

**A new genus, *Neodoxomysis*
(Crustacea: Mysidacea: Mysidae: Leptomysini), with
description of two new species**

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Abstract.—A new genus, *Neodoxomysis*, is established for two new species, *N. elongata* and *N. sahalensis*, collected from Sahul Shelf. The new genus is closely related to *Doxomysis*, but is different from the latter genus in having only a single strong, modified seta on the exopod of the fourth male pleopod, as compared with two in *Doxomysis*. *Doxomysis littoralis* Tattersall, 1922, is transferred to the new genus.

A single male specimen identified by Ii (1964) as *Doxomysis littoralis* Tattersall, 1922, is quite different from the other *Doxomysis* species in having a single strong modified seta on the exopod of the fourth male pleopod. The exopod in all other *Doxomysis* species is armed with two strong modified setae.

During a cruise to southeastern Asian seas (KH-72-1) by the R/V *Hakuho Maru* of the Ocean Research Institute, University of Tokyo, two undescribed species, which were similar to *D. littoralis* with respect to the morphology of the fourth male pleopod, were collected. This morphological character is distinct these species from those of the genus *Doxomysis*. Therefore, a new genus is established to receive these three species, and two new species are described. The type specimens are deposited in the National Science Museum, Tokyo (NSMT).

Neodoxomysis, new genus

Diagnosis.—Carapace produced anteriorly into triangular rostral plate with rounded apex. Antennal scale lanceolate with rounded apex, armed with setae on whole margins. Eye functionally normally developed, without papilliform process on eye-stalk. Maxilla with second segment of en-

dopod wider than long, expanded distally, with about 10 strong spines on distal margin. Labrum with rounded frontal margin. Endopods of third to eighth thoracic limbs with propodus divided into 2 subsegments. Endopod of uropod with row of numerous spines along inner margin. Telson with lateral margin armed with spines throughout, apical cleft deep, armed with marginal spinules and pair of plumose setae arising from anterior end. Exopod of fourth pleopod of male modified, longer than endopod, ultimate segment small, with 1 or 2 short simple setae, penultimate segment with single strong seta.

Type species.—*Neodoxomysis elongata*, new genus, new species.

Etymology.—Derived from its relationship to *Doxomysis*. It is feminine in gender.

Remarks.—The new genus *Neodoxomysis* closely resembles *Doxomysis* Hansen, 1912, except for the fourth male pleopod. In the new genus, the exopod of the fourth male pleopod is armed with only a single, strong, modified seta arising from the penultimate segment, while in *Doxomysis* as well as eight related genera in the tribe Leptomysini (Talbot 1997), the exopod is armed with two strong modified setae, one arising from the penultimate segment and the other from the antepenultimate segment.

Among 11 *Doxomysis* species in which the exopod of the fourth male pleopod has been described, only *D. littoralis* bears a single strong modified seta on the exopod. This species was established on specimens from the Andaman Islands by Tattersall (1922); later the male was described from the South China Sea by Ii (1964). Accordingly, *D. littoralis* should be transferred to the new genus. The new genus *Neodoxomysis* comprises a total of three species.

Neodoxomysis elongata, new species
Figs. 1, 2

Type series.—Holotype (NSMT-Cr 12487), adult male (5.3 mm), allotype (NSMT-Cr 12488), adult female with embryos (4.9 mm), paratypes (NSMT-Cr 12489), 6 adult males (6.1–6.8 mm) and 3 adult females (4.5–5.0 mm); Sahul Shelf, 12°37.3'S, 124°33.9'E to 12°36.0'S, 124°36.4'E; 74–78 m; 25–26 June 1972; plankton net installed in mouth of 3-m beam trawl.

Other material.—8 adult males, 3 adult females, 15 immature males and 19 immature females; collection data same as type series.

Description.—Body somewhat slender. Carapace produced anteriorly into triangular rostral plate with rounded apex extending beyond basal margin of antennular peduncles, leaving whole eyes uncovered (Fig. 1A, B); anterolateral corner rounded; posterior margin slightly emarginate, leaving last thoracic somite exposed.

