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A New Species of the Enigmatic Copepod Genus *Lernaeascus* (Cyclopoida: Philichthyidae), Parasitic on Angelfishes (Actinopterygii: Pomacanthidae) from the Ryukyu Islands, Japan

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Lernaeascus kabuto sp. nov. (Cyclopoida: Philichthyidae) is described based on specimens of both sexes collected from two species of angelfish (Actinopterygii: Pomacanthidae), the purplemask angelfish *Centropyge venusta* (Yasuda and Tominaga, 1969) and the yellow angelfish *C. heraldi* Woods and Schultz, 1953, caught in the East China Sea near Kumejima Island, Japan. *Lernaeascus kabuto* sp. nov. is easily distinguished from its congener, *L. nematoxys* Claus, 1886, by the following characters: the male has a pair of elongate, distomedially notched dorsal plates on the second pedigerous somite, four abdominal somites, a pair of dorsal hamuli on the third abdominal somite, a non-bifurcate genital operculum, a curved proximal antennulary segment, a naked maxillule, a maxilla without a posteriorly-directed process on the syncoxa, and the endopod of leg 1 modified into a simple spine; and the female has a triangular antenna, a styliform process on the labrum, and three setae on the exopods of legs 1 and 2.

Key Words: *Lernaeascus kabuto* sp. nov., parasitic copepod, mucous canal, *Centropyge* spp., KUMEJIMA 2009 Expedition.

Introduction

The Philichthyidae presently include nine genera and 87 species of highly modified, bizarre-looking copepods (Walter and Boxshall 2015). Among the nine genera, *Colobomatus* Hesse, 1873 is the most speciose, with 70 species. Species of *Colobomatus*, *Colobomatoides* Essafi and Raibaut, 1980, *Leposphilus* Hesse, 1866, *Philichthys* Steenstrup, 1862, *Procolobomatus* Castro Romero, 1994, and *Sphaerifer* Richiardi, 1874 occur in the subcutaneous spaces associated with the sensory canals of the lateral line and/or skull bones of marine actinopterygian fishes (Kabata 1979; Boxshall and Halsey 2004). By contrast, species of *Ichthyotaces* Shiino, 1932 and *Sarcotaces* Olsson, 1872 reside within a cyst in the host tissue (Shiino 1932; Izawa 1974; Boxshall and Halsey 2004), while the single known species of *Lernaeascus* Claus, 1886 inhabits the mucous canals underneath the scales of its flatfish host (Claus 1886, 1887).

The monotypic *Lernaeascus* is hitherto known from only the whiskered sole *Monochirus hispidus* Rafinesque, 1814 (as *Solea monochir* Bonaparte, 1833) in European waters (Claus 1886, 1887, 1888; Dollfus 1927). Although Yamaguti (1963) established the Lerneascidae (sic) to accommodate *Lernaeascus nematoxys* Claus, 1886, this family is currently considered a junior synonym of Philichthyidae (Kabata 1979; Boxshall and Halsey 2004). Recently, we discovered an undescribed species of *Lernaeascus* parasitizing specimens of the purplemask angelfish *Centropyge venusta* (Yasuda and Tominaga, 1969) and the yellow angelfish *C. heraldi* Woods and Schultz, 1953 caught in the East China Sea off Kumejima Island, Japan, during the Kumejima Marine Biodiversity Expedition (a.k.a. KUMEJIMA 2009 Expedition, see Naruse *et al.* (2012)). Additional *Lernaeascus* material was subsequently collected in 2010 from a purplemask angelfish captured off Kumejima Island. In this study, this new species of *Lernaeascus* collected from these angelfish is described based on specimens of both sexes.

Materials and Methods

Angelfish were caught with a gill net positioned at the bottom of a cliff and/or with a hand net on a reef flat in No-