

A New Species of *Idiomysis* (Crustacea, Mysidacea) from Japan

By

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The genus *Idiomysis* was established by TATTERSALL in 1922 for *I. inermis* collected from the Gulf of Manaar, South India, and has been monotypical for a long time. The second species, *I. tsumamali*, was recorded by BACESCU in 1973 from the Red Sea. A new species from Japan described herein is, therefore, the third of the genus and the first to be recorded from the Pacific.

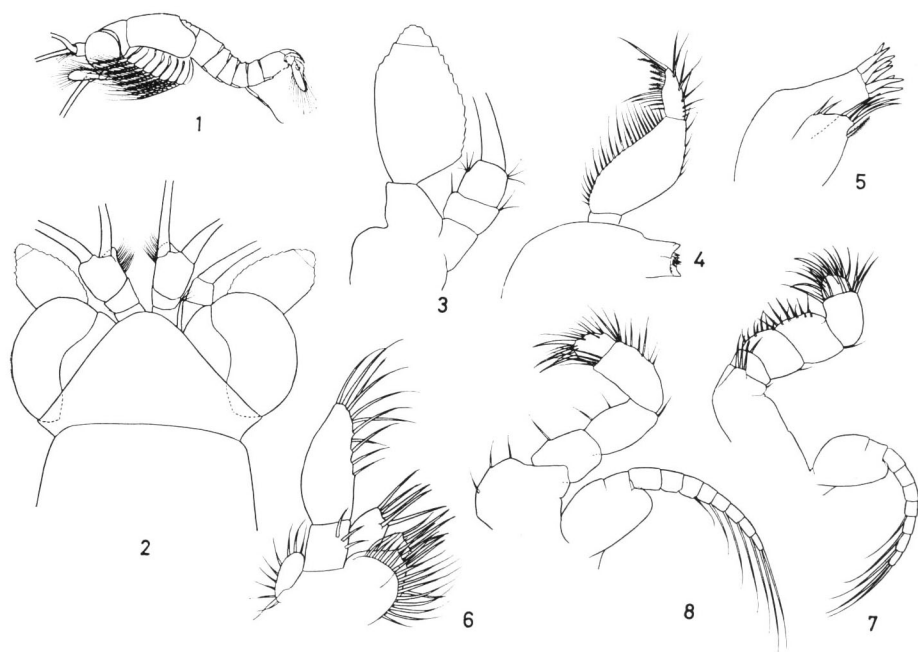
I am indebted to Dr. T. TAKITA and Mr. S. INOUE, Nagasaki University, for their kindness in sending the specimens for my study and offering the biological data.

Idiomysis japonica sp. nov.

(Figs. 1-16)

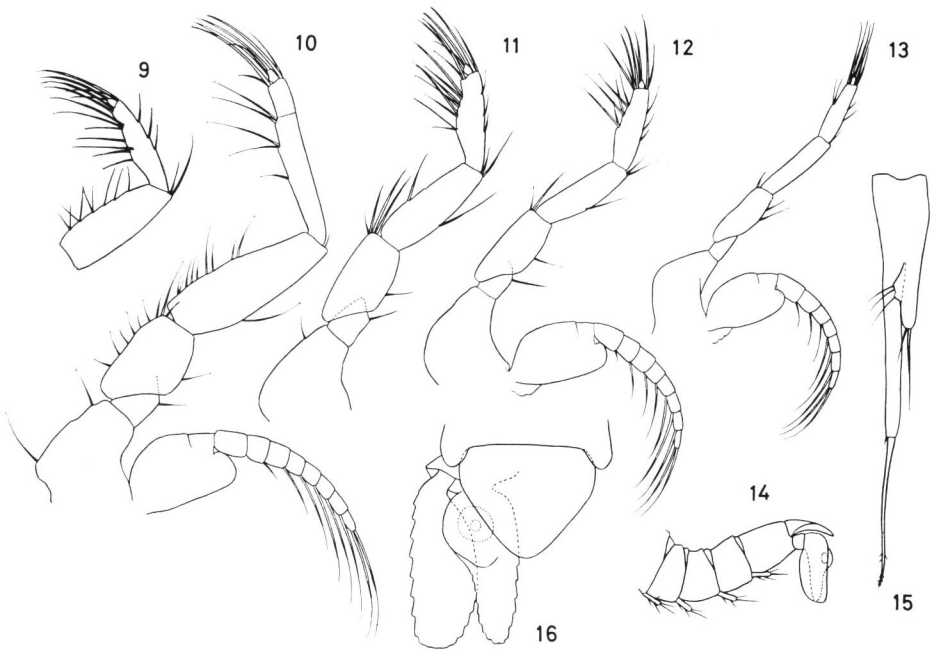
Material. July 9, 1975; 4 adult females (3.7-3.9 mm), 2 adult (3.3 mm) and 2 immature (2.7 and 3.2 mm) males; Nomo, Nagasaki Pref.; directly collected by diving from sandy bottom studded with stones and rocks at a depth of 3 m.

