

TWO NEW SPECIES OF THE GENUS *PSEUDANTHURA*
RICHARDSON (CRUSTACEA: ISOPODA: ANTHURIDEA)

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Examination of the isopod material collected during the South African Museum's 1975-77 *Meiring Naude* cruises revealed specimens of a very slender anthurid displaying the reduced uropodal exopod of *Pseudanthura* Richardson. While working through the Smithsonian collection of anthurid material, two specimens of a very large species collected by the R/V *Albatross* in 1909 were also found to show this feature. As *Pseudanthura lateralis* has never been fully described and figured, it was decided to deal with all three species together for completeness and ease of comparison.

Pseudanthura Richardson, 1911

Diagnosis.—Mouthparts adapted for piercing and sucking. Eyes lacking. Pereonites with dorsolateral grooves. Pereonite 7 considerably shorter than preceding pereonites. Pleonites and telson fused, anterior 5 pleonites indicated by shallow grooves, pleonite 6 indistinguishable from telson. Telson lacking statocyst. Flagellum of antennule multiarticulate in male and female, brush-like in male. Distal segment of mandibular palp armed with row of distal spines. Maxilliped 4-segmented, second segment produced into lobe at distomedial corner. Pereopod 1, unguis of dactylus very short, palm of propodus armed with row of short spines. Pereopods 4-7 with cylindrical carpus not overriding propodus. Pereopod 7 distinctly shorter than preceding pereopods. Exopod of pleopod 1 indurate, operculate, endopod reduced. Pleopod 2 in male, stylet of endopod slender, considerably longer than rami, apically hooked. Uropods with exopod reduced to short triangular structure, endopod and basis tending towards fusion. Brood pouch formed by 4 pairs of oostegites.

Type-species.—*Pseudanthura lateralis* Richardson

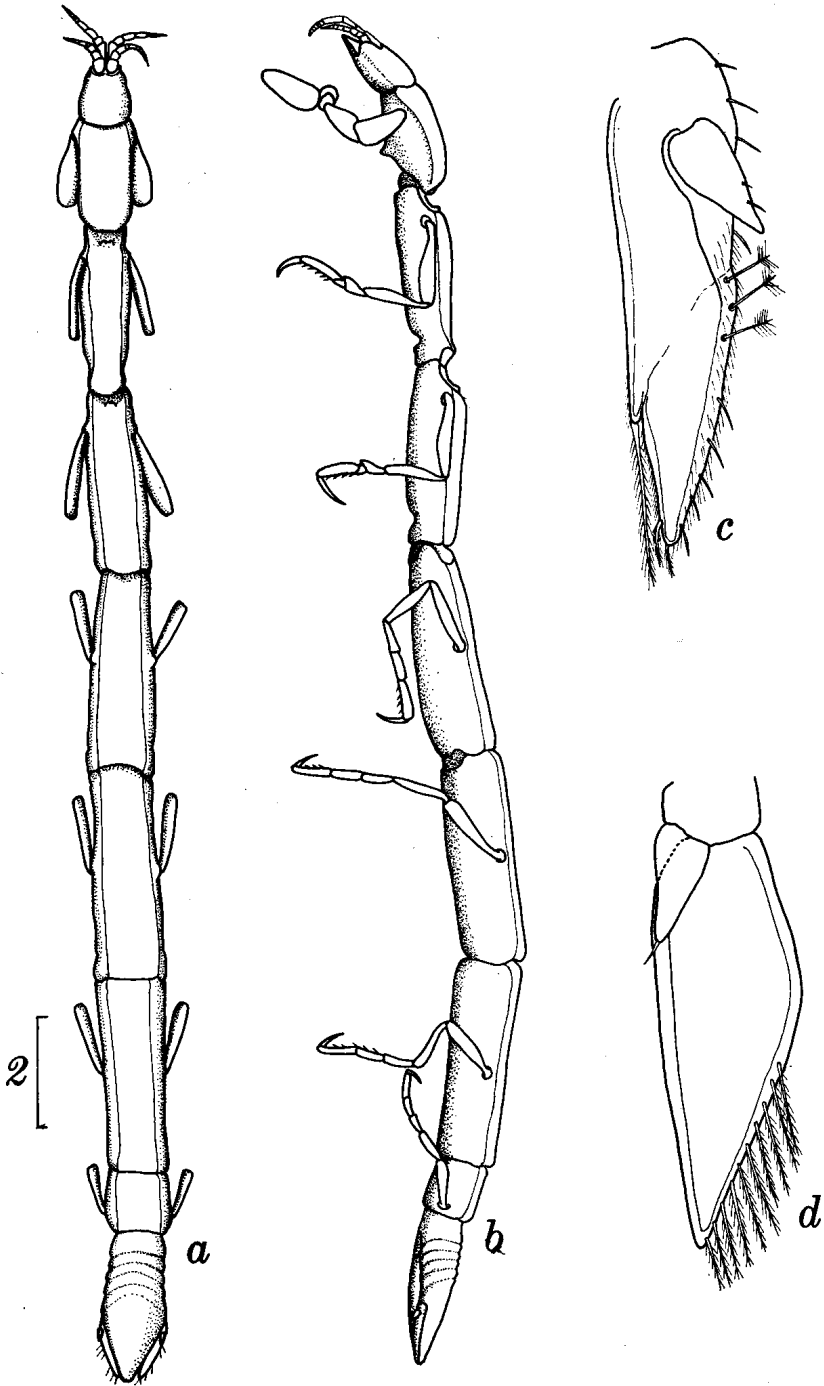
Gender.—Feminine.