Eye developed, relatively large; cornea occupying more than half of whole organ, spherical, wider than eyestalk; eyestalk hispid on anterior and posterior surfaces, without papilliform process (Fig. 1A, B).

Antennular peduncle of male more robust than that of female, first segment with several setae at outer distal corner and 1 seta at inner distal corner, second segment short, narrower than preceding one; third segment

as long as first, wider than preceding two segments, with 1 straight and 4 short curved setae at inner distal corner; processus masculinus large, hirsute (Fig. 1A). Antennular peduncle of female slender; first segment as long as succeeding 2 segments together; second segment short, narrow, with 1 seta at inner distal corner; third segment with 1 seta at distal third of inner margin and 5 setae on inner distal margin (Fig. 1B).

Antennal scale extending beyond distal margin of third segment of antennular peduncle for about $\frac{1}{3}$ of its length (Fig. 1A, B), lanceolate, 6.3 times as long as broad, outer margin slightly concave, distal segment $\frac{1}{10}$ of length of scale (Fig. 1C). Antennal peduncle short, reaching proximal third of antennal scale, 3-segmented, third segment longest; sympod with thorn at outer distal corner (Fig. 1C).

Mandible with well developed masticatory edge. Mandibular palp 3-jointed, second segment elongated oval, third segment 0.52 of second in length, outer margin with 2 series of setae, proximal setae longer, barbed on proximal half, distal setae barbed on whole length (Fig. 1D). Maxillule: inner lobe with 9 setae on inner margin, 5 setae on outer margin, 3 setae on ventral surface and 3 stout and 1 slender setae on distal margin; outer lobe with about 10 spines on apical margin and 3 setae on ventral surface (Fig. 1E). Maxilla: second segment of endopod expanded distally, wider than long, distal margin slightly convex, 2.5 times as wide as at base, armed with 10 stout spines, which are rounded and flattened at tip, outermost spine longer than others, inner 6 spines, especially 2 innermost ones armed with short setae on margins; exopod rather rectangular in shape, extending beyond distal margin of first segment of endopod (Fig. 1F). Labrum with frontal margin rounded (Fig. 1G).

Endopod of first thoracic limb robust, dactylus wider than long, with strong terminal claw (Fig. 1H). Endopod of second

