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Five New Species Belonging to the Genus *Proneomysis* (Crustacea, Mysidacea) from Japan

By

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(Communicated by Yoshinori IMAIZUMI)

The genus *Proneomysis* was erected in 1933 by W. M. TATTERSALL for the reception of specimens collected from British Columbia. He mentioned two characteristics as the definition of the genus, viz., exopod of the fourth pleopod of the male three-jointed and terminating in two strong barbed setae; fifth pleopod of the male not similar to that of the female, but well developed and modified, consisting of a long protopod terminating in a very long seta.

At the time of the addition of Japanese species, II (1936) found that the fifth pleopod of the male was similar to that of the female and showed no modification in all of the Japanese species. Therefore, he altered the original definition of the genus and took off the character of the fifth pleopod of the male from the definition.

Besides the fifth pleopod of the male, there is a difference between American and Asian species, namely, the carpo-propodus of the third to eighth thoracic limbs is divided into five subjoints in the American species and into three in the Asian ones.

II added four species in 1936, one in 1940 and two in 1964, all from Japan, and one species in 1964 from Indonesian waters. By the addition of the present five new species, the genus consists of fourteen species. A key to the species is given below.

Many of the present specimens were offered for identification by Dr. M. TORIUMI, Emeritus Professor of Tohoku University, Dr. T. TAKITA, Nagasaki University, Mr. A. OHNO, Tokyo University of Fisheries, Mr. M. MUTO, Tokyo Metropolitan Fisheries Experimental Station, and Mr. N. HORII, Uwozu Aquarium. The present author expresses his sincere gratitude to them for the presentation of the specimens. The type-specimens are lodged in the National Science Museum, Tokyo.

Key to the Species of the Genus *Proneomysis*

1. Fifth pleopod of the male elongate, bearing a long, strong terminal seta; proximal part of the lateral margin of the telson unarmed .... *P. wailesi* W. M. TATTERSALL, 1933

— Fifth pleopod of the male short and similar to that in the female; lateral margin of telson armed with spines throughout the margin (sometimes with spineless

part in the middle region) 2
2. Abdominal somites with transverse dorsal folds ..... *P. misakiensis* Ii, 1936
— Abdominal somites smooth without folds 3
3. Fourth pleopod of the male long, extending beyond the posterior end of the last abdominal somite 4
— Fourth pleopod of the male rather short, not extending beyond the posterior end of the last abdominal somite 7
4. Telson short linguiform, one and a half as long as broad .... *P. sandoi* Ii, 1964
— Telson narrowly linguiform or elongate triangular, equal to or more than twice as long as broad 5
5. Ultimate longer spine on the lateral margin of telson much longer and stouter than other longer spines on the lateral margin ..... *P. quadrispinosa* Ii, 1964
— Ultimate longer spine on the lateral margin of telson equal in size to other longer spines on the lateral margin 6
6. Telson two and a half times as long as broad ..... *P. longipes* sp. nov.
— Telson about twice as long as broad ..... *P. perminuta* Ii, 1936
7. Telson more than two and a half times as long as broad 8
— Telson less than twice as long as broad 9
8. Endopod of uropod with about twenty-four spines at the statocyst region .. .. *P. tenuiculus* Ii, 1940
— Endopod of uropod with about eight spines at the statocyst region .... *P. toriumii* sp. nov.
9. Telson with spineless part in the middle region of the lateral margin .... *P. lingvura* sp. nov.
— Telson with many spines throughout the length of the lateral margin 10
10. Dacylus of the endopod of the first and second thoracic limbs with numerous peculiar plumose setae ..... *P. eriopedes* Ii, 1936
— Dactylus of the endopod of the first and second thoracic limbs without such plumose setae 11
11. Endopod of uropod with six to nine spines 12
— Endopod of uropod with fifteen to seventeen spines 13
12. Rostrum long and acute, extending beyond the middle of the first segment of antennular peduncle ..... *P. fusca* Ii, 1936
— Rostrum short and obtuse, hardly reaching the base of antennular peduncle ..... *P. ornata* Ii, 1964
13. Ultimate longer spine on the lateral margin of telson much longer and stouter than other longer spines on the lateral margin ..... *P. surugensis* sp. nov.
— Ultimate longer spine on the lateral margin of telson equal in size to other longer spines on the lateral margin ..... *P. takitai* sp. nov.

Proneomysis longipes sp. nov.

(Figs. 1–2)

Material. Apr. 23, 1975; Tsuchisaki, Akita Prefecture; 3 adult and 1 immature males, 11 adult females; collected by shrimp-net. (Presented by Dr. M. TORIUMI.)

Body length. Adult male up to 8.3 mm, female up to 8.9 mm.

Description. Frontal margin of carapace produced into a triangular rostral plate with bluntly pointed tip, the rostral plate reaching the base of antennular peduncle, covering the basal part of eyestalk dorsally; posterior margin emarginate, leaving the last two thoracic segments exposed (Figs. 1 a, b and 2 a, b).

Eye large and well developed, extending laterally a little beyond the lateral line of the body, somewhat longer than the breadth, cornea wider than the eyestalk (Fig. 2 a, b).

Antennular peduncle more robust in the male than in the female, third segment longer, in the male, and shorter, in the female, than the first and second joints combined (Fig. 2 a, b).

Antennal peduncle somewhat shorter than antennular peduncle; second joint long, nearly twice as long as broad (Fig. 2 c).

