



## Faunistic and bibliographical inventory of the blackflies (Diptera: Simuliidae) of Morocco

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### Abstract

All published records are provided for the 42 species of black flies known from Morocco, together with appropriate literature references and misidentifications where known. New records of *S. lundstromi* are presented for the Rif.

**Key words:** Blackflies, catalogue, fauna, inventory, Morocco

### Introduction

Morocco is the only African country with a coastline on both the Mediterranean Sea and the Atlantic Ocean. The northern portion of Africa is, by virtue of its geology, topography, climate, fauna, and flora, unique from the rest of the continent, and in many respects, it is more similar to Europe. Morocco is crossed from north to south by four mountain ranges: the Rif, Middle Atlas, High Atlas, and Anti Atlas.

The first paper on the Simuliidae of Morocco was written by Edwards (1921), who described *Simulium gracilipes*. For the next five decades, the simuliids of Morocco received sporadic study devoted mainly to the description of new species and rarely to their biology, ecology, or biogeography (Séguy, 1930; Grenier & Théodoridès, 1953; Grenier & Faure, 1957; Grenier *et al.*, 1957; Grenier & Bailly-Choumara, 1970; Bernard *et al.*, 1972). The most comprehensive studies were conducted in the High Atlas, Middle Atlas, and pre-Saharan region; the Rif was, until recently, minimally investigated. Simuliids occupy a wide variety of lotic habitats in Morocco, from small streams to large rivers, at altitudes of 5–4071 m. They have been the subjects of two theses, which demonstrated that the larvae and pupae are an important component of the aquatic macroinvertebrate community in Moroccan streams (Bouzidi, 1989; Belqat, 2002).

A total of 42 species of the Simuliidae are now known from Morocco, of which 7 recently were identified as new records for North Africa, all from the Rif, including *Prosimulium rufipes* and *Prosimulium tomosvaryi* (Adler & Belqat, 2001; Belqat & Adler, 2001; Belqat *et al.*, 2001a, 2001b), *Simulium (Nevermannia) angustitarse* and *Simulium (Simulium) trifasciatum* (Belqat *et al.*, 2001a, 2001b), *Simulium (Obuchovia) galloprovinciale* and *Simulium (Obuchovia) auricoma* (Belqat, 2000; Belqat *et al.*, 2001a), and *Simulium* sp. (Belqat *et al.*, 2001a, 2001b). Recent research also revealed six species new to the Rif (Belqat *et al.*, 2001a, 2001b). Subsequent works have included an identification key to the simuliids of Morocco (Belqat & Dakki, 2004), an ecological analysis of species of the Rif (Belqat *et al.*, 2005), and a study of simuliids, by basins, not yet concluded, which began with the Laou (Belqat *et al.*, 2008). We provide an annotated list of the simuliids of Morocco, following the classification of Adler & Crosskey (2010). We report *Simulium (Nevermannia) lundstromi* (Enderlein) for the first time in northern Morocco, from three stations: Kanar (280 m), Majjo (905 m), and 10 km before the Issaguene source (1200 m), divided among the basins of Tihissasse, Laou, and Sebou. The species was collected on 26-VI-2003 and 20-IV-2004.