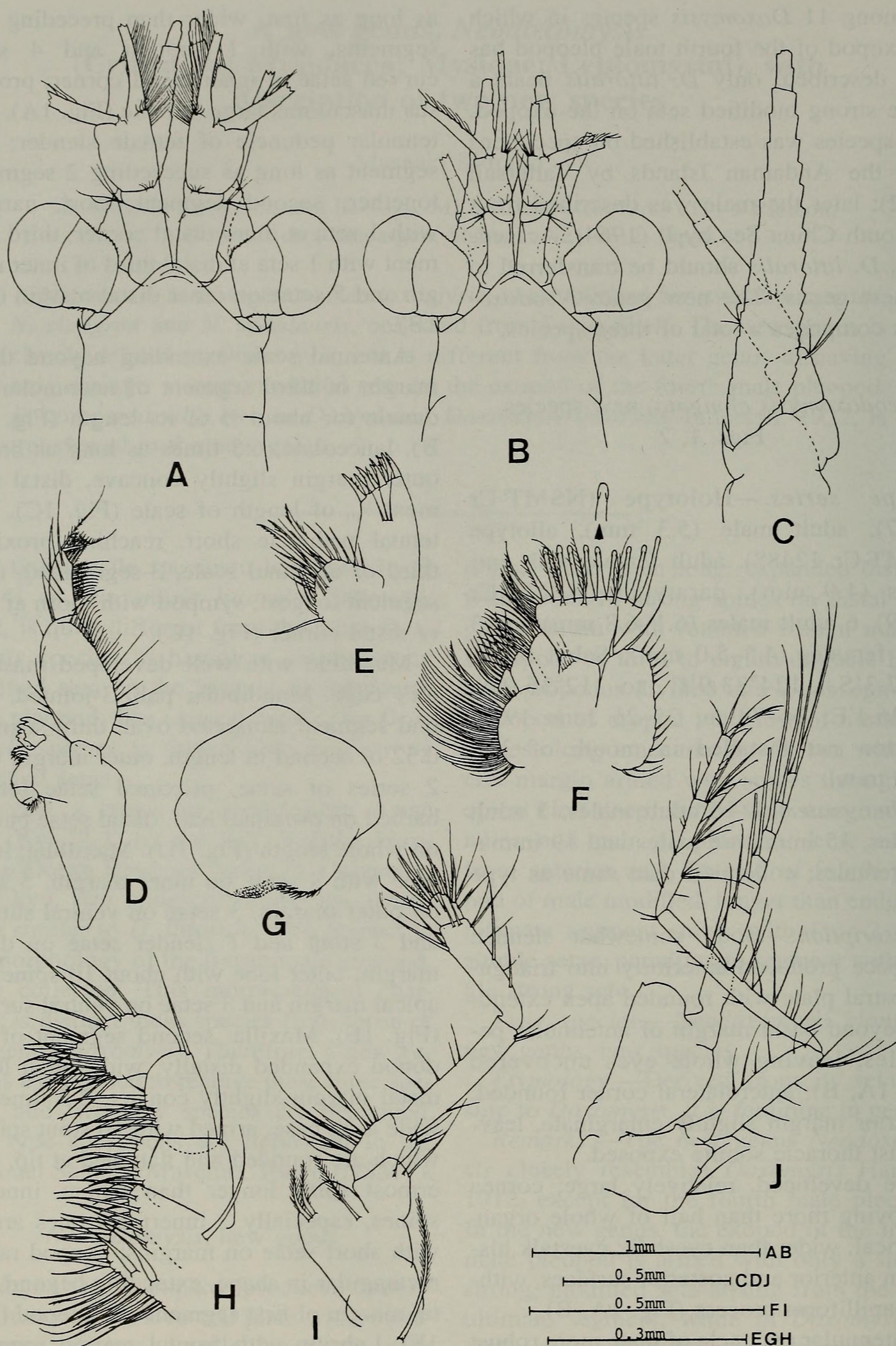


Fig. 1. *Neodoxomysis elongata*, new species; A, C–J: holotype; B: allotype. A, anterior end of adult male; B, anterior end of adult female; C, antenna; D, mandible and mandibular palp; E, maxillule; F, maxilla; G, labrum; H, endopod of first thoracic limb; I, endopod of second thoracic limb; J, sixth thoracic limb.

