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With the author's compliments
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A New Species of *Meningodora* (Crustacea, Decapoda, Oplophoridae) from the Western North Pacific

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Abstract A new species of deep-sea pelagic caridean shrimps of the genus *Meningodora* (Caridea, Oplophoridae) is described. Thirty-eight specimens were taken from four stations in the western North Pacific. This new species is easily distinguished from the other five species of this genus by the carina not supporting the branchiostegal spine and the third abdominal somite lacking the median posterior tooth.

The genus *Meningodora* was established by SMITH (1882) for the type species, *M. mollis* collected from off Cape Lookout, North Carolina, USA and after that only four species, i.e. *M. vesca* (SMITH, 1886), *M. compsa* (CHACE, 1940), *M. marptocheles* (CHACE, 1940), and *M. miccyla* (CHACE, 1940) have been described. During the course of a study on the pelagic shrimps from the western North Pacific collected by the R/V *Kaiyo-Maru* of the Fisheries Agency of Japan and the R/V *Tansei-Maru* of the Ocean Research Institute, University of Tokyo, 38 specimens of an undescribed species of the genus *Meningodora* were found in the collections. In the present paper they are described under the name of *Meningodora longisulca*. The type materials are deposited in the National Science Museum, Tokyo (NSMT).

Meningodora longisulca sp. nov.

(Figs. 1–14)

Types. Holotype (NSMT-Cr 9091), adult male of 15.0 mm CL, 23°08.1′N, 149° 33.8′E, May 21, 1983. Allotype (NSMT-Cr 9092), adult female of 14.0 mm CL, 23°22.5′N, 149°41.2′E, May 23, 1983. Paratypes (NSMT-Cr 9093), 2 males (8.0, 10.0 mm CL) and 3 females (8.5–10.5 mm CL) from the same collection as allotype. All the types were collected by the R/V *Kaiyo-Maru*.

Description. Integument thin and fragile. Carapace dorsally carinate for its entire length. Branchiostegal spine minute, not supported by any carina, but followed by blunt ridge. Single longitudinal carina present on lateral surface of carapace. Rostrum acutely triangular, slightly concave dorsally and not reaching beyond second segment of antennular peduncle; 7 to 11, usually 8 to 10 dorsal spines, and no teeth or spines on lower margin. Abdomen carinate on fourth, fifth and sixth

somites; third abdominal somite with a very faint dorsal carina; median posterior tooth present on fourth, fifth and sixth somites; sixth somite about 1.7 times as long as fifth. Telson longer than sixth somite, deeply sulcate dorsally, armed with two pairs of dorsolateral spines and with three pairs of movable spines on its tip (Fig. 2). Uropodal exopodite with a minute spine on outer margin. Eyes slightly narrower than eyestalks; ocular tubercle present on inner side of stalks (Fig. 3); tip of the eye reaches to first segment of antennular peduncle. Stylocerite reaches to end of first segment of antennular peduncle. Antennal scale broad, slightly concave along its external margin; spine on outer margin of antennal scale set behind apex; its length about three times width (Fig. 4). Mandible entire on anterior half of incisor process (Fig. 5). Endopod of first maxilla armed with a short but strong spine at distal portion (Fig. 6). Scaphognathite of second maxilla elongate, slightly inflate along its external margin (Fig. 7). Endopod of first maxilliped composed of two segments (Fig. 8). Second maxilliped bearing epipod with podobranch (Fig. 9). Third maxilliped extending beyond apex of antennal scale. Dactylus of first two pereiopods ending in two short spines (Figs. 10, 11). Endopod of first pleopod of male lingulate with a triangular flap on proximal half (Figs. 12, 13). Appendix masculina of male with twelve minute spines on distal portion, very long with two articulations, more than three times as long as appendix interna (Fig. 14). The following description is given on the allotype.

