



Redescriptions of two morphologically confusing sea lice *Caligus aesopus* Wilson, 1921 and *C. spinosus* Yamaguti, 1939 (Copepoda: Siphonostomatoida: Caligidae) parasitic on amberjacks (*Seriola* spp.) from Korea

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Abstract

The taxonomically confusing species of sea lice *Caligus aesopus* Wilson, 1921 and *C. spinosus* Yamaguti, 1939 are redescribed based on material taken from gills of amberjacks (*Seriola* spp.) from Korean seas. These two sea lice can be distinguished from each other by the following major differences: (1) the female abdomen of *C. aesopus* has a lateral constriction in the distal third, but that of *C. spinosus* is fusiform, without a constriction; (2) the proximal process on the first antennal segment is subcircular distally in *C. aesopus*, but tapered in *C. spinosus*; (3) the basis of leg 1 has a small tubercle in *C. aesopus*, but none in *C. spinosus*; (4) the protopod (apron) of leg 3 of *C. aesopus* has an inner patch of less than 15 large spinules, but that of *C. spinosus* has a patch of more than 25 small spinules; (5) the innermost spine on the third exopodal segment of leg 4 is distinctly longer than the nearby middle spine in *C. aesopus*, but subequal to the middle spine in *C. spinosus*; (6) the inner margin of the first maxillipedal segment of the male has four processes in *C. aesopus*, but three in *C. spinosus*; and (7) the first maxillipedal segment of the female has a tubercle on the myxal area in *C. aesopus*, but absent in *C. spinosus*.

Key words: Crustacea, copepods, taxonomy, fish parasite, caligids

Introduction

Several species of amberjack fishes (*Seriola* spp.) are currently cultured either commercially or experimentally in Korea, Australia, United States, Japan, and countries bordering the Mediterranean Sea (Sharp *et al.* 2003). Amberjacks are known to be hosts of more than ten species of caligid copepods commonly referred to as sea lice. Some of these sea lice, such as *Caligus spinosus* Yamaguti, 1939, may heavily infect farmed amberjacks and result in mortalities of the fishes (Johnson *et al.* 2004).

Wilson (1921) originally described *Caligus aesopus* as a parasite of "probably *Seriola peruana*" from the Juan Fernandez Islands in the East Pacific. This reference was unknown to many subsequent researchers due to its publication in a journal of limited distribution (Lin & Ho 2007). Another species of sea louse *C. spinosus* was inadequately described, with very limited figures, based on female specimens taken from *Seriola quinqueradiata* Temminck & Schlegel caught in Japan (Yamaguti 1939). In spite of the close similarity between *C. spinosus* and *C. aesopus*, Yamaguti (1939) did not compare his species with *C. aesopus* while he described *C. spinosus*, probably because Wilson's (1921) work was unknown to him.

Later, Shiino (1960) redescribed *C. spinosus* collected from *Seriola aureovittata* Temminck & Schlegel (= *S. lalandi* Valenciennes) and an unidentified fish from Japan. Hewitt (1963) reported *C. aesopus* from *Seriola grandis* Castelnau in New Zealand. Shiino's (1960) *C. spinosus* and Hewitt's (1963) *C. aesopus* appear to be very similar in body form sharing a characteristically truncated female genital complex and an inflated male genito-abdomen, which suggest that they are conspecific.

Fernandez & Villalba (1986) treated *C. spinosus* as a junior synonym of *C. aesopus*. Lin & Ho (2007) redescribed both sexes of *C. aesopus* in detail based on specimens from *Seriola dumerili* (Risso) caught in