

ALPHEUS UTRIENSIS, NEW SPECIES (CARIDEA: ALPHEIDAE),
FROM UTRIA SOUND, PACIFIC COAST OF COLOMBIA

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ABSTRACT

A new species of Alpheidae, *Alpheus utriensis*, is described from Utria Sound, Pacific coast of Colombia. The shrimps were obtained from hollow spines of the fan clam, *Pinna rugosa* Sowerby. The new species shares some general characters with *A. longicarinatus* Hilgendorf and *A. cristulifrons* Rathbun, but can easily be separated from them by the presence of marked branchiostegal and infraorbital furrows, a characteristic not shared with other snapping shrimps.

During sampling activities, numerous specimens of the fan clam, *Pinna rugosa* Sowerby, were collected on sandy bottoms in Utria Sound (6°05'N, 77°19'W), Colombia. Closer examination of the valves of the clam indicated that the hollow spines harbored specimens of snapping shrimps that belong to an undescribed species.

The shrimps were generously confirmed as apparently undescribed by Dr. M. L. Christoffersen, Universidade Federal da Paraíba, Brazil.

The terminology used in this paper is based on that of Banner and Banner (1966, 1982). Abbreviations used are: AHF, Collection of the Allan Hancock Foundation, University of Southern California; UFPB, Coleção de Crustacea da Universidade Federal da Paraíba, Brazil; CRBMUV, Colección de Referencia de Biología Marina Universidad del Valle, Cali, Colombia. TL = total length, ov. = ovigerous female.

Alpheus utriensis, new species

Figs. 1, 2

Type Material.—Holotype, 1 ♀ (14.1 mm TL), Utria Sound, 5 August 1984 (AHF 842); allotype, 1 ♂ (12.4 mm TL), Utria Sound, 5 August 1984 (AHF 842a). Paratypes, 2 ♀♀ ov. (14.0 mm and 12.4 mm TL), Utria Sound, 5 August 1984 (UFPB 4386), 1 ♀ ov. (8.3 mm TL), 1 ♂ (6.8 mm TL), same locality, 5 August 1984 (CRBMUV 84009).

Diagnosis.—Rostrum short, triangular. Rostral carina present, forming dorsal hump, reaching midlength of carapace. Orbitorostral margin bearing arcuate prominences. Orbital hoods inflated. Carapace with 2 shallow but well-marked lateral furrows. Anterolateral angle of carapace rounded, not produced. Small chela without "balaeniceps-shaped" dactylus. Carpus of third and

fourth pereopod without spines on inferior margin. Telson with row of dorsal spinules on posterior margin. Uropodal endopod with 12–15 spines on external and distal margin.

Description.—Rostrum acute, triangular, with few setae. Rostral carina sharp, forming in lateral view dorsal hump extending about to midlength of cephalothorax. Orbital hoods inflated. Orbitorostral margin bearing subtriangular prominences. Carapace with 2 shallow furrows originating on anterolateral margin. First well defined, arising between eye and base of antenna, extending backward to reaching termination of dorsal hump. Second shallow, arising below base of antenna and running back to disappear in hepatic region. Visible part of first antennular article 0.7 times as long as second; second article 2.2 times as long as broad; third article 0.6 times as long as second. First and second antennular article with scarce short setae, distal margin of third article with fringe of short setiferous bristles. Stylocerite with acute tip, almost reaching end of first antennular article. Outer margin of scaphocerite concave, squamous portion narrow, reduced, free from lateral tooth in distal half; lateral tooth heavy, reaching well beyond end of antennular peduncle. Carpcerite reaching beyond end of lateral tooth of scaphocerite. Basicerite without lateral tooth.

Third maxilliped with ratio of articles of endopods as 10:1.4:6.4; third article with margins and tip bearing brush of long setae.

Large chela cylindrical, 2.3 times as long as broad, fingers about 0.3 length of entire chela; without sculpturing, but with slight groove just proximal to dactylus. Plunger reduced. Tips of fingers obtuse. Merus 1.8