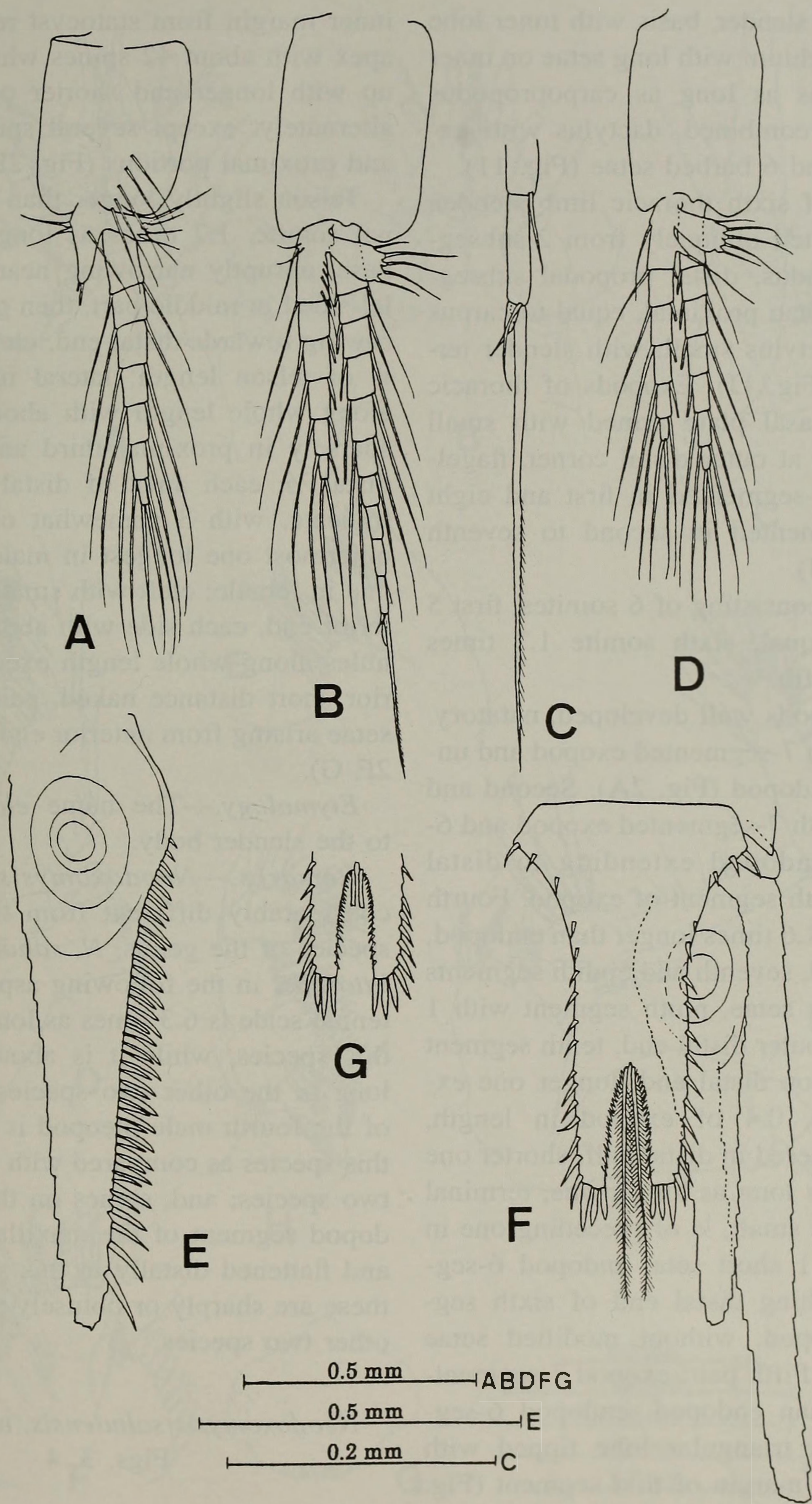


Fig. 2. *Neodoxomysis elongata*, new species; A–F: holotype; G: allotype. A, first male pleopod; B, fourth male pleopod; C, distal part of fourth male pleopod; D, fifth male pleopod; E, endopod of uropod; F, uropod and telson; G, distal part of telson.

thoracic limb slender, basis with inner lobe developed, ischium with long setae on inner margin, merus as long as carpopropodus and dactylus combined, dactylus with terminal claw and 6 barbed setae (Fig. 11).

Endopod of sixth thoracic limb slender, carpus separated obliquely from 2-subsegmented propodus, distal propodal subsegment longer than proximal, equal to carpus in length; dactylus small, with slender terminal claw (Fig. 1J). Exopods of thoracic limbs with basal plate armed with small acute process at outer distal corner, flagelliform part 8-segmented in first and eighth limbs, 9-segmented in second to seventh limbs (Fig. 1J).

Abdomen consisting of 6 somites, first 5 somites subequal, sixth somite 1.7 times longer than fifth.

Male pleopods well developed, natatory. First pair with 7-segmented exopod and unsegmented endopod (Fig. 2A). Second and third pairs with 7-segmented exopod and 6-segmented endopod extending to distal margin of sixth segment of exopod. Fourth pair: exopod 1.6 times longer than endopod, 11-segmented, seventh and eighth segments unarmed with setae, ninth segment with 1 short seta at outer distal end, tenth segment with 2 setae on distal end, longer one extremely long, 0.4 of exopod in length, straight, feathered in distal half, shorter one simple, 0.2 as long as longer one, terminal segment very small, $\frac{1}{3}$ of preceding one in length, with 1 short seta; endopod 6-segmented, reaching distal end of sixth segment of exopod, without modified setae (Fig. 2B, C). Fifth pair: exopod 7-segmented, longer than endopod, endopod 6-segmented, with triangular lobe tipped with seta on outer margin of first segment (Fig. 2D).