Description. Body robust, curving at middle of thorax, at fourth abdominal somite and between last abdominal somite and telson in lateral view (Figs. 1, 14); carapace with frontal margin produced anteriorly into triangular rostral plate with broadly rounded apex which reaches middle of first segment of antennular peduncle (Fig. 2); posterior margin reaching posterior end of thorax, but dorsally leaving last two thoracic somites exposed for emargination (Fig. 1). Eye very large, globular; cornea wider than eyestalk (Fig. 2). Antennular peduncle rather small; outer distal corner of first segment produced anteriorly, armed with a few setae on tip; third segment articulated obliquely with second segment, longer than the two preceding segments combined (Fig. 2). Antennal peduncle short, somewhat shorter than antennular peduncle; second segment short and wide; third segment tapering towards distal margin (Fig. 3). Antennal scale outreaching short antennular peduncle, short and wide, one and two-thirds times as long as broad; outer margin naked on proximal two-thirds and with setae on distal one-third, without prominent spine at distal end of naked part; distal suture present; no spine on outer corner of sympod (Fig. 3). Mandibular palp similar to that of *I. inermis* (Fig. 4). Maxillule with inner plate of normal type for mysids (Fig. 5). Exopod of maxilla very much reduced in size and armed with nine setae; second segment of endopod elongate, with narrow apex,



Figs. 1–8. *Idiomysis japonica* sp. nov. — 1. Adult male in lateral view, $\times 13$. — 2. Anterior end of adult male in dorsal view, $\times 31$. — 3. Antenna, $\times 47$. — 4. Mandible, $\times 47$. — 5. Maxillule, $\times 95$. — 6. Maxilla, $\times 95$. — 7. First thoracic limb, $\times 47$. — 8. Second thoracic limb, $\times 47$.

more than twice as long as broad (Fig. 6). First thoracic endopod robust, with masticatory lobe tipped with three setae; inner margins of carpo-propodus, merus and ischium without stout barbed setae; nail stronger than setae of distal segment (Fig. 7). Second thoracic endopod robust, similar to first thoracic endopod but more slender; inner margins of carpo-propodus, merus and ischium armed with zero, two and one setae, respectively (Fig. 8). Third, fourth, sixth and seventh thoracic endopods of similar structure; carpo-propodus not jointed; nail distinguishable from other setae by its swollen base (Figs. 9, 11, 12). Fifth thoracic endopod developed, longer than any of other limbs; merus about twice as long as preceding segment, about as long as the following two segments combined and much broader; propodus separated by articulation from carpus and about one-fourth the length of carpus; nail with swollen base (Fig. 10). Eighth thoracic endopod smaller and more slender than any of the other limbs, considerably longer than exopod; merus nearly equal in length to the preceding segment; carpo-propodus not jointed, shorter than merus; nail with swollen base (Fig. 13). Exopods of all thoracic limbs with rounded outer distal corner on basal segment; flagellum eight-segmented (Figs. 10, 12, 13). Abdomen composed of six somites; first somite long, as long as the two following somites



