

A REVIEW OF THE GENUS *CLYTHROCERUS* (BRACHYURA: DORIPPIDAE)
IN THE EASTERN GULF OF MEXICO WITH NOTES ON *CLYTHROCERUS STIMPSONI*

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ABSTRACT The four members of the dorippid crab genus *Clythrocerus* from the Gulf of Mexico are reviewed. The rediscovery of *C. stimpsoni* has allowed for the first description of the male of the species. Known previously only from the unique holotypic female, the rediscovery of *C. stimpsoni* is based on material from the same general area as the type-locality. *Clythrocerus granulatus* and *C. perpusillus* are reported for the first time from the Gulf of Mexico. The latter form was the most frequently collected species of *Clythrocerus* from the study area. Although no specimens of *C. nitidus* occurred in our samples, previous records from the Gulf of Mexico are reviewed and the species is figured from supplemental material. Available sediment data are given for the species and male gonopods are figured.

INTRODUCTION

The unusual dorippid crab genus *Clythrocerus* A. Milne-Edwards and Bouvier, 1899, is represented by four nominal species in the northwestern Atlantic (Rathbun 1937). Of these four taxa only two species, *C. stimpsoni* Rathbun, 1937, and *C. nitidus* A. Milne-Edwards, 1880, have been reported previously from the Gulf of Mexico. Rathbun (1937) described *C. stimpsoni* from a single female taken off the west coast of Florida and the Gulf record for *C. nitidus* is based on an immature specimen collected south of Cape San Blas, Florida.

MATERIALS AND METHODS

Material examined during this study came primarily from recent collections made by the Minerals Management Service (formerly the Bureau of Land Management) on the carbonate shelf of west Florida. Specimens were collected with box cores at depths ranging from 10 to 189 m. Supplemental material was examined from the National Museum of Natural History. Representative series of the species from our material have been deposited in that institution.

RESULTS

Dorippidae De Haan, 1841

Clythrocerus A. Milne-Edwards and Bouvier, 1899

Diagnosis — Carapace usually flattened, rounded; first three abdominal segments visible in dorsal view; orbits incomplete; 5th pair of legs dorsal in position; external maxillipeds elongate and covering buccal cavern; efferent orifices continuous, united in a gutter approaching frontal border; no afferent opening at base of anterior pereopods; antennules small and retractile; antennae very short with valviform peduncle; exopods of 2nd and 3rd maxillipeds rudimentary (modified from Rathbun 1937).

Clythrocerus stimpsoni Rathbun, 1937

(Figure 1)

Clythrocerus stimpsoni Rathbun, 1937; 121, fig. 32, pl. 34, figs. 5 and 6.

Diagnosis — Carapace convex; anterior teeth of carapace separate from remainder of carapace by depression; 2 large lateral teeth at widest part of carapace and smaller anteriorly directed tooth above margin; surface granulate with lateral margins spinulose; rostral tooth more advanced than pre-orbital teeth; oblique spinuliferous ridge on merus of maxilliped; pterygostomian ridge armed with spines and extending to a point opposite 1st lateral tooth of carapace.

Material examined — 1♂, 29°35'00"N, 87°20'02"W, November 1977, 106 m, coarse sand; 1♀, 29°42'59"N, 86°15'30"W, 6 June 1974, 67 m, medium sand; 1♂, 26°24'57"N, 84°15'00"W, 9 August 1977; 2♂♂, 2♀♀ (1 ovig), 26°24'57"N, 84°15'00"W, November 1977, 168 m, silty very fine sand; 1♀ (ovig), 25°40'00"N, 84°15'00"W, November 1977, 180 m, silty very fine sand; 1♀, 25°40'00"N, 83°50'00"W, 9 August 1977, 120 m, medium fine sand; 1♂, 26°16'45"N, 83°47'45"W, 22 July 1981, 89 m, coarse sand; 1♂, 26°16'45"N, 83°47'45"W, 30 April 1981, 90 m, fine sand; 1♂, 26°16'00"N, 84°15'00"W, 25 July 1981, 180 m, medium sand; 2♀♀ (1 ovig), 25°15'00"N, 84°15'00"W, 2 August 1981, 180 m, medium sand.

