

# The genus *Anisomysis* (Crustacea: Mysidae) from the east coast of South Africa – descriptions of three new species, and range extensions of two known species

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(with 8 figures, 5 tables)

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Three new species of Mysidae, of the genus *Anisomysis*, are described. Two of these, *Anisomysis* (*Anisomysis*) *pescaprae* sp. nov. and *A.* (*Anisomysis*) *neptuni* sp. nov., were collected on reef in a depth of 20–40 m, within the Aliwal Shoal Marine Protected Area, about 60 km south of Durban on the KwaZulu-Natal shelf. Both belong to the subgenus *Anisomysis*, and each possesses a uniquely shaped telson which immediately identifies the species. In shallow, sheltered waters adjacent to the derelict and partly submerged Vetch's Pier in the southern corner of the Durban beachfront, the third new species, *Anisomysis* (*Paranisomysis*) *sudafricana* sp. nov., was found in small shoals. It is closely related to *A.* (*Paranisomysis*) *arabica* Wooldridge & Victor, 1994, and *A.* (*Paranisomysis*) *marisrubri* Băcescu, 1973, but can be separated from these two species by the more elongate and acutely pointed rostrum, as well as detail of the telson, mandibular palp and male fourth pleopod. *Anisomysis* *vasseuri* Ledoyer, 1974, previously known from Tuléar on the southwestern coast of Madagascar, and the Comores Islands in the Mozambique Channel, was found in close association with *A. pescaprae* and *A. neptuni* on the Aliwal Shoal. All three species from the Aliwal Shoal were encountered in large shoals, at times covering several cubic metres over the reef. The known distribution of *Anisomysis* (*Anisomysis*) *hanseni* Nouvel, 1967, originally described from Nosy-Bé, off the northwest coast of Madagascar, is extended to the partly submerged island reef of Bassas da India in the Mozambique Channel, where it was found in small shoals among coral heads in the shallow lagoon.

**Key words:** *Anisomysis*, *Paranisomysis*, shelf waters, Western Indian Ocean, Aliwal Shoal, Mysidae.

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## INTRODUCTION

The mysid fauna from estuarine and shallow subtidal habitats of the east coast of South Africa is well known, due largely to the efforts of O.S. Tattersall (1952, 1958, 1962, 1969) and Wooldridge (1978, 1988), Wooldridge & McLachlan (1987); Wooldridge & Mees (2000, 2003). A concerted effort to search for juvenile fishes recruiting to the local line fishery, has recently led to the discovery of a number of new mysid species on and adjacent to reef habitats at depths of 15–60 m on the KwaZulu-Natal shelf. Some of these species have very specific habitat preferences, and coupled with their often high numbers, must play a significant role in the food of many fish species associated with these reefs. Their identification and habitat preferences are an important first step in elucidating this role. This paper is the second in a series describing these species, and deals with *Anisomysis*, a genus previously unrecorded from South African waters.

The genus *Anisomysis* was established by Hansen (1910)

to describe *A. laticauda* from Indonesia. Băcescu (1973a) divided the genus into two subgenera, based on the shape of the mandibular palp, creating the subgenus *Paranisomysis* for species with triangular processes on the inner margin of the palp's second segment, while retaining in the subgenus *Anisomysis*, those species with normal setae on both margins. Murano (2003) created a third subgenus, *Pseudanisomysis*, to accommodate a few species that have the eye divided into two parts by a groove, including *A. xenops*, originally described by Tattersall (1943), as a new genus *Carnegieomysis*, but moved to *Anisomysis* by Murano (1994). Mysidae taxonomists now generally agree that the genus *Anisomysis* is characterized by the three-segmented exopod of the male fourth pleopod (Murano, 2003). Currently the genus comprises some 54 known species, 35 of which are in the subgenus *Anisomysis*, 15 in *Paranisomysis* and four in *Pseudanisomysis*. The present paper boosts the total to 57 species. They are all from tropical and subtropical waters of

the Indian and Pacific Oceans, currently known from as far east as Hawaii and the Society Islands (Murano and Fukuoka 2003).

The genus *Anisomysis* consists of free-swimming, shoaling species, usually on reef habitat, and all my specimens were collected by sweeping a hand-held net through clearly discernible shoals, usually a metre or two above the seabed. The exception was *A. hanseni*, which was initially collected under a light, at night, in the shallow lagoon at Bassas da India.

### SYSTEMATICS

Terminology follows Tattersall & Tattersall (1951), and specimen length was measured from the anterior margin of the carapace, including the rostrum, to the posterior end of the telson, excluding spines or setae.

#### *Anisomysis (Anisomysis) pescaprae* sp. nov.

Figs 1A–K, 2A–C

#### Material

Holotype (SAM A45582) adult male (4.7 mm); allotype (SAM A45583) adult female (4.8 mm); paratypes (SAM A45584), include 10 adult males (4.6–4.9 mm), and 10 adult females (4.4–4.9 mm), all deposited in the Iziko South African Museum, Cape Town. Collected by A.D. Connell from Aliwal Shoal (30°15'44"S, 030°49'38"E) on 13 July 2000, at a depth of 20 m.

#### Description

Rostrum obtusely triangular, slightly more rounded in some specimens, not covering bases of antennules (Fig. 1A, B). Posterior margin of carapace smoothly emarginate (Fig. 1B). Antennular peduncle three-segmented, less robust in females (Fig. 1B,C) than males (Fig. 1A). Distal margin of third segment of male supports a hirsute lobe. In both sexes, first segment slightly longer than second and third combined (Fig. 1C). Antennal scale (Fig. 1D) about eight times longer than broad, reaching just past the hirsute lobe in males (Fig. 1A); a little beyond third segment of antennular peduncle in females (Fig. 1B). Distal suture prominent.

Mandibular palp second segment foliate (Fig. 1E), with straight outer edge, bearing about 14 long, straight setae, evenly spaced; inner edge bowed, with six short setae. Terminal segment with three setae on outer edge, one on inner edge. Mandibles (Fig. 1F,G) with incisor and molar processes, and a lacinia mobilis. Left mandible has a set of bristles outside the molar process (Fig. 1G). Maxillule and maxilla normal for the genus.

Endopod of first thoracic limb (Fig. 1H) short and stout. Endopod of limbs three to eight more elongate; the eighth least robust and with fewest setae (Fig. 1I). Carpopropodus of each of endopods 3–8 unsegmented, bearing two, short, comb-bearing setae near the outer edge and one elongate comb-bearing seta terminally (Fig. 1I, and see Fig. 7J for details). The dactylus lacks a strong nail, appearing like the terminal setae, and lacks a comb.

First, second, third and fifth pleopods in both sexes (Fig. 1J), of one reduced segment with 2–3 long plumose setae terminally, and 6–7 shorter setae, all plumose. Male fourth pleopod with endopod reduced, bearing three terminal setae; exopod elongate, three-segmented (Fig. 1K),

second and third subequal, first segment 3.3 times longer than second segment ( $n = 10$ ). Pleopod 4 exopod terminates in two setae, one terminal, bearing a characteristic fan of sub-setae, the other less robust, lightly pinnate subterminally (Fig. 1L). In lateral view (Fig. 2A), male fourth pleopod extends to tip of uropodal endopod. Telson elongate (Fig. 2B), with a deep apical cleft, each distal lobe terminating in two spines. Lateral spines vary between four and six. Uropodal endopod (Fig. 2C) distinctly shorter than exopod.

#### Colour

Apart from brown pigment in the mouthparts, and in patches on the female marsupium, the species is translucent in life, and white in preservation. The eyes are dark red.

#### Etymology

The species name refers to the shape of the telson, reminiscent of the front limbs of a goat, terminating in cloven hooves, literally translated as 'goat's foot'.

#### Remarks

The telson of this species is unique, and immediately distinguishes it from all other known species of *Anisomysis*.

#### Distribution

Known only from the Aliwal Shoal Marine Protected Area off Scottburgh on the KwaZulu-Natal south coast, where it is common on moderate to high-profile reefs at a depth of 15–40 m. Sometimes forms dense shoals, when a sweep of a handnet, a metre or two above the reef, can collect hundreds of specimens.

