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Glassell 1938

ALLAN HANCOCK PACIFIC EXPEDITIONS

VOLUME 5

NUMBER 1

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THREE NEW ANOMURAN CRABS FROM THE
GULF OF CALIFORNIA

by

STEVE A. GLASSELL

RESEARCH ASSOCIATE
NATURAL HISTORY MUSEUM
SAN DIEGO, CALIFORNIA

INVERTEBRATE
ZOOLOGY
Crustacea



THE UNIVERSITY OF SOUTHERN CALIFORNIA PRESS
LOS ANGELES, CALIFORNIA

1938

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The three species herein described have already been recorded in publication under manuscript names. Therefore, it has been thought best to publish these descriptions at this time, rather than wait for the full report of the collections now on hand.

PAGURIDAE

Genus **PYLOPAGURUS** M. Edwards and Bouvier

Pylopagurus spinicarpus Glassell, new species

Pylopagurus spinicarpus Glassell, manuscript name, Zoologica, N. Y. Zool. Soc., vol. 22 (part 3), no. 16, 1937, p. 256.

Type: Male, holotype; Cat. No. 75432, and female, paratype, U. S. National Museum, from Puerto Refugio, Angel de la Guardia Island, Gulf of California, Mexico, 65 fathoms; March 4, 1936; collected by Allan Hancock Pacific Expedition of 1936.

Measurements: Male holotype: length from rostrum to tip of telson 14.2 mm., of carapace 4.2 mm., of precervical portion of carapace 2.2 mm., width 2.1 mm.; length of major cheliped 10.6 mm., of merus 2.1 mm., of carpus 2.5 mm., of manus 2.8 mm.; length of eye-stalk 2 mm.

Diagnosis: Precervical portion of carapace as broad as long, transversely convex, naked, polished, projections subequal. Inner margin of major hand with low, blunt teeth, outer margin a granular ridge; minor hand unarmed. Inner carpal margin of major cheliped armed with two median spines and one distal spine, a concavity between the median and distal spines. Eyes as long as width of carapace, constricted in middle, cornea dilated.

Description: Anterior portion of carapace as long as wide, transversely convex, naked, polished; median projection obtuse, slightly depressed, extending to base of eye-scales; lateral projections armed with a minute spinule.

Eye-stalks cylindrical, depressed on upper surface, constricted in middle, cornea dilated, subequal in length to width of carapace. The ophthalmic scales are bluntly triangular and armed with a sharp sub-apical spine, margins entire. The third antennular peduncle extends four fifths its length past the cornea.

The antennal acicle is slight, sharp-pointed, unarmed, lightly setose, and extends to the middle of the cornea. The third antennal peduncle extends more than half its length past the cornea; the flagellum is lightly ciliated.

The major cheliped is three fourths the length of the entire body; merus trigonal, with upper, distal portion rounded and lightly setose, inner and outer lower margins entire; carpus increasing in width distally, inner margin armed with three teeth, two median and one distal, between these groups a wide sinus; the outer margin is nearly obsolete, consisting of a slight ridge joining the outer hinge of the manus, the inner proximal surface is contorted, with a deep, oblique sinus; the hand is three fifths as wide as long, smooth and slightly concave on its operculiform surface and lacks a proximal transverse ridge. The inner margin of the palm is an upturned low-toothed ridge, the outer margin of the hand is unarmed, a simple granulate low crest. The pollex is armed on its cutting edge with a sharp median lobe. The dactyl is crested with a row of low teeth, the largest is proximal. The minor hand extends past the carpus of the major and is one third the width of the latter; merus compressed; carpus with two rows of spines, one on the crest, the other below on the inner side.

The ambulatory legs are unarmed on their upper crests, lightly setose, surface polished, shorter than major chela. The terminal segment of the telson is semioval, entire.

Color in alcohol: Buff with red markings.

Range: Throughout the Gulf of California, at depths ranging from 40 to 80 fathoms.

