

## *NOTALPHEUS IMARPE*: A NEW GENUS AND SPECIES OF SNAPPING SHRIMP FROM WESTERN SOUTH AMERICA (DECAPODA: ALPHEIDAE)

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*Abstract.*—*Notalpheus imarpe* is described from off Paita, Peru. The new genus resembles *Nennalpheus* Banner and Banner, but differs in the rostrum, major chela, and second pereopod.

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Recent collecting off the coast of Peru has resulted in the finding of several new species of caridean shrimps. A most unusual find is a deep-water snapping shrimp (family Alpheidae) that does not fit into any known genus. The new genus and species is described herein.

### *Notalpheus*, new genus

*Diagnosis.*—General body form as usual for members of the family Alpheidae. Rostrum triangular, acute and short, with dorsal carina. Without orbital hoods. Pterygostomial margin rounded, not protruding. Eyes well developed, visible at least in lateral view, partly concealed in dorsal view. Orbitorostral process lacking.

Antennular peduncle relatively large, stylocerite with lateral tooth well developed. Scaphocerite normal with tooth and squamous portion well developed. Carpocerite long, basicerite with inferolateral margin pointed.

Mouthparts similar to those in *Alpheus*.

First cheliped with chela enlarged and carried extended; chela proper carried in inverted position. Fixed finger bearing rounded teeth of various sizes; dactyl without teeth, compressed. Carpus quadrangular, without teeth.

Carpus of second pereopod with 5 articles, the first not longer than the sum of the other 4.

Third pereopod slender, with ischium bearing 2 small spines; propodus, carpus and merus with few long setae; dactyl unknown.

Second pleopod of male bearing appendix masculina. First 4 pleura of abdominal segments rounded; fifth with posterior margin slightly projecting and subacute. Posterior margin of sixth abdominal segment lateroventrally projecting into triangular articulated pleuron.

Telson slender, with dorsal and posterolateral spines well developed. Uropods normal.

Branchial formula as in *Alpheus*: 5 pleurobranchs, 1 arthrobranch, 8 epipodites with mastigobranchs on bases from third maxilliped to fourth pereopod, setobranchs from first to fifth pereopods.

### *Notalpheus imarpe*, new species

Figs. 1, 2

*Material.*—Holotype, male, total length 27.9 mm; off Paita, Peru (5°03'S, 81°20'W), 143 m, stomach contents of sciaenid fish (*Larimus pacificus*); R/V