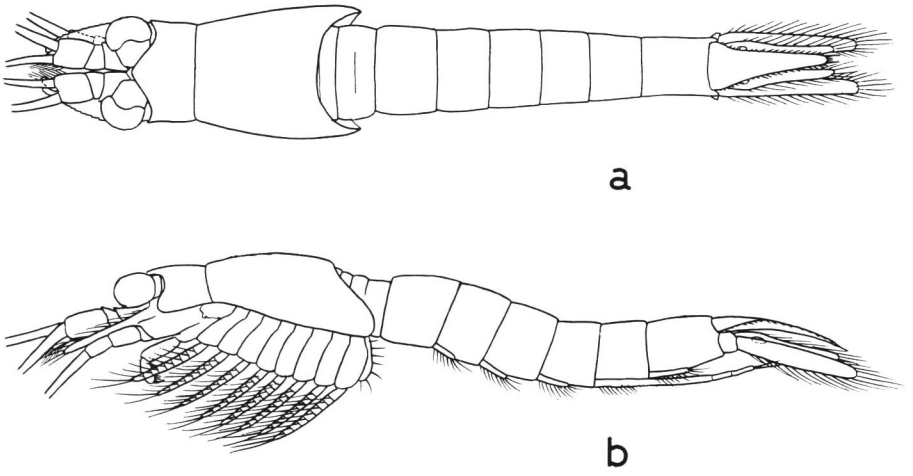

Fig. 1. *Proneomysis logipes* sp. nov.; a, adult male in dorsal view, ×12; b, adult male in lateral view, ×12.

Antennal scale lanceolate, four times as long as broad, setose on both margins, shorter than antennular peduncle including the sexual appendage in the male, longer than antennular peduncle by one-fifth and than the antennal peduncle by one-fourth of the length of scale in the female (Fig. 2 a–c).

First to fifth abdominal somites subequal, sixth somite long, somewhat longer than the width (Fig. 1 a, b).

Fourth pleopod of the male very long, extending to the middle of telson in the largest paratype of 8.3 mm, exopod composed of three joints, first joint four times as long as the endopod, second joint one-fifth of the length of the first, third joint a little longer than the preceding one, terminating in two long and stout setae of almost the same length, which are slightly longer than the joint (Fig. 2 d).

Telson elongate triangular, longer than one and a half times as long as the last abdominal somite, two and a half times as long as the maximum width at the base; lateral margin concave in the proximal one-third and then gradually narrowing to narrow apex, densely armed with many spines through the whole length; distal two-thirds of the margin armed with eight to ten grouped spines with one to five shorter spines between the longer ones; proximal one-third of the margin armed with about eight relatively long spines rather sparsely set; apex very narrow, about one-ninth of the width at the base, armed with two pairs of spines, of which the outer pair is large, almost equal to the longer spines of the lateral margin; inner pair small, about one-fourth of the outer one (Fig. 2 f).

Endopod of uropod about equal in length to telson including the apical spine, armed on the ventral surface near the inner margin at the region of statocyst with about sixteen to twenty-one spines which increase in length distally (Fig. 2 e).

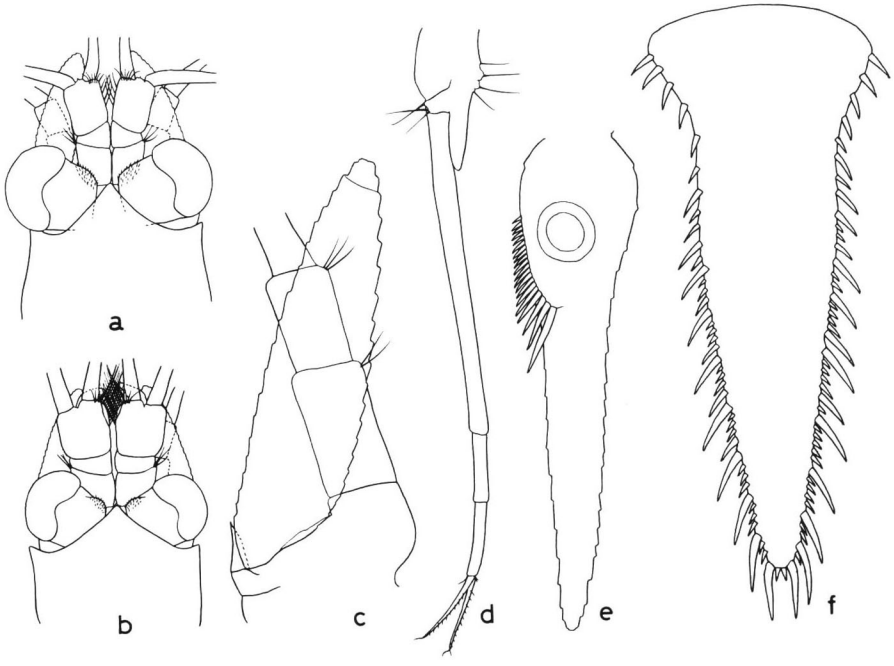

Fig. 2. *Proneomysis longipes* sp. nov.; a, anterior end of adult female, ×20; b, anterior end of adult male, ×20; c, antenna, ×29; d, fourth pleopod of male, ×49; e, endopod of uropod, ×49; f, telson, ×49.

Type-series. Holotype (NSMT–Cr. 5514), adult male of 8.2 mm; allotype (NSMT–Cr. 5515), adult female of 8.2 mm with embryos in marsupium; and paratypes (NSMT–Cr. 5516), the other 3 males and 10 females.

