



## Three new species of *Benedenia* Diesing, 1858 from the Great Barrier Reef, Australia with a key to species of the genus

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### Abstract

Three new species of *Benedenia* are described from the Great Barrier Reef: *B. ernsti* n. sp., *B. fieldsi* n. sp. and *B. haywardi* n. sp. *Allobenedenia ishikawae* (Goto, 1894) Yamaguti, 1963 does not fit the diagnosis of *Allobenedenia* Yamaguti, 1963 as amended by Yang, Kritsky & Sun, 2004 and we return it to *Benedenia* as *B. ishikawae* (Goto, 1894) Monticelli, 1902. We consider *Benedenia sargocentron* Zhang, Yang & Liu, 2001 a synonym of *B. hawaiiensis*. *Benedenia* now consists of 25 species with a broad range of morphological variations, host relationships and microhabitats. A key to species of *Benedenia* is presented. *Benedenia fieldsi* may pose a significant risk to sea cage aquaculture of its serranid hosts.

**Key words:** Platyhelminthes, Monogenea, Capsalidae, Benedeniinae, *Benedenia*, *Benedenia ernsti* n. sp., *Benedenia fieldsi* n. sp., *Benedenia hawaiiensis*, *Benedenia haywardi* n. sp., *Benedenia ishikawae*, *Benedenia sargocentron*, taxonomy, aquaculture

### Introduction

*Benedenia* Diesing, 1858, a large genus of Monogenea, was reviewed by Whittington *et al.* (2001). Some species infect commercially important teleost fish. Ongoing studies of capsalid monogeneans subsequent to that paper have revealed another species that should be included in *Benedenia* and a new synonymy, on which we elaborate here. We also describe 3 new species of *Benedenia* from the Great Barrier Reef, Queensland, Australia discovered during surveys of the fish parasite fauna of that region.

### Materials and methods

We surveyed fish at Heron Island [23°27'S, 151°55'E] and Lizard Island [14°40'S, 145°27'E], Great Barrier Reef, Queensland, Australia to obtain living specimens of *Benedenia* spp. Fishes collected by hook and line, spear and seine net were identified using Randall *et al.* (1997). Taxonomic validity of hosts was checked using Nelson (1984; 1994), Eschmeyer (1998) and Froese & Pauly (2009).

All hosts were killed by pithing and dorsal chordotomy and examined immediately. Spared fish were dissected within a few hours of capture. Fish were measured in millimetres from their anterior-most extremity to caudal fork (LCF). The following dissection procedure was performed as quickly as possible after hosts were killed. The fish was immersed in filtered seawater (FSW) prepared by filtration to 0.22 µm using a