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Ceratodoxomysis robustispina, New Genus and Species of the Tribe Leptomysini (Crustacea: Mysida) from the Timor Sea

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Abstract *Ceratodoxomysis robustispina*, gen. nov., sp. nov. belonging to the tribe Leptomysini, family Mysidae, is established on specimens collected from the Timor Sea. The species is characterized by the labrum with a long frontal process, the maxilla with the second endopod segment shorter than broad, the endopods of the third to eighth thoracic limbs with carpus and propodus not divided into subsegments, the uropodal endopod armed on the inner margin with sparsely set spines, distal two or three of which are exceptionally long, robust and hook-shaped, and the lateral margin of the telson with a hiatus between proximal and distal spine groups.

Key words: Mysidae, *Ceratodoxomysis*, new genus, new species, Timor Sea.

Introduction

During a scientific cruise to southeastern Asian seas (KH-72-1) by the Hakuho Maru of the Ocean Research Institute, University of Tokyo, a species belonging to the tribe Leptomysini of the fimily Mysidae, which does not belong to any of known genera, was collected from the Sahul Shelf, Timor Sea. It is described as a new genus and species herein. The type specimens are stored in the National Science Museum, Tokyo (NSMT), Japan.

Systematics

Ceratodoxomysis gen. nov.

Diagnosis.—Carapace produced anteriorly into short triangular rostrum with rounded apex.

Cornea of eye developed, well pigmented. Eyestalk without papilliform process.

Antennal scale lanceolate with rounded apex, setose all round.

Labrum with prominent frontal process.

Second endopod segment of maxilla expanded distally, shorter than broad; outer margin naked, shorter than inner margin; distal margin truncate, with about 10 strong spines.

Endopods of third to eighth thoracic limbs with carpus and propodus not divided into subsegments.

Exopod of fourth pleopod of male 6-segmented, penultimate segment with 2 strong, modified setae, ultimate segment small, with single feeble seta; endopod 6-segmented, without modified setae.

Endopod of uropod with inner margin furnished with sparsely set spines along whole length, distal several spines extremely robust, hook-shaped.

Telson with apical cleft armed with spinules; lateral margin with hiatus between proximal and distal spine groups; each apex of distal lobes with 3 spines, outer one longest.

Etymology.—The generic name is a combination of Greek "ceratus", which means "thorn", and *Doxomysis*. It is feminine in gender.

Type species.—*Ceratodoxomysis robustispina* sp. nov.

Remarks.—The new genus is closely allied to the genus *Nouvelia*, which was established for *N. natalensis mombasae* by Băcescu & Vasilescu (1973), in the labrum with a frontal process, the endopods of the third to eighth thoracic limbs with the carpus and propodus being not divided into subsegments, and the telson with a hiatus in the spination of the lateral margin. The new

genus, however, is distinguished from *Nouvelia* by the second endopod segment of the maxilla, the endopod of the uropod, and the fourth pleopod of the male. The second endopod segment of the maxilla in the new genus shows a *Doxomysis*-type (it is shorter than broad and greatly expanded distally) compared with a *Tenagomysis*-type (it is longer than broad and slightly expanded distally) in *Nouvelia*. The endopod of the uropod in the new genus is armed along whole length of the inner margin with rather sparsely set spines, distal several spines of which are exceptionally large and hook-shaped, while in *Nouvelia* it is armed densely with numerous simple spines becoming gradually longer distally. The exopod of the fourth male pleopod in the new genus bears a single feeble seta at the tip of the terminal segment, while in *Nouvelia* there is a strong serrated seta.

The characteristics of the maxilla and fourth male pleopod in this new genus show a close relation to the genus *Doxomysis* Hansen, 1912. The new genus, however, is distinguished from *Doxomysis* by the labrum with a strong frontal process, the endopods of the third to eighth thoracic limbs with the carpus and propodus being not divided into subsegments, the endopod of the uropod with exceptionally strong and hook-shaped spines on the inner margin, and the telson with an unarmed part on the lateral margin.

In the characteristics of the labrum and the endopods of the third to eighth thoracic limbs, the new genus also resembles *Pseudoxomysis* Nouvel, 1973, but differs from the latter genus in the second endopod segment of the maxilla with the inner margin shorter than outer, and the uropodal endopod furnished with exceptionally large and hook-shaped spines.

Ceratodoxomysis robustispina sp. nov.

(Figs. 1, 2)

Type series.—Holotype (NSMT-Cr 14281), adult male (4.7 mm); allotype (NSMT-Cr 14282), adult female (3.9 mm); paratypes (NSMT-Cr 14283), 5 adult males (3.9–4.7 mm), 11 adult females (3.7–4.7 mm), 2 immature males (3.7 mm), 6 immature females (3.0–3.9 mm), Sahul Shelf, Timor Sea, 12°24.8′S, 128°00.1′E to 12°24.8′S, 128°00.2′E; 115-115 m; 25 June 1972; plankton net installed in mouth of 3-m beam trawl.