Remarks. This species closely resembles *P. perminuta*, but there are differences in the shape and armature of the telson, as given below. 1) In *P. perminuta* the telson is twice as long as broad, while it is two and a half times in the present species; 2) the lateral margin is concave through the entire length in *P. perminuta*, while in the present species it is concave in basal one-third and rather convex in the distal two-thirds of the margin; 3) spines on the lateral margin are more numerous in the present species (over forty) than in *P. perminuta* (about thirty-three). There are slight differences in the fourth pleopod of the male between the two species. In *P. perminuta* the length of its endopod is about two-ninths of the first joint of the exopod, and the second joint is slightly longer than the third, while in the present species the length of endopod is about one-fourth of the first joint and the second joint is slightly shorter than the third.

The present species is also allied to *P. misakiensis* in general form. However, the differences are as follows. 1) In *P. misakiensis*, each of the five anterior abdominal somites has a transverse fold on the dorsal side, while in the present species abdominal somites do not bear such a fold; 2) the antennal scale is about five times as long as broad in *P. misakiensis*, while it is four times longer in the present species; 3) the fourth pleopod of the male reaches the posterior end of the last abdominal somite in *P. misakiensis*, whereas it reaches the middle of telson in the present species; 4) the inner uropod bears thirty to thirty-five spines on the ventral inner margin in *P. misakiensis*, while in the present species it is armed with about twenty spines.

From the other species of the genus, the present one is easily distinguished by the elongate triangular telson and the long fourth pleopod of the male.

This is a littoral species. The species name *longipes* is derived from the long fourth pleopod of the male.

Proneomysis toriumii sp. nov.

(Figs. 3–5)

Material. Apr. 23, 1975; Tsuchisaki, Akita Prefecture; 3 adult males and 12 adult females; collected by shrimp-net. (Presented by Dr. M. TORIUMI.)

Apr. 29, 1975; Uchiura Bay, Chiba Prefecture; 4 adult and 2 immature males, 4 adult and 1 immature females. (Presented by Mr. A. OHNO.)

Body length. Adult male from Tsuchisaki 9.3 to 10.3 mm, from Uchiura Bay 7.7 to 8.3 mm; adult female from Tsuchisaki 9.4 to 11.6 mm, from Uchiura Bay 7.6 to 8.4 mm.

Description. Body moderately robust.

Frontal margin of carapace curving downward and produced into a triangular

rostral plate with a narrowly rounded or obtusely pointed apex, extending to just the base of antennular peduncle or slightly beyond that level. Posterior margin emarginate, leaving the last thoracic segment uncovered in dorsal view (Figs. 3 a, b and 4 a, b).

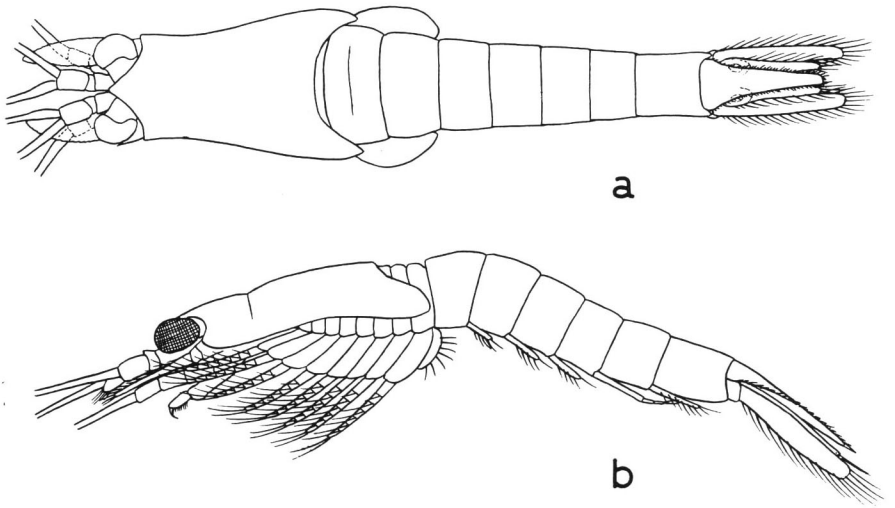

Fig. 3. *Proneomysis toriumii* sp. nov.; a, adult female in dorsal view, ×9; b, adult male in lateral view, ×9.

Eye large and well developed, somewhat depressed dorsoventrally; eye, including the stalk, only slightly longer than the width; cornea wider than the stalk (Fig. 4 a, b).

Antennular peduncle, in the male, robust and the third segment much longer than the preceding two segments together, one and one-third times as long as broad; male appendage curved inwardly, more than half the length of the third segment; in the female, more slender than in the male and the third segment a little longer than the preceding two segments together (Fig. 4 a, b).

Antennal peduncle a little shorter than antennular peduncle; the second segment the longest, one and a half times as long as broad (Fig. 4 a–c).

Antennal scale extending forwards beyond the distal margin of antennular peduncle by one-fourth, in the male, and by two-fifths, in the female, of the length of scale, lanceolate in shape, less than four times as long as broad, setose all round (Fig. 4 c).

First to fifth abdominal segments subequal; sixth segment the longest, one and a half times as long as the preceding segment, as long as broad; all abdominal segments without transverse dorsal furrows (Fig. 3 a, b).

Fourth pleopod of the male relatively short, extending somewhat beyond the posterior margin of the fifth abdominal segment, exopod about twice as long as endopod; third segment as long as the second and terminating in two long setae which are equal in length (Fig. 4 d).

Telson large, longer than the last two abdominal segments combined, two and a half times as long as the maximum breadth at the base; apex narrow, one-seventh to one-eighth of the maximum width, furnished with two pairs of spines, of which the outer pair is three times as long as the inner pair; lateral margin slightly concave in proximal one-third, densely armed throughout with many spines; distal two-thirds of the margin furnished with about fifteen grouped spines with one to four smaller spines between larger spines, proximal one-third of the margin furnished with about nine stout spines rather widely spaced (Fig. 4 e).

