

Eisothistos besar n. sp. from a coral reef in the Tioman Archipelago, first member of the genus from southeast Asia (Crustacea: Isopoda)

by

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With 26 figures and 1 table

ABSTRACT

Eisothistos besar n. sp. is described from a coral reef in the Tioman Archipelago, Malaysia. The new species is closely related to *Eisothistos teri* Kensley & Snelgrove, 1987 from the Caribbean and was found associated with dead coral substratum.

INTRODUCTION

During a survey of marine invertebrates inhabiting dead coral substratum on fringing reefs in the Tioman Archipelago, off the Malaysian Peninsula, a new species of *Eisothistos* (Anthuridea: Hyssuridae) was discovered. Species of this genus are not often found and the new one described below is the first record of *Eisothistos* from southeast Asia. Up to now 16 species were described, 9 of them since 1980. 11 species are included in a catalogue of Anthuridean isopods (NEGOESCU & WÄGELE 1984: 117) with notes on their geographic and bathymetric distribution, as well as on their habitat. The information on the 5 species discovered since 1984 is summarized in table 1.

The coral reef fauna of the two Malaysian islands Pulau Babi Besar and Pulau Tioman was studied by the author over a period of 3 weeks in April 1991. Specimens of the new *Eisothistos* were found only at Pulau Babi Besar, associated with dead *Acropora* sp. and *Pocillopora damicornis* corals.

Specimens are deposited in the Muséum d'Histoire naturelle, Genève (MHNG) and in the author's private collection.

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EISOETHISTOS Haswell, 1884

Eisoethistos besar n. sp. (Figs. 1-26)

H o l o t y p e : Immature adult (MHNG), Malaysia; fringing reef at the north-west coast of Pulau Babi Besar, 15 km off Mersing; dead coral substratum (*Acropora* sp., *Pocillopora damicornis*) on outer reef flat, reef margin and upper coral slope, 1-2 m, 2-9 April 1991.

P a r a t y p e s : 3 immature adults, deposited as follows: 2 immature adults (including 1 preparatory ♂) (MHNG), 1 immature adult (Coll. MÜLLER); collected together with holotype.

D e r i v a t i o n o m i n i s – The specific name refers to the type locality, Pulau Babi Besar.

D e s c r i p t i o n, immature adult: Body about 8 times longer than wide, total length 1.7-2.1 mm. Body proportions: $C < 1 < 2 > 3 < 4 > 5 > 6 > 7$. Eyes anterolaterally situated, composed of 5 large, feebly pigmentid ommatidia. Pereonites 1-6 with shallow middorsal depression and poorly defined brownish pigment reticulations. Pleonites 1-5 free and subequal in length. Telson widest in distal half, with convex lateral margins; shallow mid-dorsal ridge becoming obsolete distally, with 4 small tooth-shaped tubercles; distal margin with strong serrations, bearing 7 simple and 2 long plumose setae; 2 short simple setae arising near dorsodistal margin.

Antenna 1 elongate-slender; three peduncular articles slightly increasing in length and decreasing in width distally; first peduncular article with shallowly rounded mediodistal projection; flagellum of 7 articles, 5th and 6th article with long aesthetasc. Antenna 2 also elongate-slender, with 5-articulated peduncle; second peduncular article widest, with small, narrowly rounded mediodistal projection; 5th peduncular article longest; flagellum of 6 setose articles.

Mandible lacking palp; incisor with single rounded, sclerotized cusp, and small subterminal seta; lamina dentata lacking. Slender, curved maxilla with 6 distal teeth, the terminal one much broader than others. Maxilliped elongate-slender, 5-articulated; articles 2 and 3 with simple seta at mediodistal margin; tiny terminal article bearing 4 simple setae.

All pereopods ambulatory, similar in shape among one another. Pereopod 1 barely setose, with a small non-denticulate compound spine at posterodistal margin of propodus; unguis about 1/2 length of dactylus; carpus of pereopods 1-3 triangular, with short free anterior margin; carpus of pereopods 4-7 trapezoid, increasing in length from pereopod 4 to 7; pereopods 2-3, merus and ischium with several sclerotized tubercles near posterior margin; carpus of pereopods 2-3 and merus of pereopods 4-6 with small tubercle at posterior margin; propodus of pereopods 2-7, also carpus of pereopods 4-7 with a strong denticulate compound spine at posterodistal margin and many scales along posterior margin.