Pseudanthura tenuis, sp. nov.

Figs. 1, 2

Description.—♀. Integument indurated, brittle, bearing tiny evenly spaced ovoid scales. Cephalon half length of pereonite 1; anterolateral corners extending slightly beyond rostrum. Pereonites with well marked dorsolateral

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Fig. 1. *Pseudanthura tenuis*: a, Holotype in dorsal view; b, Holotype in lateral view; c, Uropod; d, Pleopod 1.



grooves. Pereonite 1 two-thirds length of pereonite 2, with strong medioventral crest bearing tooth-like triangular process. Pereonite 2 bearing 2 low rounded semi-coalesced tubercles dorsally, close to articulation with pereonite 1; pereonite 3 with similar pair of tubercles. Pereonites 2 and 3 subequal in length, 4-6 subequal but longer than anterior pereonites; pereonite 7 slightly less than one-third length of pereonite 6. Pleon twice length of pereonite 7; pleonite 1 twice length of pleonite 2; pleonites 3-5 subequal in length. Telson triangular, tapering to acutely rounded apex.

Antennule with 4-segmented peduncle, basal segment longest, fourth segment very short; flagellum of 8 or 9 articles. Antenna with 5-segmented peduncle, fifth segment longest; flagellum of 9 articles.

Mandible distally narrowly triangular, acute; palp 3-segmented, basal segment short, two distal segments subequal, distal segment bearing row of 14-15 spines. Upper lip distally narrowed, apex narrowly rounded, serrate. Maxilla lancet-like with 10-12 serrations. Maxilliped 4-segmented, second segment produced at mediolateral angle into lobe tipped with single seta; third segment shorter than fourth; latter armed with several setae.

Pereopod 1 far more robust than following pereopods; propodus proximally broad, carpus small, triangular; propodus and carpus with several short serrate spines on posterior margin. Pereopod 2 with all segments slender; propodus with row of 9 serrate spines on posterior margin; carpus very short, triangular.

Pereopods 4-7 very slender, carpus two-thirds length of propodus; latter with 3 serrate spines on posterior margin; carpus with 2 serrate spines on posterior margin.

Pleopod 1 exopod operculate, indurate, completely closing off the branchial chamber, bearing plumose setae on distolateral margin; endopod reduced to small triangular process bearing single distal seta.

Uropod with basis and endopod fused into single structure, but with suture line faintly indicated, and with short lobe on median margin bearing single elongate plumose seta marking area of fusion; exopod reduced to short triangular lobe folding into hollow of fused exopod/basis.

Etymology.—The specific name of *P. tenuis* is derived from the very slender form of the body.

Material.—*Meiring Naude* st 103, 28°31'S, 32°34'E, 680 metres (off east coast of South Africa). Holotype SAM-A15644 ♀ TL 25.3 mm. Paratypes SAM-A15644 ♀ ♀ TL 23.4 mm, 17.1 mm, 6.0 mm; USNM 170272 ♀ ♀ TL 18.9 mm, 6.0 mm. *Meiring Naude* st 53, 26°51'S, 33°12'E, 720 metres (off east coast of South Africa) SAM-A15645 ♀ TL 9.9 mm.

Pseudanthura albatrossae, sp. nov.

Figs. 3, 4

Description.—♂. Body anteriorly narrow, widening posteriorly, widest at pereonite 5. Cephalon narrower and about half length of pereonite 1.