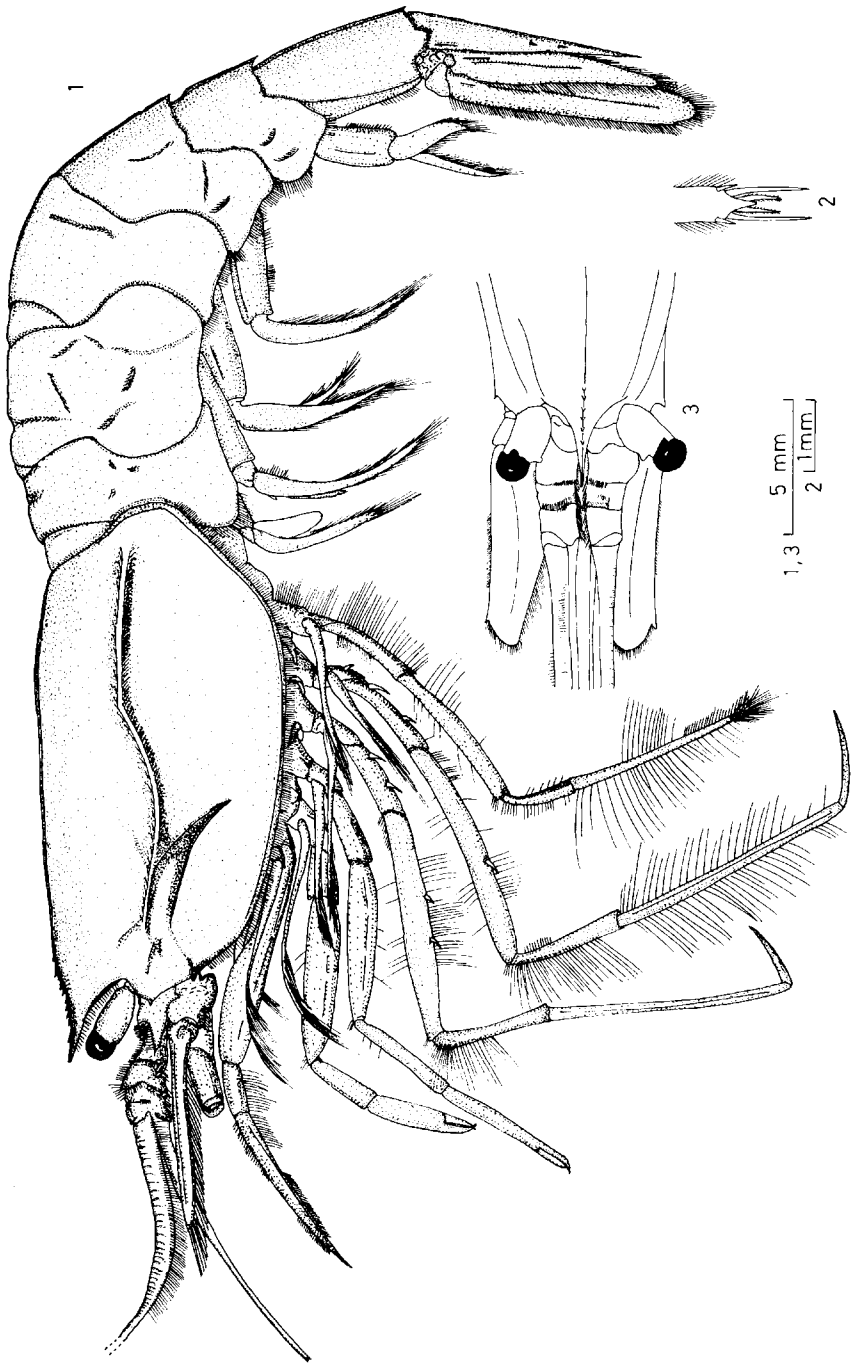
Second to fifth pleopods of female with slender appendix interna. Eggs proportionally small about 0.3–0.5 mm in diameter. Other characters as in male.

Etymology. The specific name *longisulca* refers to the conspicuous hepatic groove of the carapace.

Remarks. All remaining specimens other than the types are listed below. Number in parentheses indicates carapace length in mm.

1 female (15.5), tow no. KOC–1, oblique tow; 1 male (9.5), 2 females (6.5, 8.0), 2 young (4.0, 4.5), tow no. KOC–8, horizontal tow; 3 females (5.5–8.5), 1 young (4.0), tow no. KOC–8, oblique tow; 1 female (5.0), tow no. KOC–15, oblique tow; 1 male (10.0), 2 females (7.0, 7.5), tow no. KOC–18, horizontal tow; 2 males (8.0, 10.0), 5 females (8.0–10.5), tow no. KOC–18, oblique tow; 1 male (8.5), 2 females (13.5, 14.5), tow no. KMT–3; 3 females (13.5–17.5), tow no. KMT–7; 1 female (16.5), tow no. IK–1; 1 female (8.0), tow no. KOC–9, oblique tow; 1 female (11.0), tow no. KMT–8; 1 female (8.5), tow no. KMT-11. The type malterials are deposited in the National Science Museum (Nat. Hist.), Tokyo and the rest are deposited in the Ocean Research Institute, University of Tokyo, Tokyo. Sampling data of this species are summarized in Table 1.