Uropod relatively short, endopod shorter than telson, armed on the ventral surface near the inner margin at the statocyst region with seven to nine spines which become gradually longer distally; the distalmost spine is the longest and about one-sixth of endopod (Fig. 4 f); exopod extending beyond the distal margin of endopod by distal one-fifth.

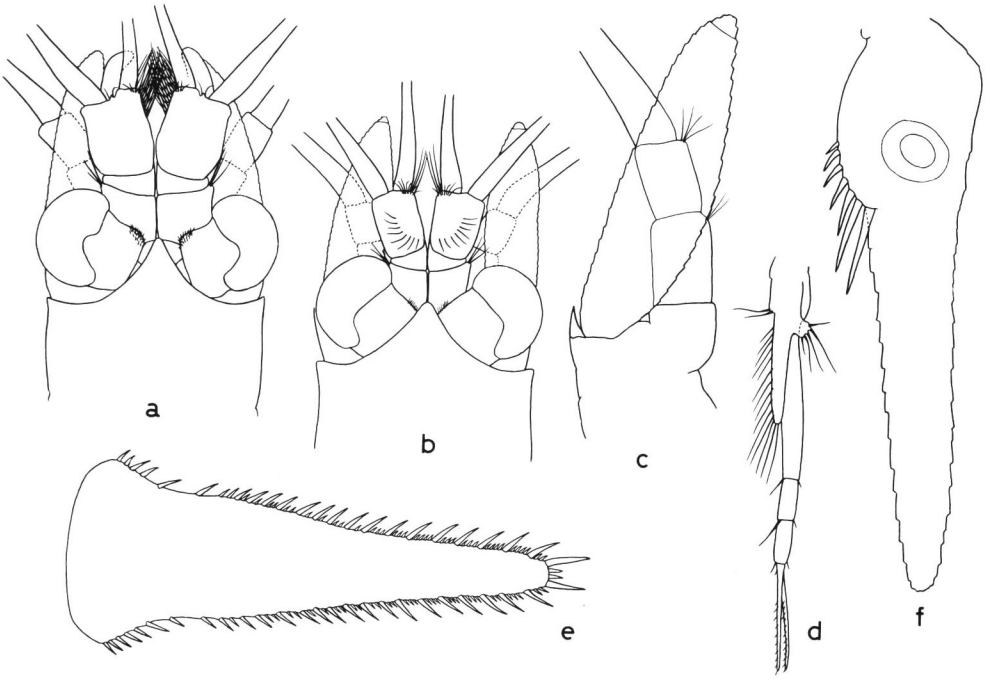

Fig. 4. *Proneomysis toriumii* sp. nov.; a, anterior end of adult male, ×20; b, anterior end of adult female, ×20; c, antenna, ×32; d, fourth pleopod of male, ×32; e, telson, ×32; f, endopod of uropod, ×49.

Type-series. Holotype (NSMT-Cr. 5520), adult female of 10.4 mm; allotype (NSMT-Cr. 5521), adult male of 10.0 mm; and paratypes (NSMT-Cr. 5522), the other 2 males and 11 females, all from Tsuchisaki, Akita Prefecture.

Remarks. Specimens collected from Uchiura Bay, Chiba Prefecture, are different

from the type-series in the following respects. 1) The apex of telson narrower (about one-ninth) than that of the type-series (Fig. 5 c); 2) endopod of the fourth pleopod of the male longer than that of the type-series as compared with the exopod (Fig. 5 b); 3) two terminal setae on exopod of the fourth pleopod of the male different in the length (Fig. 5 b); 4) number of spines on the endopod of uropod being six to seven (Fig. 5 d); 5) body length being 8.0 to 8.3 mm in the adult male and 7.6 to 8.4 mm in the adult female.

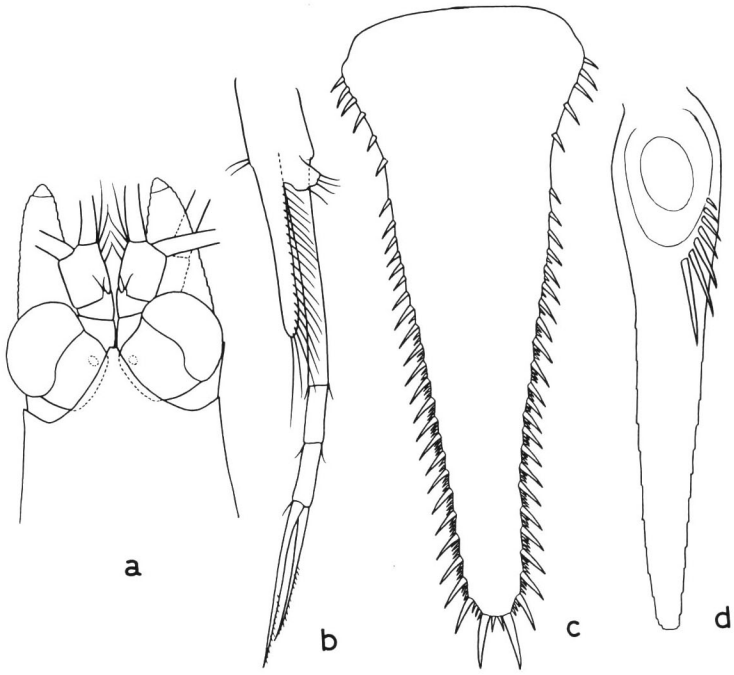

Fig. 5. *Proneomysis toriumii* sp. nov. from Uchiura Bay; a, anterior end of adult female, ×23; b, fourth pleopod of male, ×57; c, telson, ×57; d, endopod of uropod, ×57.