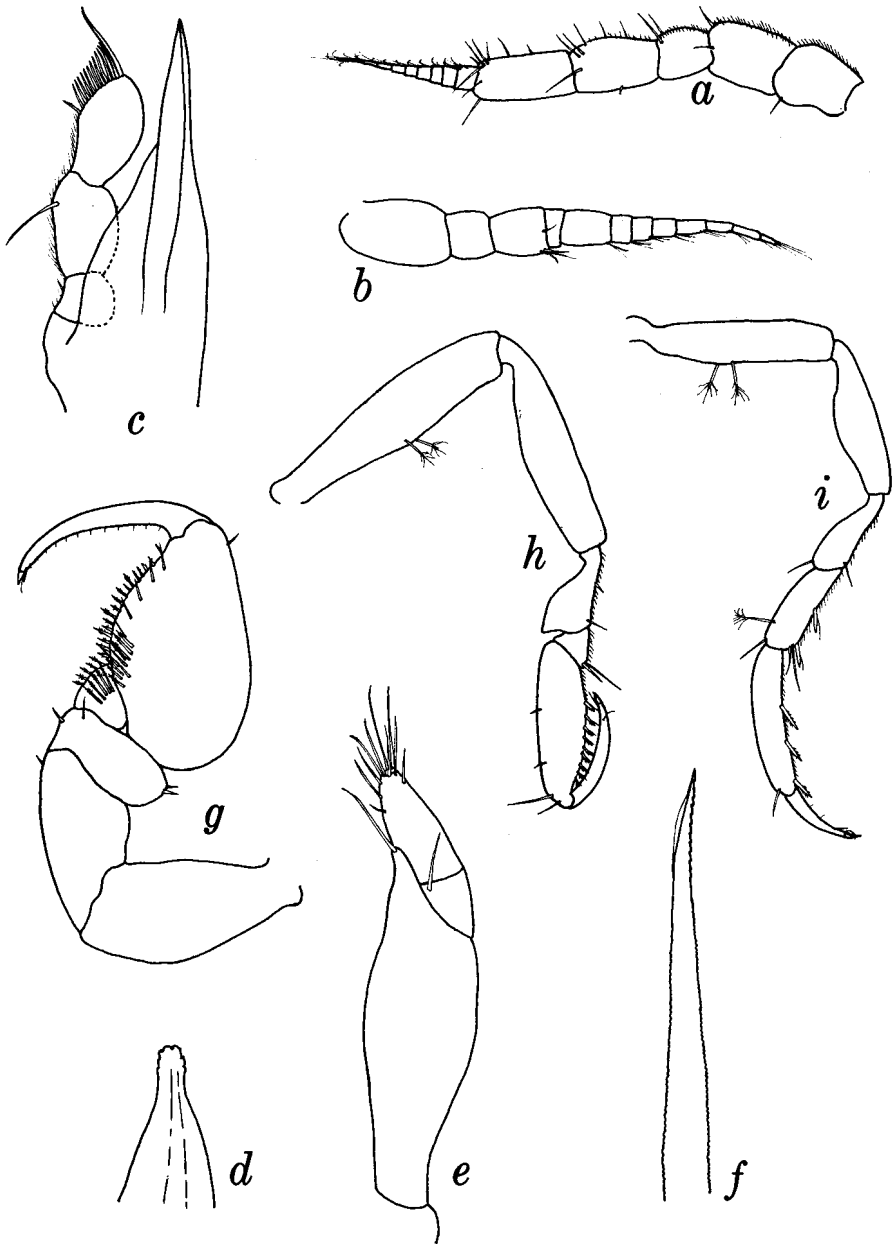


Fig. 2. *Pseudanthura tenuis*: a, Antenna; b, Antennule; c, Mandible; d, Upper lip; e, Maxilliped; f, Maxilla; g, Pereopod 1; h, Pereopod 2; i, Pereopod 6.

