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## Two new species of philometrid nematodes (Nematoda: Philometridae) in *Epinephelus coioides* (Hamilton, 1822) from the South Bali Sea, Indonesia

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### Abstract

Based on light and scanning electron microscopy, two new species of philometrid nematodes, *Spirophilometra endangae* **sp. nov.** and *Philometra epinepheli* **sp. nov.** (Nematoda: Dracunculoidea: Philometridae) are described from *Epinephelus coioides* (Hamilton, 1822) (Perciformes: Serranidae) from the South Bali Sea, Indonesia. *Spirophilometra endangae* **sp. nov.** was isolated from the fins of *E. coioides*. The new species can be distinguished from the most closely related *S. eichleri* Parukhin, 1971 by a larger total body length and the site of infection in the host. The new species differs from *S. centropomi* (Caballero, 1974) also in the larger body size of the gravid females and the site of infection in the host. *S. endangae* **sp. nov.** differs from *S. pacifica* (Moravec, Santana-Pineros, Gonzales-Solis & Torres-Huerta, 2007) in the structure and arrangement of the spines on the middle part of the body, the infection site of the worm, the type host and the zoogeographical host distribution. *Philometra epinepheli* **sp. nov.** differs from all other *Philometra* spp. congeners so far recorded from *Epinephelus* groupers in the total body length and the site of infection. This is the first opercula-infecting species of *Philometra* described from the fish family Serranidae.

**Key words:** nematodes, *Epinephelus*, *Spirophilometra*, *Philometra*, new species, Indonesia

### Introduction

Fish parasitology research in Indonesia is facing overwhelming species richness because of the high biodiversity of potential fish hosts in the region. This contrasts a widely scattered literature in obscure journals, and the lack of taxonomic review articles that can be treated as a new baseline for the further exploration of the Indonesian fish parasite fauna. Palm (2000, 2004, 2008) summarized the diversity of trypanorhynch cestodes in Indonesia, with 54 species or over 20% of the then existing total species diversity occurring in that region. Kuchta *et al.* (2009) recorded four species of bothriocephalideans, and most recently Bray & Palm (2009) provided a key and described two new species of bucephalid digeneans. Within the nematodes, Palm *et al.* (2008) recorded 34 different fish species infected with anisakid nematodes, with the molecular identification of three genotypes of *Anisakis typica* (Diesing, 1860) in four of them. Fish parasites from Indonesian grouper mariculture have been most recently recorded by Rueckert *et al.* (2008, 2009b, 2010) and Palm *et al.* (2011). Kleinertz *et al.* (2012) recorded 21 different parasite species in their environmental assessment of the parasite fauna of *Epinephelus areolatus* (Forsskål) and Moravec *et al.* (2012) described five new species of philometrid nematodes, demonstrating a high diversity of parasitic helminths, including the nematodes, within commercially important fish species from the region.

Most recently, interests in dracunculid nematodes of the family Philometridae has increased throughout the world. They parasitize marine fishes often of commercial importance (Petersen *et al.* 1993) and can cause serious damage to the infected fishes (Moravec & Justine 2005; Moravec *et al.* 2008). The taxonomy of species within this family is difficult because of their morphological and biological peculiarities. Female philometrids are well known because of their large body size, often red color, and easy visibility in the visceral organs, the fins and the muscles