



Mayflies of the Caucasus Mountains. I. A new species of the genus *Electrogena* Zurwerra & Tomka, 1985

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Abstract

Based on the material recently collected in the Western Caucasus Mts., Russian Federation, *Electrogena gibedede* **sp. nov.**, new species from the genus *Electrogena* Zurwerra & Tomka, 1985 is described in detail. The morphological characteristics of the adults and larvae of the species are presented (adults of both sexes were reared from the larvae in the field). The variability of the species and critical characteristics distinguishing *Electrogena gibedede* **sp. nov.** from the remaining representatives of the genus (focusing mainly on Caucasian species) are described and discussed. In the description of the larval morphology the standard set of diagnostic characteristics is used. Larval biology and habitat preferences are mentioned. An overview of the present state of knowledge of *Electrogena* species known from the Caucasus Mts. is provided.

Key words: Ephemeroptera, Heptageniidae, differential diagnosis, taxonomy, biology, distribution

Introduction

The genus *Electrogena* Zurwerra & Tomka, 1985 (Ephemeroptera: Heptageniidae) was established for the original *Ecdyonurus lateralis* species-group (Zurwerra & Tomka 1985). The genus is distributed in the Western and Southern Palaearctic (Webb & McCafferty 2008) and comprises 17 European species described so far. Within the Western Palaearctic, the genus is missing in North Africa. The generic placement of the East Palaearctic and Oriental taxa (described within the genera *Ecdyonurus* Eaton, 1868, *Heptagenia* Walsh, 1863 or *Afronurus* Lestage, 1924 and others, more or less distinctly resembling *Electrogena*) remains doubtful.

Eighteen species were recorded from the areas of the Middle East (Turkey, Israel and Northern Iran) and the Caucasus Mts. Additional two species, namely *Electrogena braaschi* (Sowa, 1984) and *E. macedonica* (Ikonomov, 1954) are known from the Pontic region within Ukraine (Crimean Peninsula) and Bulgaria. The European representatives of the genus have been extensively studied; numerical methods of discriminating individual species were introduced for this genus for the first time by Belfiore (1994). This concept was subsequently widely used and several new characteristics were added to the original set (see e.g. Belfiore & Desio 1995; Belfiore 1996, 1997; Belfiore & Sartori 1999; Belfiore *et al.* 1999; Belfiore *et al.* 2000). Concerning Caucasian species, current knowledge is rather limited and often only an insufficient original description of the species is available (Braasch 1978, 1980a, 1980b, 1981, 1983a, 1983b, 1984; Demoulin 1973; Kazancı 1986, 1987; Sowa 1984). Although some of the species from the area in question were recently thoroughly redescribed (e.g. Belfiore *et al.* 2000) knowledge of most Caucasian representatives of the genus still remains poor.

Recently authors of the present study collected an extensive body of mayfly material in the western part of the Caucasus Mts. within the Russian Federation, containing also a new species from the genus *Electrogena*.

The objectives of the present contribution are to (i) describe in detail the new species, namely *Electrogena gibedede* **sp. nov.** in both larval and imaginal stages, (ii) comment on intraspecific variability, (iii) define critical characteristics allowing differential diagnosis of the new species, (iv) briefly summarize and discuss available data