Rami of pleopod 1 fused for about 4/5 length, distal endopodite and exopodite with 4 plumose setae each. Pleopod 2, exopodite of half width and 4/5 length of endopodite, distal margins of exopodite bearing 2 plumose, of endopodite bearing 4 plumose setae.

Uropodal sympodite with serrate mesial margin; convex inner margin of endopodite longer than outer margin, both strongly serrate; acute apex of endopodite not extending beyond distal margin of telson; proximal part of uropodal exopodite broad with serrate margins; distal part of exopodite with elongate slender projection, this projection 2/3 length of wide proximal part; outer dorsal margin of exopodite with strong recurved tooth in proximal third of slender extension; distal margins of both endopodite and exopodite with small plumose sensory spine.

Preparatory ♂: Body poorly sclerotized and 8 times longer than wide, total length 2.0 mm. Cephalon with few feebly pigmented ommatidia, 3 in left, 5 in right half. Pereopods 2-6 with some small, indistinct brownish pigment reticulations. Middorsal ridge of telson with strong proximal tooth and 4 much smaller teeth distally; strongly serrate distal margin bearing 5 slender and 2 long plumose setae.

Antennae smooth, with few short simple setae; flagellar articles of right antennae poorly defined.

Mouthparts metamorphosed, reduced to unsclerotized uniarticulated lobes.

Pereopods smooth, without compound spines and smaller tubercles on merus and ischium of pereopods 2-3.

Rami of pleopod 1 fused for 4/5 length, distal endopodite with 2, exopodite with 3 plumose setae; second pleopods similar to other immature adults, distal margins of rami with 2 plumose setae each.

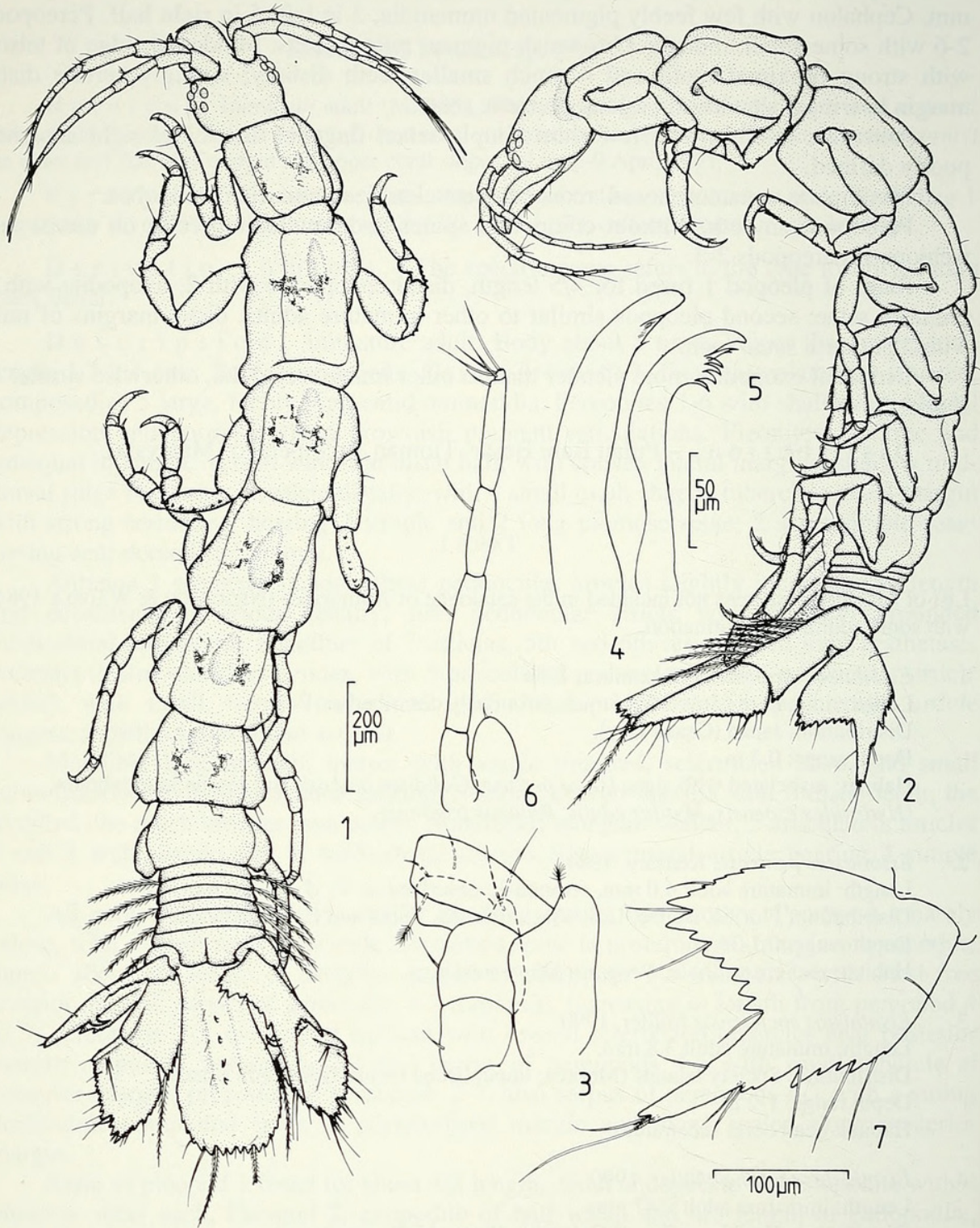
Uropodal exopodite more slender than in other immature adults, otherwise similar in shape.

