THREE MORE UNRECORDED SEA LICE (COPEPODA, CALIGIDAE) 
PARASITIC ON MARINE FISHES COLLECTED OFF TAI-DONG, TAIWAN

BY

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ABSTRACT

Three species of sea lice (Caligidae) were found parasitic on five species of marine fishes caught off the east (Pacific) coast of Taiwan. The species of parasites and their hosts are: Caligus alaihi Lewis, 1968 in the gill cavities of the flat needlefish, Ablennes hians (Valenciennes in Cuvier & Valenciennes, 1846) and the blackblotch squirrelfish, Sargocentron melanospilos (Bleeker, 1858); Caligus cookeoli n. sp. on the body surface of the arrow bullseye, Priacanthus sagittarius Starnes, 1988 and the longfinned bullseye, Cookeolus japonicus (Cuvier in Cuvier & Valenciennes, 1829); and Lepeophtheirus formosanus n. sp. on the body surface of the ocean sunfish, Mola mola (Linnaeus, 1758).

RÉSUMÉ

Trois espèces de copépodes Caligidae ont été trouvés, parasitant cinq espèces de poissons marins pêchés au large de la côte Est (Pacifique) de Taiwan. Les espèces de parasites et leurs hôtes sont: Caligus alaihi Lewis, 1968, dans les cavités branchiales de l’orphie plate, Ablennes hians (Valenciennes en Cuvier & Valenciennes, 1846) et de l’écureuil à points noirs, Sargocentron melanospilos (Bleeker, 1858); Caligus cookeoli n. sp. sur la surface du corps de Priacanthus sagittarius Starnes, 1988 et du beauclaire longue aile, Cookeolus japonicus (Cuvier en Cuvier & Valenciennes, 1829); et Lepeophtheirus formosanus n. sp. sur la surface du corps du poisson-lune, Mola mola (Linnaeus, 1758).

INTRODUCTION

Caligus Müller, 1785 is the most speciose fish-parasitizing genus of the Copepoda found mostly on marine Osteichthyes. According to Walter & Boxshall

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(2010) the genus currently comprises 291 species. This number is about one-half of the known species of the family Caligidae in the world. In Taiwan, the species of *Caligus* occupy a higher proportion than this world figure. While there are 68 species of the family known from Taiwan (Ho & Lin, 2004, 2007, 2010; Ho et al., 2007, 2008a, b; Lin & Ho, 2007), nearly three-quarters of them (50/68) belong to *Caligus*. In this paper we shall add two more species of *Caligus* to this listing. One of these is new to science.

*Lepeophtheirus* is the second largest genus of the Caligidae, comprising 140 species (Walter & Boxshall, 2010). Since most members of this genus are parasites of cold water fish, only four species of this genus have been recorded from Taiwan (Ho & Lin, 2004; Ho et al., 2008b). However, in this paper we shall add one more species to this record of Taiwan.

All three newly recorded species are parasitic on the fish caught off the east (Pacific) coast of Taiwan.

**MATERIAL AND METHODS**

The fish were purchased from the market in Tai-dong fishing port where the catch of the day was unloaded. The fish were then transferred in an icebox to the laboratory for examination of the copepod parasites. Copepod parasites removed from the host’s gill cavities or body surface were preserved in 70% ethanol. They were later cleared in 85% lactic acid for 1 to 2 hours before dissection in lactic acid. Examination of the dissected parts and appendages under the compound microscope was carried out on a wooden slide following the procedure given by Humes & Gooding (1964). The scientific and common names of the host fish follow FishBase (Froese & Pauly, 2009). All drawings were made with the aid of a drawing tube and measurements were taken after soaking the specimens in lactic acid. Where there were more than 10 specimens, a range of measured values based on 10 randomly selected specimens is given in parentheses in addition to the average value.

**RESULTS**

**Order SIPHONOSTOMATOIDAE**

**Family CALIGIDAE**

*Caligus alaihi* Lewis, 1968 (figs. 1-2)

*Caligus alaihi* Lewis, 1968: 64; Kazachenko, 1975: 211.

Material examined. — One ♀ from gill cavity of flat needlefish, *Ablennes hians* (Valenciennes in Cuvier & Valenciennes, 1846), landed at Tai-dong on 2 April, 2008; 4 ♀♀ from gill cavity