#### *Anisomysis (Anisomysis) neptuni* sp. nov.

Figs 2D–I, 3A–G, 4A–C

#### Material

Holotype (SAM A45585) adult male (5.7 mm); allotype (SAM A45586) adult female (6.0 mm); paratypes (SAM A45587), include 10 adult males (4.8–5.8 mm), and 10 adult females (4.6–5.5 mm), all deposited in the Iziko South African Museum, Cape Town. Collected by A.D. Connell from Aliwal Shoal (30°15'44"S, 030°49'38"E) on 13 July 2000, at a depth of 20 m. Additional material examined was collected at a depth of 18–25 m on coral reefs off Pomene in Mozambique (22°55'53"S, 35°36'46"E), by the present author, in May 2008.

#### Description

Rostrum obtusely triangular, bluntly pointed, not covering bases of antennules (Fig. 2D,E). Posterior margin of carapace smoothly emarginate, with rounded lateral corners. Eye large, cornea expanded, wider than eyestalk. Eye projecting well past carapace, eyestalks smooth (Fig. 2D,E).

Antennular peduncle three-segmented, less robust in females (Fig. 2E) than males (Fig. 2D). Distal margin of third segment of male supports a hirsute lobe. In both sexes, first segment subequal in length, to second and third combined. Antennal scale (Fig. 2F) about 5.5 times longer than broad, not quite reaching the hirsute lobe tip in males (Fig. 2D); well beyond third segment of antennular peduncle in females (Fig. 2E). Distal suture indistinct.

Mandibular palp second segment foliate (Fig. 2G), with straight outer edge, bearing about 18 long, straight setae, evenly spaced; inner edge bowed, with three to seven setae. Terminal segment with three setae on outer edge, none on inner edge. Mandibles (Fig. 2H,I) with incisor and molar processes, a lacinia mobilis, and a set of small bristles outside the molar. Maxillule and maxilla normal for the genus.

Endopod of first thoracic limb short and stout (Fig. 3A). Endopods of limbs 3–7 progressively more elongate; eighth slightly shorter, less robust and with fewer setae, than seventh (Fig. 3B–E). Endopod of eighth limb of female slightly more robust than the male (Fig. 3E). Carpopropodus of each of endopods 3–7 unsegmented, bearing three short, comb-bearing setae near the outer edge and one elongate comb-bearing seta terminally (Fig. 3B,C); that of the eighth has the same complement of comb-bearing setae, but is divided into two sub-segments (Fig. 3D,E). Dactylus lacks a strong nail, appearing like the terminal setae, and the nail lacks a comb.

All pleopods reduced to one segment in both sexes, except fourth pleopod of male. Male fourth pleopod with endopod reduced; exopod elongate, three-segmented (Fig. 3F), second segment always shorter than third. Segment ratios 4.0:1:1.5 ( $n = 10$ ). Male pleopod 4 terminates in the usual two setae, one bearing a characteristic fan of sub-setae, the other less robust, lightly pinnate subterminally (Fig. 3G). In lateral view (Fig. 4A), male fourth pleopod extends to tip of telson, with terminal setae extending past telson. Telson elongate (Fig. 4B), with a deep apical cleft containing six to seven spines at its base; each posterior lobe terminating in three spines. Lateral spines vary between five and seven. Uropodal endopod (Fig. 4C) 20% shorter than exopod.

#### Colour

Apart from brown pigment on the mouthparts, and in patches on the female marsupium, the species is translucent in life, and white in preservation. The eyes are dark red.

#### Etymology

The species name is derived from the shape of the three-spined terminals of the telson, which resemble mythical Roman god Neptune's trident.

#### Remarks

The telson of this species is unique, and immediately distinguishes it from all other known species of *Anisomysis*.

#### Distribution

The species was originally collected on and around the Aliwal Shoal, about 5 km offshore of Scottburgh, on the KwaZulu-Natal south coast, where it is common on moderate to high-profile reefs at a depth of 15–40 m. It sometimes forms large shoals rising several metres off the bottom, and was the most common of the three species of *Anisomysis* found in the area. During one dive, several manta rays (*Manta birostris*) as well as the anthiids *Pseudanthias squamipinnis* and *Nemanthias carberryi*, and the sparid *Chrysoblephus puniceus*, were seen feeding in the shoals. In May 2008, specimens were collected at 18–25 m depth on coral reefs off Pomene in Mozambique (22°55'53"S, 035°36'46"E).

#### *Anisomysis (Anisomysis) vasseuri* Ledoyer, 1974

Figs 4D–J, 5A–G

*Anisomysis vasseuri* Ledoyer, 1974, p. 61, pl. 1, figs 1–28; Bačescu, 1973, p. 78, fig. 2F (key); Murano & Fukuoka 2003, p. 82 (key); Wooldridge & Mees 2004, p. 101.

#### Material

Collected by A.D. Connell from Cowrie Reef, Scottburgh (30°15.3'S, 030°49.0'E) on 13 July 1999, at a depth of 20 m. Specimens have been deposited in the Iziko South African Museum, Cape Town, under the accession no. SAM A45591. Additional material examined was collected at a depth of 22 m on coral reef off Pomene in Mozambique (22°55'53"S, 035°36'46"E), by the present author, in May 2008.

#### Description

The KwaZulu-Natal and Mozambique specimens match closely the description given by Ledoyer (1974). Size is also similar; males 3.8–4.3 mm, females 3.9–4.2 mm (Ledoyer; 3.5–4.0 mm).

Ledoyer noted that the carpopropodus (his propodus) of thoracic endopods 3–6 comprised two articles, and only one article in thoracic endopods 7 and 8. This is in agreement with current specimens, although the segmentation is often indistinct on the carpopropodus of the sixth thoracic endopod.

The carpopropodi of thoracic endopods 3–7 have two short comb-bearing setae on the outer edge, and two longer comb-bearing setae terminally. The eighth thoracic endopod has two comb-bearing setae terminally, but only one on the outer edge (Fig. 5A).

In current specimens, the exopod of the male fourth pleopod usually has the second segment slightly shorter than the third (Fig. 5C), although not always so, whereas Ledoyer's specimens showed the second and third segments often to be equal in length (Table 1).

The male fourth pleopod mean segment ratios (three segments of exopod), show small discrepancies as shown in Table 2.

The male fourth pleopod reaches to or extends slightly beyond the tip of the telson (Fig. 5E).

#### Remarks

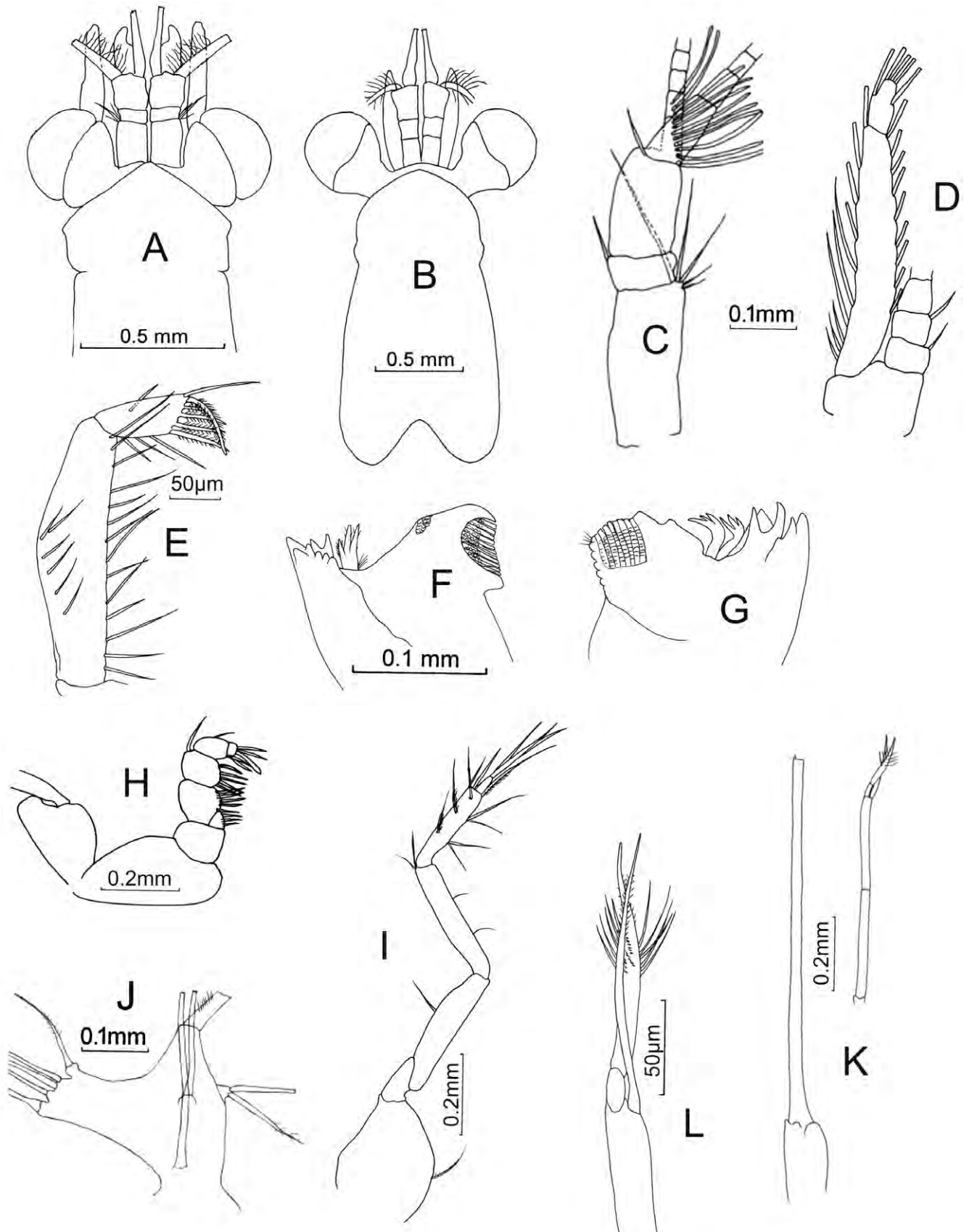
The most striking difference separating this species from other similar species of the subgenus *Anisomysis*, is the

