

A new synonym of the biting midge, *Culicoides bottimeri* Wirth, with a redescription, new distribution records and seasonal activity data (Diptera: Ceratopogonidae)

ROBERT A. PHILLIPS, WILLIAM L. GROGAN, JR. & BRADLEY A. MULLENS

(RAP) Moab Mosquito Abatement District, Box 142, Moab, UT, USA (email: moabmad@frontiernet.net);

(WLG) Department of Biological Sciences, Salisbury University, Salisbury, MD 21801, USA (email: wlgro-

gan@salisbury.edu); (BAM) Department of Entomology, University of California, Riverside, CA 92521, USA (email: bradley.mullens@ucr.edu)

Abstract

We provide evidence that the North American biting midge, *Culicoides multidentatus* Atchley & Wirth, is a junior objective synonym of *C. bottimeri* Wirth (new synonym). A detailed comparison of paratypes of both species with recently collected specimens from California and Utah revealed that only one species is represented in the southwestern United States. Also provided are redescriptions, illustrations, and photographs of key characters of both sexes of *C. bottimeri*, as well as new distribution records from California and Utah (new state record), and seasonal activity data from Utah.

Key words: Diptera, Ceratopogonidae, *Culicoides bottimeri*, *C. multidentatus*, biting midge, new synonymy, United States

Introduction

There are currently 150 species of biting midges in the genus *Culicoides* that inhabit the United States and Canada (Borkent and Grogan, in press), several of which are vectors of pathogens and parasites of vertebrates (Borkent 2005, Mullen 2002). One of these vector species, *C. multidentatus* Wirth and Atchley, was described from female specimens from Arizona, California, and New Mexico (Atchley & Wirth 1975) and subsequently shown to be a primary vector of the filarial nematode, *Splendidofilaria californiensis* (Wehr & Herman), the causative agent of heartworm in California quail, *Callipepla californica* Shaw (Weinmann et al. 1979).