Distribution. – Pulau Babi Besar, Tioman Archipelago (Malaysia).

TABLE 1.

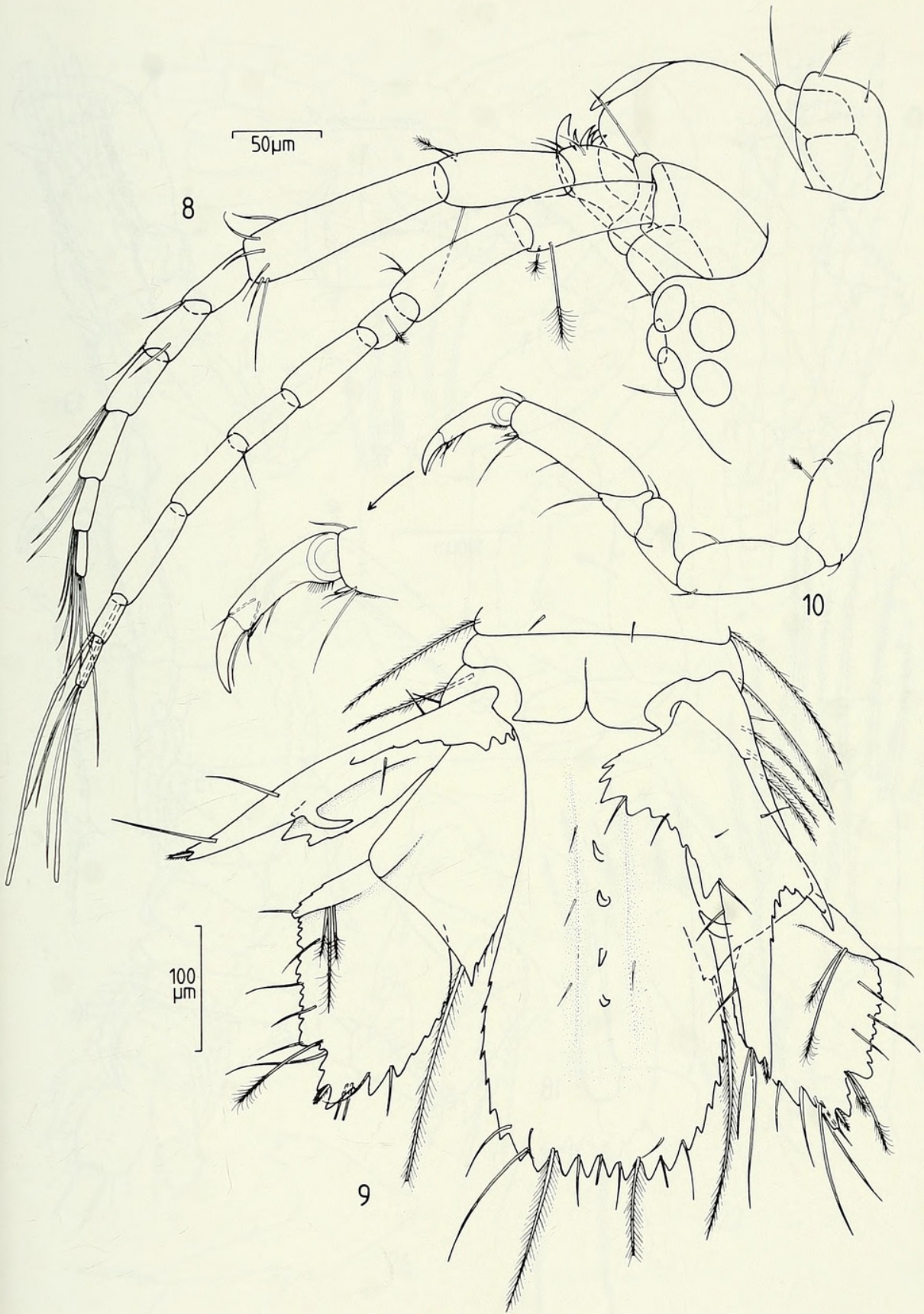
List of *Eisothistos* species not included in the catalogue of Anthuridea (NEGOESCU & WÄGELE 1984), with some additional information.