**Table 1.** Exopod of the male fourth pleopod: relative lengths of segments 2 and 3.

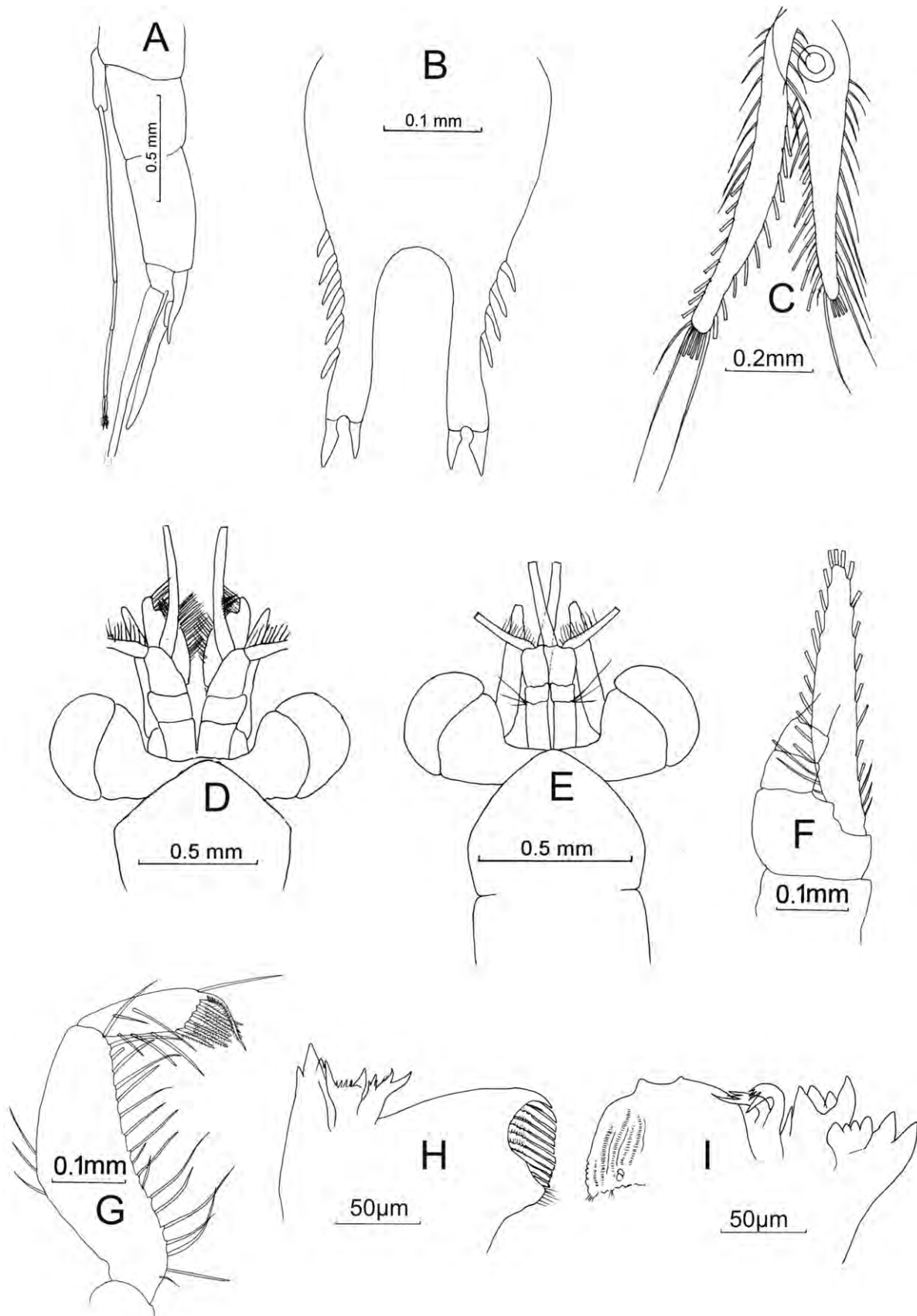
Locality	2 < 3	2 = 3	2 > 3
Tuléar (Ledoyer)	4	5	1
Aliwal Shoal MPA	9	0	1
Pomene, Mozambique	4	0	0

**Table 2.** Exopod of the male fourth pleopod: mean segment length ratios of the three segments.

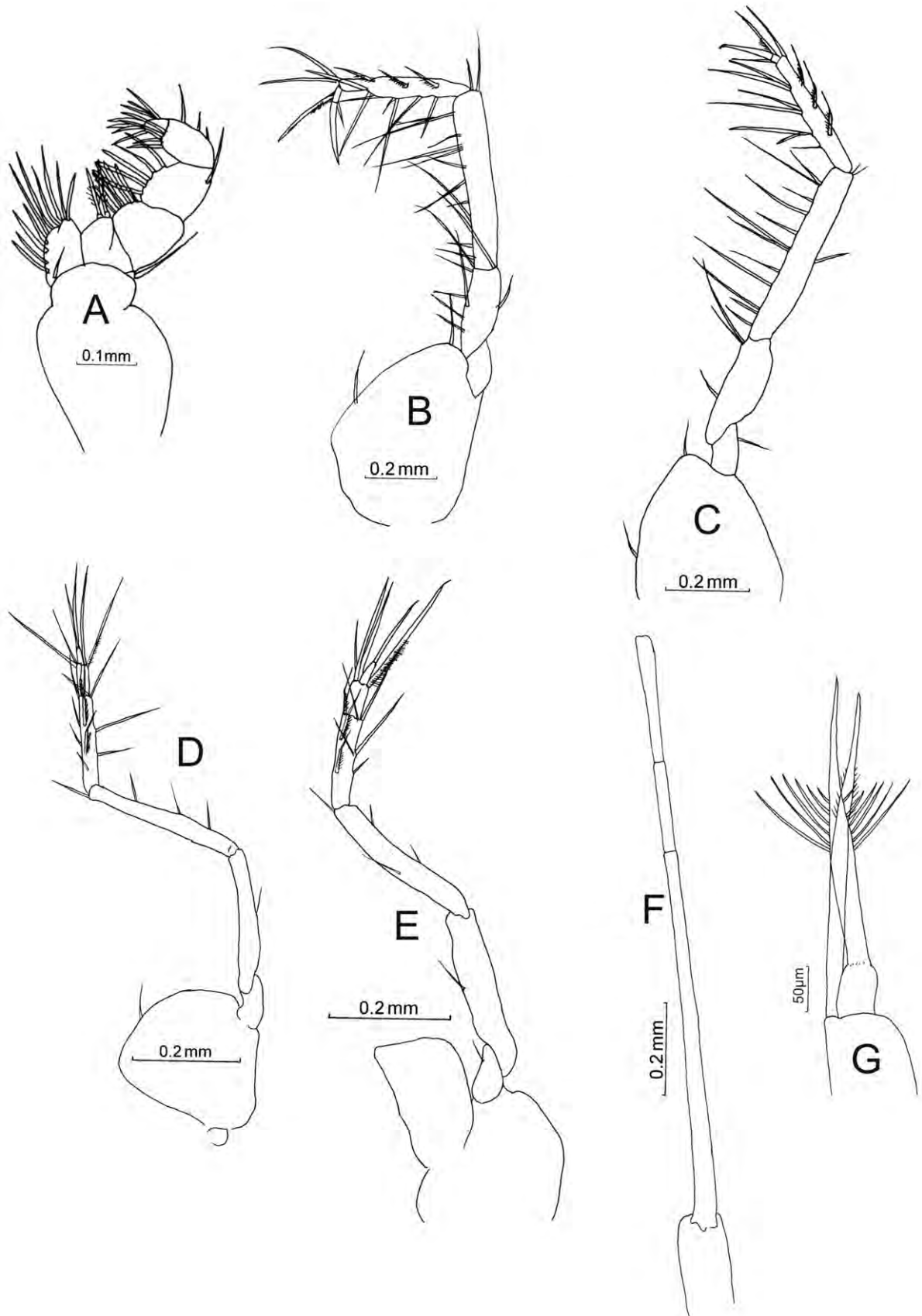
Locality	<i>n</i>	Segment ratios
Tuléar (Ledoyer)	10	2.6:1:1.1
Aliwal Shoal MPA	10	2.7:1:1.2
Pomene, Mozambique	4	2.6:1:1.2



