

## Two New Species of the Genus *Paramblyops* (Crustacea: Mysidacea: Mysidae) from the Sulu Sea

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**Abstract** Two new species of the genus *Paramblyops*, *P. tenuicaudus* and *P. spatulicaudus*, are described based on specimens from the Sulu Sea. *P. tenuicaudus* is distinguished from other species of the genus by the number of the small denticles on the antero-lateral corner of the carapace, the shape of the eyeplate, and the shape and armature of the telson. *P. spatulicaudus* closely resembles *P. tenuicaudus*, but is distinguished by the size and shape of the eyeplate, and the shape and armature of the telson.

**Key words:** Mysidae, *Paramblyops*, new species, Sulu Sea.

### Introduction

During a scientific cruise (KH-72-1) to south-eastern Asian seas by R/V Hakuho Maru (KH-72-1), the Ocean Research Institute, University of Tokyo, many undescribed species of mysids were collected. In this paper two new species of the genus *Paramblyops* are described based on specimens collected from deep water of the Sulu Sea. All the specimens examined are stored in the National Science Museum, Tokyo (NSMT).

#### Genus *Paramblyops* Holt & Tattersall, 1905

*Paramblyops* Holt & Tattersall, 1905: 124–125.—Tattersall & Tattersall, 1951: 255.—Murano, 1981: 288.

**Diagnosis.** Body slender. Carapace with anterior margin produced forward into long, narrow, triangular rostrum covering eyes partially; posterior margin emarginate, leaving last thoracic somite almost wholly or partially uncovered dorsally. Antennal scale with spine terminating entire outer margin longer than obliquely truncate apex; 1 or 2 prominent spines on outer distal corner of sympod. Eyes in form of flat plates, completely separately set, without visual elements, each somewhat semicircular or triangular in shape with antero-lateral angle produced into

long acute process. Male pleopods biramous; endopod of fourth pleopod with modified setae terminally. Endopod of uropod with single slender spine in statocyst region. Telson elongate rectangular, distal margin broad, truncate or arched, armed with 4 or 5 pairs of long and short spines, without median plumose setae; lateral margin armed with 10–16 spines.

**Type species.** *Paramblyops rostratus* Holt & Tattersall, 1905.

**Remarks.** The genus *Paramblyops* was instituted for *P. rostrata* by Holt & Tattersall in 1905, and is currently composed of seven species including the present two new species; these are *P. rostratus* Holt & Tattersall, 1905, *P. bidigitatus* W. M. Tattersall, 1911, *P. brevirostris* O. S. Tattersall, 1955, *P. globorostris* Birstein & Tchindonova, 1970, *P. japonicus* Murano, 1981, *P. tenuicaudus* sp. nov. and *P. spatulicaudus* sp. nov. However, these species are heterogeneous morphologically and can be divided into three groups as shown in Table 1 together with characteristics of each group. The *bidigitata*-group and *globorostris*-group are considerably different from the *rostratus*-group, to which the type species of this genus, *P. rostratus*, belongs. Only the species belonging to the *rostratus*-group are true member of the genus *Paramblyops* and it

Table 1. Components and characters of three species group of *Paramblyops*.

|                                                          | <i>rostratus</i> -group                                                                                                                                | <i>bidigitatus</i> -group                                            | <i>globorostris</i> -group                       |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------------|
| Components                                               | <i>P. rostratus</i> Holt & Tattersall<br><i>P. brevirostris</i> O. S. Tattersall<br><i>P. tenuicaudus</i> sp. nov.<br><i>P. spatulicaudus</i> sp. nov. | <i>P. bidigitatus</i> W. M. Tattersall<br><i>P. japonicus</i> Murano | <i>P. globorostris</i> Birstein<br>& Tchindonova |
| Rostrum                                                  | Long, acutely pointed.                                                                                                                                 | Pointed or rounded                                                   | Rounded                                          |
| Eye                                                      | Plate-like, sharply pointed antero-laterally                                                                                                           | Plate-like, both anterior corners sharply pointed                    | Subconical, pointed                              |
| Spear-shaped outgrowth arising from just front of labrum | Present                                                                                                                                                | Absent                                                               | Absent                                           |
| Anterolateral corner of antennal sympod                  | With 2 spines                                                                                                                                          | With 1 spine                                                         | With 1 spine                                     |
| Apical plumose setae on telson                           | Absent                                                                                                                                                 | Present                                                              | (Unknown)                                        |

seems to be appropriate that those of the other two groups should be transferred to other genera.

