley 1996, 2002, Rogers and Mattoni 1993, Steinberg et. al. 1998, Ballmer et. al. 1994, Toft and Kimsey 1982).

Rhaphiomidas terminatus abdominalis Cazier is the only species of Diptera federally listed under the U.S. Endangered Species Act of 1973, in the continental United States (Federal Register, 58(183): 49881). Two taxa similar to *R. terminatus abdominalis* (Cazier 1985), are *Rhaphiomidas terminatus terminatus* Cazier and *R. trochilus* (Coquillett), are also near extinction. *R. terminatus terminatus* is only known from 20 ha in the middle of a golf course (George and Mattoni 2006). According to Section 18 of the Endangered Species Act the U.S. Fish and Wild Life Service has spent \$2,515,666 on *R. terminatus abdominalis* from 1996–2004. It was ranked as the 81st out of 1,271 Threatened and Endangered species (top 6%) in total expenditure in 2004 (U.S. Fish and Wildlife Service 2004). The species remains Endangered because of dwindling habitat as a result of urban development (US Fish and Wildlife Service 1997). Extensive efforts to find *Rhaphiomidas moapa* **sp. nov.** in surrounding areas has lead to the conclusion that this species may be restricted to a very small range, as it is only known from a single wash. Its fate is also imperiled because of mining operations, off road vehicle activity and development.