



## Redescription of four species of *Hatschekia* (Copepoda: Siphonostomatoida: Hatschekiidae) parasitic on tetraodontiform fishes from Japan

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### Abstract

Four species of the genus *Hatschekia* Poche, 1902 (Copepoda: Siphonostomatoida; Hatschekiidae) are redescribed based on specimens collected from tetraodontiform fishes captured recently in Japanese waters: female *H. iridescens* Wilson, 1913 from *Diodon liturosus* Shaw (representing a new host record), *D. hystrix* L., and *D. holocanthus* L.; female *Hatschekia legouli* Nuñez-Ruivo, 1954 (representing a new parasite record for Japan) from *Chilomycterus reticulatus* L.; female *H. ostracii* Yamaguti, 1953 from *Ostracion immaculatus* Temminck & Schlegel and *O. cubicus* L.; and both sexes of *H. monacanthi* Yamaguti, 1939 from *Thamnaconus modestus* (Günther). Proportions of various parts of the female body and appendages are included as important characters to distinguish morphologically similar species. A key to the 20 species of *Hatschekia* reported from Japanese waters is also included.

**Key words:** taxonomy, copepods, marine fish, Japanese waters

### Introduction

The genus *Hatschekia* Poche, 1902 is one of the major copepod genera parasitic on marine teleosts. Jones (1985) revised this genus and recognized 68 species as valid. Since then, a total of 22 new species have been described from the Indo-Pacific region (Pillai 1985; Castro & Baeza 1986; Villalba 1986; Jones & Cabral 1990; Kabata 1991; Ho & Kim 2001). Of the 90 valid *Hatschekia* species (Boxshall & Halsey 2004), 20 have been reported from Japan (Yamaguti 1939, 1953, 1963; Shiino 1957a, b; Yamaguti & Yamasu 1959; Jones 1985). However, only females were described for most of these Japanese species, and the descriptions were often insufficient. It is fair to point out that describing and identifying members of *Hatschekia* are challenging tasks, as these parasites have comparatively minute and vestigial appendages.

Hewitt (1969) was the first copepodologist to use extensively the length and width ratios of some body parts in his descriptions of *Hatschekia* taxa. However, Jones (1985) considered such ratios were dubious because these features were shown to vary widely within a relatively large collection of *Hatschekia hippoglossi* (Guérin-Méneville, 1837). Nonetheless, Kabata (1991) mentioned that all such variations have their limits, and used the trunk length: cephalothorax length ratio and the cephalothorax length: width ratio as delineating features for some of his new taxa. In this paper, we redescribe four species of *Hatschekia* based on new material collected from tetraodontiform fishes from Japan: *H. iridescens* Wilson, 1913, *H. legouli* Nuñez-Ruivo, 1954, *H. ostracii* Yamaguti, 1953, and *H. monacanthi* Yamaguti, 1939. We also utilize this opportunity to re-evaluate the taxonomic value of using proportional measurements of various parts of the female body and appendages to support the separation of taxa within this parasite group. A key for identification of females of the 20 species of *Hatschekia* in Japan is included.