*Paramblyops tenuicaudus* sp. nov.

(Figs. 1–2)

*Type specimens.* Holotype (NSMT-Cr 13399), adult male (5.3 mm); paratypes (NSMT-Cr 13400), 3 adult males (5.2 mm and 2 damaged specimens); Sulu Sea (08°19.0'N 118°18.7'E to 08°18.7'N 118°08.5'E), 495–500 m, 27 May 1972, plankton net installed in mouth of 3-m beam trawl.

*Description.* Body slender (Fig. 1A). Carapace produced frontally into long, narrow, acute rostral projection extending to middle of second segment of antennular peduncle, lateral margin of rostrum concave and smooth (Fig. 1B); antero-lateral angle of carapace not produced forward, denticulated with about 12 spinules (Fig. 1C); posterior margin slightly emarginate, leaving last thoracic somite exposed in dorsal view (Fig. 1A).

Eyes set apart, not connected to each other; each triangular in shape, large, plate-like without visual elements, antero-lateral angle sharply pointed, extending to tip of rostrum, lateral margin slightly convex, naked; frontal margin nearly straight (Fig. 1B).

Antennular peduncle robust; first segment short, outer distal corner produced anteriorly, armed with several setae; second segment shortest; third segment longest, much longer than pre-

ceding 2 segments combined, gradually narrowing distally; processus masculinus rather small, hirsute (Fig. 1B).

Antennal scale extending beyond distal end of antennular peduncle for 1/4 of its length, lanceolate, more than 4.5 times as long as broad; outer margin naked, very slightly convex, terminating in triangular process extending completely beyond obliquely truncate apex of scale (Fig. 1D). Antennal peduncle slender, slightly overreaching distal end of antennular peduncle, slightly shorter than antennal scale; first segment short; second segment longest, 4 times as long as first, 3.5 times as long as broad; third segment about 2/3 of second in length, 2.5 times longer than broad (Fig. 1D). Antennal sympod with 2 acutely pointed denticles on outer distal corner (Fig. 1D).

Strong median spear-shaped outgrowth arising from just front of labrum and extending to level of proximal third of third antennular peduncle segment, depressed laterally, naked (Fig. 1B). Labrum shorter than broad, frontal margin produced into short triangular process with pointed apex. Mandibular palp slender, second segment expanded inwardly, third segment narrow, more than 4 times as long as broad, half as long as second segment (Fig. 1E). Maxillule and maxilla as shown in Fig. 1F and G, respectively.

First thoracic endopod rather slender, basis with small lobe, dactylus with slender terminal claw (Fig. 1H). Second thoracic endopod relatively short; merus as long as carpopropodus and

