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A new genus and new species of Baetidae (Ephemeroptera) from lakes and reservoirs in eastern North America

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Abstract

Waynokiops dentatogriphus, new genus and new species (Ephemeroptera: Baetidae), is described from nymphs collected from seven lakes and reservoirs in the eastern United States of America, specifically from the states of Virginia, Kentucky, Ohio, Indiana and Arkansas (type locale), during sampling for the USEPA National Lakes Assessment. The lateral abdominal expansions and the dorsal abdominal armature of the new genus are unique among *Cloeon* complex genera. Abdominal tergal projections are unusual for a small minnow mayfly from lentic habitats.

Key words: *Cloeon* complex, identification, systematics, taxonomy, evolutionary novelty

Introduction

In 2007, the United States Environmental Protection Agency (USEPA) sampled over 1100 lakes in the continental United States of America as part of the National Lakes Assessment (NLA), a project to assess the overall status of the nation's lakes and evaluate the effects of selected stressors on lake condition. Field data collection for the project included selected chemical and physical parameters, and biological samples for later identification of phytoplankton, zooplankton, and benthic macroinvertebrates (USEPA, 2009). In 2008, EcoAnalysts, Inc. (Moscow, Idaho, USA) was awarded a contract for the taxonomic identification of a large portion of the biological samples collected for the NLA. During the processing of the benthic macroinvertebrate samples from this project, an unusual mayfly (Ephemeroptera) nymph that did not match any known taxonomic description was discovered from several sites in the eastern United States. The long antennae, the ventrally oriented dorsal lobe of the apex of the femur and the lateral ocelli being located posterior to the initial lateral branches of the epicranial suture all indicate placement in the family Baetidae (McCafferty, 1981; Wang & McCafferty, 1996). In this paper, we name and describe this unusual small minnow mayfly.

Material and methods

Sampling for the NLA was conducted by crews contracted by EPA. Benthic macroinvertebrate sampling was done with a D-net. One meter sweeps were done at ten locations around the shoreline of each lake. Sampling was done in littoral areas and locations were evenly apportioned around the perimeter of the lake. The resulting material from the individual sweeps was composited into a single sample per water body and preserved in ethanol (USEPA, 2009). Each sample had a 500 count sub-sample randomly removed and identified. In those samples where the new mayfly was found, the remainder of the sample was searched for additional specimens. Subsequent sampling at the Tipton Lakes site conducted in the summer of 2009 failed to provide additional nymphs for rearing or molecular analysis. All specimens in our study were collected by

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