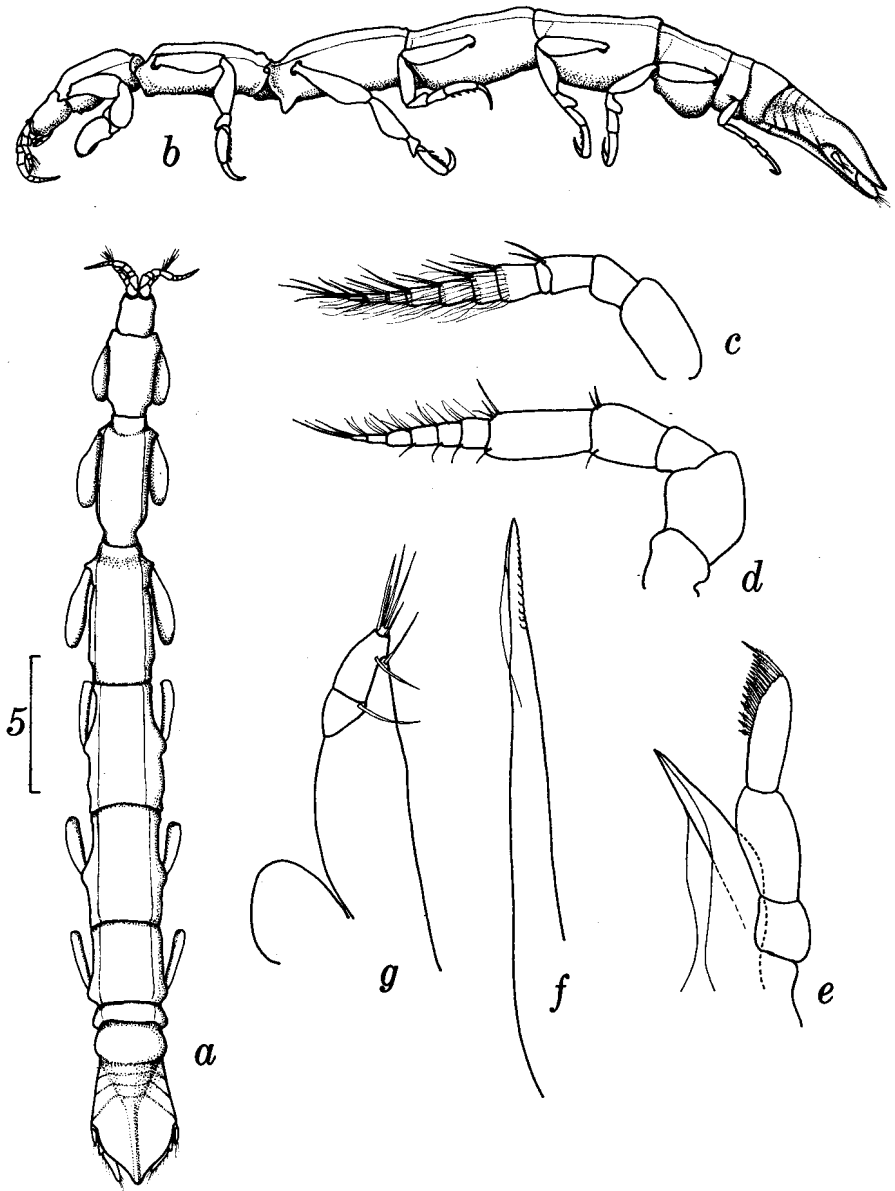


Fig. 3. *Pseudanthura albatrossae*: a, Holotype in dorsal view; b, Holotype in lateral view; c, Antennule; d, Antenna; e, Mandible; f, Maxilla; g, Maxilliped.

Latter two-thirds length of pereonite 2. Pereonite 3 with pair of triangular anteroventral processes below articulation of pereopod. Pereonites 2-5 of similar length; sixth two-thirds length of fifth, ventrally bulbous; seventh very short, one-quarter length of sixth. Dorsolateral pereonal grooves present. Pleonite 1 broad and equal in length to fused pleonites 2-5; pleonite 6 indistinguishable from telson. Telson indurated, triangular, margins gently sinuous, tapering to narrowly-rounded apex; strong middorsal rounded ridge present as extension of raised triangular pleonal area. No statocyst visible.

Antennular peduncle 4-segmented, basal segment longest and broadest, fourth segment short, about one-third length of third; flagellum of 8 articles, carrying filiform aesthetascs. Antennal peduncle 5-segmented, second segment broadest, fifth segment longest; flagellum of 6 articles.

Mandible apically acute; palp 3-segmented, basal segment half length of middle segment; latter broader than, but equal in length to terminal segment; latter armed with 14 or 15 serrate spines. Maxilla lanceolate, slender, with about 14 serrations distally, proximal serrations becoming rounded. Maxilliped 4- (possibly 5-) segmented, second segment elongate, produced at mediiodistal corner into narrowly triangular lobe; suture of tiny terminal setiferous segment hardly discernible.

Pereopod 1 robust, dactylus strongly curved, row of fine evenly-spaced setules on inner margin; palm of propodus with few short distal setae plus cluster of more elongate setae proximally; carpus triangular, with 6-8 setae on posterior margin; posterior surface of carpus, merus, and ischium with dense very short setules. Pereopod 2 propodus with 6 spines plus very fine setules on posterior margin; carpus small, triangular.

Pereopods 3-6 increasing in length; carpus becoming elongate, armed with 3 posterior spines. Pereopod 7 about half length of sixth, with 3 spines on posterior propodal margin; no spines on carpus.