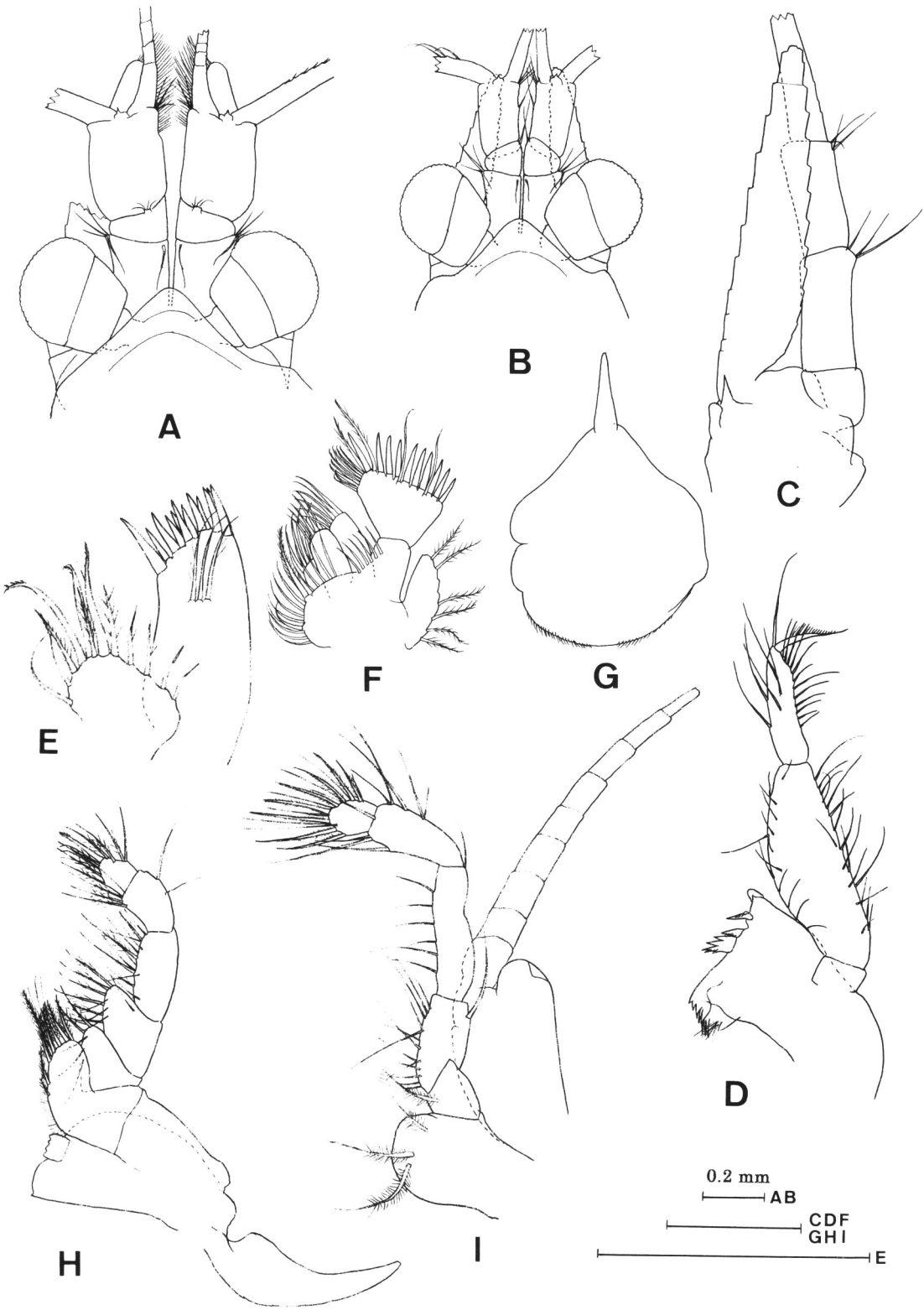
Description.—Carapace produced frontally in short triangular rostrum with rounded apex and straight lateral margins, extending beyond base of antennular peduncles (Fig. 1A, B); anterolateral corner rounded; posterior margin emarginate, leaving last thoracic somite exposed in dorsal view.

Eye relatively large, cornea occupying more than half of whole organ, wider than eyestalk; eyestalk without papilliform process (Fig. 1A, B).