1. *Eisothistos nipponicus* Nunomura, 1984
Length: immature adult 3.6-4.8 mm, erroneously described as ♀.
Distribution: Japan (Osaka Bay).
Depth range: 0.4 m.
Habitat: associated with algae (*Ulva pertusa*, *Gelidium amansii* and sessile invertebrates (*Hydroides ezoensis*, *Mytilus edulis*, *Balanus trigonus*).
2. *Eisothistos petrensis* Kensley, 1984
Length: immature adult 4.0 mm, erroneously described as ♀; ♂ 1.5-2.0 mm.
Distribution: Florida, Belize, U.S. Virgin Islands, Turks and Caicos Islands.
Depth range: 0.1-36 m.
Habitat: reef crest rubble, *Neogoniolithon* washings.
3. *Eisothistos societensis* Müller, 1990
Length: immature adult 3.8 mm.
Distribution: Society Islands (Moorea; unpublished record from Bora Bora).
Depth range: 1-2 m.
Habitat: dead coral substratum.
4. *Eisothistos tayrona* Müller, 1990
Length: immature adult 2.47 mm.
Distribution: Caribbean Sea of Colombia (Santa Marta area).
Depth range: 2-3 m.
Habitat: in seagrass bed (*Thalassia testudinum*).
5. *Eisothistos teri* Kensley & Snelgrove, 1987
Length: immature adult 1.3-3.2 mm, erroneously described as ♀; ♂ 1.8-2.0 mm.
Distribution: Barbados.
Depth range: 9-15 m.
Habitat: associated with the coral *Madracis mirabilis*.



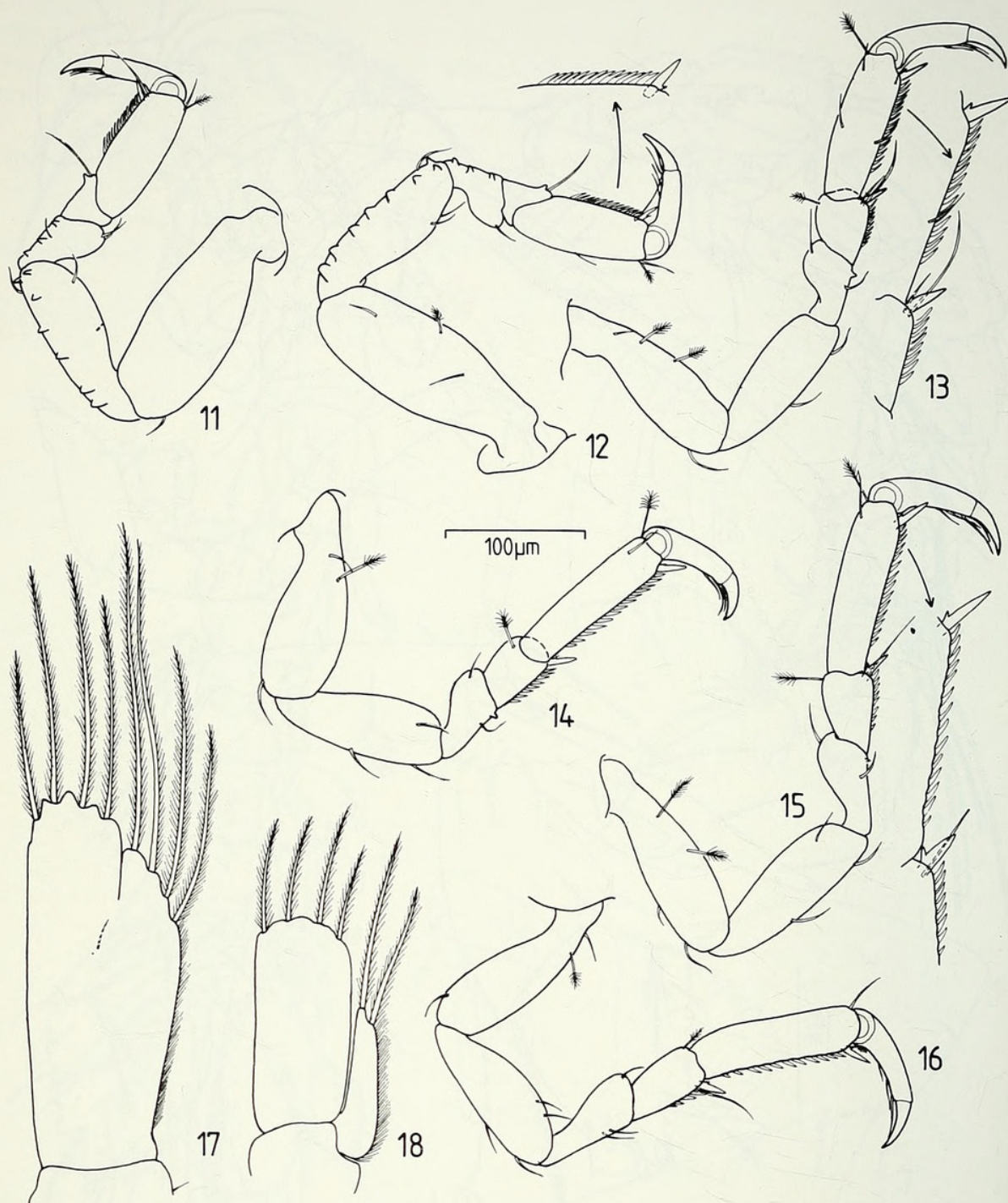
FIGS 1-7.

