



<http://dx.doi.org/10.11646/zootaxa.3796.1.8>

<http://zoobank.org/urn:lsid:zoobank.org:pub:2D5E540F-D056-4D51-ADA7-6AF81AF58A47>

Biodiversity and Bionomics of the Black Flies (Diptera: Simuliidae) of Northeastern Algeria

MOUNA CHERAIRIA^{1,4}, PETER H. ADLER² & BOUDJÉMA SAMRAOUI^{1,3}

¹Laboratoire de Recherche et de Conservation des Zones Humides, University of 08 Mai 1945, Guelma, Algeria.

E-mail: mounacherairia@yahoo.fr; bsamraoui@yahoo.fr

²Entomology Program, Clemson University, Clemson, South Carolina, 29634-0310, USA. E-mail: padler@clemson.edu

³Center of Excellence for Research in Biodiversity, King Saud University, Riyadh, Saudi Arabia

⁴Corresponding author. E-mail: mounacherairia@yahoo.fr

Abstract

Black flies in the Seybouse River Basin in northeastern Algeria were sampled at 31 sites along the main river and its tributaries across all seasons from 2011 to 2013. Eight nominal species and species complexes in three genera were identified among more than 31,000 specimens. *Urosimulium faurei* (Bernard, Grenier & Bailly-Choumara), *Simulium* (*Eusimulium*) *mellah* Giudicelli & Bouzidi, and *Simulium* (*Nevermania*) *lundstromi* (Enderlein) were recorded for the first time in northeastern Algeria. Three cytoforms of the *Simulium* (*Eusimulium*) *velutinum* complex and two morphoforms of *Simulium* (*Nevermannia*) *ruficornis* Macquart were found. The most abundant and ubiquitous taxon, *Simulium* (*Wilhelmia*) *pseudequinum* Séguy, representing nearly 80% of collected specimens, occupied the widest range of habitats, including those with anthropogenic influences.

Key words: Algeria, aquatic insects, biodiversity, black flies, polytene chromosomes, Seybouse Basin

Introduction

The simuliid fauna of North Africa east of Morocco is insufficiently known, and the oueds or wadis (i.e., intermittent streams) are some of the least-studied Mediterranean systems. Northeastern Algeria supports a wide spectrum of wetlands, many of international importance (Samraoui & Samraoui 2008, Samraoui *et al.* 2010). Despite their ecological significance, the simuliid communities of Algerian hydrosystems have attracted little taxonomic or ecological study. Most works on the simuliids of Algeria have been devoted largely to alpha taxonomy and species distributions (Edwards 1923, Parrot 1949, Grenier 1953, Vaillant 1955, Grenier & Clastrier 1960, Clastrier & Grenier 1961, Belazzoug & Tabet-Derraz 1980, Clergue-Gazeau *et al.* 1991). Two species have their type localities in Algeria: *Simulium beckeri* Roubaud 1906, considered conspecific with *S. ruficornis* Macquart, and *S. mediterraneum* Puri 1925, regarded as conspecific with *S. pseudequinum* Séguy. More recent studies have provided faunistic assessments of Kabylie du Djurdjura in northern Algeria (Lounaci *et al.* 2000a, 2000b) and the Tafna River Basin in northwestern Algeria (Chaoui Boudghane-Bendiouis *et al.* 2012). Few investigations have treated the biogeography and preimaginal ecology of simuliids in Algeria (Vaillant 1953, Gagneur & Clergue-Gazeau 1988, Clergue-Gazeau *et al.* 1991), and no investigations have addressed the behavior or ecology of adult simuliids in the country. Twenty-nine species currently are recognized in Algeria (Adler & Crosskey 2014).

To provide a more complete understanding of the simuliid fauna of North Africa, we analyzed the preimaginal simuliid community in the Seybouse River Basin of Algeria's northeastern Mediterranean region. Our results are based on morphological identifications of more than 31,000 specimens collected from 31 sampling stations over a three-year period, supplemented with chromosomal examination of larvae of selected taxa.

Acknowledgments

This work was conducted, in part, while the first author was a Visiting Scholar at Clemson University, USA, based on collections made over a three-year period in Algeria. We thank Mohamed Aouissi for excellent field assistance and Charles E. Beard (Clemson University) for outstanding laboratory assistance. This work was funded, in part, by the Algerian Ministère de l'Enseignement Supérieur et de la Recherche Scientifique, DSFP of King Saud University (Saudi Arabia), and National Science Foundation grant DEB-0933218. This is Technical Contribution No. 6245 of the Clemson University Experiment Station and is based on work supported, in part, by NIFA/USDA under project number SC-1700433.

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