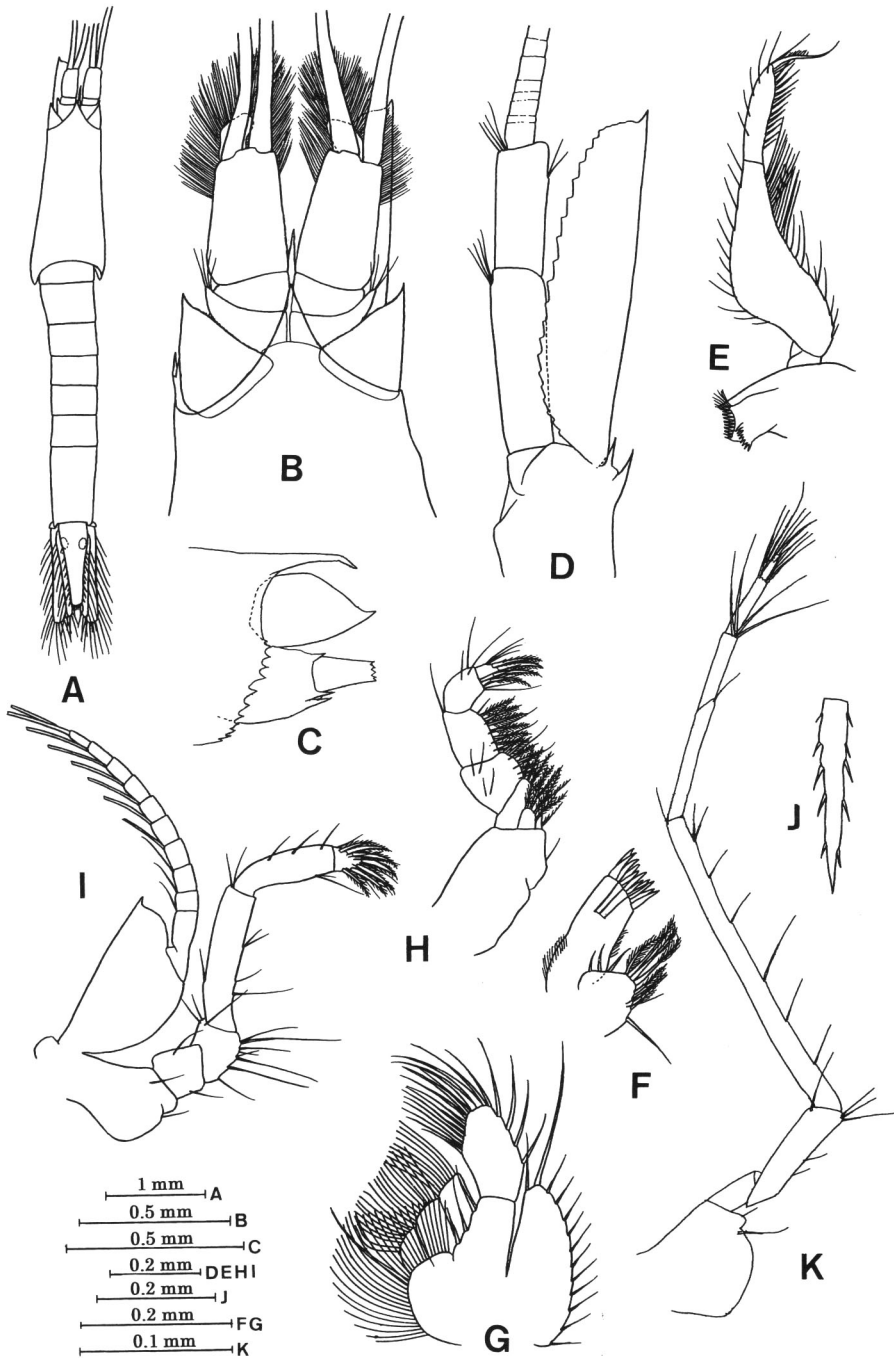


Fig. 1. *Paramblyops tenuicaudus* sp. nov., A, B, D-K, holotype; C, one of paratypes. A, whole body in dorsal view; B, anterior part of body in dorsal view; C, anterior part of body in lateral view; D, antenna; E, mandible; F, maxillule; G, maxilla; H, endopod of first thoracic limb; I, second thoracic limb; J, sternal process on third thoracic somite, ventral view; K, endopod of third thoracic limb.

dactylus combined, 4 times as long as broad; carpopododus somewhat swollen in middle part, 3 times as long as broad; exopod with flagelliform portion 10-segmented (Fig. 1I). Third thoracic endopod slender, carpus divided obliquely from 2-segmented propodus, terminal claw slender (Fig. 1K). Fourth to eighth thoracic endopods lost for damage. Exopods of thoracic limbs with antero-lateral corner of basal plate pointed (Fig. 1I). Third to fifth thoracic somites with sternal process curved forward and armed with spinules (Fig. 1J).

Abdomen 6-segmented; first somite longer than second, second to fifth somites subequal, sixth somite long, 1.7 times as long as broad, much longer than preceding 2 segments together (Fig. 1A).

Pleopods of male natatory and biramous. First pleopod with 9-segmented exopod and unsegmented endopod extending beyond distal margin of second segment of exopod (Fig. 2A). Second and third pleopods 9-segmented exopod and 8-segmented endopod, without modified setae (Fig. 2B). Endopod of fourth pleopod thicker than exopod, extending beyond distal end of exopod by its last joint, 8-segmented, terminal segment armed with 2 modified setae on apex, inner seta curved outwardly, rounded apically, naked except for apical inner short portion furnished with minute setae, outer seta twice longer than inner, slender, feathered on distal 1/3, inner setae of first to seventh segments longer and stouter than those of outer; exopod 8-segmented, outer setae on first to seventh segments stouter than those of inner (Fig. 2C, D). Fifth pleopod with 8-segmented exopod and 7-segmented endopod. Side lobe from endopods slender (Fig. 2A, B, C).

Uropod rather short; exopod extending beyond distal margin of telson for 1/5 of its length; endopod slightly shorter than exopod, armed with single feeble spine on inner ventral margin in statocyst region (Figs. 1A, 2E).