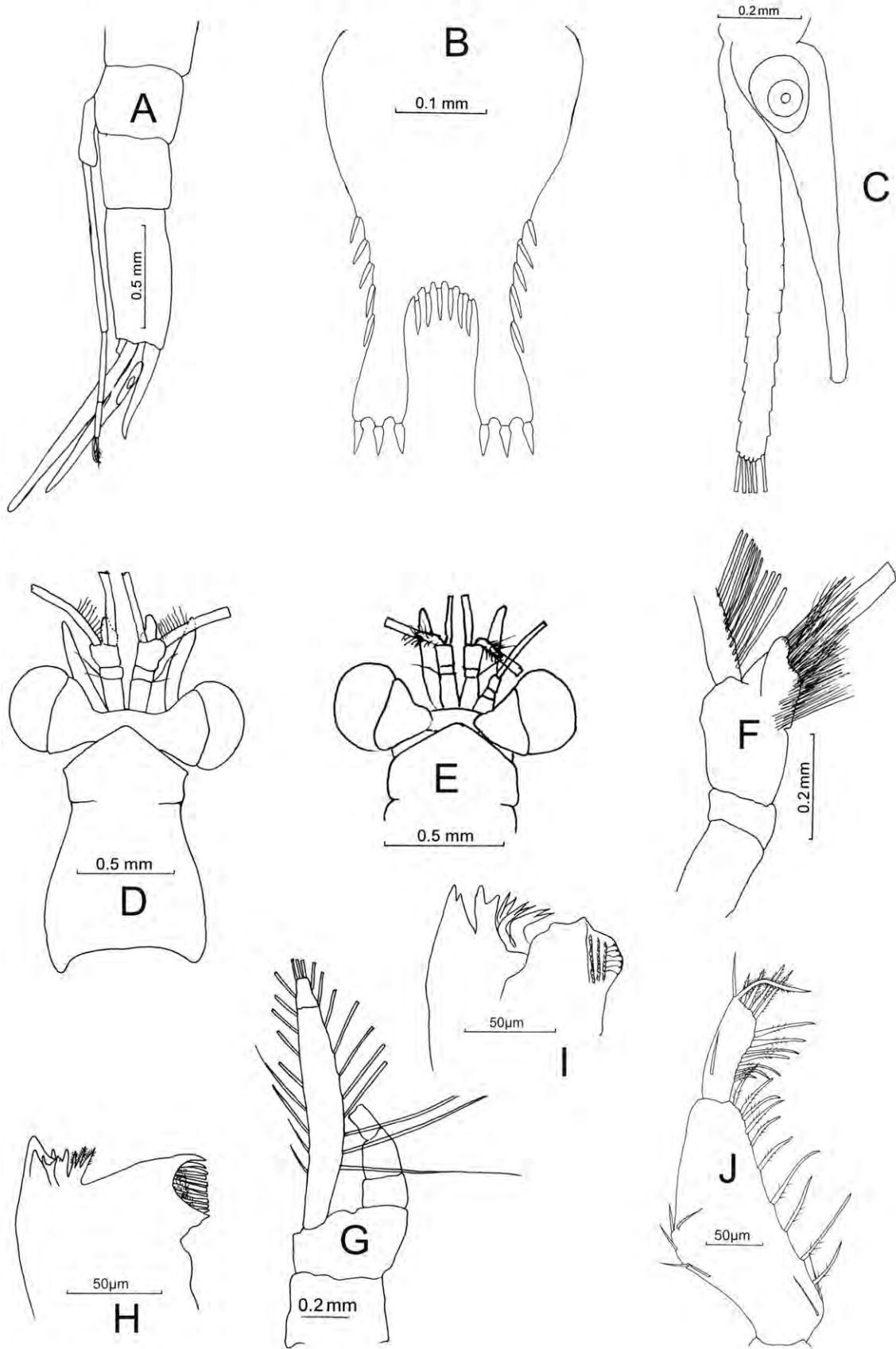
**Fig. 1.** *Anisomysis (Anisomysis) pescaprae* sp. nov. **A**, Male, anterior part of body; **B**, female, anterior part of body; **C**, female antennule; **D**, antennal scale; **E**, mandibular palp; **F**, right mandible; **G**, left mandible; **H**, endopod of first thoracic limb; **I**, endopod of eighth thoracic limb; **J**, male first pleopod; **K**, male fourth pleopod; **L**, detail of tip of male fourth pleopod.