Eisothistos besar n. sp., immature adult (FIG. 1 holotype, others paratype): 1) dorsal view; 2) lateral view; 3) proximal peduncular articles of left antennae, dorsal view; 4) mandible; 5) maxilla; 6) maxilliped; 7) uropodal exopodite, lateral (=ventral) view.



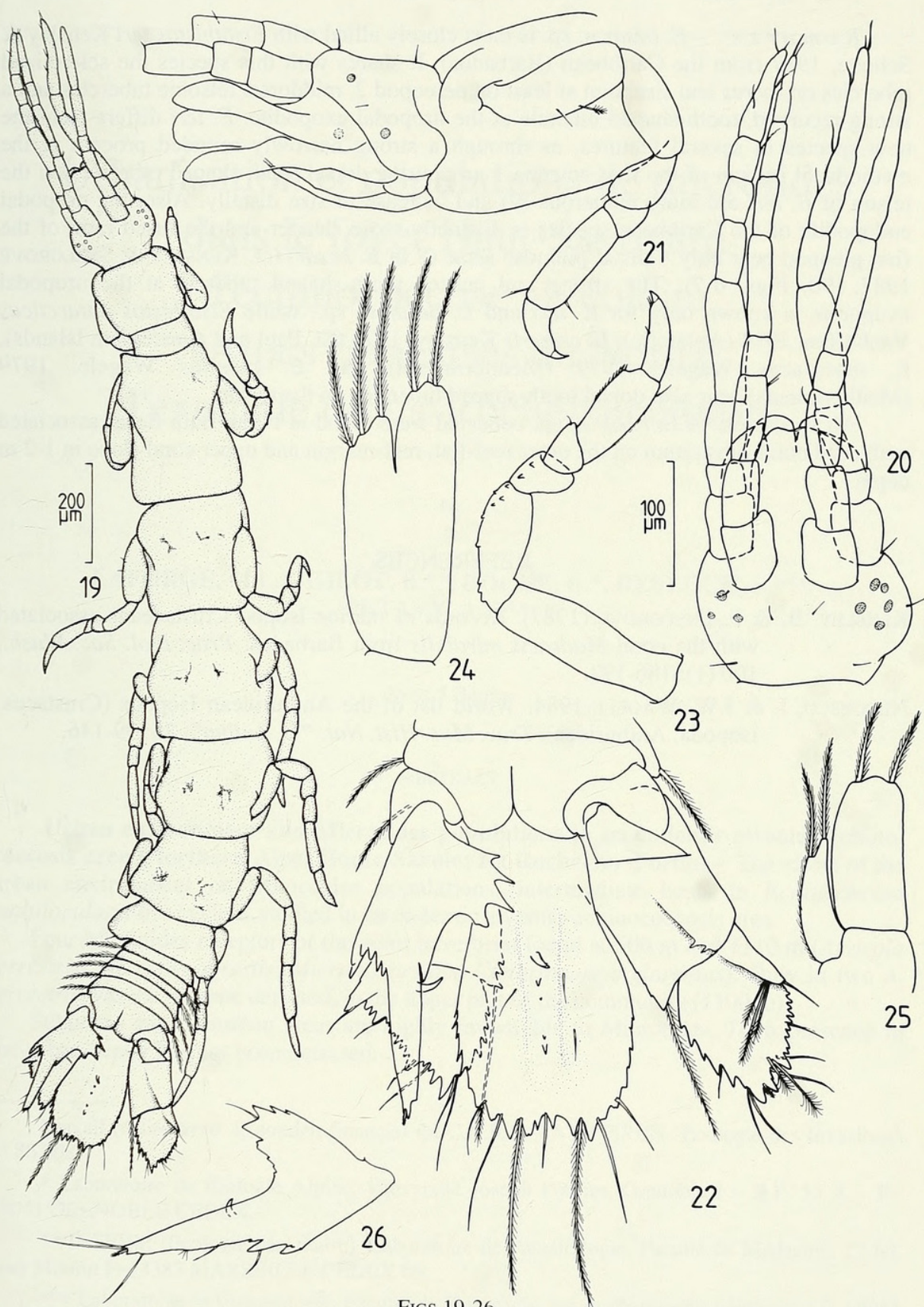
FIGS 8-10.