Telson long, almost equal in length to last abdominal somite, more than 2.5 times as long as broad at base, gradually narrowing towards distal third, then parallel-sided; lateral margin armed

on distal 2/3 with about 10 longer and shorter spines arranged sparsely and irregularly in size; distal margin slightly arched, 2/5 as broad as at base, armed with 4 pairs of spines slightly curved inwardly, innermost spines shortest, second inner spines 1.5 times as long as innermost, third inner spines longest, twice as long as second, more than 1/6 of telson length, outermost pair of spines more than 3/5 as long as third inner spines; apical median plumose setae absent (Fig. 2F).

*Etymology.* The species name refers to the shape of the telson.

*Remarks.* *Paramblyops tenuicaudus* sp. nov. resembles *Paramblyops rostratus* Holt & Tattersall, 1905, from the North Atlantic Ocean and the Mediterranean Sea, but is readily distinguished from the latter species by many morphological aspects. (1) In *P. tenuicaudus* the denticulation on the anterior margin of the carapace is present on only anterolateral corners, while it is present on almost whole lateral margins of the rostrum except for apical short portion in *P. rostratus*. (2) The eyeplate is triangular in shape in *P. tenuicaudus* compared with semicircular in *P. rostratus*. (3) The telson is armed with 4 pairs of spines on the posterior margin and about 10 longer and shorter spines on the lateral margin in *P. tenuicaudus*, while it is armed with 5 pairs of spines on the posterior margin and 14 to 16 short spines on the lateral margin in *P. rostratus*. (4) *P. tenuicaudus* is much smaller (5.2–5.3 mm in body length) than *P. rostratus* (10 mm).

Nouvel & Lagardère (1976) described and illustrated the modification in the endopod of the fourth male pleopod in *P. rostratus*, being considerably different from that of *P. tenuicaudus*. In *P. tenuicaudus* the endopod extends beyond the distal end of the exopod by the ultimate segment and is armed with modified setae on only the terminal end, whereas in *P. rostratus* the distal three segments of the endopod overreach the distal end of the exopod and the modified setae arise from the distal two segments. The modification is much more complicated in *P. rostratus* than in *P. tenuicaudus*. As to the modification in the fourth

