

Taxonomy and biology of *Simulium clarkei* Stone & Snoddy (Diptera: Simuliidae), a poorly known black fly of the southeastern United States

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Abstract

Simulium clarkei Stone & Snoddy was the least known species of black fly in the eastern United States prior to our recent collections from southern Virginia (type locality) to southern Georgia, which yielded good series of all life stages after the egg. On the basis of these collections, we describe the female and the banding patterns of the polytene chromosomes, redescribe the larva, pupa, and male, and provide biological and distributional information. *Simulium clarkei* most closely resembles *S. emarginatum* Davies, Peterson, & Wood, but can be distinguished by the banding sequence of its larval polytene chromosomes and the shape of the male ventral plate.

Key words: taxonomy, black flies, aquatic insects, polytene chromosomes, Nearctic

Introduction

The *Simulium annulus* species group sensu Crosskey & Howard (1997) is a small clade of univoltine black flies whose preimaginal stages inhabit medium-sized streams and rivers throughout much of the Holarctic Region (Davies et al. 1962, Currie 1986, Adler et al. 1999). Chromosomally, they form a rather homogenous group of closely related species (Golini & Rothfels 1984). All members of the *S. annulus* species group are presumably ornithophilic, based on the presence of a bifid tarsal claw in females. Records are sparse, but *S. euryadmiculum* Davies is believed to feed chiefly, if not exclusively, on loons (Lowther & Wood 1964), and other members of the group have been recorded feeding on hawks (Smith et al. 1998).