Pleopod 1, basis with 6 retinaculacae; exopod strongly indurated, with several plumose setae on distolateral margin; endopod three-quarters length of exopod, about one-quarter width, almost entire margin bearing plumose setae. Pleopod 2 endopod three-quarters length of exopod, with 5 distal plumose setae; stylet about twice length of endopod, distally curved, with small terminal barb.

Uropod with narrow exopod somewhat reduced, about three-quarters length of basis, bearing several setae distally; endopod distally narrowly rounded with plumose setae on median margin, simple setae on distolateral margin; suture between endopod and basis clearly visible, but ramus apparently not freely articulating.

Etymology.—The species is named for the R/V *Albatross*.

Material.—Albatross st 5660, 5°36'30"S, 120°49'00"E, 1,380 metres (Flores

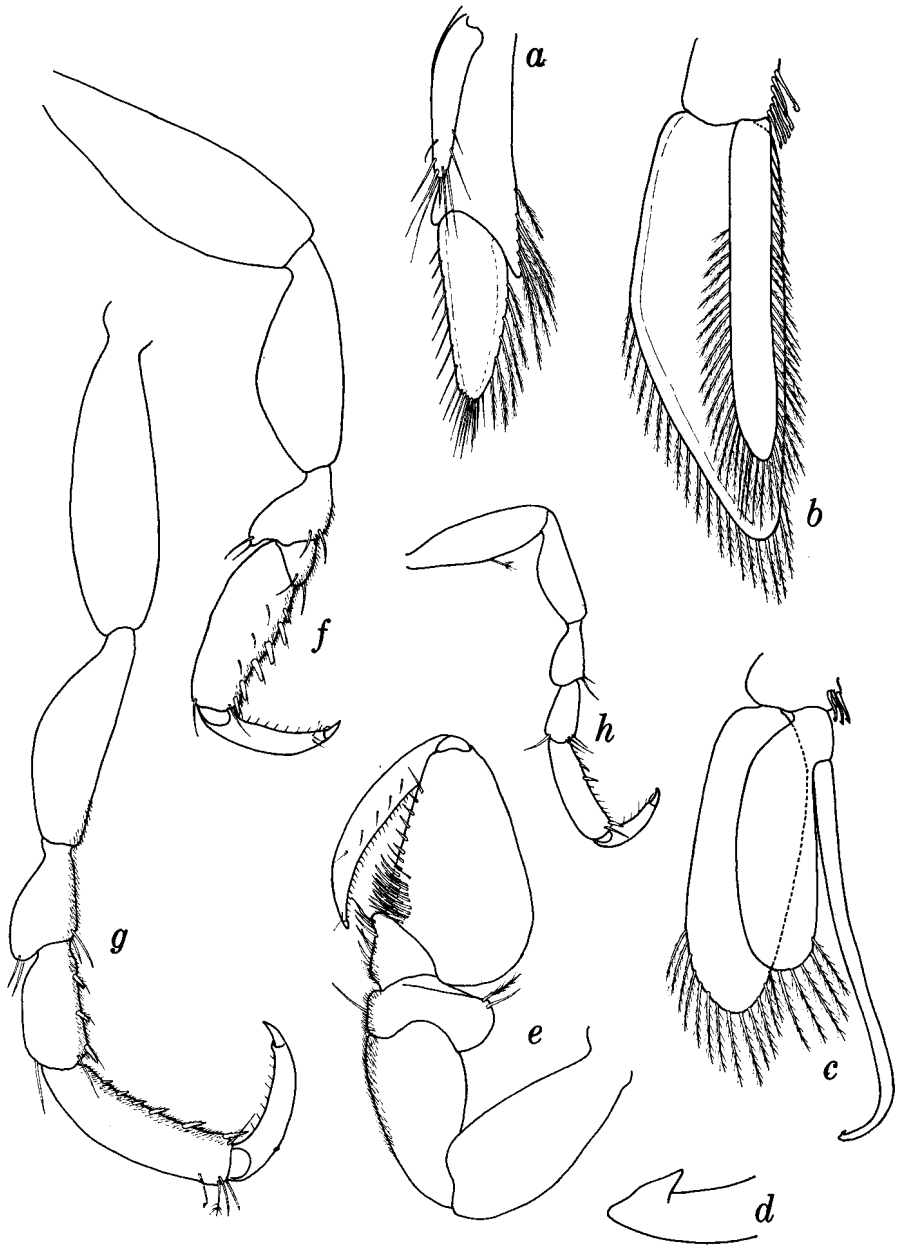


Fig. 4. *Pseudanthura albatrossae*: a, Uropod; b, Pleopod 1; c, Pleopod 2; d, Apex of stylet; e, Pereopod 1; f, Pereopod 2; g, Pereopod 6; h, Pereopod 7.