Figs. 9-16. *Idiomysis japonica* sp. nov. — 9. Distal part of endopod of fourth thoracic limb, $\times 47$. — 10. Fifth thoracic limb, $\times 47$. — 11. Endopod of sixth thoracic limb, $\times 47$. — 12. Seventh thoracic limb, $\times 47$. — 13. Eighth thoracic limb, $\times 47$. — 14. Abdomen of adult female in lateral view, $\times 19$. — 15. Fourth pleopod of adult male, $\times 95$. — 16. Telson and uropod, $\times 47$.

combined; second to fifth somites subequal; sixth somite long, equal in length to the first; prominent fold present just in front of posterior margin of each abdominal segment except for the sixth (Figs. 1, 14). First, second, third and fifth pleopods of male simple, reduced to unsegmented plate; fourth pleopod with small endopod and elongate exopod which are imperfectly marked off from basal segment; exopod two and half times as long as endopod, terminating in long stout seta armed with setules on distal one-fourth (Fig. 15); whole exopod extending backward somewhat beyond posterior margin of last abdominal somite (Fig. 1). Telson very short, triangular, shorter than width, apex bluntly rounded and entire; whole margin without any spines or setae (Fig. 16). Uropod short and broad, with endopod and exopod being equal in length, barely twice as long as telson; endopod twice as long as maximum width at statocyst region, armed with no spines on inner margin (Fig. 16).

Type-series. Holotype (NSMT-Cr. 5652), adult female of 3.9 mm; allotype (NSMT-Cr. 5653), adult male of 3.3 mm; 6 paratypes (NSMT-Cr. 5654). The type materials are deposited in the National Science Museum (Nat. Hist.), Tokyo.

Remarks. Only two species of the genus *Idiomysis* have hitherto been known,

viz., *I. inermis* TATTERSALL from India and *I. tsumnamali* BACESCU from the Red Sea. The present species is more closely allied to *I. inermis* than to *I. tsumnamali*, but there is a clear difference in the fourth pleopod of the male. In the present species, the exopod of the fourth pleopod is two and half times as long as the endopod, and whole exopod, including the terminal seta, reaches backward somewhat beyond the posterior margin of the sixth abdominal somite. In *I. inermis*, however, the exopod is four times as long as the endopod, and whole exopod extends to the tip of the uropod or slightly beyond. It is not considered that the shortness of the fourth pleopod in the present species is derived from the immaturity. Mr. INOUE, one of the collectors, informed me that he found some ovigerous females of 3.1 to 4.0 mm through the examination of fifteen females, so that the specimens of the body length more than 3.1 mm can be regarded as adult in both the male and female.

In addition to the discrepancy in the male fourth pleopod, the following differences can be noted between the new species and *I. inermis*: 1) A prominent fold is present on each of anterior five abdominal segments in the new species, but such a fold is absent in *I. inermis*. 2) The endopod of the eighth thoracic limb is longer than the exopod in the new species, while it is shorter in *I. inermis*.

The new species differs from another species of the genus, *I. tsumnamali*, in the following points: 1) The endopods of the fifth to eighth thoracic limbs become progressively smaller posteriorly in the new species, while the exopod of the seventh thoracic limb is the smallest in *I. tsumnamali*. 2) Whole exopod of the fourth pleopod in male is short and does not exceed the posterior margin of the fifth abdominal segment in *I. tsumnamali*. 3) The endopod of the uropod is nearly equal in length to the exopod in the new species, while it is clearly shorter than the exopod in *I. tsumnamali*.

BACESCU (1973) noted that *I. tsumnamali* lives in the commensalism with some Coelenterata, because his specimens were directly captured by diving while hovering over either the medusa, *Cassiopea andromeda*, or the sea anemone, *Megalactis hemprichi*. The present specimens were also directly captured by diving, having been found as a group of ten to twenty individuals on the rocky bottom, or in hollows on lateral surfaces of stones and rocks studding the sandy bottom at depths of 1–5 m.

Literature

- BACESCU, M., 1973. A new case of commensalism in the Red Sea: The mysid *Idiomysis tsumnamali* n. sp. with the Coelenterata *Megalactis* and *Cassiopea*. *Rev. Roum. Biol.*, (Zool.), **18**: 3–7.
TATTERSALL, W. M., 1922. Indian Mysidacea. *Rec. Ind. Mus.*, **24**: 445–504.