Eisoethistos besar n. sp., immature adult (FIG. 10 paratype, others holotype): 8) anterolateral part of cephalon and left antennae, dorsolateral view; 9) tail fan; 10) pereopod 1.



FIGS 11-18.

Eisothistos besar n. sp., immature adult, paratype: 11) pereopod 2; 12) pereopod 3; 13) pereopod 4; 14) pereopod 5; 15) pereopod 6; 16) pereopod 7; 17) pleopod 1; 18) pleopod 2.



FIGS 19-26.

Eisoosthos besar n. sp., preparatory ♂, paratype: 19) dorsal view; 20) cephalon, dorsal view; 21) lateral view of cephalon and pereonite 1 (only proximal articles of antennae figured); 22) tail fan; 23) pereopod 3; 24) pleopod 1; 25) pleopod 2; 26) uropodal exopodite.

Remarks. – *E. besar* n. sp. is most closely allied with *Eisothistos teri* Kensley & Schotte, 1987 from the Caribbean (Barbados). It shares with this species the sclerotized tubercles on merus and ischium at least on pereopod 2, middorsal telsonic tubercles and a strong recurved, tooth-shaped tubercle at the uropodal exopodite. *E. teri* differs from the new species in several features, as through a strong narrowly rounded process at the mediodistal margin of the first antenna 1 article; the dorsal tooth-shaped tubercles on the telson of *E. teri* are more numerous (9) and increase in size distally. Also, the uropodal endopodite of the Caribbean species is distinctly more slender and the fused rami of the first pleopod bear only 4 distal plumose setae (8 in *E. besar*) (cf. KENSLEY & SNELGROVE 1987: 190, Figs. 6-7). The strong and curved tooth-shaped tubercle at the uropodal exopodite is known only for *E. teri* and *E. besar* n. sp., while *Eisothistos antarcticus* Vanhöffen, 1914 (Antarctic), *E. crateris* Kensley, 1976 (St. Paul and Amsterdam Islands), *E. marcurus* Wägele, 1979 (Mediterranean) and *E. pumilus* Wägele, 1979 (Mediterranean) bear also dorsal tooth-shaped tubercles on the telson.

All specimens of *E. besar* n. sp. collected were found at Pulau Babi Besar associated with dead coral substratum on the outer reef-flat, reef-margin and upper coral slope in 1-2 m depth.

REFERENCES

- KENSLEY, B. & P. SNELGROVE (1987). Records of marine Isopod Crustaceans associated with the coral *Madracis mirabilis* from Barbados. *Proc. biol. Soc. Wash.*, 100 (1): 186-197.
- NEGOESCU, I. & J.W. WÄGELE 1984. World list of the Anthuridean Isopods (Crustacea, Isopoda, Anthuridea). *Trav. Mus. Hist. Nat. "G. Antipa"*, 25: 99-146.



Muller, H-G. 1992. "Eisothistos besar n. sp. from a coral reef in the Tioman Archipelago, first member of the genus from southeast Asia (Crustacea: Isopoda)." *Revue suisse de zoologie* 99, 369–376.

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