Exopod of uropod slender, long, slightly curved outwardly, extending beyond distal end of telson for its distal half (Fig. 2F). Endopod of uropod extending beyond distal end of telson for distal third, armed along

inner margin from statocyst region to near apex with about 42 spines which are made up with longer and shorter ones arranged alternately, except several spines in distal and proximal portions (Fig. 2E, F).

Telson slightly longer than last abdominal somite, 1.7 times as long as broad at base, abruptly narrowing near base, parallel-sided in middle part, then gradually narrowing towards distal end, cleft at apex for $\frac{1}{3}$ of telson length; lateral margin armed along whole length with about 16 spines, sparsely in proximal third and densely in distal $\frac{2}{3}$; each apex of distal lobes rather truncate, with 3 somewhat obtuse spines, outermost one longest in male and middle one in female; cleft with small notch at anterior end, each side with about 16–18 spinules along whole length except for posterior short distance naked, pair of plumose setae arising from anterior end of cleft (Fig. 2F, G).

Etymology.—The name *elongata* refers to the slender body.

Remarks.—*Neodoxomysis elongata* is considerably different from the other two species of the genus, *N. sahurensis* and *N. littoralis*, in the following aspects: The antennal scale is 6.3 times as long as broad in this species, while it is about 5 times as long in the other two species; the exopod of the fourth male pleopod is 11-jointed in this species as compared with 7 in the other two species; and, spines on the second endopod segment of the maxilla are rounded and flattened distally in this species, while these are sharply or obtusely pointed in the other two species.

Neodoxomysis sahulensis, new species
Figs. 3, 4

Type series.—Holotype (NSMT-Cr 12490), adult male (5.0 mm); allotype (NSMT-Cr 12491), adult female (4.0 mm); paratypes (NSMT-Cr 12492), 2 adult females (3.7, 4.0 mm), 1 adult male (divided into two parts); Sahul Shelf, 12°17.3'S,