The present species resembles *P. misakiensis* and *P. tenuiculus* in the shape and armature of the telson, but is distinguishable from *P. misakiensis* by the number of spines on the endopod of uropod and in the male fourth pleopod, and from *P. tenuiculus* by the size of eye and by the number of spines on the endopod of uropod. In the number of spines on the endopod of uropod, the present species is also allied to *P. ornata*, but the former is easily distinguished from the latter by the shape of the rostral plate and by the shape and armature of the telson.

The species is a littoral form. It is named after Dr. M. TORIUMI who offered the specimens to the author for identification.

Proneomysis lingvura sp. nov.

(Fig. 6–7)

Material. May 1973; Niijima Island (about 34°10′N, 139°20′E); 4 adult and 1 immature males, 2 adult females; directly collected by diving among seaweeds at 2 m depth. (Presented by Mr. M. MUTO.)

May 16, 1975; Nomo, Nagasaki Prefecture; 1 adult and 4 immature males, 5 adult females; directly collected by diving from sand bottom at 3 m depth. (Presented by Dr. T. TAKITA.)

July 25, 1976; Ozakai, Toyama Prefecture; 1 adult and 2 immature males, 3 adult and 9 immature females; collected under the lighting. (Presented by Mr. N. HORII.)

December 24, 1975; Uwozu, Toyama Prefecture; 1 immature male; collected among seaweeds. (Presented by Mr. N. HORII.)

Body length. Adult males from Niijima of 7.3 to 7.6 mm, from Nomo of 6.6 mm and from Ozakai of 4.5 mm; and adult females from Niijima of 6.8 to 7.7 mm, from Nomo of 5.3 to 6.5 mm and from Ozakai of 4.8 to 5.6 mm.

Description. Frontal margin of carapace produced into a triangular rostral plate with narrowly rounded apex which just or nearly reaches the distal margin of antennular peduncle; rostral plate growing somewhat downward, leaving the eyestalk exposed in dorsal view; posterior margin emarginate, leaving the last two segments uncovered in dorsal view (Fig. 6 a–c).

Eye extending laterally beyond the lateral line of body by the portion of cornea, somewhat longer than breadth, cornea wider than eyestalk (Fig. 6 b, c).

Antennular peduncle more robust in the male than in the female; third joint longer than, in the male, and equal to, in the female, the preceding two segments together (Fig. 6 b, c).

Antennal peduncle shorter than antennular peduncle; second joint the longest, nearly one and a half times as long as broad (Fig. 6 d).

Antennal scale lanceolate, four times as long as broad, setose on both margins, about equal to the length of antennular peduncle including the sexual appendage in the male, extending beyond the distal margin of antennular peduncle by one-fourth the length of scale in the female, longer than antennal peduncle by nearly one-fourth of the length of scale (Fig. 6 d).

Abdomen six-segmented, first to fifth segments subequal, sixth segment long, somewhat longer than broad (Fig. 6 e).

Fourth pleopod of the male not so long, barely reaching the middle of the last abdominal segment; exopod consisting of three joints, first joint more than twice as long as endopod, second and third joints almost equal in size, about one-sixth of the length of the first, third joint terminating in two strong spinous setae which are of different length, the longer one of which is three times and the other is two and a half times as long as the third (Fig. 6 f).

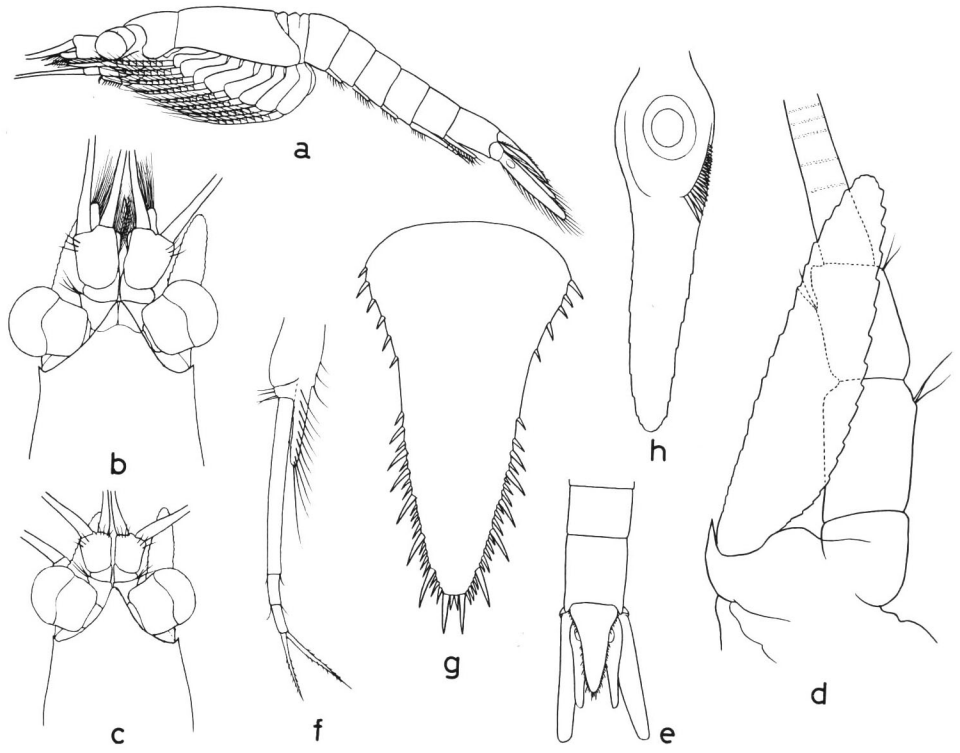

Fig. 6. *Proneomysis lingvura* sp. nov.; a, adult male in lateral view, ×9; b, anterior end of adult male, ×16; c, anterior end of adult female, ×16; d, antenna, ×57; e, posterior end of adult male, ×12; f, fourth pleopod of male, ×40; g, telson, ×57; h, endopod of uropod, ×57.