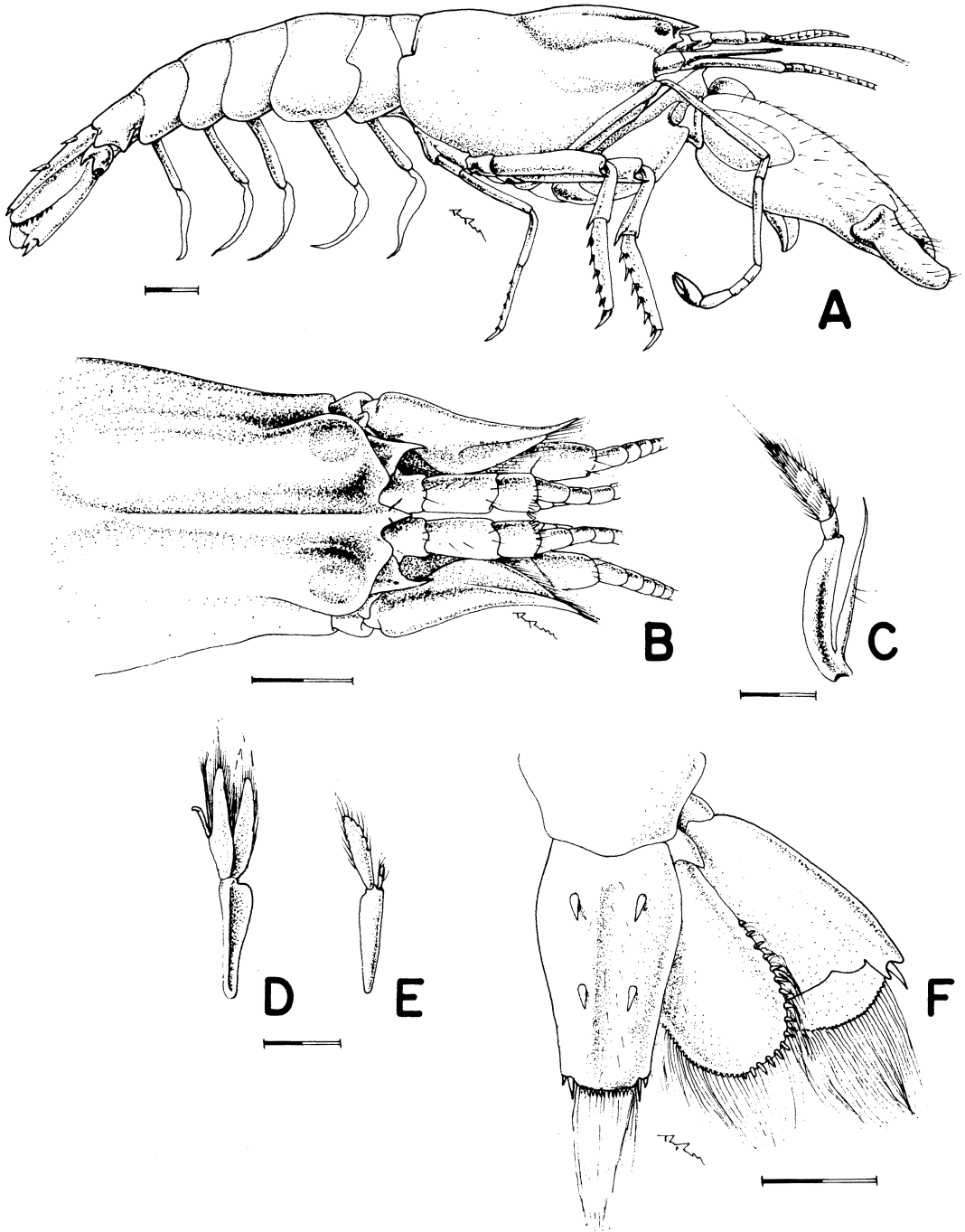


Fig. 1. *Alpheus utriensis*, new species, holotype. A, body in lateral view; B, anterior region in dorsal view; C, third maxilliped; D, second pleopod (allotype); E, first pleopod (allotype); F, telson and uropods. (Scale = 1 mm.)

