



Two new species of *Chaetonotus* (Gastrotricha, Chaetonotida, Chaetonotidae) from Japan

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Abstract

Two new species of freshwater gastrotrichs are described from a pond in Osaka, Japan. *Chaetonotus retiformis* n. sp. is a medium size species attaining a length of 180 µm, characterized by a three-lobed head with a single tuft of sensory cilia on each side and small scales with four long spines on the base of each member of the furca. *Chaetonotus machikanensis* n. sp. is a small size species attaining a length of 110 µm in length, characterized by a five-lobed head with a two tufts of sensory cilia on each side and large scales with long barbed spines.

Key words: benthos, *Chaetonotus*, freshwater gastrotrichs, Machikane Pond, pond fauna

Introduction

The Gastrotricha is a small phylum of 749 marine and freshwater species that live in the interstitial spaces of bottom sediments and superficial detritus, the surfaces of submerged plants and animals, and the water film of soil particles (Todaro and Tongiorgi, 2008; Balsamo et al., 2009). The phylum is divided into two groups: the marine (except for 2 species) Macrodsasyida and the marine and freshwater Chaetonotida. The most common species are freshwater gastrotrichs that inhabit ponds, swamp, streams, and lakes. Their bodies are tenpin- or bottle- like shaped; flattened ventrally and arched dorsally. There is an anterior head with the sensory organs, brain, and pharynx. Posteriorly, a “furca” bears the adhesive organ. The locomotory cilia are restricted to the ventral surface, forming a pair of ciliary bands. The body wall is usually composed of the external cuticle of a flexible proteinous layer. In some gastrotrichs, the basal layer is locally thickened and specialized to form scales, spines, and hooks. The cuticular scales vary in arrangement and shape, depending on the species.

To date, 33 freshwater gastrotrichs including 7 genera have been recorded in Japan. Kawamura (1918) reported the first species, *Polymerurus nodicaudus* (Voigt, 1901) in Shinshu (Nagano Prefecture). Later, Saito (1973) reported 26 species in the ponds of Hiroshima Prefecture. Sudzuki (1971a, b) reported 11 species in lakes around Mount Fuji (Yamanashi Prefecture) and Shigakogen (Nagano Prefecture). There is no record of Japanese freshwater gastrotrichs in the subsequent decades.

The present study describes two new species from a pond in the Osaka University campus.

Material and methods

Gastrotrichs were found on water plants and in bottom sediment of Machikane Pond in the Osaka University campus (Toyonaka, Osaka Prefecture, Honshu, Japan). This pond is about 10m in diameter and 0.5m in maximum depth. Rainwater is the only source of water. It is surrounded by a grove of trees, including plum, oak, and cherry. Fallen leaves accumulate in the sandy, mud bottom and it is bordered by large rocks.

The pond fauna has several introduced vertebrates, including *Trachemys scripta* (Schoepff), *Micropterus salmoides* (Lacepède), *Lepomis macrochirus* Rafinesque, and *Rana catesbeiana* Shaw. The benthic invertebrate fauna