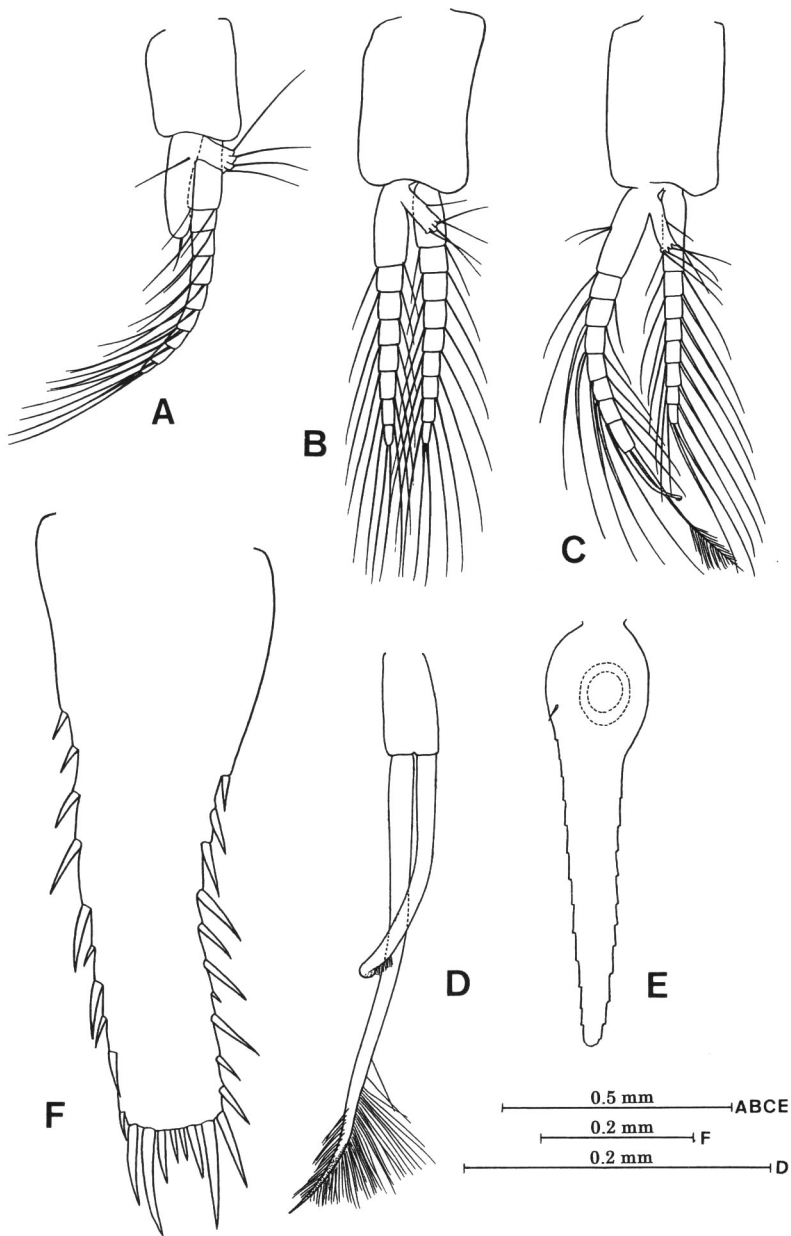


Fig. 2. *Paramblyops tenuicaudus* sp. nov., holotype. A, first pleopod; B, third pleopod; C, fourth pleopod; D, distal end of endopod of fourth pleopod; E, endopod of uropod; F, telson.

male pleopod there is no information in the other species of this genus.

***Paramblyops spatulicaudus* sp. nov.**

(Fig. 3)

*Type specimen.* Holotype (NSMT-Cr 13398),

adult female (7.5 mm); 5 June 1972, Sulu Sea (07°31.3'N, 121°33.2'E to 07°31.0'N 121°33.5'E), 4890–4890 m, plankton net installed in mouth of 6-m beam trawl.

*Description.* Carapace produced anteriorly into long, triangular rostral plate with acutely pointed apex extending beyond distal margin of

