



A new species of *Rhithrogena* Eaton, 1881 from the Far East of Russia with notes on this genus in this area (Ephemeroptera: Heptageniidae)

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Abstract

Rhithrogena klugei **sp. nov.** (male, female and larva) are described from Far East of Russia. The Far Eastern species of *Rhithrogena* belong to two groups: *lepnevae* and *sibirica*. The species group *sibirica* is represented by the East Palaearctic species *R. sibirica* Brodsky 1930. The *lepnevae* species group includes *R. lepnevae* Brodsky 1930, *R. bajkovaevae* Sowa 1973 and *R. klugei* **sp. nov.** in the Far East and Siberia, and two species which can be found in the Russian Far East, *R. piechockii* Braasch 1977 from Mongolia, and *R. ingalik* Randolph and McCafferty 2005 from Alaska. The species group *sibirica* differs from *lepnevae* species group in that its larvae present a rounded projection on gills II–VI on the posterior-dorsal margin, whereas the imagines present a shoot at the base of the penis lobes. The larva of *R. klugei* **sp. nov.** differs from those of *R. bajkovaevae* and *R. lepnevae* in their form of gill I and in the ratio of the length to the width of gills III–IV. The male imago of the new species can be distinguished from others of the *lepnevae* species group by the absence of the latero-dorsoventral tooth on the penis lobes.

Key words: Mayflies, Heptageniidae, *Rhithrogena*, taxonomy, distribution

Introduction

Prior to this report, only three species of the genus *Rhithrogena* Eaton subgenus *Rhithrogena* (*R. lepnevae* Brodsky 1930, *R. bajkovaevae* Sowa 1973, and *R. sibirica* Brodsky 1930) were known in Russia (Kluge 1997), all of which were recorded from the Far East of Russia (Tshernova *et al.* 1986; Tiunova 2008, 2009). In the study presented here, an investigation of the mayfly fauna of the Russian Far East and Siberia resulted in the discovery of a new species, *Rhithrogena klugei* **sp. nov.**, which is described below.

Far Eastern species of *Rhithrogena* belong to two groups: *lepnevae* and *sibirica*. The *lepnevae* species group includes *R. lepnevae*, *R. bajkovaevae* and *R. klugei* **sp. nov.** in the Far East and Siberia, and two species which can be found in the Russian Far East, *R. piechockii* Braasch 1977 from Mongolia, and *R. ingalik* Randolph and McCafferty 2005 from Alaska.

The East Palaearctic species *R. sibirica* represents the species group *sibirica*. This species group differs from other one in that its larvae present a rounded projection on gills II–VI on the posterior-dorsal margin, whereas the imagines present a long and narrow shoot at the base of the penis lobes (Kluge 1997).

The larvae of the species group *lepnevae* was difficult to identify; therefore, in this work we employed a number of additional morphological characters to describe the species.

A new species, *Rhithrogena klugei* **sp. nov.**, is described based on male and female imagines and larvae. Specimens were preserved in 75% ethanol. The material is deposited in the collection of the Institute of Biology and Soil Sciences, Far Eastern Branch, Russian Academy of Sciences, Vladivostok.