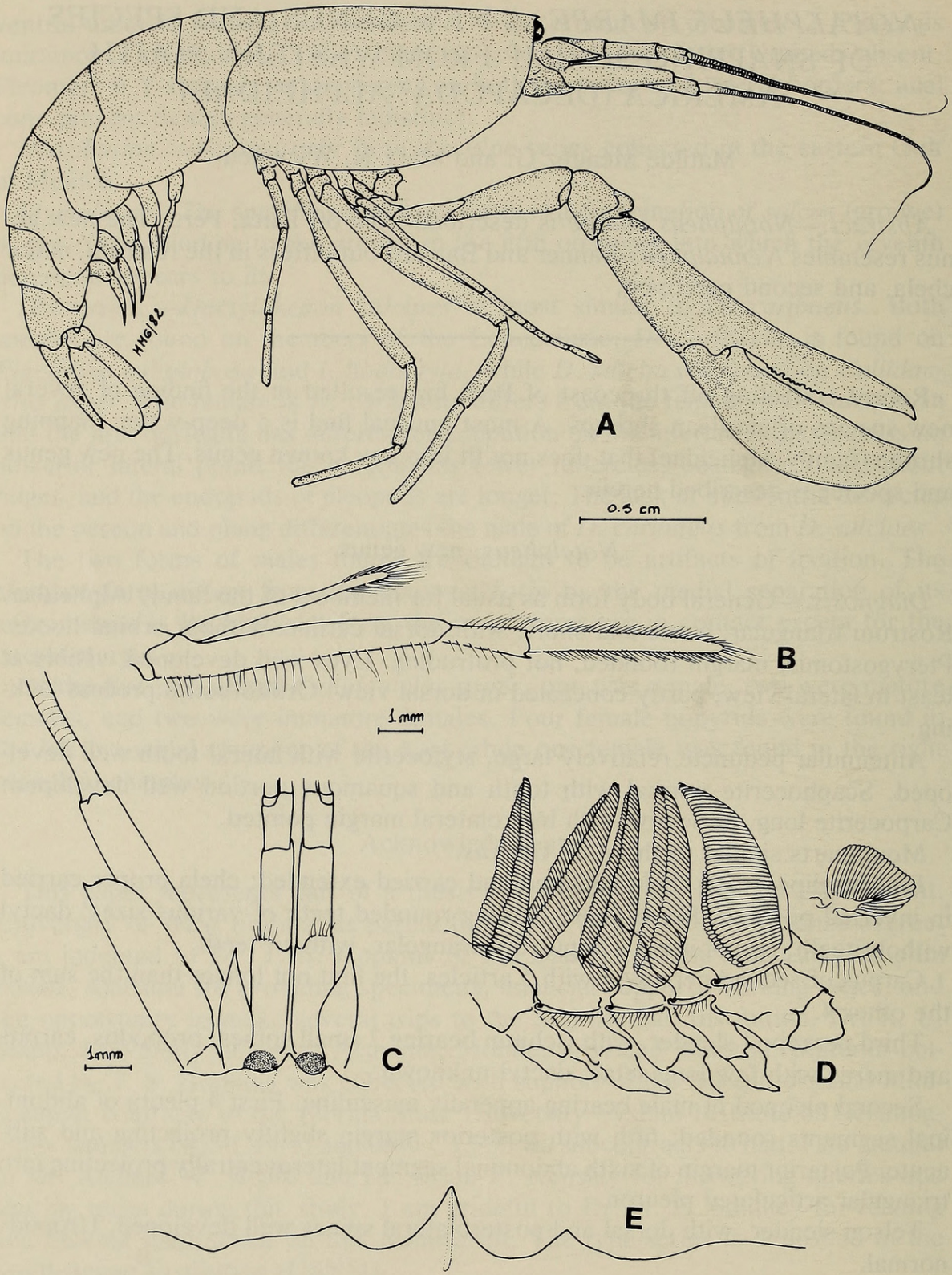


Fig. 1. *Notalpheus imarpe*: A, Lateral view of male from off Paita, Peru; B, Third maxilliped, lateral view; C, Anterior region, dorsal view; D, Lateral view with carapace partly removed, showing gill structure; E, Rostrum, enlarged.



*Humboldt* cruise 8103-04, Lance 15, 19 March 1981, Walter Elliott, collector; Instituto del Mar del Perú.

*Description*.—Specimen somewhat damaged. Anterior part of cephalothorax detached, right cheliped and dactyls of third-fifth pereopods missing.

Rostrum triangular, short and sharp, with dorsal carina. No orbital hoods. Flat orbital teeth present. Anterior margin of carapace gradually rounded, without teeth. Cornea visible dorsally and laterally. Second antennular article  $1.4\times$  as long as visible part of first,  $1.6\times$  length of third article. Stylocerite reaching nearly to end of first antennular article. Scaphocerite with external margin straight, with lateral tooth somewhat longer than squamous part, exceeding half of length of third antennular article. Carpocerite exceeding scaphocerite.

Mouthparts as usual in the family. Ratio of articles of third maxilliped beginning with base 10:3:7.

Right cheliped missing. Left cheliped with chela carried in inverted position. Chela long and thin, of generally subtriangular form, laterally compressed, length  $4.0\text{--}4.2\times$  breadth, fingers occupying distal 0.54. Palm suboval. Fixed finger more compressed than palm, having on proximal two-thirds of its length series of 11–12 rounded teeth of irregular size and other smaller inconspicuous ones, with obvious margin along length of edge. Dactyl very compressed, laminate, without teeth, with obvious border along length of its edge. Both fingers ending in points, crossing each other. Carpus quadrangular, with distal margins slightly produced dorsally and rounded. Merus  $3\times$  as long as wide, with superior and inferior margins rounded.

Second pereopods with 5 carpal articles, with ratio of 10:3.6:3.6:3.6:5.1.

Third pereopod more or less slender. Propodus, carpus, and merus with few long setae, ischium with 2 spines on inferior margin. Fourth and fifth pereopods similar. Dactyls of these appendages missing.

Posterior margin of sixth abdominal segment lateroventrally projecting into triangular articulated pleuron. Telson slender, with 2 pairs lateral spines.

*Discussion*.—When we first examined this shrimp, we thought that it might be a species of *Nennalpheus* Banner and Banner, 1981. Like members of this genus, our shrimp carries its chelae extended, not folded back. The general shape of the chelae and frontal region are similar. However, species of *Nennalpheus* lack a rostral carina. The fingers of the major chelae bear rounded and “exactly fitting” teeth in the proximal half. The carpus in lateral view has a “rounded subrectangular shape.” The distal margins of the carpus extend into acute or rounded flat teeth. The ratio of the carpal articles of the second pereopod is 10:2.1:2.1:5:2.2. Our shrimp, however, has a rostral carina. Only the fixed finger of the chela bears teeth. The carpus of the cheliped is quadrangular, without teeth. The ratio of articles in the carpus of the second pereopod is 10:3.6:3.6:3.6:5.1.

*Notalpheus*, like *Nennalpheus*, contains shrimps from the continental shelf. The two species of *Nennalpheus*, *N. sibogae* (De Man) and *N. inarticulatus* Banner and Banner, live at depths of 70–222 m. The former has been collected in Indonesian waters, the latter lives off the Philippines (Banner and Banner 1981). Our new species was collected from the stomach of a fish caught at 143 m. Like other alpheid shrimps, it may burrow or live in cracks.