Sea south of Celebes). Holotype USNM 170273 ♂ TL 39.9 mm; paratype USNM 170276 ♂ TL 23.9 mm.

Pseudanthura lateralis Richardson

Figs. 5, 6

Pseudanthura lateralis Richardson, 1911:7.—Barnard, 1920:343, pl. 15 (figs. 13–16); 1925:157, figs. 1s, 3e, 5d; 1940:497.—Nierstrasz, 1941:252.—Menzies, 1962:191, fig. 70.

Description.—♀. Integument only slightly indurated, bearing tiny evenly spaced ovoid scales. Cephalon less than half length of pereonite 1, lateral margins sinuous. Dorsolateral grooves present on all pereonites. Pereonite 1 two-thirds length of pereonite 2, with strong medioventral crest bearing tooth-like triangular process. Pereonites 2 and 3 each with anterodorsal pair of conical tubercles. Pereonites 2 and 5 subequal in length, 3 and 4 slightly longer, 6 slightly shorter, 7 one-third length of sixth. Telson triangular, apex narrowly rounded.

Antennular peduncle 4-segmented, basal segment longest and broadest, fourth segment very short; flagellum of 6 articles. Antennal peduncle 5-segmented; flagellum of 6 articles.

Mandible acutely triangular; palp 3-segmented, terminal segment tapering distally with row of 9 or 10 spines, middle segment with single distal seta. Maxilla lanceolate, with 13 or 14 distal serrations. Maxilliped 4-segmented, second segment produced into lobe at mediobasal angle; terminal segment bearing several setae.

Pereopod 1, propodus with palm gently convex, armed with row of spines; carpus with 5 or 6 spines on posterior margin. Pereopod 2 propodus with 8 spines on posterior margin; carpus small, triangular.

Pereopods 5–7 with carpus becoming elongate/cylindrical. Pereopod 6 propodus with 5 spines on posterior margin, carpus with 4 spines on posterior margin. Pereopod 7 shorter than preceding pereopods, propodus armed with 4 spines on posterior margin.

Exopod of pleopod 1 indurated, operculate, with plumose setae on distolateral margin, apically acutely rounded; endopod one-third length of exopod, tapering distally, with 2 apical setae.

Uropodal exopod very small, triangular; endopod and basis fused, distolateral margin faintly serrate, with short setae; tiny lobe bearing single plumose seta on mediobasal margin.

♂ Antennular peduncle and flagellum not clearly demarked, filiform aesthetascs on 8 distal segments.

Pleopod 2 stylet twice length of endopod, slender, distally curved, with apical barb; endopod only slightly shorter than exopod.