Remarks: This proposed species is allied to *P. guatemoci* Glassell, 1937, but differs from that species by the major hand being smooth, the inner margin only being armed, the outer a granulated ridge, and with no proximal ridge, instead of being entirely margined with teeth, the surface minutely granulate.

Genus PAGURUS Fabricus

Pagurus bunomanus Glassell, new species

Pagurus bunomanus Glassell, manuscript name, Zoologica, N. Y. Zool. Soc., vol. 22 (part 3), no. 16, 1937, p. 262.

Type: Male, holotype; Cat. No. 75433, and female, paratype, U. S. National Museum, from Puerto Refugio, Angel de la Guardia Island, Gulf of California, Mexico, 15 to 30 fathoms; March 4, 1936; collected by Allan Hancock Pacific Expedition of 1936.

Measurements: Male holotype: length from rostrum to tip of telson 44.5 mm., of carapace 13 mm., of precervical portion of carapace 6.9 mm., width 7 mm.; length of major cheliped 32.3 mm., of merus 7 mm., of carpus 9 mm., of manus 12.8 mm., width of manus 7.5 mm., length of minor cheliped 24.4 mm., of merus 6.2 mm., of carpus 6.2 mm., of manus 8.5 mm., width 4.6 mm.; length of eye-stalk 5.2 mm.

Diagnosis: Precervical portion of carapace unal. Median spine outline on carapace, slightly advanced past margins and lateral spines. Major hand heavily plated with close-set granules, margined with heavy dull spines, a boss of granules at base of pollex, another at base of dactylus, this last the termination of a longitudinal granulated crest paralleling the inner margin of palm. The minor hand subrhomboidal. The second left ambulatory differs from its mate.

Description: Precervical portion of carapace unal, smooth, nude except for a few tufts of setae, length and breadth subequal; median tooth short, not reaching base of eye-scales, outlined on upper surface of carapace and extending past and above the revolute, widely triangular, distal margin; lateral spines blunt, not advanced past the median. Eye-stalks stout, two-thirds width of carapace, dilated, with three tufts of setae on upper surface. Antennal acicle narrow, setaceous on inner

side, curved, extending to middle of cornea. Ophthalmic scales triangular, with a subapical spine, upper surface concave.

Major cheliped with merus trigonal, two upper distal spines, outer, lower distal end spined, inner distal margin and under surface granulate and rugose; carpus widest distally, surface rugose, with few setae; a few spines parallel inner margin, inner margin armed with forward-pointing spines, twelve or more, outer margin sharply deflexed, rugose proximally, granular distally; hand rectangular, two thirds as wide as long, margined with heavy-based, blunt-ended spines, surface paved with close-fitting, rounded-topped granules, two rows of well-separated tubercles converge near base of a boss at base of pollex; a granular ridge parallels inner margin of palm, ending in a prominent elevation at base of dactyl; the fingers with a median elevation, on either side of which the surface is concave. The minor cheliped reaches slightly past the carpus of the major; the merus is like the major though smaller; carpus narrow, crested with teeth and granular on outer surface; the manus is subrhomboidal, with three dull teeth on the inner margin of palm, the outer margin with six or seven teeth in the median portion, the surface plated as in the major chela and with a few proximal tubercles on the tumid median ridge at the proximal end.

The first pair of ambulatory legs are similar, lightly setose; the carpus with a crest of spines; dactyli compressed, slightly twisted and nearly as long as the carpus and propodus. In the second pair, except for the longer ischium, the right leg is similar to those of the first pair, while that on the left side has a row of heavy granules on the posterior side of the propodus and dactyl, separated by a deep groove from both an upper and a lower ridge of setae.

Color in alcohol: Buff with reds and browns.

Range: Throughout the Gulf of California. Found in from 15 to 50 fathoms.