Antennular peduncle of male more robust than that of female; first segment armed with several setae at outer distal corner and 1 seta near inner distal corner; third segment longest, 1.3 times longer than broad, armed at inner distal corner with 2 long and 1 short setae (Fig. 1A). In female, second segment with 1 long seta at inner distal corner; third segment as long as first, twice longer than broad, armed with 1 long seta at distal third of inner margin and 3 long setae at inner distal corner (Fig. 1B).

Antennal scale slightly extending beyond antennular peduncle, 5 times as long as broad, setose all round, outer margin straight, inner margin convex, distal suture present at about distal tenth (Fig. 1C). Antennal peduncle 3/4 as long as scale, second segment slightly longer than third (Fig. 1C). Antennal sympod with denticle at outer distal corner (Fig. 1C).

Fig. 1. *Ceratodoxomysis robustispina* gen. nov., sp. nov.; A, D, F–I: holotype; B, C: allotype; E: one of male paratypes.——A, anterior part of body; B, anterior part of body; C, antenna; D, mandible and mandibular palp; E, maxillule; F, maxilla; G, labrum; H, endopod and endite of first thoracic limb; I, second thoracic limb.


A
B
C
D
E
F
G
H
I
0.2 mm
AB
CDF
GHI
E

Mandibular palp and maxillule as shown in Fig. 1D and E, respectively. Distal segment of endopod of maxilla expanded distally, trapezoidal in shape, wider than long; outer margin naked, shorter than inner margin; distal margin nearly straight, armed with 10 strong spines, outer 2 spines, especially outermost one, smaller than others; exopod small, with 9 marginal setae (Fig. 1F).

Labrum with strong frontal process with blunt tip (Fig. 1G).

Endopod of first thoracic limb rather slender, basis with developed inner lobe, preischium and ischium expanded mesially to form lobe (Fig. 1H). Endopod of second thoracic limb rather short, dactylus with many barbed and simple setae (Fig. 1I). Endopods of third to fifth thoracic limbs slender, merus longer than carpus and propodus combined, carpus jointed with propodus by transverse articulation, propodus shorter than carpus, both segments not divided into subsegments (Fig. 2A). Basal plate of first to eighth thoracic exopods with tiny process at outer distal corner (Figs. 1H, 2A). Flagelliform part of thoracic exopods 8-segmented in first and eighth limbs and 9-segmented in second to seventh limbs. Penis elongate elliptical, apical end rounded, with 2 simple and 8 short, curved setae (Fig. 2B).

Abdomen with first 5 somites subequal, last somite 1.7 times longer than preceding one.

First pleopod of male with 7-segmented exopod and unsegmented endopod. Fourth pleopod of male with 6-segmented exopod and endopod; exopod with ultimate segment very small, terminating in single minute seta, penultimate segment 1.5 times longer than preceding one, with 2 strong, modified setae arising from distal end and proximal 2/5, proximal seta extending to distal fourth of distal one; endopod reaching distal end of fourth segment of exopod, without modified setae, second and third segments with simple seta on inner margin in addition to ordinary plumose setae (Fig. 2C, D). Fifth pleopod of male with 6-segmented endopod and 7-segmented exopod, endopod shorter than exopod, first segment with finger-like process tipped with seta besides ordinary side lobe (Fig. 2E).

Endopod of uropod twice longer than telson, inner margin furnished sparsely with 15–19 spines along whole length, distal 3 spines, especially distal 2, very strong, hook-shaped (Fig. 2F). Exopod of uropod slightly longer than endopod, straight, obliquely truncate distally, setose all round (Fig. 2F).