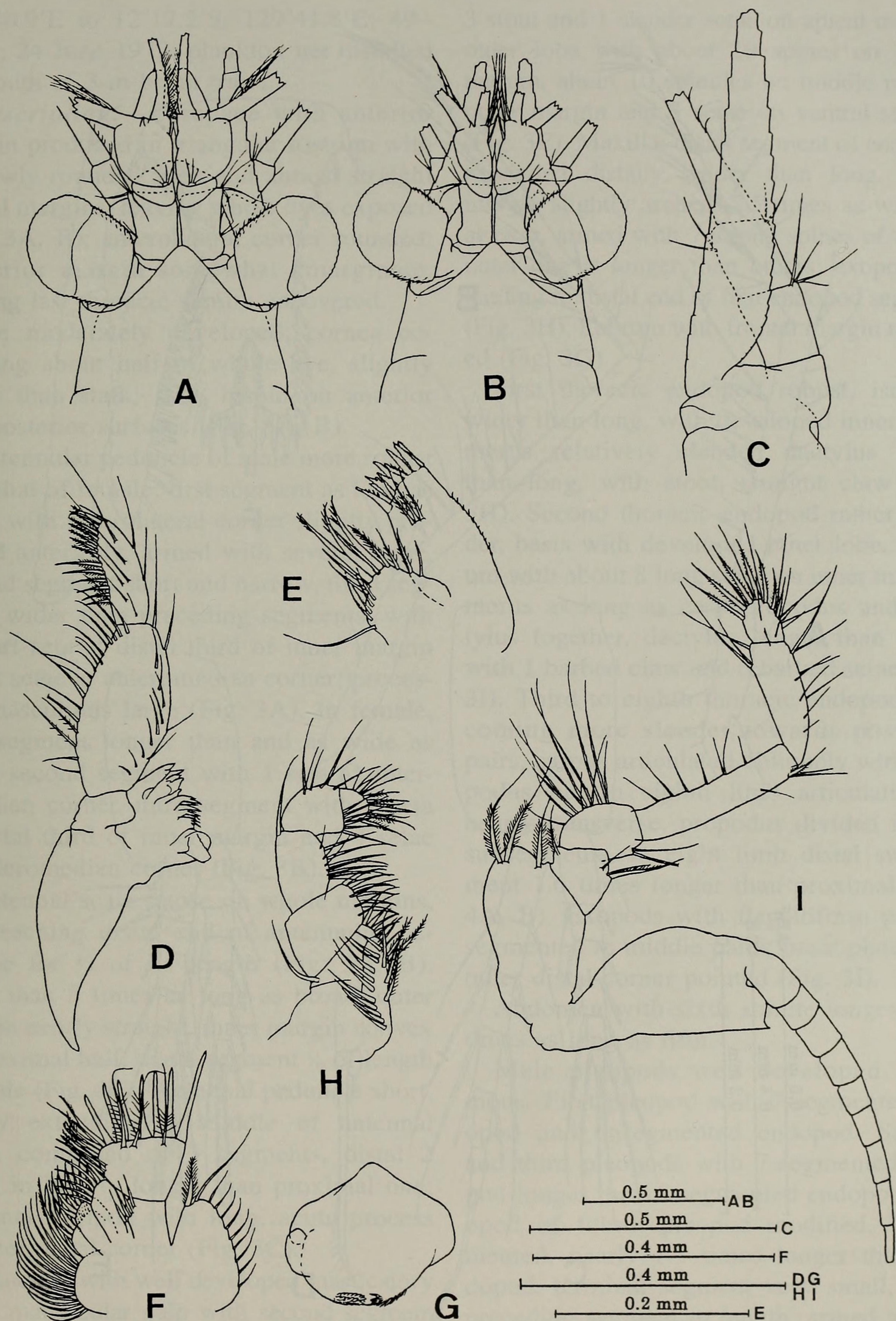


Fig. 3. *Neodoxomysis sahulensis*, new species; A, C–G: holotype; B: allotype. A, anterior end of adult male; B, anterior end of adult female; C, antenna; D, mandible and mandibular palp; E, maxillule; F, maxilla; G, labrum; H, endopod of first thoracic limb; I, second thoracic limb.