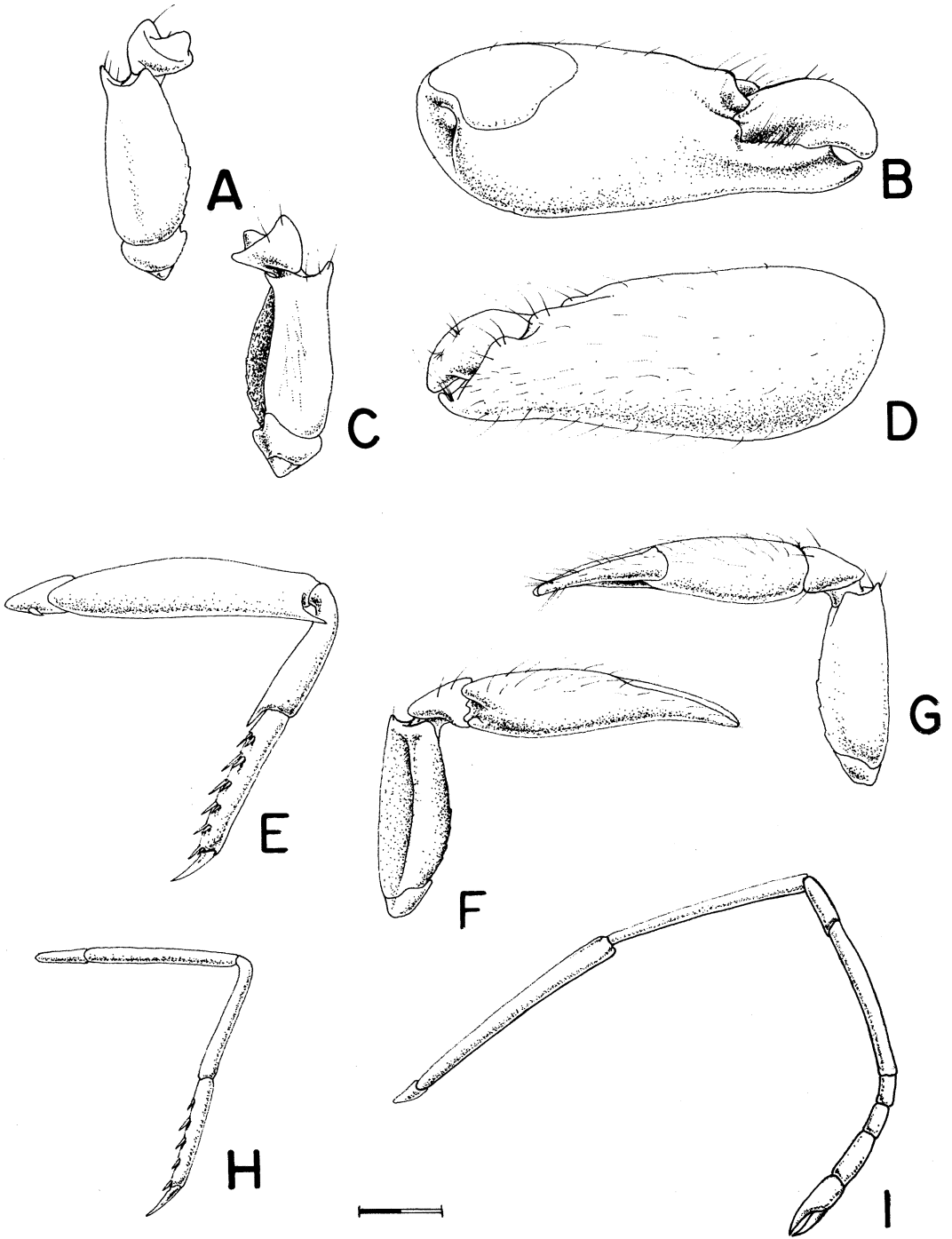


Fig. 2. *Alpheus utriensis*, new species, holotype. A, carpus and merus, lateral view; B, major chela, lateral surface; C, D, carpus, merus, and major chela, mesial surface; E, third pereiopod; F, small cheliped, mesial surface; G, small cheliped, lateral surface; H, fifth pereiopod; I, second pereiopod. (Scale = 1 mm.)

times as long as broad, with distosuperior margin projecting as subacute tooth; inferior margin serrate; inferointernal margin bearing distally acute tooth.

Small chelipeds not sexually dimorphic; chelae 3.2 times as long as broad with fingers occupying about half entire length. Lateral face glabrous. Carpus more elongated than that of major cheliped. Merus with small rounded tooth on distosuperior margin, inferior margin serrate.

Second legs extremely long; ratio of carpal articles as 10:30:6:6:10.

Ischium of third and fourth legs with spine. Merus of third leg 3.3 times as long as broad, bearing acute tooth distally on inferior margin. Carpus 0.6 times as long as merus, with acute tooth on inferodistal margin, superodistal margin rounded. Propodus 0.7 times as long as merus, inferior margin with 5 pairs of spines, small pair distally. Dactylus slender, curved, conical.

Fifth leg more slender than third or fourth, without tooth on merus or carpus; propodus with 4 or 5 spines.

