

## *Norileca indica* (Isopoda, Cymothoidae) Parasitic on Bigeye Scad *Selar crumenophthalmus* in Thailand

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**Abstract.** Specimens of the cymothoid isopod *Norileca indica* (Milne-Edwards, 1840) Bruce, 1990 were collected from the branchial cavity of bigeye scad *Selar crumenophthalmus* in Pattani Bay, a small bay on the southernmost coast of Thailand, facing the Gulf of Thailand in 2008 and 2009. This is the first record of *N. indica* in Thailand.

**Key words:** *Norileca indica*, *Selar crumenophthalmus*, Isopoda, Cymothoidae, fish parasite, bigeye scad, Thailand

### Introduction

When we conducted a parasitological study of marine fishes in Pattani Bay, a small bay on the southernmost coast of Thailand, facing the Gulf of Thailand, we collected specimens of the cymothoid isopod *Norileca indica* (Milne-Edwards, 1840) Bruce, 1990 from bigeye scad *Selar crumenophthalmus* (Bloch). This collection represents the first record of *N. indica* in Thailand and is herein reported.

### Materials and Methods

Bigeye scad *Selar crumenophthalmus* were commercially caught in Pattani Bay (6°54'46"N, 101°17'9"E), Pattani Province, Thailand. Ten fish were monthly collected from a fishing boat at Pattani Port in the middle of each month from October 2008 to March 2009 and brought to the laboratory of the Faculty of Science and Technology, Prince of Songkla University, Pattani Campus, where they were exam-

ined for parasites. Isopods were removed from fishes and fixed in 70% ethanol. Voucher specimens are deposited in the crustacean (Cr) collection at the National Museum of Science and Technology, Tokyo (NSMT-Cr 20854). The English and scientific names of fishes follow Froese & Pauly (2009).

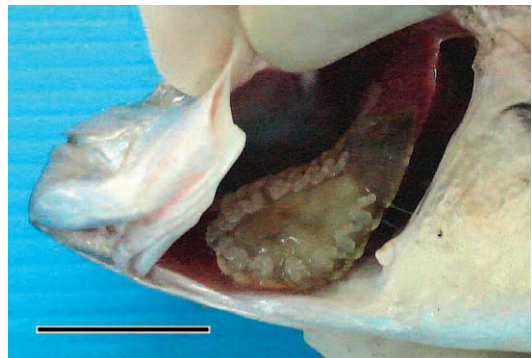


Fig. 1. Adult female of *Norileca indica* infecting the left branchial cavity of *Selar crumenophthalmus* from Pattani Bay, southern Thailand. Scale bar: 20 mm.

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## Results

Of 60 fish [18.0–25.9 (mean 20.6) cm in body length] examined during six months in this study, 51 (85%) were infected each with one isopod in their branchial cavity, where it was positioned ventrally (Fig. 1). Monthly prevalence of infection was stably high, ranging from 70 to 100%. Twenty-nine (57%) and 22 (43%) fish had infection in the left and right cavities, respectively. The body shape of isopods depended on the attachment site: their body twisted to the right side in the left branchial cavity, and *vice versa*.

All isopod specimens are identified as *Norileca indica* (Fig. 2A). Body of females ( $N=4$ ) is 30.4–34.2 (mean 32.2) mm long and 12.2–14.9 (13.8) mm

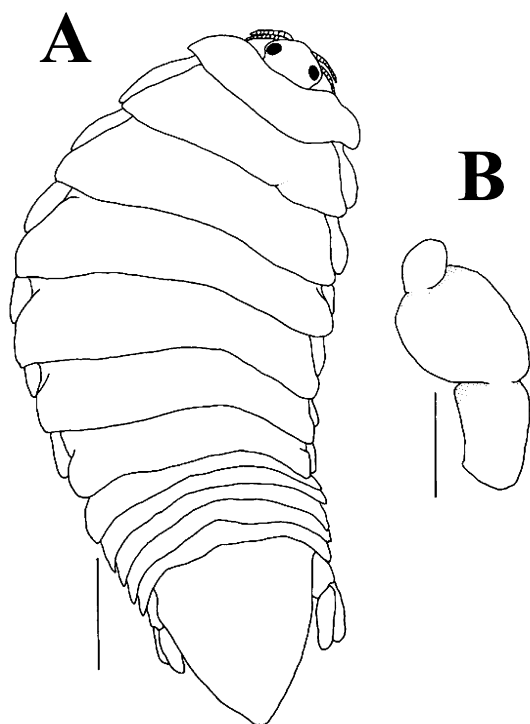


Fig. 2. Adult female of *Norileca indica* from the branchial cavity of *Selar crumenophthalmus* in Pattani Bay, southern Thailand. A. Habitus, dorsal view, B. Mandible palp articles 1-3, dorsal view. Scale bars: 5 mm in A, 0.05 mm in B.

wide at pereonite 4. They are characterized by a body twisted to one side, a mandible palp article 3 much smaller than article 2 (Fig. 2B), pleonite 5 nearly as wide as pleonite 1, and a triangular pleotelson vaulted on the anteromedial surface. Color in alcohol is pale dark green or pale dark yellow.

## Discussion

*Norileca indica* was previously reported as *Livoneca* (or *Lironeca*) *indica* Milne-Edwards, 1840 or *Livoneca ornata* Heller, 1868 but it has been currently assigned to the present genus which was erected by Bruce (1990). The species is known to widely occur in the Indo-West Pacific region (see Trilles, 1976; Bruce, 1990 for the old literature), including Sumatra (type locality), Indonesia, New Guinea, Australia (Avdeev, 1978; Bruce, 1990, 1991), the Philippines (Yamauchi *et al.*, 2005), China (Yu & Li, 2003), and Mozambique (Rokicki, 1982). Although the finding of *N. indica* in Thailand is not surprising from this wide distribution in the Indo-West Pacific region, the present collection represents the first country record for the species.

Five species of marine teleosts so far have been reported as hosts for *N. indica*: bigeye scad *Selar crumenophthalmus* (Bloch), blackfin scad *Alepes melanoptera* (Swainson) (as “*Atule malam*”), small-mouth scad *Alepes apercna* (Grant) (Perciformes: Carangidae), Indian mackerel *Rastrelliger kanagurta* (Cuvier) (Perciformes: Scombridae), and an unidentified herring *Herklotsichthys* sp. (as “*Herklotichthyes* sp.”) (Clupeiformes: Clupeidae) (Avdeev, 1978; Rokicki, 1982; Bruce, 1990, 1991; Yu & Li, 2003). Fishes of the family Carangidae may be preferred hosts because three of these five species belong to the family.

Rokicki (1982) reported that *N. indica* was found on all bigeye scad specimens examined ( $N=70$ ) from off Mozambique. This isopod is a very common parasite of bigeye scad in Pattani Bay, southern Thailand (this study). Despite such high prevalence of infection, nothing is known about its life cycle, ecology, and associations with hosts: we need more

research on this parasite.

Much remains of the marine cymothoid isopods of Thailand. Only less than ten species have been reported from this country to date, four of which being *Mothocya collettei* Bruce, 1986, *M. renardi* (Bleeker, 1856), *Ryukyua circularis* (Pillai, 1854), and *Glossobius* sp. (Bruce, 1986; Williams & Williams, 1986, 1994). Sirikanchana (1982) listed four species of cymothoids (“*Livoneca vulgaris* Stimpson, *Livoneca* sp., *Nerocila pigmentata*, *Nerocila* sp.”) from Thai fishes but doubtful identification was included (Williams & Williams, 1986). It is desirable to conduct a systematic study on the marine cymothoid fauna of Thailand.

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