



## ***Rhithrogena sartorii*, a new mayfly species (Ephemeroptera: Heptageniidae) from North Africa**

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### **Abstract**

A new species, *Rhithrogena sartorii* Zrelli & Boumaiza, **sp. nov.** is described in subimaginal, egg and nymphal stages from material collected in Northern Tunisia. This species shows affinities with members of the *insularis* species group. Features distinguishing the new species from other North African species, as well as from *Rhithrogena insularis* (from Corsica) and *Rhithrogena nuragica* (from Sardinia) are discussed.

**Keys words:** Mayflies, taxonomy, morphology, egg, *Rhithrogeninae*, Khroumirie, Tunisia

### **Introduction**

Recently, the generic situation in Heptageniidae of the world has been discussed by Webb and McCafferty (2008). The genus *Rhithrogena* Eaton, 1881 belongs to the subfamily Rhithrogeninae and includes ca 150 species mostly distributed in Palearctic region (Barber-James *et al.*, 2008), with a high degree of endemism in mountain areas and on islands. Larvae of the genus are easily recognized by the shape of the first pair of gills which meet or overlap ventrally to form a friction disk (Webb & McCafferty, 2008).

In North Africa, this genus is represented by 5 species: *R. ourika* Thomas & Mohati, 1985, *R. ayadi* Dakki & Thomas, 1986, *R. ryszardi* Thomas *et al.*, 1987, *R. giudicelliorum* Thomas & Bouzidi, 1987 and *R. mariae* Vitte, 1991. Up to now, only *R. mariae* is known at the nymphal stage and belongs to the *semicolorata* group; *R. ryszardi* belongs to the *germanica* group and the three other species have not been assigned to any group (Sartori & Hughes, 2007).

In Tunisia, the genus *Rhithrogena* is mentioned in ecological papers (Boumaiza & Thomas, 1986), checklist on aquatic insects (Thomas, 1998) or hydrobiological contributions (Kraiem, 1986). However, no specific identification of this material has been proposed so far.

In the present study, an investigation of the streams in Northern Tunisia (Zrelli *et al.*, 2011) resulted in the discovery of several *Rhithrogena* populations. After careful examination, it appeared that these populations belonged to a new species. Mature nymphs, eggs, and subimagos are described. The new species presents affinities with the *insularis* species group, i.e. *R. insularis* Esben-Petersen, 1913 from Corsica and *R. nuragica* Belfiore, 1987 from Sardinia.

### **Material and methods**

The study sites are located in Khroumirie in Northern Tunisia (Fig. 1). The mayflies were preserved in ethanol (70%), some were dissected under the stereo microscope and were mounted on slides in Canadian balsam after a short stay in Creosote solution. The male and female subimagos were obtained by rearing in the laboratory. Unfortunately, no adults were obtained.