Meningodora longisulca sp. nov. is easily distinguished from the other five species of this genus by the following characters. 1) Branchiostegal spine not supported by any carina or sharp ridge. 2) Rostrum not reaches beyond the second segment of the antennular peduncles. 3) Outer margin of the antennal scale slightly concave. 4) The third abdominal somite without a median posterior tooth.



Figs. 1–3. *Meningodora longisulca* n. sp., holotype, male 15.0 mm CL. 1, lateral view; 2, apex of telson; 3, anterior end in dorsal view.

Table 1. Sampling data of *Meningodora longisulca* sp. nov.

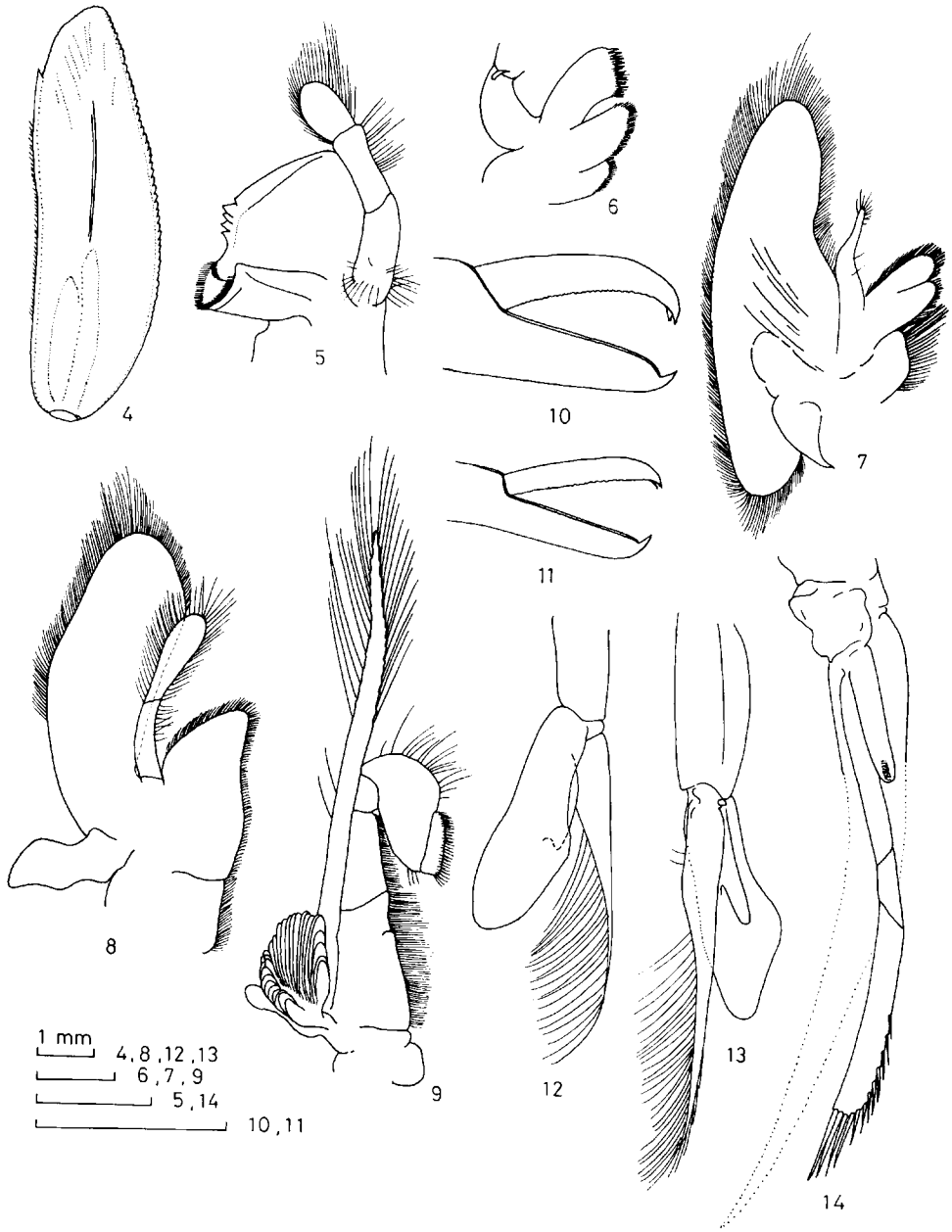
Station	Tow no.	Date	Location		Depth of tow (m)		Net	Ship
			Lat.	Long.	Hor.	Obl.		
S	KOC-1	15-V-1983	20°48.1′N,	149°52.0′E	—	0–1600	KOC-T[1]	K[4]
	LOC-8	18	22°44.6′,	149°56.6′	555–594	0– 568	KOC-T	K
	KOC-12	21	23°08.1′,	149°33.8′	—	0– 975	KOC-T	K
	KOC-15	22	22°56.7′,	149°42.4′	—	0–1275	KOC-T	K
	KOC-18	23	23°22.5′,	149°41.2′	860–895	0– 960	KOC-T	K
	KMT- 3	31	23°17.3′,	149°53.4′	—	0– 990	KMT[2]	K
	KMT- 7	1-VI	23°08.3′,	150°07.2′	—	0–1631	KMT	K
6–1	KT- 1	6-VIII	33°44.7′N,	139°59.8′E	—	0– 850	IKMT[3]	T[5]
E–1	KOC- 9	18-V-1984	33°38.2′N,	157°51.2′E	—	0– 590	KOC-T	K
	KMT- 8	31-V	31°43.4′,	158°05.3′	—	0–2394	KMT	K
E–2	KMT-11	2-VI	33°07.1′N,	156°30.3′E	—	0– 950	KMT	K