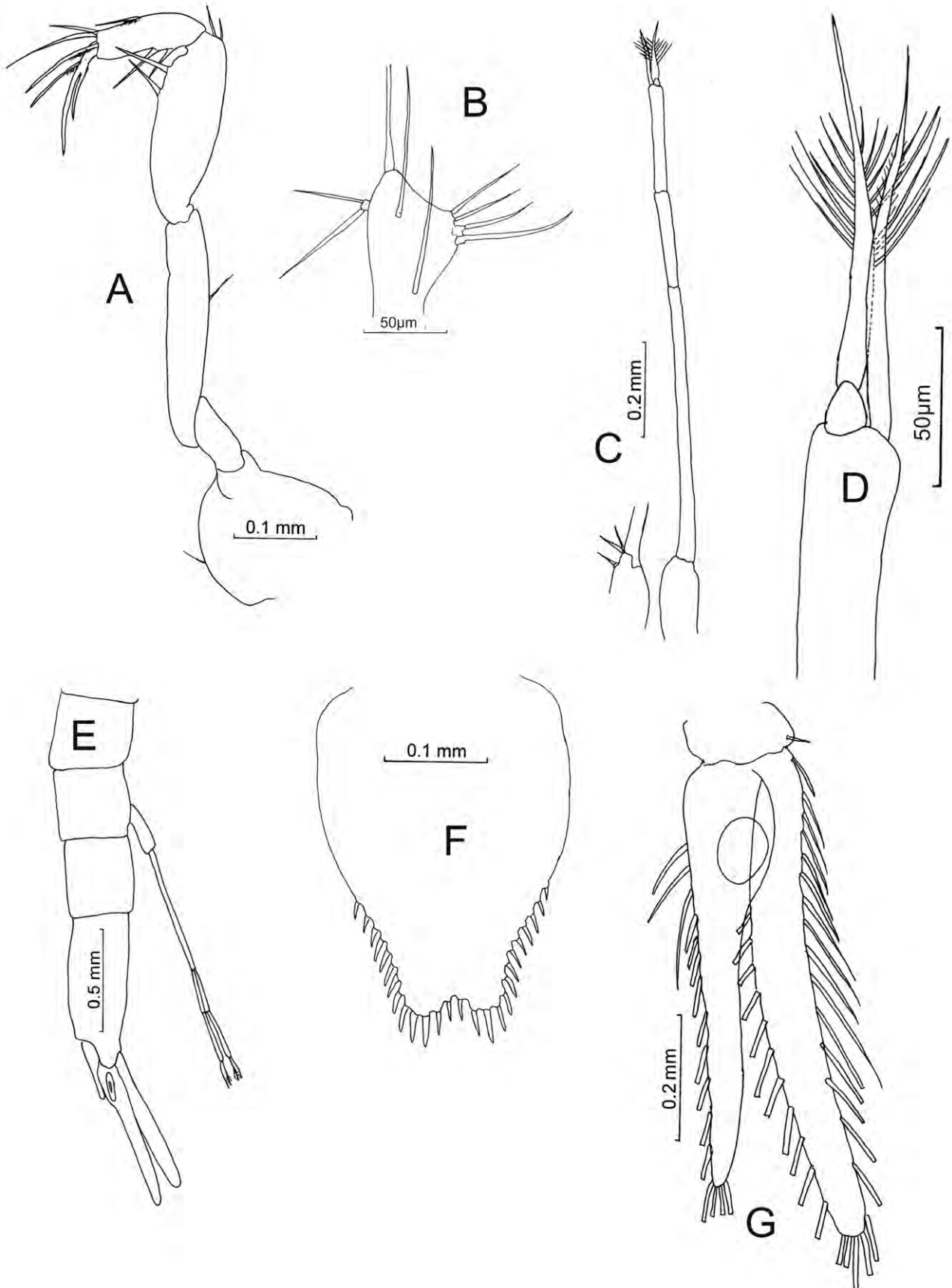
**Fig. 2.** *Anisomysis (Anisomysis) pescaprae* sp. nov. **A**, Male abdomen, in lateral view, showing reach of fourth pleopod; **B**, telson; **C**, uropods. *Anisomysis (Anisomysis) neptuni* sp. nov.; **D**, male, anterior part of body; **E**, female, anterior part of body; **F**, antennal scale; **G**, mandibular palp; **H**, right mandible; **I**, left mandible.



**Fig. 3.** *Anisomysis (Anisomysis) neptuni* sp. nov. **A**, Endopod of first thoracic limb; **B**, endopod of third thoracic limb; **C**, endopod of fifth thoracic limb; **D**, endopod of eighth thoracic limb (male); **E**, endopod of eighth thoracic limb (female); **F**, male fourth pleopod (terminal setae excluded); **G**, male fourth pleopod (detail of terminal setae).



**Fig. 4.** *Anisomysis (Anisomysis) neptuni* sp. nov. **A**, Male abdomen, in lateral view, showing reach of fourth pleopod; **B**, telson; **C**, uropods. *Anisomysis (Anisomysis) vasseuri* Ledoyer, 1974. **D**, Male, anterior part of body; **E**, female, anterior part of body; **F**, male antennule; **G**, antennular scale; **H**, right mandible; **I**, left mandible; **J**, mandibular palp.



**Fig. 5.** *Anisomysis (Anisomysis) vasseuri* Ledoyer, 1974. **A**, Endopod of eighth thoracic limb; **B**, male first pleopod; **C**, male fourth pleopod; **D**, male fourth pleopod (detail of terminal setae); **E**, posterior reach of male fourth pleopod in lateral view; **F**, telson; **G**, uropods.



shape and development of the eighth thoracic endopod (Fig. 5A). Ledoyer illustrates the eighth endopod of his holotype male, but does not comment on how it differs from other similar *Anisomysis* species (see, for example *A. hanseni*, Fig. 6H in this paper, in which the eighth endopod is relatively undeveloped). In present specimens of *A. vasseuri* collected from both Aliwal Shoal MPA and Pomene, Mozambique, the eighth limb is almost subchelate in development. The setae on the inner edge of the merus, and the facing edge of the carpopropodus, also have a non-plumose, spine-like appearance. The dactylus is armed with a stout double tip (Fig. 5A, and Ledoyer's Fig. 14 detail). The only other *Anisomysis* described, with a similarly shaped eighth thoracic endopod, is *A. (Acanthomysis) levi* Băcescu, 1973. Although labelled as peraeopod 3 by Băcescu (1973a, Fig. 1E), this appears to be the eighth thoracic limb, since the merus and carpopropodus are clearly similar to *A. vasseuri*. It should also be noted that, in his description of *A. levi*, Băcescu numbered the peraeopods (thoracic limbs) differently from the convention used in the current description. He followed Sars (Tattersall & Tattersall 1951), who called the third thoracic endopod, 'the first leg' (= peraeopod of Băcescu). Thus, Băcescu's Fig. 1D is clearly the third thoracic endopod of Tattersall & Tattersall (1951). Thus Băcescu's numbering of peraeopods is fore-shortened by two. Despite this, the labelling of his Fig. 1E appears to be incorrect.

*Anisomysis vasseuri* and *A. levi* are easily separated by the large difference in total spine count on the telson; 21–26 in *A. vasseuri* (Ledoyer, 1974), and 12–16 in *A. levi* (Băcescu 1973a).

#### Distribution.

This species was originally described from Tuléar on the south-west coast of Madagascar (Ledoyer 1974). It was recently recorded from Grande Comore in the northern Mozambique Channel (Wooldridge & Mees 2004). The species can be seen in large swarms, on the Aliwal Shoal and surrounding reefs, on the KwaZulu-Natal coast, at a depth of 15–30 m. It was also collected at 20 m amongst high sandstone and coral reef at Pomene, Mozambique, in May 2008.

#### *Anisomysis (Anisomysis) hanseni* Nouvel, 1967

Figs 6A–M

*Anisomysis hanseni* Nouvel, 1967, p. 114, figs 23–30; Murano & Fukuoka 2003, p. 82 (key); Wooldridge & Mees 2004, p. 101.

#### Material

Collected by A.D. Connell from the inner lagoon of the Bassas da India atoll, Mozambique Channel (21°29'22"S, 039°41'33"E) on 21 May 1995, at a surface light at night over about 5 m water depth. Specimens have been deposited in the Iziko South African Museum, Cape Town, under the accession no. SAM A45592.

#### Description

The KwaZulu-Natal and Mozambique specimens agree closely, with Nouvel's original description (1967). This is a small species; males 3.5–4.1 mm (Nouvel 3.5 mm), female 3.7–4.3 mm (Nouvel 4.0 mm). The antennal scale does not extend much beyond the third segment of the antennular

**Table 3.** Position and number of comb-bearing setae on the carpopropodus of limbs 3–8.

Thoracic limb	On outer edge	Terminally
3 and 4	6	2
5, 6, 7 and 8	2	2

**Table 4.** Exopod of the male fourth pleopod: mean length ratios of the three segments.

Locality	<i>n</i>	Segment ratios
Bassas da India	9	4.5:1:2.0
Nosy-Bé (Nouvel)*	1	4.1:1:2.3

\*Taken from Nouvel's illustration.

peduncle (Fig. 6A,B). The carpopropodi of thoracic endopods 3–8 are unsegmented, although some specimens showed an indistinct suture on the carpopropodus of the sixth endopod. The occurrence and location of comb-bearing setae on the carpopropodi of endopods 3–8 are given in Table 3.

The male fourth pleopod mean segment length ratios (three segments of exopod), show small discrepancies as shown in Table 4.

The male fourth pleopod extends to 2/3 to 3/4 of the length of the last abdominal segment (Fig. 6K).

#### Remarks

*Anisomysis hanseni* is a petite species. When placed alongside *A. vasseuri*, it is seen to be considerably less bulky, although approximately similar in body length.

Nouvel's original description of *A. hanseni*, noted that the carpopropodus of thoracic limbs 3–8 was 'without subdivisions'. Băcescu (1975) assigns two specimens of an *Anisomysis* from Tanzania to this species, despite noting that there was a 'distinct carpopropodal joint in all peraeopods', a fact that is also clearly illustrated (Băcescu 1975, Fig. 4H). This, along with the large size (5.5 mm) and rather different cleft in the telson suggests Băcescu's specimens were not *A. hanseni*.