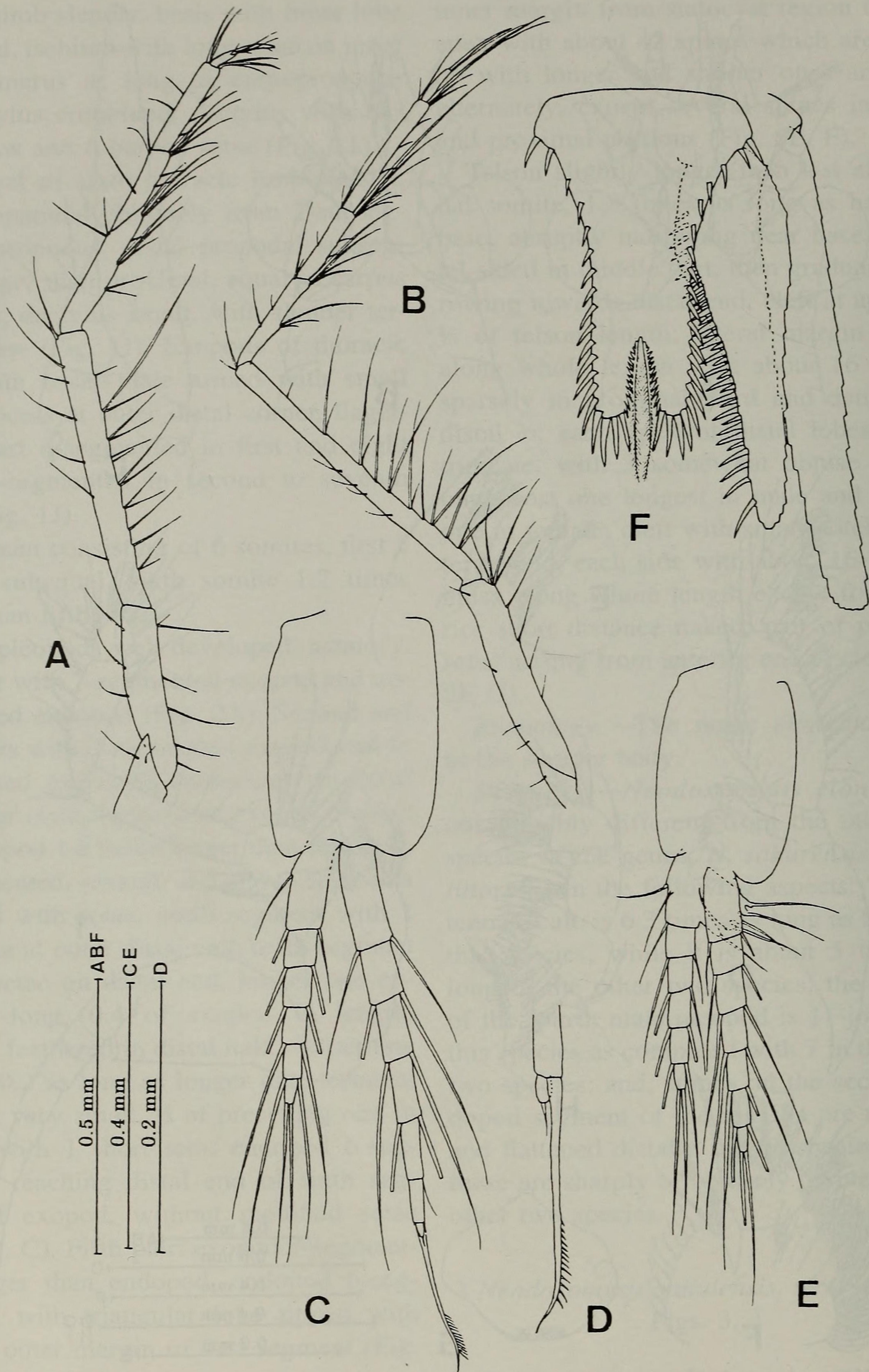


Fig. 4. *Neodoxomysis sahulensis*, new species; A: allotype; B–F: holotype. A, endopod of one of posterior thoracic limbs; B, endopod of eighth thoracic limb; C, fourth male pleopod; D, distal part of exopod of fourth male pleopod; E, fifth male pleopod; F, uropod and telson.

129°40.9'E to 12°17.2'S, 129°41.8'E; 49–52 m; 24 June 1972; plankton net installed in mouth of 3-m beam trawl.

Description.—Carapace with anterior margin produced in triangular rostrum with narrowly rounded apex and almost straight lateral margins, leaving whole eyes exposed (Fig. 3A, B); anterolateral corner rounded; posterior margin somewhat emarginate, leaving last thoracic somite uncovered.

Eye moderately developed; cornea occupying about half of whole eye, slightly wider than stalk; stalk hispid on anterior and posterior surfaces (Fig. 3A, B).

Antennular peduncle of male more robust than that of female, first segment as long as third, with anterolateral corner slightly produced anteriorly, armed with several setae, second segment short and narrow, third segment wider than preceding segments, with 1 short seta at distal third of inner margin and 2 setae at anteromedian corner; processus masculinus large (Fig. 3A). In female, first segment longer than and as wide as third, second segment with 1 seta at anteromedian corner, third segment with 1 seta at distal third of inner margin and 4 setae at anteromedian corner (Fig. 3B).

Antennal scale setose on whole margins, overreaching distal end of antennular peduncle for $\frac{1}{3}$ of its length (Fig. 3A, B), more than 5 times as long as broad, outer margin nearly straight, inner margin convex in proximal half, distal segment $\frac{1}{9}$ of length of scale (Fig. 3C). Antennal peduncle short, barely extending to middle of antennal scale, composed of 3 segments, distal 2 equal in length, longer than proximal one; antennal sympod with long, acute process at outer distal corner (Fig. 3C).

Mandible with well developed masticatory edge; mandibular palp with second segment elongated oval, third segment 0.6 as long as second, outer margin with 2 series of setae, proximal setae longer, barbed on proximal half, distal one barbed along whole length (Fig. 3D). Maxillule: inner lobe with 7 setae on inner margin, 4 setae on outer margin and

3 stout and 1 slender setae on apical margin; outer lobe with about 10 spines on apical margin, about 10 spinules on middle part of outer margin and 3 setae on ventral surface (Fig. 3E). Maxilla: distal segment of endopod expanded distally, wider than long, distal margin slightly arched, 2.5 times as wide as at base, armed with 7 strong spines of which outer one is longer than others; exopod extending to distal end of first endopod segment (Fig. 3H). Labrum with frontal margin rounded (Fig. 3G).