Telson rather linguiform, a little shorter than one and one-third times as long as the last abdominal segment, somewhat shorter than twice the maximum breadth at the base; lateral margin concave in the proximal half and convex in the distal half, spineless at a part a little proximal to the middle of the margin over the distance of one-sixth of the margin, armed with five to seven spines on the margin proximal to the spineless part; distal half of the margin armed with many spines arranged in five or six groups with one to five smaller spines between larger ones; apex narrow, about one-ninth of the maximum breadth, armed with two pairs of spines whose outer pair is two and a half times as long as the inner pair (Fig. 6 g).

Uropod moderate; endopod extending beyond the distal margin of telson by one-seventh of the length of endopod, armed on the ventral surface near the inner margin at the statocyst region with sixteen to twenty-two spines which become progressively longer distally; exopod extending backward beyond the endopod by one-fourth the length of exopod (Fig. 6 e, h).

Type-series. Holotype (NSMT–Cr. 5517), adult male of 7.6 mm; allotype (NSMT–Cr. 5518), adult female of 6.8 mm; and 3 paratypes (NSMT–Cr. 5519), 2 males of 7.5 mm and 7.3 mm, and 1 female of 7.7 mm; all from Niijima Island.

Remarks. The present species is easily distinguishable from the other members of the genus by the presence of the spineless part on the lateral margin of the telson.

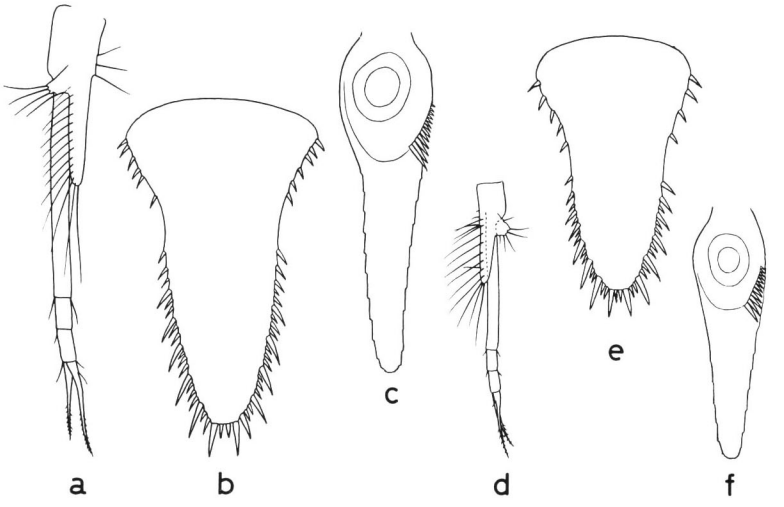

Fig. 7. *Proneomysis lingvura* sp. nov. from Nomo (a–c) and from Ozakai (d–f); a, fourth pleopod of male, ×57; b, telson, ×57; c, endopod of uropod, ×57; d, fourth pleopod of male, ×57; e, telson, ×57; f, endopod of uropod, ×57.

Table 1. Comparison of fourth pleopod of male, telson, endopod of uropod and body length on specimens from three localities of *Proneomysis lingvura* sp. nov.

	Type-series	Specimens from Nomo	Specimens from Ozakai
Fourth pleopod of male			
Ratio of three joints of exopod	75: 12.5: 12.5	77: 11: 12	75: 12.5: 12.5
Endopod : First joint of exopod	2: 1	1.8: 1	1.8: 1
Telson			
Width: Length	1: 1.83	1: 1.7	1: 1.65
Apical width : Basal width	1: 9	1: 7.5	1: 7.9
Endopod of uropod			
Number of spines	16–22	10–14	11–13
Body length (mm)			
Male	7.3–7.6	6.6	4.5
Female	6.8–7.7	5.3–6.5	4.8–5.6

Specimens from Nomo, Nagasaki Prefecture, and Ozakai, Toyama Prefecture, somewhat differ from the type-series in the telson, inner uropod and body length (Fig. 7). Differences are shown in Table 1.

The species is a littoral form. The name *lingvura* refers to the shape of the telson.

Proneomysis surugensis sp. nov.

(Fig. 8)

Material. Tansei-Maru St. 428; July 8, 1969; Suruga Bay (34°54.8′N, 138°27.9′E); 1 adult and 1 immature males, 1 adult and 1 immature females; collected by the bottom-net from the sea bottom 20 m deep.

Body length. Adult male 5.5 mm; adult female 6.7 mm.

Description. Frontal margin of carapace produced into a low triangular rostral plate with an obtusely pointed tip; rostral plate, in the female, extending a little beyond the base of antennular peduncle and covering a proximal part of eyestalk, in the male the plate not extending to the base of antennular peduncle and leaving the whole eye uncovered in dorsal view; posterior margin emarginate, leaving the last two segments exposed dorsally (Fig. 8 a–d).

Eye large, well developed, somewhat depressed dorso-ventrally, slightly longer than broad; cornea wider than the eyestalk (Fig. 8 c, d).

