

The ecology, biology and larval instars of the North Caucasian population (Lake Maliy Tambukan) of *Tipula subcunctans* Alexander, 1921 (Diptera: Tipulidae)

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Abstract

Different aspects of ecology, biology and regional distribution of *Tipula subcunctans* in the North Caucasus (Lake Maliy Tambukan, 12 km south-east of Pyatigorsk) are investigated. Abundance of larvae, fecundity of females, mode of oviposition and other data are presented. First instar larvae are described and the existence of two morphological forms of fourth instar larvae is demonstrated.

Key words: North Caucasus, *Tipula subcunctans*, ecology, biology, larvae morphology

Introduction

In the scope of my studies of Tipuloidea in the North Caucasian foothills, limoniids and tipulids were collected in the basin of Bolshoy Tambukan and Maliy Tambukan (Lake Sukhoe) at salt pans situated in the forest-steppe zone in 12 km south-east of Pyatigorsk (43°57' N., 43°10' E.) at 575 m. *Tipula* (*Tipula*) *subcunctans* Alexander, 1921 (= *czizeki* de Jong, 1925), an autumn crane fly, occurs here (Lantsov 2004) including the preimaginal stages which, together with the ecology of the species, are of certain interest.

This species has been recorded as a pest in the Ukraine, Byelorussia and Germany (Maercks 1941; Sellke 1936, 1937; Savchenko 1961, 1981). It can cause a lot of harm in areas flooded during the spring-tide and winter thaws (Savchenko 1981). The fourth instar larva of *T. subcunctans* has not been thoroughly studied, unlike that of related species (Brindle 1959, 1960; Byers 1958; Theowald 1957, 1967; Savchenko 1983). Available information on the ecology is largely based on western European populations (Jong 1925; Sellke 1936, 1937; Maercks 1941; Savchenko 1961).

The works devoted to the biology and ecology of the species, as well as to other closely related *Tipula* (Sellke 1936, 1937; Maercks 1941; Hemmingsen & Theisen 1956; Theowald 1957, 1967; Brindle 1959), do not provide descriptions and drawings of the first instar larva of *T. subcunctans*. According to Pjotr Oosterbroek (personal communication) the first instar larva of this species has not been studied. Savchenko in his monograph (1983: 126) gives certain details about the first instar larva of *T. subcunctans* (referred to as *Tipula* (*Tipula*) *czizeki* de Jong, 1925), namely that the number of elongate setae protruding from the sclerite below spiracles is four, the same as in the first instar larva of *Tipula* (*Tipula*) *paludosa* (Meigen, 1830). However the reference to the drawing is erroneous; pictures of the two species are missing from the figure showing the stigma of the first instar larva of other species of tipulids (Savchenko 1983: 127–128, figs 67, 68).