First thoracic endopod robust, ischium wider than long, with developed inner lobe, merus relatively slender, dactylus wider than long, with stout, straight claw (Fig. 3H). Second thoracic endopod rather slender, basis with developed inner lobe, ischium with about 8 long setae on inner margin, merus as long as carpopropodus and dactylus together, dactylus longer than wide, with 1 barbed claw and 6 barbed setae (Fig. 3I). Third to eighth thoracic endopods becoming more slender towards posterior pairs, carpus articulated obliquely with propodus but in eighth limb articulation is nearly transverse, propodus divided into 2 subsegments, in eighth limb distal subsegment 1.6 times longer than proximal (Fig. 4A, B). Exopods with flagelliform part 9-segmented in middle pairs; basal plate with outer distal corner pointed (Fig. 3I).

Abdomen with sixth somite longest, 1.3 times as long as fifth.

Male pleopods well developed, biramous. First pleopod with 7-segmented exopod and unsegmented endopod. Second and third pleopods with 7-segmented exopod longer than 6-segmented endopod. Exopod of fourth pleopod modified, 7-segmented, nearly 1.5 times longer than endopod, terminal segment very small, $\frac{1}{3}$ of preceding segment in length, armed with 1 tiny seta at distal end, penultimate segment with 1 strong spinose seta which is nearly 4 times longer than segment supporting it, antepenultimate segment armed with 1 short feeble seta at distal end of outer margin; endopod 6-segmented, normal, without

Table 1.—Morphological differences between *Neodoxomysis sahulensis* and *N. littoralis*.

	<i>N. sahulensis</i>	<i>N. littoralis</i>
Second segment of endopod of maxilla	With 7 acute, simple spines	With 9 slender, bluntly pointed spines
Exopod of 4th pleopod of male	7-jointed, with 1 seta at distal end	7-jointed, with 2 setae at distal end
Endopod of 4th pleopod of male	Extending to middle of 4th segment of exopod	Extending to distal end of 5th segment of exopod
Endopod of 5th pleopod of male	Extending to distal end of 5th segment of exopod	Extending to distal end of 6th segment of exopod
Telson	1.5 times as long as broad, lateral margin with 16–17 spines; cleft $\frac{1}{4}$ as long as telson, with 11–12 spines on each side	1.75 times as long as broad, lateral margin with 16 spines; cleft $\frac{2}{7}$ as long as telson, with 16–19 spines on each side

modified setae (Fig. 4C, D). Fifth pleopod with exopod 7-segmented, 1.2 times longer than 6-segmented endopod; endopod with first segment with digitiform projection tipped with 1 seta on outer margin in addition to usual side lobe (Fig. 4E).

Endopod of uropod extending beyond distal end of telson for $\frac{1}{3}$ of its length, inner margin from statocyst region to near apex with 34 spines, which are composed of longer and shorter spines arranged alternately except for several spines on proximal and distal portions, distal 4 spines long and acute, other spines obtuse (Fig. 4F). Exopod of uropod overreaching endopod for $\frac{1}{5}$ of its length (Fig. 4F).

Telson as long as last abdominal somite, 1.5 times as long as broad at base, deeply cleft at apex; lateral margin furnished with 16–17 rather long spines along whole length, distal 10 spines gradually increasing in length towards apex; each apex of distal lobes armed with 3 spines, outer one of which is slightly longer than others; apical cleft $\frac{1}{4}$ as long as telson, furnished with 11–12 spinules on each side and pair of plumose setae arising from anterior end (Fig. 4F). Spination on telson in female similar to that of male.

Etymology.—The name *sahulensis* refers to the locality in which the specimens were collected.

Remarks.—*Neodoxomysis sahulensis* is closely similar to *N. littoralis* (Tattersall,

1922) in many respects, but distinguished from that species as shown in Table 1.

In the new species the outer lobe of the maxillule is furnished with a row of spinules on the middle part of the outer margin. Such a character has been observed in *Doxomysis quadrispinosa* by Pillai (1973) and *D. australiensis* by Tattersall (1940).

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