1) Rectangular net of 8.7 m^2 in mouth area and 16.0 m in length equipped with an opening-closing device (Anonymous 1980). 2) Otter trawl. 3) 10-foot Isaacs-Kidd midwater trawl. 4) R/V *Kaiyo-Maru*. 5) R/V *Tansei-Maru*.

In regard to these characters *Maeningodora longisulca* is most closely allied to *M. miccyla* (CHACE). *M. longisulca* is distinguished from it by the following characters, i.e. cornea of the eyes which is as broad as the eyestalks, the third abdominal somite without a distinct carina or median posterior tooth, the sixth abdominal somite which is less than twice as long as fifth, outer marginal spine of the antennal scale not reaching beyond the apex, and the stylocerite not reaching beyond the first segment of the antennular peduncle. In regard to the item 2), *M. mollis* is allied to *M. longisulca* but it can be distinguished from *M. longisulca* by the presence of carina which supports branchiostegal spine, presence of dorsal carina on the third abdominal somite and cornea of the eyes which is narrower than the eyestalks. *Meningodora compsa* and *M. vesca* are easily distinguished from *M. longisulca* by having a long rostrum and carina which supports branchiostegal spine. HANAMURA (1983) reported one juvenile from the eastern North Pacific referred to this genus. *Meningodora longisulca* differs from his specimen by having dorsal carina and median posterior tooth on the last three abdominal somites even in small specimens.

A key to the five known and one new species is presented below.

1 A median posterior tooth or spine on third abdominal somite..... 5
— No median posterior tooth or spine on third abdominal somite..... 2
2 Branchiostegal spine supported by sharp ridge or carina..... 3
— Branchiostegal spine minute, not supported by carina but followed by blunt ridge ..... *M. longisulca* sp. nov.
3 Integument firm; eyes at least as broad as eyestalks..... 4
— Integument soft and fragile; eyes much narrower than eyestalks..... ..... *M. mollis* SMITH
4 Sixth abdominal somite about twice as long as fifth, second abdominal somite



Figs. 4–14. *Meningodora longisulca* n. sp., male 9.5 mm CL. 4, antennal scale; 5, mandible; 6, first maxilla; 7, second maxilla; 8, first maxilliped; 9, second maxilliped; 10, chela of first pereiopod; 11, second pereiopod; 12, first pleopod; 13, appendix masculina and appendix interna.

not dorsally carinate ..... *M. vesca* (SMITH)

— Sixth abdominal somite little longer than fifth; second abdominal somite slightly carinate dorsally..... *M. compsa* (CHACE)

5 Median posterior tooth on third abdominal somite broad and truncate or concave distally; dactylus of first two pairs of pereiopods terminating in two small blunt spines..... *M. miccyla* (CHACE)

— Median posterior tooth on third abdominal somite triangular; dactylus of first two pairs of periopods terminating in two long slender spines .... *M. marptocheles* (CHACE)

Distribution. Three individuals were captured in the horizontal day tow at the depth of about 750–800 m. Five individuals were captured in the horizontal night tow at the depth of about 550–600 m.

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