Although initially collected under a light at night, from a boat moored in the Bassas da India lagoon, small shoals were subsequently seen among coral heads in the lagoon at a depth of 4–6 m.

#### Distribution

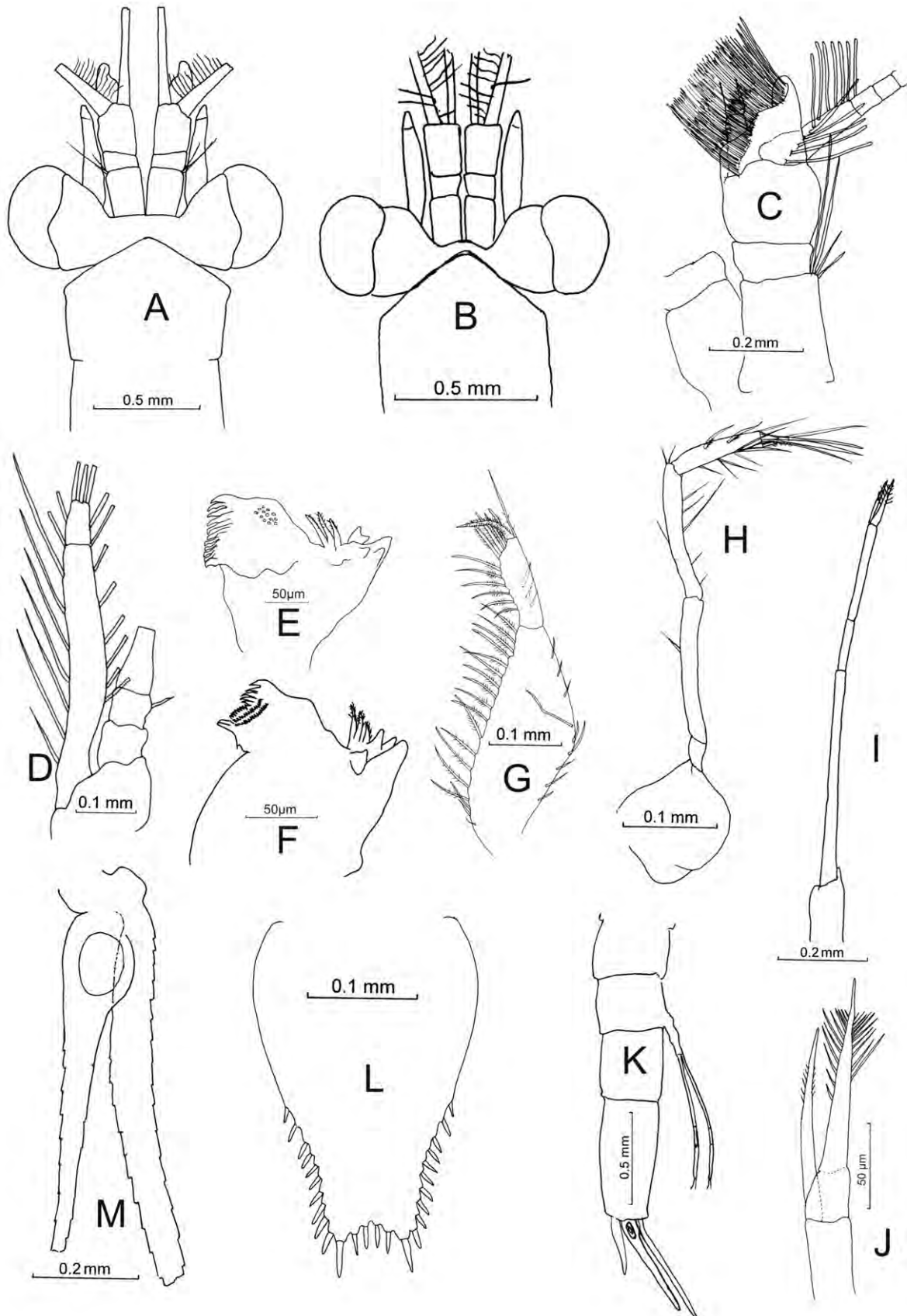
Originally collected from Nosy-Bé off the north-west coast of Madagascar (Nouvel 1967), and recently reported from Grande Comore by Wooldridge and Mees (2004), the present record, from Bassas da India in the Mozambique Channel is the furthest south this species has been collected.

