



Water mites of the genus *Ljania* Thor, 1898 (Acari: Hydrachnidia: Aturidae) in Russia

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Abstract

This study presents a detailed taxonomic review of water mites of the genus *Ljania* Thor, 1898 (Aturidae, Axonopsinae) found in the fauna of Russia. The review includes illustrations and (re)description of males and females of three species: *L. bipapillata* Thor, 1898, *L. macilenta* Koenike, 1908 and *L. orientalis* **sp. n.** A diagnosis of the genus *Ljania* and identification key to the listed species based on adults are given.

Key words: water mites, Aturidae, Axonopsinae, *Ljania*, *L. bipapillata*, *L. macilenta*, *L. orientalis* **sp. n.**, morphology, identification key, Russia

Introduction

The world fauna of water mites of the genus *Ljania* Thor, 1898 currently includes about ten species and subspecies (Viets 1987; Kim & Chung 1996). In the monograph “Limnofauna Europaea” Viets (1978) reported the following species and subspecies: *L. bipapillata bipapillata* Thor, 1898; *L. bipapillata subterranea* Schwoerbel, 1964; *L. macilenta macilenta* Koenike, 1908 and *L. macilenta longissima* Schwoerbel, 1962. Later Viets (1987) considered both these of subspecies as full species: *L. subterranea* Schwoerbel, 1964 and *L. longissima* Schwoerbel, 1962. No species of the genus were recorded from the territory of the former USSR by Sokolow (1940), but the species *L. bipapillata* and *L. macilenta* were recorded in the European Russia comparatively recently (Solovkina & Tsember 1971; Tuzovskij 1977, 1978a). A population from Asian Russia reported as *Ljania* sp. (Semenchenko 2005) was later identified as *L. macilenta* (Semenchenko 2010). Investigations in the Far East of Russia made it possible to find one more species of this genus: *Ljania orientalis* **sp. n.** Data on the morphology of *L. bipapillata* and *L. macilenta* are presented in many works (Thor 1905; Koenike 1909, 1914; Motaş & Angelier 1927; Viets 1923, 1936; Soar & Williamson 1929; Walter 1944; Lundblad 1956; Laska 1962; Schwoerbel 1961, 1967; Petrova 1968; Szalay 1964; Biesiadka 1970, etc.), but they are, as a rule, very brief and insufficiently illustrated, complicating the identification of the species of this genus.

The aim of the paper is to study the morphology of the species of the genus *Ljania* collected in Russia and to give an identification key for the Russian species.

Material and methods

Specimens were collected in streams in the European part of Russia (coll. Tuzovskij and O. Tsember) and in running waters of the Asian part of Russia (coll. T. Vshivkova). Specimens collected by P. Tuzovskij were not fixed in Koenike liquid, but slides were made from the fresh material. Most specimens were not dissected, thus preserving the natural shape of the body. For several females and males the gnathosoma was mounted in a position that allowed investigating chelicerae and pedipalps in lateral view. Specimens collected by T. Vshivkova and O. Tsember were fixed in a 3% formaldehyde solution and were dissected. All mite specimens were mounted in Hoyer's medium.