



## Notes on winter flies Trichoceridae (Diptera) of Mongolia with description of new species

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### Abstract

The family of winter flies Trichoceridae is newly recorded for Mongolia. Four species, *Trichocera* (*Metatrachocera*) *gigantea* (Dahl), *T. (M.) mackenziei* (Dahl), *T. (Saltrichocera) regelationis* (Linnaeus) and *T. (Trichocera) hiemalis* (De Geer) are first recorded in Mongolia from sampling during 1996, 2003–2006, 2008. A new species, *Trichocera (Saltrichocera) chuluuta*, is described from specimens collected during the fieldwork of the Mongolian Aquatic Insect Survey Project in western and north-central Mongolia.

**Key words:** Diptera, Trichoceridae, Trichocera, new species, Mongolia

### Introduction

Winter flies Trichoceridae together with families Tipulidae, Limoniidae, Pediciidae and Cylindrotomidae are considered by authors to be members of the infraorder Tipulomorpha (for example, Bertone *et al.*, 2008) based on molecular data and adult morphology. Over 15,000 species of Tipulomorpha are described to date (Oosterbroek, 2011). Winter flies are named so from their occurrence during the warmer winter days or colder fall and spring months (McAlpine, 1981). Males are forming swarms especially during dusk hours at lower altitudes and on sunny days at higher altitudes. When outside temperature rises, they tend to hide in caves, hollow trees, or other shaded places.

Trichoceridae is a small family comprising 157 species, with a fairly extensive fossil record extending back from the Middle Jurassic (Krzemińska *et al.*, 2009). *Trichocera* is the largest genus of the family with about 110 described species. The genus is mostly distributed in the Holarctic region, but several species are introduced to islands of the South Atlantic and Australia (Dahl & Krzemińska, 1997). *Trichocera* larvae are saprophagous, found in a variety of habitats, especially in decaying leaves, fungi, burrows of rodents and other shaded places where decaying material accumulates. They also can feed as scavengers and are known to develop in dead bodies of mammals (Broadhead, 1980).

Despite many expeditions that took place in Mongolia starting from middle of the nineteenth century, there are no published records of Trichoceridae from that country. All the species listed here are newly registered for the fauna of Mongolia.

Current sampling for winter flies in Mongolia is part of activities of the Mongolian Aquatic Insect Survey (MAIS), an international collaborative project involving Mongolian, U.S.A. and European scientists, funded primarily by a grant from the U.S.A. National Science Foundation (Biotic Surveys and Inventories Program). Starting in 2002, this project has focused on documenting the species diversity of aquatic insects. Sampling in the first phase of MAIS (2003–2006) involved the Selenge River Basin watershed, building on earlier collaborative work in the Lake Hovsgol watershed (1996) (Goulden *et al.*, 2006). Sampling was conducted in the Hentiy Mountains and surrounding environs (2003); on the Hangai Mountains drainages (2004); on the lower drainages of the Selenge, and upper drainages of the Eg and Delger Moron Rivers (2005); on the lower drainages of Selenge, drainages of