#### *Anisomysis (Paranisomysis) sudafricana* sp. nov.

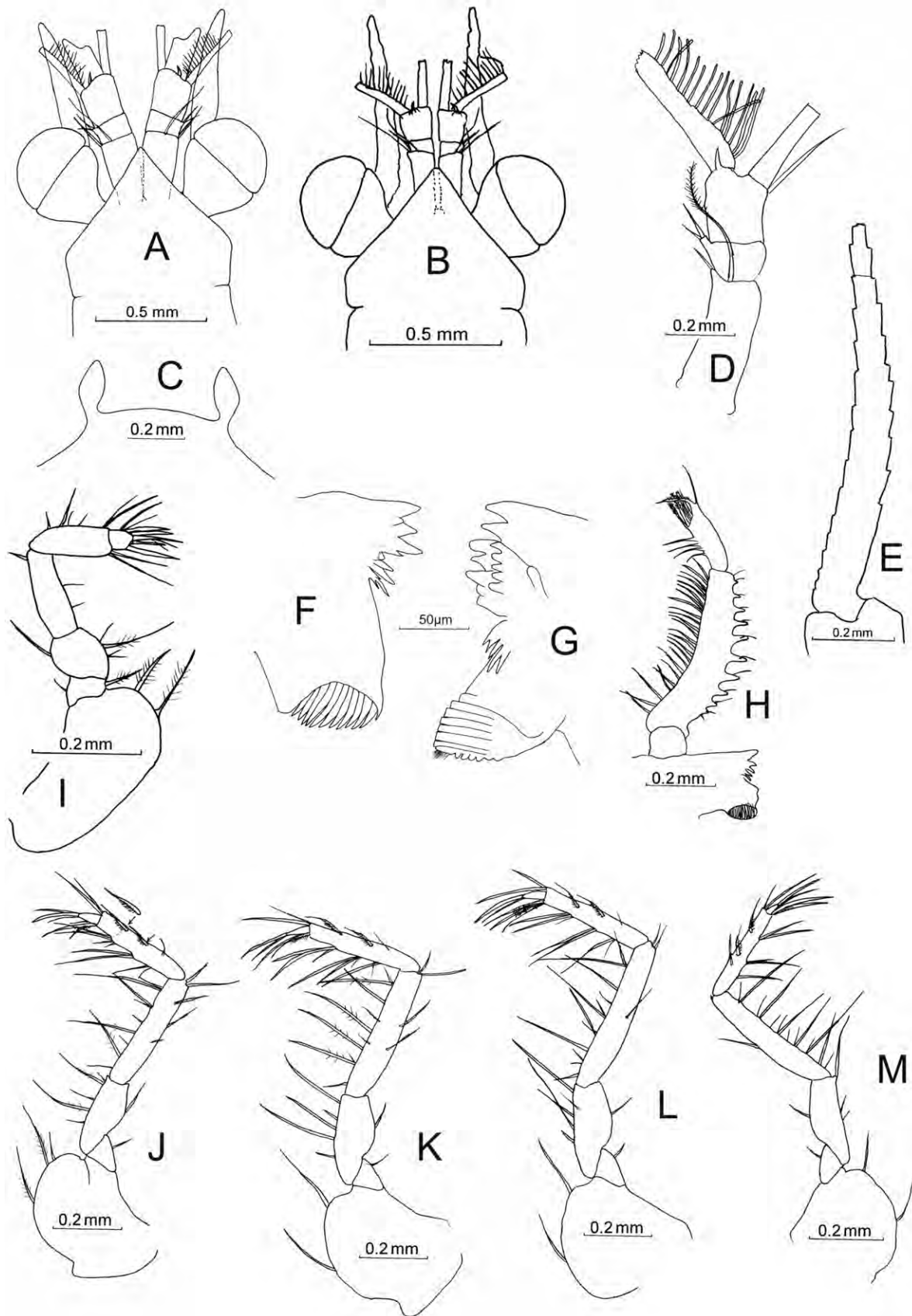
Figs 7A–M, 8A–G

#### Material

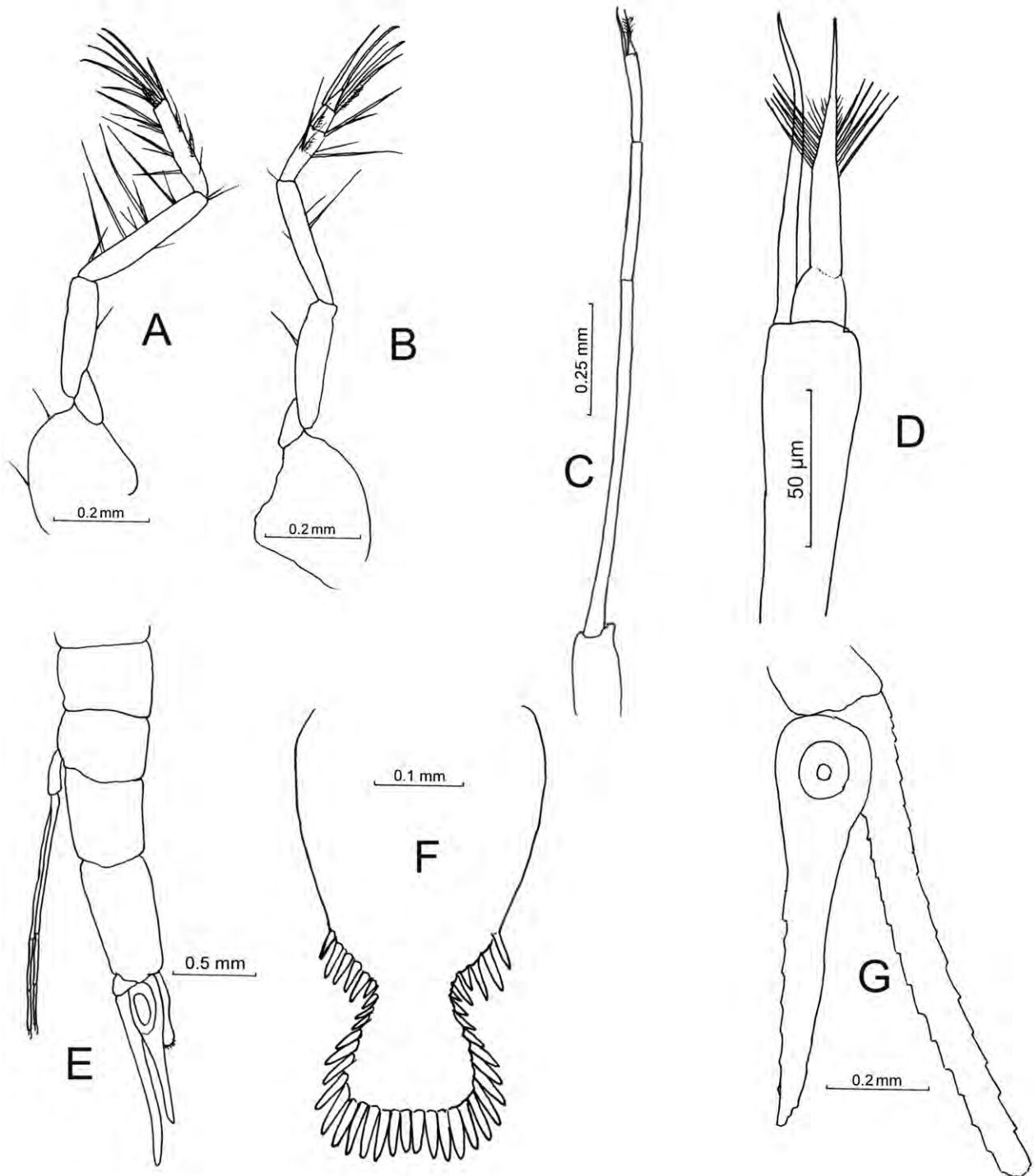
Holotype (SAM A45588) adult male (5.3 mm); allotype (SAM A45589) adult female (5.7 mm); paratypes (SAM A45590), include 10 adult males (4.4–5.2 mm), and 10 adult females (4.8–5.7 mm), all deposited in the Iziko South African Museum, Cape Town. Collected by A.D. Connell



**Fig. 6.** *Anisomysis (Anisomysis) hanseni* Nouvel, 1967. **A**, Male, anterior part of body; **B**, female, anterior part of body; **C**, male antennule; **D**, antennal scale; **E**, right mandible; **F**, left mandible; **G**, mandibular palp; **H**, endopod of eighth thoracic limb; **I**, male fourth pleopod; **J**, detail; tip of male fourth pleopod; **K**, male abdomen, in lateral view, showing reach of fourth pleopod; **L**, telson; **M**, uropods.



**Fig. 7.** *Anisomysis* (*Paranisomysis*) *sudafricana* sp. nov. **A**, Male, anterior part of body; **B**, female, anterior part of body; **C**, dorsal view of posterior edge of carapace; **D**, female antennule; **E**, antennal scale; **F**, right mandible; **G**, left mandible; **H**, mandibular palp; **I**, endopod of second thoracic limb; **J**, endopod of third thoracic limb; **K**, endopod of fourth thoracic limb; **L**, endopod of fifth thoracic limb; **M**, endopod of sixth thoracic limb.



**Fig. 8.** *Anisomysis (Paranisomysis) sudafricana* sp. nov. **A**, Endopod of seventh thoracic limb; **B**, endopod of eighth thoracic limb; **C**, male fourth pleopod; **D**, detail of tip of male fourth pleopod; **E**, male abdomen, in lateral view, showing reach of fourth pleopod; **F**, telson; **G**, uropods.

from Vetch's Pier, Durban (29°52'08"S, 031°03'05"E) on 7 May 2004, at a depth of 2 m.

#### Description

Rostrum acutely triangular, elongate, extending to anterior edge of eyestalk, almost covering first segment of antennal peduncle in both sexes (Fig. 7A,B). Posterior margin of carapace emarginate, with matching pair of indentations, mid-dorsally, joined by an almost straight edge

(Fig. 7C). Eye large, cornea expanded, wider than eyestalk; eyestalk smooth (Fig. 7A,B).

Antennular peduncle three-segmented, less robust in females (Fig. 7B,D) than males (Fig. 7A). Distal margin of third segment of male supports a hirsute lobe. In males, first segment of peduncle equal in length to second and third combined (Fig. 7A); in females, first segment exceeds length of second and third combined (Fig. 7D). In both sexes, third segment bears forward-projecting spine on distal edge

**Table 5.** Comparison of features useful in separating *Anisomysis sudafricana* sp. nov. from closely related species of *Anisomysis*.

	<i>sudafricana</i>	<i>lamellicauda</i> *	<i>ohtsukai</i>	<i>arabica</i>	<i>marisrubri</i>
Apex of rostrum	Acutely pointed	Acutely pointed	Obtusely pointed	Obtusely pointed	Obtusely pointed
Denticles on second segment of mandibular palp	8–11	11–13	9	10	7
Proximal part of telson (to narrowest point of constriction)	13% longer than broad, with 4–6 spines each side	As long as broad, with four spines each side	As long as broad, with four spines each side	15% longer than broad, with 5–6 spines each side	16% longer than broad, with five spines each side
Total spines on telson	33–41	26–30	26–28	34–36	36
♂ fourth pleopod exopod segments 1–3 ratios	3.7:1.3:1	3.25:1.45:1	3.0:1.1:1	3.6:1.1:1.16	4.05:1.5:1
Body length (mm)	♂ 4.4–5.3 ♀ 4.8–5.7	♂ 4.8–5.4 ♀ 4.8–5.6	♂ 3.6–4.1 ♀ 3.8–4.5	♂ 5.4–6.1 ♀ 6.2–7.1	♂ 6.0 ♀ 6.0

\*Confirmed from specimens collected by the present author, in Fiji, in June 2002.

(Fig. 7D). Antennal scale (Fig. 7E) about eight times longer than broad, reaching past the hirsute lobe in males (Fig. 7A); well beyond third segment of antennular peduncle in females (Fig. 7B). Distal suture indistinct.