Previous records.—Coast of West Africa, between Dakar and Praya, 930–

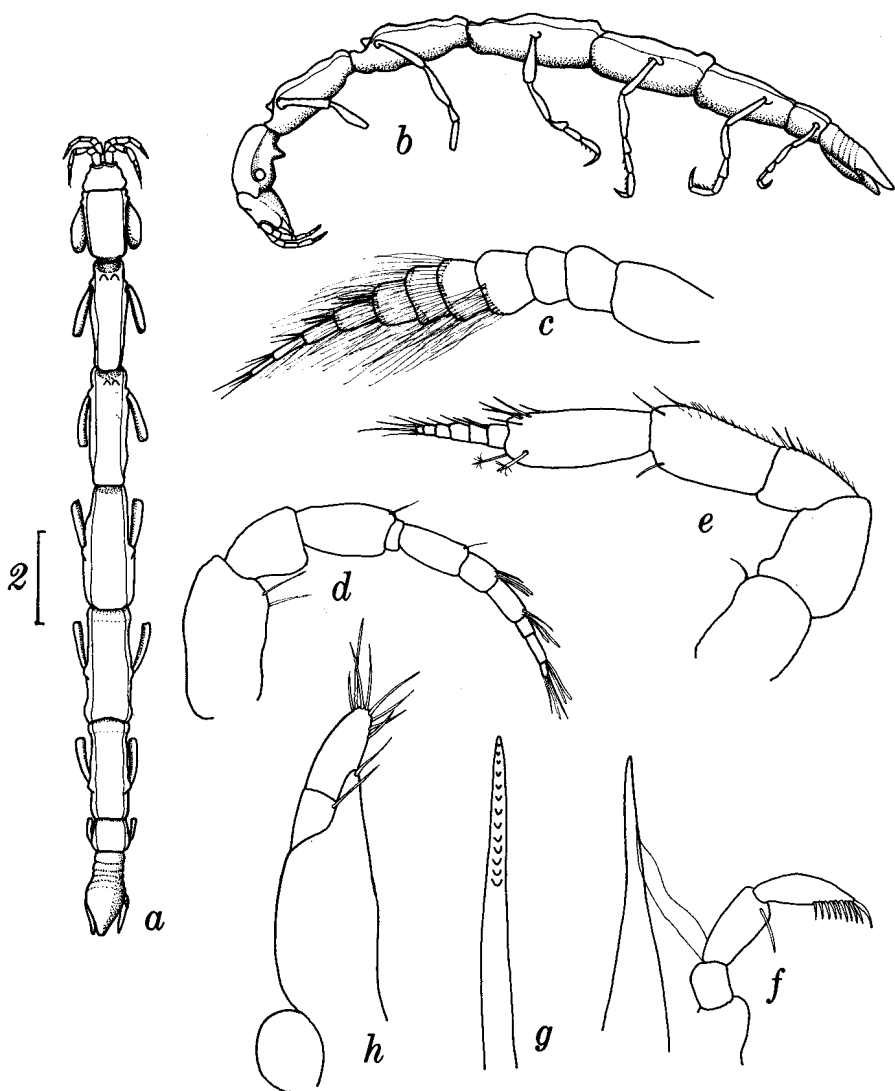


Fig. 5. *Pseudanthura lateralis*: a, Paratype in dorsal view; b, Paratype in lateral view; c, Antennule ♂; d, Antennule ♀; e, Antenna; f, Mandible; g, Maxilla; h, Maxilliped.

3,200 metres (Richardson). Off Cape Point, South Africa, 1,620–1,816 metres (Barnard; Menzies).

Material examined.—Paratype USNM 42171 ♀ West Africa TL 17.5 mm. SAM-A3832 ♂ Cape Point TL 15.5 mm, ♀ 15.6 mm, ovigerous ♀ damaged.

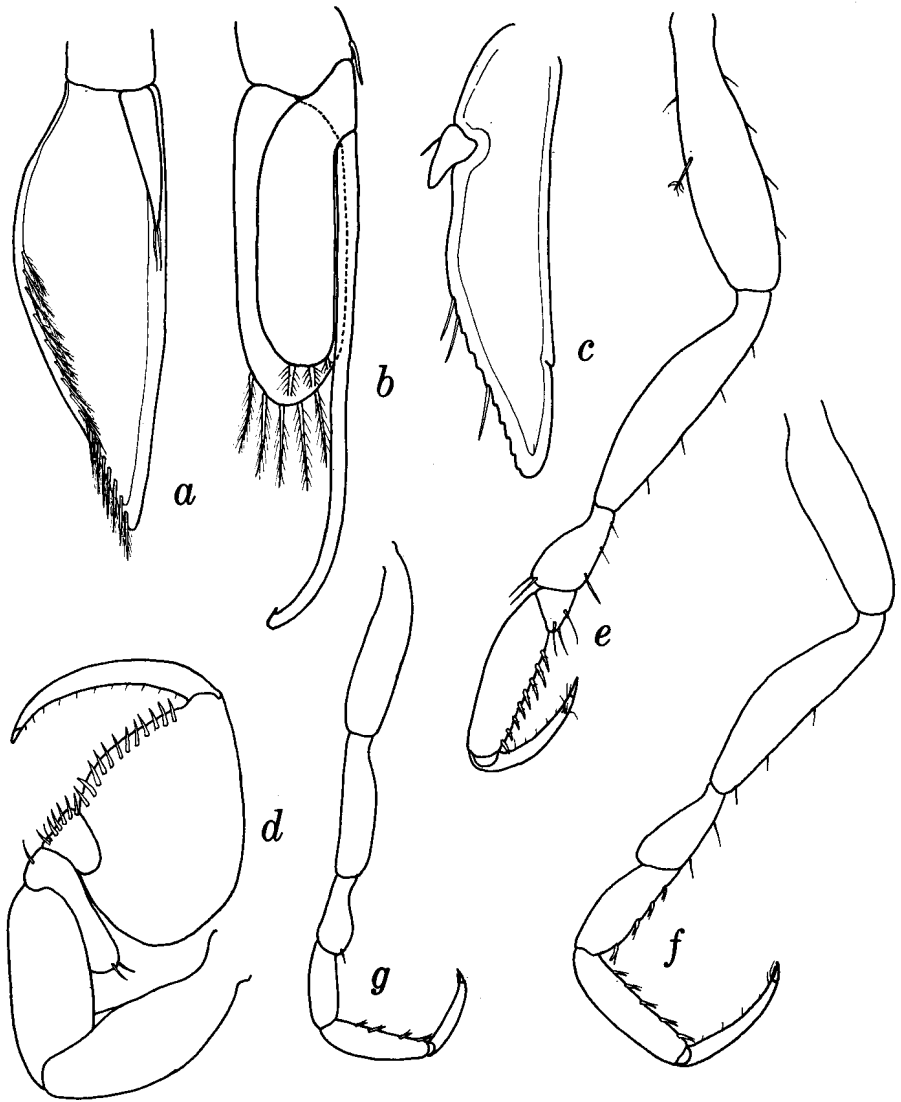


Fig. 6. *Pseudanthura lateralis*: a, Pleopod 1; b, Pleopod 2 ♂; c, Uropod; d, Pereopod 1; e, Pereopod 2; f, Pereopod 6; g, Pereopod 7.