*Notalpheus imarpe* is the eleventh species of alpheid shrimp to be reported off



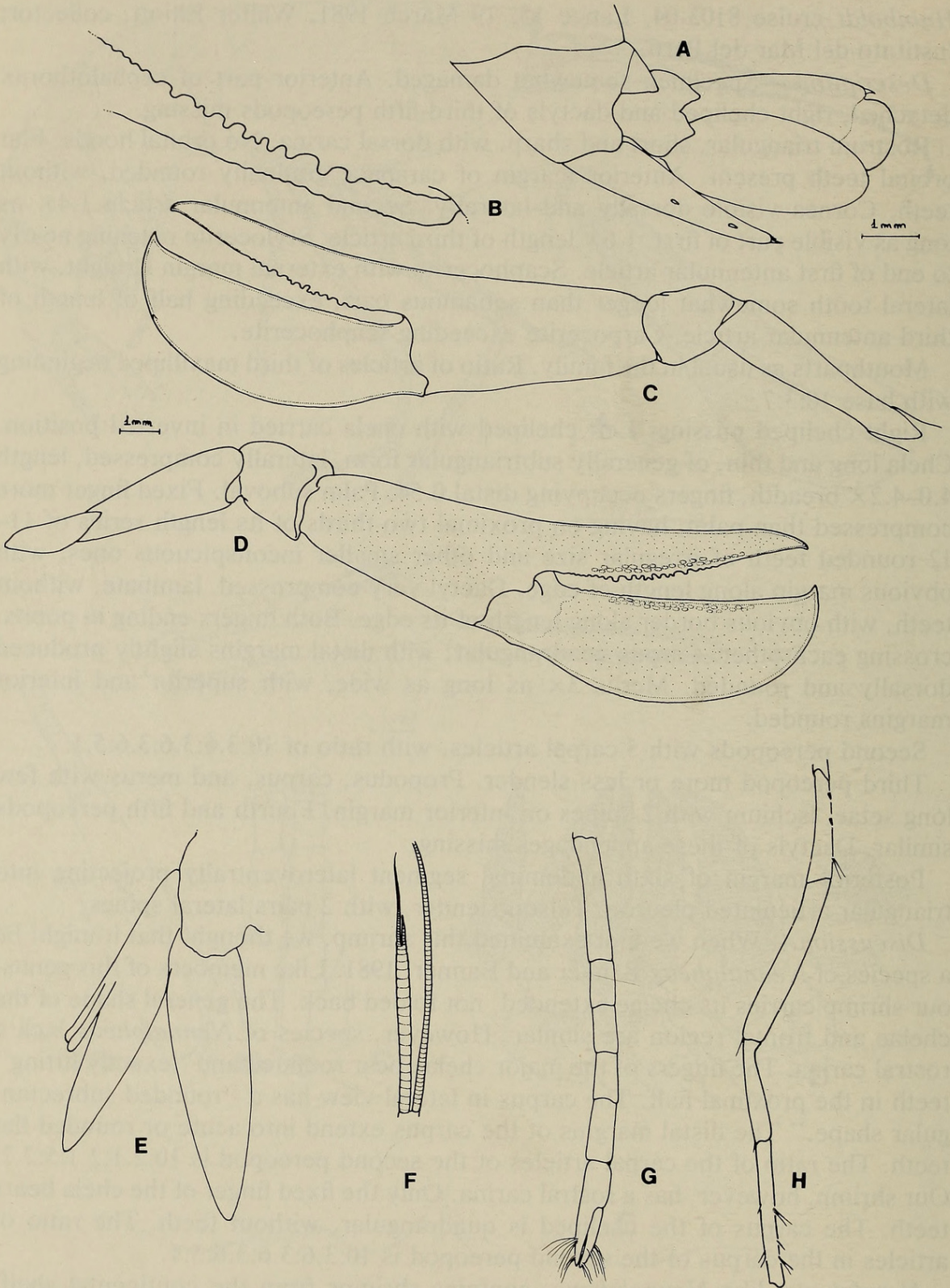


Fig. 2. *Notalpheus imarpe*: A, Posterior region of abdomen showing articulated sixth abdominal pleuron; B, Cutting edge of chela, enlarged; C, Lateral view of cheliped; D, Medial view of cheliped; E, Male second pleopod; F, Antennular flagella; G, Carpus and chela of second pereopod; H, fourth pereopod.



temperate western South America. *Automate dolichognatha* De Man and *Alpheus sulcatus* Kingsley have been collected off northern Peru, an area considered to be the mixture zone between the temperate Peruvian biogeographic province and the tropical Panamic province. Holthuis (1952) reported that a specimen of *Alpheus dentipes* Guérin supposedly collected at Portland Bay, western Patagonia, probably was mislabelled. *Athanas nitescens* (Leach), normally a resident of the eastern Atlantic, has been reported from the vicinity of Callao. This record may be in error (Méndez 1981). Six other species are residents of the area: *Betaeus truncatus* Dana, *B. emarginatus* (H. Milne-Edwards), *Synalpheus spinifrons* H. Milne-Edwards, *Alpheopsis chilensis* Coutière, *Alpheus chilensis* Coutière, and *Alpheus inca* Wicksten and Méndez.

*Etymology*.—The generic name is derived from the Greek word “*notos*,” meaning southern, and *Alpheus*, the name of a common snapping shrimp. The species name is an acronym of the Instituto del Mar del Perú, in honor of which we dedicate this new species.

#### Acknowledgments

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