



Review of the Japanese species of *Paramerina* (Diptera: Chironomidae: Tanypodinae), with a key to the known males

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Abstract

The Japanese species of the genus *Paramerina* Fittkau, 1962 are reviewed based on studies of the type material and the specimens collected recently. Three species, *P. kurobekogata* Sasa et Okazawa, *P. tokararesea* Sasa et Suzuki and *Krenopelopia amaminova* Sasa, are treated as synonyms, and four species, *P. yunouresia* (Sasa), *P. okigenga* (Sasa), *P. okimaculata* Sasa and *P. togavicea* (Sasa et Okazawa), are recognized as valid. The adults, males and females, of the first two and the last species, and the pupa of the last species are redescribed. The pupae and larvae of the first two species, and the larva of the last species are described for the first time in this paper. Based on the examination of the holotype, the morphological features of *P. okimaculata* are discussed. The generic diagnosis for the larva is emended. A key to males of the known Japanese species is provided.

Key words: Diptera, Chironomidae, Tanypodinae, *Paramerina*, taxonomy, synonym, Japan

Introduction

The genus *Paramerina* Fittkau, 1962 has a nearly worldwide distribution, and comprises twenty-eight species (Ashe & O'Connor 2009). The following nine species have been described from Japan: *P. divisa* (Walker), *P. okimaculata* Sasa, *P. tusimuheia* Sasa et Suzuki, *P. kurobekogata* Sasa et Okazawa, *P. tokararesea* Sasa et Suzuki, *P. yunouresia* (Sasa), *P. amaminova* (Sasa), *P. togavicea* (Sasa et Okazawa), and *P. okigenga* (Sasa). According to Kobayashi & Endo (2008), only *P. divisa* and *P. okimaculata* have been recognized as valid with the last six synonymized with the first species, based solely on the wing without pigmentation and the abdominal tergites II and V being almost pale. A re-examination of the holotype male of *P. tusimuheia* Sasa et Suzuki, 1999 (*q. v.*) agrees with the conclusion given by Kobayashi & Endo (2008) that the characters, mainly, the presence of lyrate tibial spurs, row of strong setae on the abdominal tergite IX, and short, straight phallapodemes of the hypopygium, are diagnostic of *Zavreliomyia*, resulting in the species being transferred to that genus.

A closer re-examination of the type material belonging to the other species has led us to re-evaluate the validity of some of the synonymized species listed above. Based on collections, so far our conclusion is that only four valid species are recognized from Japan.

Here, we redescribe the males and females of *P. yunouresia*, *P. okigenga* and *P. togavicea*, and the pupa of *P. togavicea*, and describe the pupae and larvae of *P. yunouresia* and *P. okigenga*, and the larva of *P. togavicea*. A re-examination of the holotype of *P. okimaculata* has revealed errors in the original description, which are corrected.

Material and methods

Descriptions of morphological characters are based on slide-mounted specimens except when otherwise stated. Adult body coloration is carefully examined under the reflected light, because the abdomen in some specimens has