Second pleopod of male with appendix masculina 1.5 times as long as appendix interna. Both sexes with appendix interna on endopods of second to fifth pleopods.

Telson 2.5 times as long as broad. Posterior margin with row of dorsal spinules between posterolateral spines. Inner uropod with internal margin serrate, bearing 12–15 spines on external and distal margin. Outer uropod with distal margin serrated; movable spine stout at distal articulation, flanked by 2 heavy teeth; articulation slightly scalloped.

Color in Life.—Eyes black. Chelae translucent green with yellow finger tips. Carapace and abdomen with intercalated transverse bands of dark green and light green, and numerous yellow chromatophores. Pereiopods, and antennal and antennular peduncles, translucent with greenish spots. Pleopods translucent green. Eggs orange.

Habitat.—*Alpheus utriensis* was collected in the hollow spines of the fan clam, *Pinna rugosa* Sowerby, and observed to feed on algae which grow on the surface of the clam. This habitat is also apparently shared with *Synalpheus townsendi peruvianus* Rathbun, *Typton serratus* Holthuis, and *Gonodactylus zaca* Manning.

Etymology.—The new species is named after the type locality, Utria Sound, Colombia.

DISCUSSION

Alpheus utriensis, new species, belongs to the *crinitus* group, characterized in having reduced orbital teeth, chelae large, rounded in section and without grooves or ridges (Banner and Banner, 1982). The new species is closely related to *A. cristulifrons* Rathbun from the western tropical Atlantic (Crosnier and Forest, 1966) and *A. longecarinatus longecarinatus* Hilgendorf and *A. longecarinatus bucephaloides* Nobili from the Indo-Pacific region (Banner and Banner, 1983).

The differences of these species from the rest of species belonging to the *crinitus* group have been discussed by Crosnier and Forest (1966) and Banner and Banner (1981, 1983).

Based on these works we found that *A. utriensis* can be easily separated from the other species by the following characteristics: (1) The anterolateral angle of the carapace is rounded and not produced as in *A. longecarinatus longecarinatus*, *A. longecarinatus bucephaloides*, and *A. cristulifrons*; (2) The dactylus of the male minor chela is not "sub-balaeniceps" as in the related species; (3) The carpus of the third and fourth pair of pereopods lacks spines; in *A. longecarinatus* and *A. cristulifrons* there are one to four spines; and (4) The presence of two well-marked furrows on the carapace of *A. utriensis* is a characteristic not found in other species of the *crinitus* group.

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LITERATURE CITED

- Banner, A. H., and D. M. Banner. 1966. The alpheid shrimp of Thailand.—Siam Society Monograph series 3: 1–168.
- Banner, D. M., and A. H. Banner. 1981. Annotated checklist of the alpheid shrimp of the Red Sea and Gulf of Aden.—Zoologische Verhandlungen 190: 1–99.
- , and ———. 1982. The alpheid shrimp of Australia. Part III: the remaining alpheids, principally of the genus *Alpheus*, and the family Ogyrididae.—Records of the Australian Museum 34: 1–357.
- , and ———. 1983. An annotated checklist of the alpheid shrimps from the Western Indian Ocean.—Travaux et Documents de l'ORSTOM 158: 1–164.

Crosnier, A., and J. Forest. 1966. Crustacés Décapodes: Alpheidae. XXVII.—Campagne de la Calypso dans le Golfe de Guinée et aux Iles Principe, São Tomé et Annobon (1956), et campagne aux îles du Cap Vert (1959) 7: 199–314.

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ANNOUNCEMENT

The International Council for the Exploration of the Sea will sponsor a symposium on "Shellfish life histories and shell fishery models" on the campus of the Université de Moncton, Moncton, New Brunswick, Canada, 25–29 June 1990.

Among specific topics of interest to carcinologists, identified as key issues, are:

(a) Small scale regional and temporal changes of productivity in fisheries of *Nephrops*, *Pandalus*, *Homarus*, and *Chionoecetes*;

(b) Inter- and intrapopulation density dependent or environmental regulation in deep-water shrimps, snow crabs, and lobsters;

(c) Latitudinal adaptation of growth, life expectancy, and age at first maturity in crustaceans;

(d) Methodologies of age determination in crustaceans using isotope dating of carapaces;

(e) Relative incidence of nonbiological factors and stock recruitment relationships on lobster populations;

(f) Direct impact of man-induced abiotic factors;

(g) Behavior affecting catchability of shrimps, crabs, and lobsters.

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