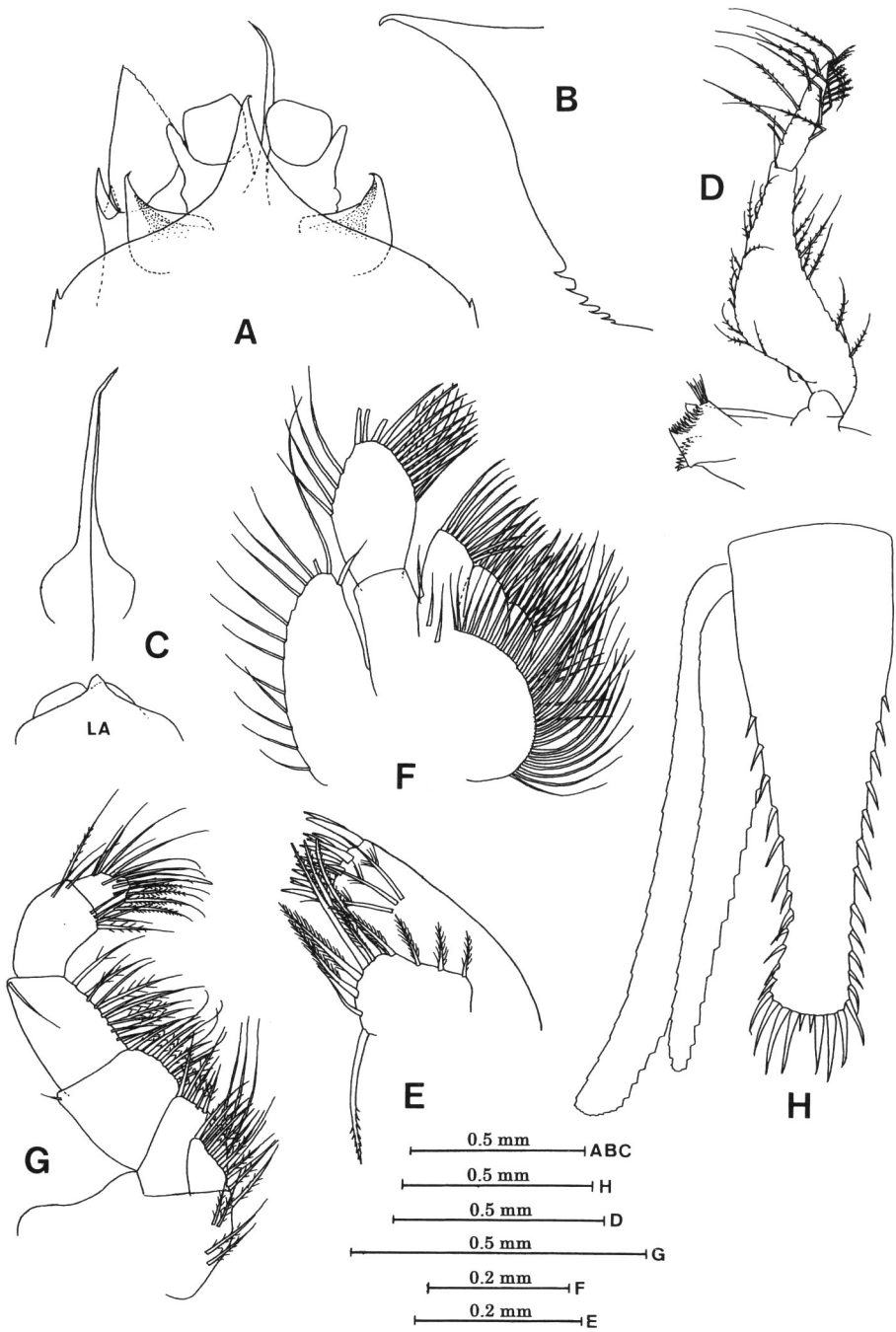


Fig. 3. *Paramblyops spatulicaudus* sp. nov., holotype. A, anterior part of body in dorsal view; B, anterior part of carapace in lateral view; C, anteromedian process of clypeus and anterior half of labrum, ventral view (LA: labrum); D, mandible; E, maxillule; F, maxilla; G, endopod of first thoracic limb; H, uropod and telson.

second segment of antennular peduncle, lateral margin of rostrum smooth (Fig. 3A). Antero-lateral corner of carapace in form of gentle shoulder, not produced forward, armed with about 6 small denticles (Fig. 3B). Posterior margin covering whole thoracic somites dorsally and anterior half of first abdominal somite laterally.

Eyes set apart, small; each reduced into triangular plate without visual elements, antero-lateral corner lengthened forward and sharply pointed, extending to level of distal margin of first segment of antennular peduncle, frontal margin concave, lateral margin slightly convex (Fig. 3A).

First segment of antennular peduncle with outer distal corner produced anteriorly and tipped with setae; third segment broken off.

Sympod of antenna armed with 2 spines on antero-lateral corner (Fig. 3A). Antennal scale and peduncle broken off.

Prominent spear-shaped process arising from front of labrum and extending far beyond apex of rostrum, depressed laterally, ventral keel running throughout its length (Fig. 3C).

Labrum with frontal margin produced into short triangular process with pointed tip (Fig. 3C). Mouth parts and first thoracic endopod showing no marked characteristics (Fig. 3D, E, F, G).

Endopods of second to eighth thoracic limbs broken off.

Abdomen composed of 6 somites; first, second and fifth somites subequal; third and fourth somites subequal, shorter than others; sixth somite long, twice as long as fifth.

Uropod slender; exopod extending beyond posterior end of telson for 1/4 of its length; endopod tapering, extending to apex of apical spines of telson (Fig. 3H), with 1 feeble spine in statocyst region.

Telson long and slender, somewhat longer than last abdominal somite, 2.7 times as long as broad at base, gradually narrowing towards distal fifth, then gradually widened towards distal end; lateral margin armed on distal 2/3 with 13 spines which are somewhat irregular in size and rather sparsely set, distalmost lateral spine long, about

twice as long as other lateral spines; apical margin arched, 2/5 as broad as at base, furnished with pair of median short spines and 3 pairs of long spines of which middle one is longest, 1/7 of telson in length (Fig. 3H).

*Etymology.* The species name refers to the shape of the telson

*Remarks.* Only a single female, somewhat damaged specimen was caught. Although the major parts of the antennules and antennae are lost, the specimen is distinct to belong to the genus *Paramblyops* by the long triangular rostrum with sharply pointed apex, the plate-like eyes without visual elements, the long spear-shaped process arising from the front of the labrum, and the shape and armature of the telson.

This species is closely allied in general structure to *Paramblyops tenuicaudus*, which was described above as a new species. The differences, however, are recognized in the size and shape of the eye and the shape and apical armature of the telson. From the other species of the genus this species is distinguishable in the characters of the rostrum, eye and telson.

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