



Two new species of the subterranean amphipod genus *Stygobromus* (Amphipoda: Crangonyctidae) from Siberia, with new data on *Stygobromus pusillus* (Martynov) and remarks on morphology and biogeographic relationships

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Abstract

Two new species of the subterranean amphipod genus *Stygobromus* are described from groundwater habitats in Siberia: *Stygobromus mikhaili* n. sp. from a spring in the Central Altay Mountains and *Stygobromus anastasiae* n. sp. from two non-freezing springs in South Pribaikalye in the Irkutsk area. Additional taxonomic details of the previously described *S. pusillus* (Martynov) from Teletskoye Lake, also in Central Altay, are illustrated based on syntype material. Utilization of SEM has revealed a tiny structure on antenna 2 that appears to be a new character, and may prove useful in future analyses. Descriptions of the two new species raise the total number of described species in the genus *Stygobromus* to 134, but four or possibly five have been found in the Palearctic region outside North America. However, it is likely that continued exploration of subterranean groundwater habitats in Siberia and other parts of the Palearctic will reveal additional new species of *Stygobromus* and provide more insight into the origin and geographic distribution of this large, northern hemisphere, subterranean freshwater amphipod genus. Careful evaluation of taxonomic affinities of the new species and comparison with previously described congeners should provide further insight into the biogeographic history of *Stygobromus*.

Key words: Crangonyctidae, Amphipoda, *Stygobromus*, subterranean, groundwaters, stygomorphic, Siberia, Teletskoye Lake, Palearctic

Introduction

Species of the large, Holarctic, subterranean amphipod genus *Stygobromus* are exclusively stygomorphic (characterized by absence of eyes and pigment). They are recorded from a wide variety of groundwater habitats, including pools, streams and lakes in caves, phreatic water accessible in wells, seeps (= hypotelminorheic) and small springs, and the underflow (hyporheic) of surface streams (Holsinger 2009; see also Culver & Pipan 2009). In North America, the genus is represented by 129 described species, although numerous new species have been discovered and are either undergoing description or are provisionally recognized. In addition, five species are recorded from Eurasia, two of which are described below, bringing the total number of described species in the genus to 134.

The first Asian species, *Stygobromus pusillus*, was described by Martynov (1930) based on specimens collected from Teletskoye Lake and source of the Biya River in the Altay Mountains of south-central Russia (Fig. 1; see also Fig. 3 in Holsinger 1987). Although originally placed in the now defunct genus *Eucrangonyx*, this species clearly belongs to *Stygobromus* (Birstein 1940; Holsinger 1987). The second species, *Synurella apscheronia*, was described by Derzhavin (1945) from a spring in Azerbaijan just west of the Caspian Sea. This species was originally assigned to the closely related, crangonyctid genus *Synurella* by Derzhavin, but the description is inadequate and the species is a problematic member of *Stygobromus* (Holsinger 1987). The