

## Chub mackerel, *Scomber japonicus* (Perciformes: Scombridae), a new host record for *Nerocila phaiopleura* (Isopoda: Cymothoidae)

Kazuya NAGASAWA<sup>1)\*</sup> and Hiroki NAKAO<sup>2)</sup>

<sup>1)</sup> Graduate School of Biosphere Science, Hiroshima University,  
1-4-4 Kagamiyama, Higashi-Hiroshima, Hiroshima 739-8528, Japan

<sup>2)</sup> Fisheries Research Division, Oita Prefectural Agriculture, Forestry and Fisheries Research  
Center, Kamiura, Saeki, Oita 879-2602, Japan

**Abstract** An ovigerous female of *Nerocila phaiopleura* Bleeker, 1857 was collected from the caudal peduncle of a chub mackerel, *Scomber japonicus* Houttuyn, 1782 (Perciformes: Scombridae), at the Hōyo Strait located between the western Seto Inland Sea and the Bungo Channell in western Japan. This represents a new host record for *N. phaiopleura* and its fourth record from the Seto Inland Sea and adjacent region.

**Key words:** Cymothoidae, fish parasite, Isopoda, *Nerocila phaiopleura*, new host record, *Scomber japonicus*

### INTRODUCTION

The Hōyo Strait is located between the western Seto Inland Sea and the Bungo Channell in western Japan. This strait is famous as a fishing ground of two perciform fishes of high quality, viz., chub mackerel, *Scomber japonicus* Houttuyn, 1782 (Scombridae), and Japanese jack mackerel, *Trachurus japonicus* (Temminck and Schlegel, 1844) (Carangidae), both of which are currently called “Seki-saba” and “Seki-aji”, respectively, as registered brands (e.g., Ishida and Fukushige, 2010). The brand names are well known nationwide, and the price of the fishes is very high (up to 5,000 yen per kg). Under these situations, the fishermen working in the strait pay much attention to the parasites of the fishes they catch because those fishes are almost exclusively eaten raw as “sashimi.” Recently, a chub mackerel infected by a large parasite on the body surface (Fig. 1A) was caught by a fisherman in the Hōyo Strait and was sent to us for identification. The parasite was identified as the cymothoid isopod *Nerocila phaiopleura* Bleeker, 1857, which is reported herein as a new host record.

### MATERIALS AND METHODS

The fish was commercially caught using hook and line in the Hōyo Strait off Saganoseki, Oita Prefecture, on 30 January 2017. It was found to harbor a large skin parasite before auction and immediately transported to the Oita Prefectural Agriculture, Forestry and Fisheries Research Center, Saeki, where it was examined for the parasite after being photographed and measured for total length (TL). The parasite was carefully removed from the fish, fixed and preserved in 70% ethanol. This parasite specimen was sent to Hiroshima University, Higashi-Hiroshima, for identification. It is deposited in the Crustacea (Cr) collection of the National Museum of Nature and Science, Tsukuba, Ibaraki Prefecture (NSMT-Cr 25583).



Fig. 1. A chub mackerel, *Scomber japonicus*, infected by an ovigerous female of *Nerocila phaiopleura* (A, B) and a fresh specimen of *N. phaiopleura* (C), dorsal view, NSMT-Cr 25583. The fish was commercially caught in the Hōyo Strait off Saganoseki, Oita Prefecture, western Japan, on 30 January 2017. Scale bars: 5 cm in A; 10 mm in B and C.

## RESULTS AND DISCUSSION

The parasite was firmly attached to the caudal peduncle of the fish (306 mm TL) and oriented parallel to the fish's body (Fig. 1A-B). The parasite (Fig 1B-C) is an ovigerous female, measuring 32.2 mm in total length (including uropod rami) and 13.5 mm in maximum width (in ethanol). It has a cephalon with a broadly rounded anterior margin, large eyes, straight and long uropod exopods, and black stripes on the uropod exopods and lateral sides of the pleon and posterior pereonites. These morphological features fit the previous descriptions of *N. phaiopleura* (Bowman and Tareen, 1983; Bruce, 1987; Nagasawa and Shirakashi, 2017).

*Nerocila phaiopleura* is a skin parasite of various marine fishes in the Indo-West Pacific (e.g., Bowman and Tareen, 1983; Bruce, 1987; Bruce and Harrison-Nelson, 1988; Trilles *et al.*, 2011, 2013; Aneesh *et al.*, 2013; Nagasawa and Shirakashi, 2017). In this study, the parasite was found infecting *S. japonicus*, which belongs to the family Scombridae. To date, four species of this family are known to serve as the hosts for *N. phaiopleura*: Indian mackerel, *Rastrelliger kanagurta* (Cuvier, 1816), in India (Rameshkumar and Ravichandran, 2010; Trilles *et al.*, 2013); Indo-Pacific king mackerel, *Scomberomorus guttatus* (Bloch and Schneider, 1801), in India (Trilles *et al.*, 2011: table 1); Japanese Spanish mackerel, *Scomberomorus niphonius* (Cuvier, 1832), in Japan (Nagasawa and Tensha, 2016;

Hata *et al.*, 2017); and Pacific bluefin tuna, *Thunnus orientalis* (Temminck and Schlegel, 1844), in Japan (Nagasawa and Shirakashi, 2017). Thus, the collection of *N. phaiopleura* in this study represents a new host record for this parasite.

*Nerocila phaiopleura* has been reported three times before from two fish species in the Seto Inland Sea close to the Hōyo Strait: Japanese sardine, *Sardinopsis melanostictus* (Temminck and Schlegel, 1846) (Saito and Hayase, 2000) and Japanese Spanish mackerel (Nagasawa and Tensha, 2016; Hata *et al.*, 2017). This paper is the fourth record of *N. phaiopleura* from the Seto Inland Sea and its adjacent region. Another species of cymothoid isopod *Ceratothoa carinata* (Bianconi, 1869) is also known to parasitize Japanese scad, *Decapterus maruadsi* (Temminck and Schlegel, 1843) (Crangidae), in the western Seto Inland Sea near the Hōyo Strait (Nagasawa *et al.*, 2014).

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## マサバはイワシノコバンの新宿主

長澤 和也<sup>1)</sup>・中尾 拓貴<sup>2)</sup>

<sup>1)</sup> 広島大学大学院生物圏科学研究科, 〒739-8528 広島県東広島市鏡山1-4-4

<sup>2)</sup> 大分県農林水産研究指導センター水産研究部, 〒879-2602 大分県佐伯市上浦大字津井浦194-6

**要 旨** 大分県佐賀関沖の豊予海峡で漁獲されたマサバの尾柄部に等脚類ウオノエ科のイワシノコバン *Nerocila phaiopleura* Bleeker, 1857の寄生を認めた。マサバはイワシノコバンの新宿主である。本報告は、瀬戸内海と周辺水域からのイワシノコバンの第4記録となる。

**キーワード**：イワシノコバン, ウオノエ類, 魚類寄生虫, 新宿主, 等脚類, マサバ