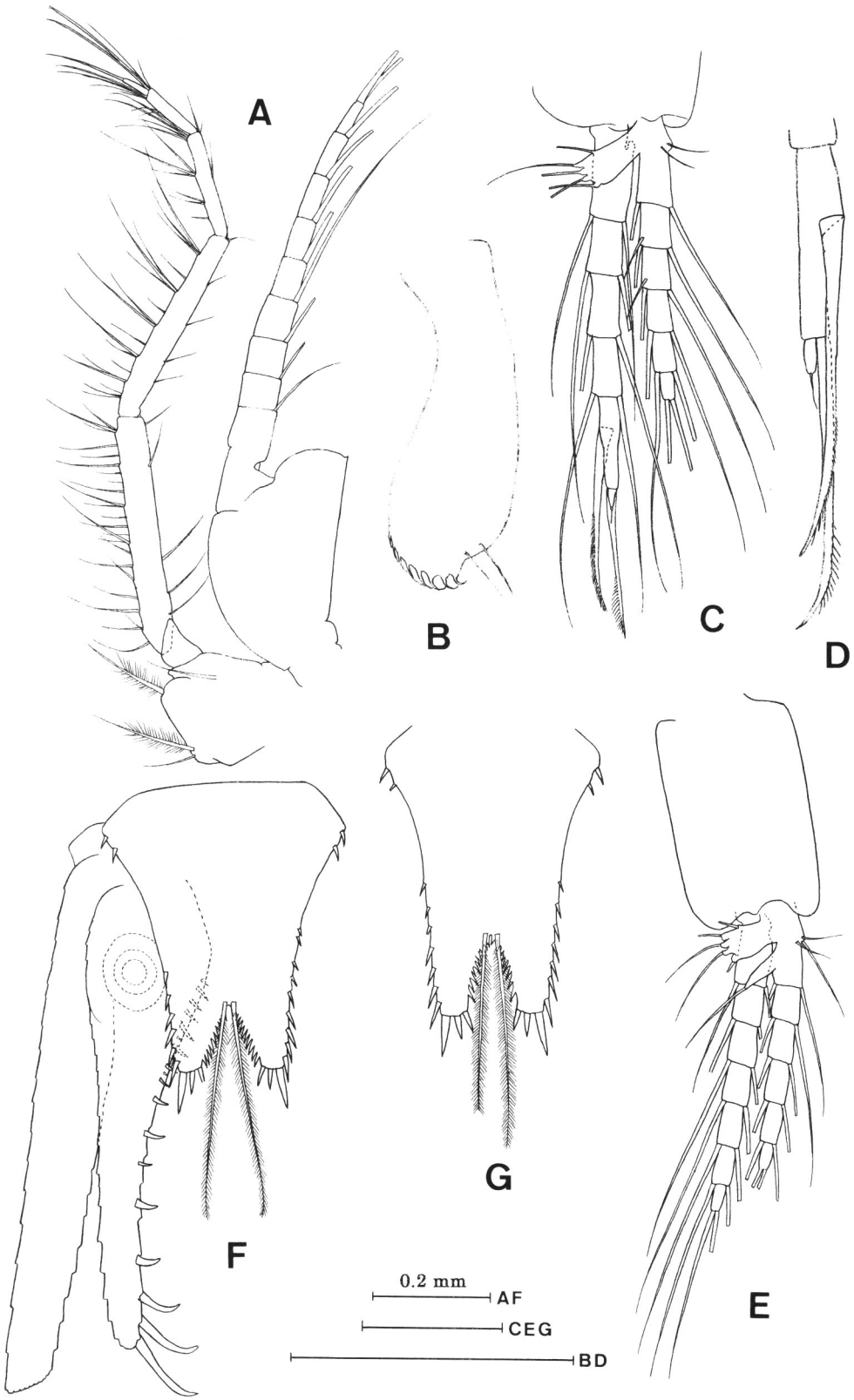
Telson (Fig. 2F, G) shorter than last abdominal somite, 1.2–1.3 times longer than maximum width at base; lateral margin concave, armed with 2 spines in proximal part, proximalmost spine located at widest part, distal half with 6–9 spines increasing in length distally, naked part inserted between proximal and distal spine groups. Apical cleft V-shaped, about 1/4 of telson length, armed with about 10 spinules on each side. Pair of plumose setae arising from dorsal surface at just front of anterior end of cleft. Each apex of distal lobes armed with 3 spines, outermost spine twice longer than inner ones.

Etymology.—The specific name, *robustispina*, refers to the strong spines on the uropodal endopod.

Remarks.—*Ceratodoxomysis robustispina* sp. nov. is distinguished from all of species of related genera by a combination of the following four characters: the labrum armed with a long and strong process on the frontal margin, the carpus and propodus of the endopods of thoracic limbs not divided into subsegments, the endopod of the uropod armed on the inner margin with sparsely set spines, distal two or three of which are exceptionally strong and hook-shaped, and the lateral margin of the telson with a hiatus in spine arrangement.

In species of related genera, such as *Nouvelia*,

Fig. 2. *Ceratodoxomysis robustispina* gen. nov., sp. nov.; A, C–F: holotype; G: allotype; B: one of male paratypes.——A, fifth thoracic limb; B, penis; C, fourth pleopod; D, extremity of exopod of fourth pleopod; E, fifth pleopod; F, uropod and telson; G, telson.


A
B
C
D
E
F
G
0.2 mm
AF
CEG
BD

Doxomysis and *Pseudoxomysis*, the exopod of the fourth male pleopod has the penultimate and antepenultimate segments provided with one modified seta (e.g., Băcescu and Vasilescu, 1973; Talbot, 1997; Murano, 2001), whereas in this species the penultimate segment alone has two modified setae. The articulation at the base of the proximal modified seta, which is seen in common in related species, was not discovered in the corresponding portion.

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