Antennular peduncle more robust in the male than in the female; third segment the longest, equal to, in the female, and longer than, the length of the preceding two segments combined (Fig. 8 c, d).

Antennal peduncle extending somewhat beyond the middle of the third segment of antennular peduncle; second segment the longest, one and a half times as long as broad (Fig. 8 e).

Antennal scale lanceolate, four times as long as broad, longer than antennal peduncle by one-third the length of scale, shorter than antennular peduncle including the sexual appendage in the male and longer than antennular peduncle by one-fourth of the scale length in the female; distal suture present (Fig. 8 e).

First five abdominal segments subequal; sixth somite the longest, a little longer than broad.

Fourth pleopod of the male extending to the middle of the sixth abdominal somite; exopod two and a half times as long as endopod; second segment about one-third of the first, furnished with a seta on the distal end of inner and outer margins, of which the inner seta is long, nearly twice as long as the third; third segment short, less than three-fifths of the second, terminating in two long stout setae and two slender ones, the former two setae of about equal length, nearly four times as long as the third segment; inner one of the latter setae half the length of the terminal strong setae (Fig. 8 f).

Fifth pleopod of the male unarmed with a long terminal seta (Fig. 8 g).

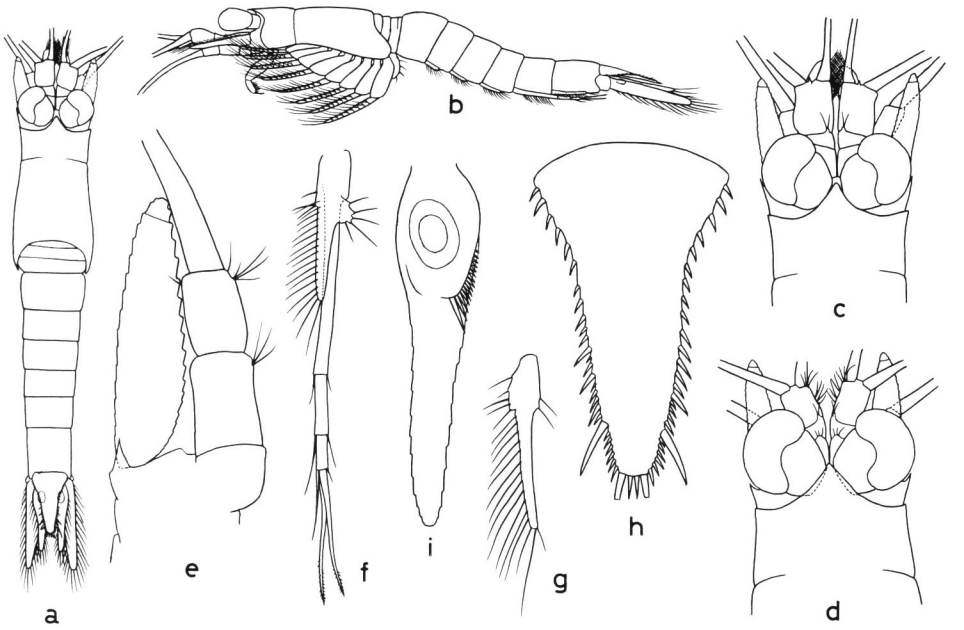

Fig. 8. *Proneomysis surugensis* sp. nov.; a, adult male in dorsal view, ×10; b, adult male in lateral view, ×10; c, anterior end of adult male, ×20; d, anterior end of adult female, ×20; e, antenna, ×49; f, fourth pleopod of male, ×49; g, fifth pleopod of male, ×49; h, telson, ×49; i, endopod of uropod, ×49.

Telson rather linguiform, abruptly becoming narrower near the base, then gradually tapering to the apex, one and one-third times as long as the last abdominal somite, one and one-third times as long as broad; apex narrow, about one-seventh of the maximum width at the base, furnished with two pairs of spines, of which the outer pair is long and stout but the exact length is unknown for the damaged condition of the present specimens; lateral margin armed with many spines throughout, the proximal half of the margin armed with nine subequal spines roughly arranged, the distal half of the margin densely armed with larger and smaller spines rather irregularly arranged, ultimate larger spine of the lateral margin especially long and stout, longer than one-sixth of telson; six smaller spines present on the lateral margin between the ultimate larger spine and the apical spine (Fig. 8 h).

Uropod moderate, endopod longer than telson by one-fourth the length of endopod, densely furnished on the ventral surface near the inner margin at the statocyst region with eleven to fifteen spines which increase in length distally (Fig. 8 i); exopod extending beyond the apex of endopod by one-fifth the length of endopod.

Type-series. Holotype (NSMT–Cr. 5523), adult female of 6.7 mm; allotype (NSMT–Cr. 5524), adult male of 5.5 mm.

Remarks. This species bears a peculiar fourth pleopod of the male, namely, the

second joint of the exopod is nearly twice as long as the third, and the third joint is furnished with a slender seta besides two strong barbed ones. Such a feature is unique in this genus.

In the linguiform telson and the special elongation of the ultimate larger spine on the lateral margin of the telson, this species is related with *P. fusca, P. eriopedes, P. sandoi* and *P. lingvura*, but it differs, besides the fourth pleopod of the male, in the following respects: 1) from *P. fusca* in the shape of eye and rostrum and in the number of spines on the inner uropod; 2) from *P. eriopedes* in the numerous peculiar plumose setae on dactylus of the first and second thoracic limbs, and in the shape of eye and rostrum; 3) from *P. sandoi* in the shape of eye and in the number of spines on the inner uropod; 4) from *P. lingvura* in the shape of eye and rostrum, and in the presence of spineless part on the lateral margin of the telson in the latter species.