Discussion.—Richardson (1911) established the genus *Pseudanthura* for three specimens from deep water off West Africa, collected by the R/V *Talisman*, and noted that this genus differed from all others in the family in the reduced uropodal exopod. The formerly monotypic genus now contains three species, each displaying such important diagnostic features

Table 1.

	<i>P. tenuis</i>	<i>P. albatrossae</i>	<i>P. lateralis</i>
Body Width/Length	1/18	1/14	1/11
Integument	Strongly indurated, with tiny scales	Slightly indurated, lacking tiny scales	Slightly indurated, with tiny scales
Pereonite 1	Strong medioventral crest with tooth-like process	Strong medioventral crest tooth lacking	Strong medioventral crest with tooth-like process
Pereonite 3	Anterolateral corners rounded	Anterodorsal corners produced	Anterolateral corners rounded
Pereonites 7/6	3/10	1/4	1/3
Pleopod 1	Endopod $\frac{1}{4}$ exopod length, triangular	Endopod $\frac{4}{6}$ exopod length parallel-sided, elongate	Endopod $\frac{1}{3}$ exopod length triangular
Uropod	Articulation faintly indicated between basis and endopod Exopod short, triangular	Articulation visible between basis and endopod Exopod elongate, triangular	No articulation visible Exopod short, triangular
Telson	Triangular, lateral margin straight Dorsally smoothly convex	Triangular, lateral margin sinuous Strong mediodorsal ridge	Triangular, lateral margin slightly sinuous Dorsally smoothly convex

as the reduction of the uropodal exopod and the endopod of pleopod 1, and the tendency towards fusion of the uropodal basis and endopod into a rigid structure which closes the branchial chamber laterally. The three species may be separated on several features, the more obvious of which are given in Table 1. The species from the Flores Sea may be regarded as the least specialized of the three, showing as it does, the relatively elongate endopod of pleopod 1, the relatively elongate uropodal exopod (when compared with *P. lateralis* and *P. tenuis*) and the suture between uropodal basis and endopod. *P. tenuis* is perhaps intermediate between *P. albatrossae* and *P. lateralis* as there are still traces of the fusion line between uropodal basis and endopod, although this structure is completely rigid. The uropodal exopod is relatively longer than in *P. lateralis* but shorter than in *P. albatrossae*.

Barnard (1925:127) regarded *Pseudanthura* as a representative of the 'limicolous' group of anthurids i.e. living on fine muddy substrates. The Natal species was taken in a light biological dredge, from hard fine mud overlain with pteropod, heteropod, and foraminiferan shells, coral fragments, and sponge spicules. The fauna of this conglomerate was rich, containing numerous crustacea, small molluscs, and echinoderms. Compared to the Atlantic and Flores species, the much harder integument of this species may be related to this fairly coarse substrate.

Literature Cited

- Barnard, K. H. 1920. Contributions to the Crustacean fauna of South Africa. No. 6. Further additions to the list of marine Isopoda. Ann. S. African Mus. 17:319-438.
- . 1925. A revision of the family Anthuridae (Crustacea Isopoda) with remarks on certain morphological peculiarities. J. Linn. Soc. London 36:109-160.
- . 1940. Contributions to the crustacean fauna of South Africa. No. 12. Further additions to the Tanaidacea, Isopoda, and Amphipoda, together with keys for the identification of the hitherto recorded marine and freshwater species. Ann. S. African Mus. 32:381-543.
- Menzies, R. J. 1962. The isopods of abyssal depths in the Atlantic Ocean. Vema Res. Ser. 1:79-206.
- Nierstrasz, H. F. 1941. Isopoden der Siboga-Expedition. IV. Isopoda Genuina. III. Gnathiidea, Anthuridea, Valvifera, Asellota, Phreatoicoidea. Siboga Exped. Monogr. 32d:235-308.
- Richardson, H. 1911. Les Crustacés Isopodes de *Travailleur* et du *Talisman*: Formes Nouvelles. Bull. Mus. Nat. Hist. Nat. Paris 1911 (7):1-17.

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