Mandibular palp second segment bowed, inner margin armed with 8–11 flagellated denticles; outer margin concave, bearing 13–30 setae (Fig. 7H). Third segment bears 1–4 setae on outer edge; none on inner edge.

Mandibles (Fig. 7E,G) with incisor and molar processes, and a lacinia mobilis. Left mandible has a set of bristles outside the molar process (Fig. 7G). Maxillule and maxilla normal for the genus.

Endopod of first thoracic limb short and stout, second slightly more elongate (Fig. 7I). Endopods of limbs 3–8 more elongate (Figs 7J–M, 8A–B); the eighth least robust and with fewest setae (Fig. 8B). Carpopropodus of each of thoracic endopods 3–7 unsegmented, although endopods 3 and 7 may have one indistinct subsegment distally. Eighth limb has distinct subsegment distally in some (Fig. 8B), but not all specimens. Carpopropodus of endopods 3–7, each have two short, comb-bearing setae near outer edge and one elongate comb-bearing seta terminally. Dactylus lacks a strong nail, appearing like terminal setae; lacks a comb.

First, second, third and fifth pleopods in both sexes, of one reduced segment. Male fourth pleopod with endopod reduced, exopod elongate, three-segmented (Fig. 8C), third segment shortest. Segment ratio (three segments of exopod), 3.7:1.3:1 (mean of five specimens). Pleopod 4 terminates in usual two setae, the terminal seta bearing a characteristic fan of sub-setae, the other less robust, and naked (Fig. 8D). In lateral view (Fig. 8E), male fourth pleopod, including terminal setae, extends to tip of telson. Telson 1.6 times longer than broad (Fig. 8F), with a deep lateral constriction. Lateral spines proximal to narrowest point of constriction vary between four and six each side; total spines 33–41. Uropods (Fig. 8G) bear no spines, only plumose setae.

When alive, dark brown pigment occurs above and behind the eyes, through the mouthparts, in the bases of the thoracic limbs, and, in females, onto the marsupium, giving this

species a dark thoracic region that makes them conspicuous in a sample. The eyes are a golden hue with an orange-red centre. In death the eyes are dark red.

#### Etymology

The species name refers to the geographic location of this species; it has the southernmost distribution of all known species of the subgenus *Paranisomysis*.

#### Remarks

This species is closely related to *A. (Paranisomysis) lamellicauda* (Hansen, 1912), from Fiji, *A. (P.) ohtsukai* Murano, 1994 from Japan, *A. (P.) arabica* Wooldridge & Victor, 2004, from the coast of Oman, and *A. marisrubri* Băcescu, 1973, known from the Red Sea (Băcescu 1973b), the Comores (Wooldridge and Mees, 2004), and the east African coast as far south as Nacala Bay in northern Mozambique (Wooldridge & Mees 2003). *Anisomysis sudafricana* shares with *A. lamellicauda* the very acute rostrum extending forward to the front edge of the eyestalks. It also shares, with *A. lamellicauda* and *A. arabica* a pair of indentations in the posterior margin of the carapace, although this feature deserves attention in other species of *Paranisomysis*, where it has possibly been overlooked. Murano (pers. comm., 2009) has found a similar pair of indentations on a female *Anisomysis (Paranisomysis) acuminata* Murano, 1990. A comparison of features in the closely related species is given in Table 5.

#### Distribution

Known only from sheltered waters adjacent to Vetch's Pier at the southern extremity of the Durban beachfront, where it was found in small shoals along the reef/sand interface at a depth of 2 m.

#### REFERENCES

BĂCESCU, M. 1973a. *Anisomysis levi* n. sp. from the Red Sea and the dichotomic key of the species belonging to the genus, with description of a new taxon, *Paranisomysis* n. sg. *Revue roumaine de Biologie – Zoologie* **18**: 173–180.

- BĂCESCU, M. 1973b. Contribution à la connaissance des Mysidés benthiques de la mer Rouge. *Rapport de la Commission internationale pour l'Exploration Scientifique de la Mer Méditerranée* **21**: 643–646.
- BĂCESCU, M. 1975. Contributions to the knowledge of the mysids (Crustacea) from the Tanzanian waters. *University Science Journal (University of Dar es Salaam)* **1**: 39–61.
- HANSEN, H.J. 1910. The Shizopoda of the Siboga Expedition. *Siboga Expedition*, **37**: 1–123.
- HANSEN, H.J. 1912. The Schizopoda. In: Reports on the scientific results of the expedition to the eastern tropical Pacific, in charge of Alexander Agassiz, by the U.S. Fish Commission steamer 'Albatross', from October, 1901 to March, 1905. *Memoirs of the Museum of Comparative Zoology, Harvard College* **35**: 173–296, 12 pls. (not seen in the original).
- LEDOYER, M. 1974. *Anisomysis vasseuri* n. sp. Mysidacé nouveau vivant à l'entrée des grottes sous-marines récifales. *Tethys* **5** (1973): 361–366.
- MURANO, M. 1994. *Anisomysis (Paranisomysis) ohtsukai* (Crustacea, Mysidacea), a new mysid from Japan. *Bulletin of the National Science Museum, Tokyo, Ser. A*, **20**: 155–159.
- MURANO, M. 1995. New and already known species of the genus *Anisomysis* (Mysidacea) from Hawaii and the Society Islands. *Journal of Crustacean Biology* **15**: 355–364.
- MURANO, M. & FUKUOKA, K. 2003. A systematic study of the genus *Anisomysis* (Crustacea: Mysida: Mysidae), with descriptions of six new species. *Bulletin of the National Science Museum, Tokyo, Ser. A*, **29**: 65–102.
- NOUVEL, H. 1967. Mysidacés récoltés par S. Frontier a Nosy-Bé. IV. *Mesacanthomysis pygmaea* n. gen., n. sp. et *Anisomysis hanseni* n. sp. *Bulletin de la Société d'Histoire naturelle de Toulouse* **103**: 105–121.
- TATTERSALL, O.S. 1952. Report on a small collection of Mysidacea from estuarine waters of South Africa. *Transactions of the Royal Society of South Africa* **33**: 283–332.
- TATTERSALL, O.S. 1958. Further notes on the Mysidacea from South African waters. *Transactions of the Royal Society of South Africa* **35**: 373–383.
- TATTERSALL, O.S. 1962. Report on a collection of Mysidacea from South African off-shore and coastal waters (1957–59), and from Zanzibar. *Proceedings of the Zoological Society of London* **139**: 221–247.
- TATTERSALL, O.S. 1969. A synopsis of the genus *Mysidopsis* (Mysidacea, Crustacea), with a key for the identification of its known species, and description of two new species from South African waters. *Journal of Zoology* **158**: 63–79.
- TATTERSALL, W.M. & TATTERSALL, O.S. 1951. *The British Mysidacea*. Ray Society Monograph No. 136. 460 pp.
- WOOLDRIDGE, T.H. 1978. Two new species of *Gastrosaccus* (Crustacea, Mysidacea) from sandy beaches in Transkei. *Annals of the South African Museum* **76**: 309–327.
- WOOLDRIDGE, T.H. 1988. A new species of *Mysidopsis* (Mysidacea) from coastal waters of Southern Africa, and a key to the known species from the subcontinent. *Annals of the South African Museum* **98**: 93–103.
- WOOLDRIDGE, T.H. & McLACHLAN, A. 1987. A new species of *Gastrosaccus* (Mysidacea) from the south-west coast of Africa. *Crustaceana* **52**: 101–108.
- WOOLDRIDGE, T.H. & MEES, J. 2000. *Doxomysis algoensis*, a new mysid species from Algoa Bay (South Africa). *Hydrobiologia* **421**: 61–68.
- WOOLDRIDGE, T.H. & MEES, J. 2003. Additions to the mysid fauna (Crustacea: Mysidacea) from coastal waters of Mozambique, with descriptions of two new species. *Hydrobiologia* **505**: 31–39.
- WOOLDRIDGE, T.H. & MEES, J. 2004. Mysidacea from the Comoros Archipelago with descriptions of two new species. *Annals of the South African Museum* **112**: 89–102.
- WOOLDRIDGE, T.H. & VICTOR, R. 2004. Additions to the mysid fauna (Crustacea: Mysidacea) from coastal waters of Oman, including descriptions of two new species. *Hydrobiologia* **511**: 247–258.