This species is a littoral form. It is named after the type-locality.

Proneomysis takitai sp. nov.

(Fig. 9)

Material. July 9, 1975; Nomo, Nagasaki Prefecture; 1 adult and 1 immature males, 2 immature females; directly collected by diving from sandy sea bottom 3 m deep. (Presented by Dr. T. TAKITA.)

Body length. Adult male of 5.3 mm; immature females with half-grown marsupium of 4.4 and 4.3 mm.

Description. Frontal margin of carapace produced into a triangular rostral plate with obtusely pointed apex; rostral plate not extending to the base of antennular peduncle, leaving the whole eye uncovered; posterior margin of carapace emarginate, leaving the last two thoracic segments exposed in dorsal view (Fig. 9 a–c).

Eye large, as long as broad, extending laterally beyond the lateral line of body by the length of cornea which is broader than the eyestalk (Fig. 9 c).

Antennular peduncle in the male with the third segment as long as the first and second joints together, male appendage from the third joint large, somewhat shorter than the joint (Fig. 9 c).

Antennal peduncle extending to the middle of the third joint of antennular peduncle, second joint the longest, one and one-third times as long as the third and one and a half times as long as broad (Fig. 9 d).

Antennal scale slender, longer than antennular peduncle, but shorter than that including the male appendage, extending beyond the distal end of antennal peduncle by the distal one-third of the scale, nearly five times as long as broad, outer margin straight and inner margin convex, setose all round (Fig. 9 d).

Abdomen six-segmented, five anterior segments subequal, sixth segment the longest, slightly longer than broad (Fig. 9 a).

Fourth pleopod of the male rather short, extending to the middle of the sixth

abdominal segment; exopod consisting of three joints, the first joint two and a half times as long as endopod, the second joint short, one-seventh the length of the first, the third joint more than one and a half times as long as the second, terminating in two long and stout setae which are different in size, of which the longer one is two and two-thirds times and the other is one and two-thirds times as long as the third joint (Fig. 9 e).

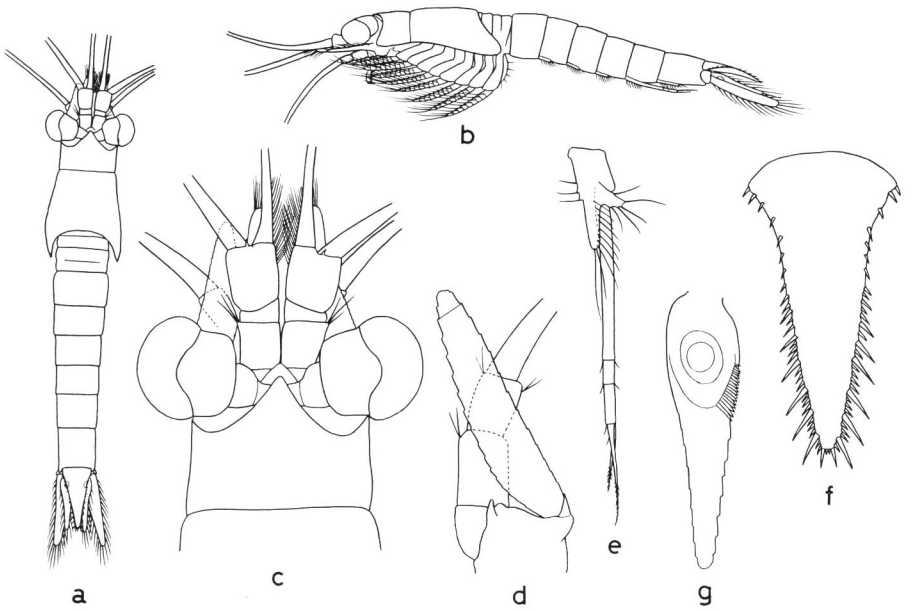

Fig. 9. *Proneomysis takitai* sp. nov.; a, adult male in dorsal view, ×10; b, adult male in lateral view, ×10; c, anterior end of adult male, ×32; d, antenna, ×49; e, fourth pleopod of male, ×49; f, telson, ×49; g, endopod of uropod, ×49.

Telson elongate triangular, one and a half times as long as the last abdominal segment, twice as long as the maximum breadth at the base; lateral margin concave in the proximal two-fifths, then tapering gradually to narrow apex, densely armed with many spines through the entire length; distal three-fifths of the margin armed with spines arranged in five to six groups with one to four smaller spines between larger ones; proximal two-fifths armed with seven to eight smaller spines sparsely set; apex narrow, about one-twelfth of the width at the base, armed with two pairs of spines, of which the inner pair is so small that they are the shortest among the spines on the apical and lateral margins; outer pair of spines three times as long as the inner pair and about half the length of the larger spines on the lateral margin (Fig. 9 f).

Uropod moderate, endopod equal to the length of telson including the outer apical spine, armed with fifteen to eighteen spines on the ventral surface near the inner margin at the statocyst region (Fig. 9 g); exopod extending backward beyond

the distal end of endopod by one-fourth of exopod.

Type-series. Holotype (NSMT–Cr. 5525), adult male of 5.3 mm; allotype (NSMT–Cr. 5526), immature female of 4.4 mm; and paratypes (NSMT–Cr. 5527), the others, 1 immature male and 1 immature female.

Remarks. This species is at once distinguished from other species of the genus by the fairly small apical armature on the telson. It is also peculiar in that the fourth pleopod of the male bears its third joint being more than one and a half times as long as the second.

This species is a littoral form. It is named after Dr. T. TAKITA who offered to the present author the specimens for identification.

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