Remarks: This proposed species is allied to *P. tanneri* (Benedict), 1892, but differs in that the eye-stalks are longer than the anterior border of the carapace, instead of subequal in length; by the antennal acicles being shorter than the eye-stalks, instead of extending past the cornea; by the hands being plated, instead of tuberculated; by the smaller hand being margined with teeth, instead of with spinules; by the second pair of ambulatory legs being asymmetric, instead of symmetric.

In this latter respect *P. bunomanus* resembles some of the species in other genera, such as *Dardanus*, *Coenobita*, and *Diogenes*.

PORCELLANIDAE

Genus *PORCELLANA* Lamarck, restricted

Porcellana hancocki Glassell, new species

Porcellana hancocki Glassell, manuscript name, *Zoologica*, N. Y. Zool. Soc., vol. 22 (part 1), no. 4, 1937, p. 87.

Type: Male, holotype; Cat. No. 72454, and female, paratype, U. S. National Museum; from entrance to Angeles Bay, Baja California, Mexico, 25 fathoms; March 3, 1936; collected by Allan Hancock Pacific Expedition of 1936.

Measurements: Male holotype: length of carapace 6.3 mm., width 5.8 mm. Female paratype: length 4.8 mm., width 4.2 mm.

Diagnosis: Carapace slightly convex, high in center, lateral margins sharp, upturned. Front tridentate, horizontal. Chelipeds slender. Ambulatory legs long.

Description: Carapace longer than wide, slightly convex, with gastric regions highest, slightly rugose, a small whorl on each side of the cardiac region; lateral margins slightly upturned, a sharp, deep, narrow, V-shaped notch at terminus of the cervical groove; a transverse line of tomentum behind the front; front tridentate, median tooth triangular; a shallow median sulcus extends to near the distal end; it is longer than the lateral teeth and separated from them by a wide, V-shaped notch; the lateral teeth slightly diverge, their outer margins form in a sweeping curve, the upper orbits for the eyes, their inner margins, with those of the median tooth, form a graceful "W"; a post-orbital tooth. Eyes large; stalks thick, short. Antennae long. Epimera fringed with tomentum.

Chelipeds rather slender, narrow; merus armed at distal inner end with a vertically pointed, sharp tipped, compressed lobe, its tip exceeding the plane of the carpus; carpus longer than wide, armed with a single low tooth whose longest margin is proximal, the surface microscopically, transversely striate; the ventral inner surface is also armed with a tooth, as is the dorsal, a concavity between these surfaces for the reception of the inner part of the hand; hands similar, unequal, the right (in the holotype) the larger, a ridge on the inner margin to base of dactyl, a median ridge from proximal end to gape; from this ridge to outer margin the hands are tomentose, the margin fringed with serrate granules and pinnate setae to tip of upturned pollex; the dactyli are sinuous, with sharp, curved tips; palms of hands smooth.

Ambulatory legs rather long, lightly crested with tomentum in tufts; the propodi nearly one and one-half times as long as the carpus; carpus subequal in length to dactyli; dactyli long with slightly curved corneous tips, and armed on the under side with a row of supplemental corneous spines.

The outer maxillipeds have their ischium transversely striate.

Color in alcohol: Carapace with orange-red blotches on a cream-colored ground. Propodi of ambulatories banded. Ventral surface slightly iridescent.

Range: West coast of Mexico, at depths from 20' to 50 fathoms.

Remarks: This proposed species is allied to *P. sigsbeiana* A. M. Edwards, 1880, and is undoubtedly the Pacific analogue of Milne Edwards' species; it differs in having two small verticils on the carapace, instead of being smooth; by having the ventral inner surface of the carpus of the chelipeds subsimilar to that of the dorsal surface, both bearing spines, instead of the dorsal alone; and by the carapace not being marked with longitudinal stripes. The bathymetric range in both species is the same.

This proposed species is dedicated to Captain Allan Hancock, patron of science, whose interest in the marine fauna of the Pacific coast has been responsible for the extension of our horizons.