Description of male — Male very similar to female, differing in following aspects; smaller than female with branchial tubercles fewer in number; accessory spinules of lateral spines of carapace well developed, but not as numerous as in female; carapace as long as broad; abdominal segments 4-7 fused with medial and lateral elevations evident on somites 1-3; gonopod as illustrated (figure 1).

Chelipeds of female heavy, spinose; merus stout, inflated with few anterior spinules at midlength and posterior at base; palm inflated with few large spines, fingers narrow with large spines on dorsal surface of fixed finger; movable finger with spines on outer face with small tubercles proximally on dactyl.

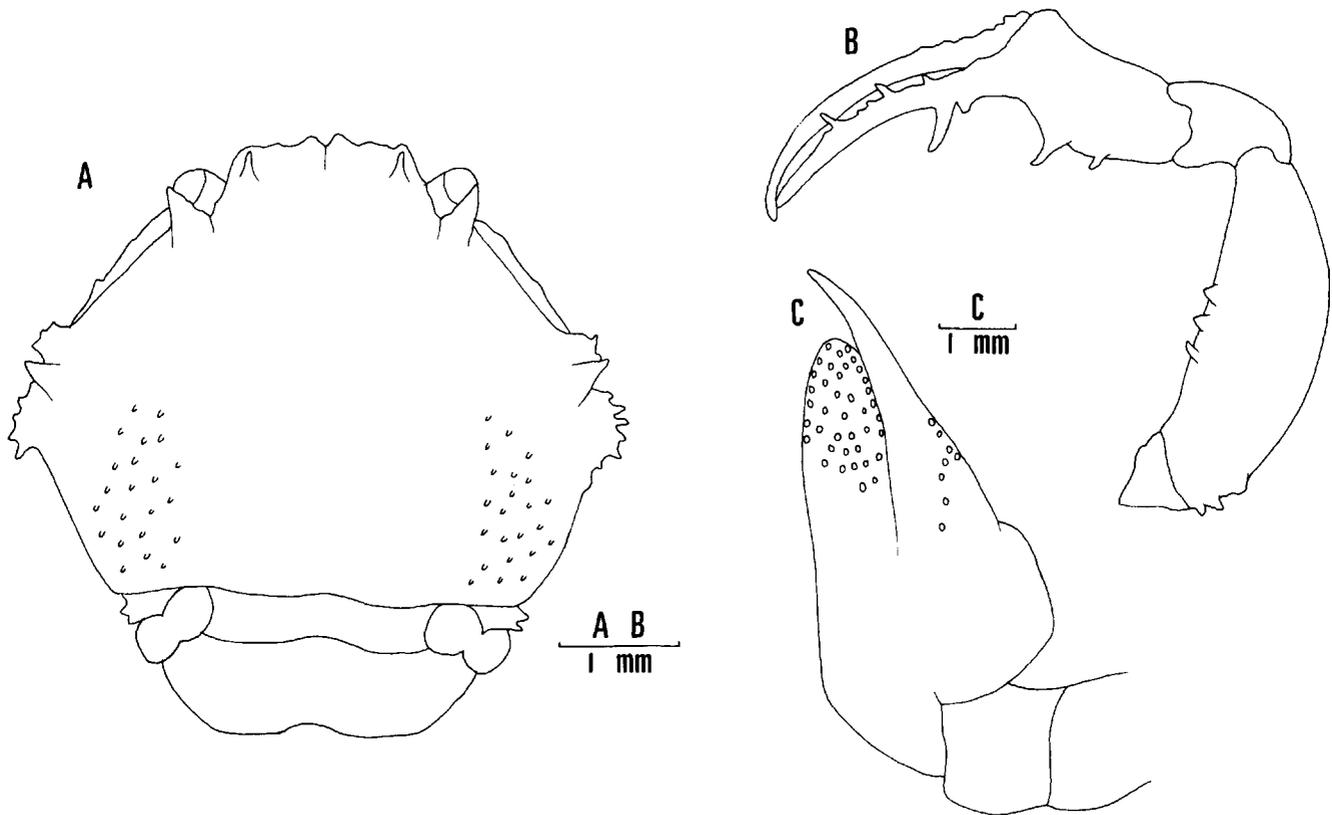


Figure 1. *Clythrocerus stimpsoni*. A. Female, legs removed; B. Male, cheliped outer face; C. Male, gonopod one.

Remarks — *Clythrocerus stimpsoni* was described by Rathbun (1937) from a single specimen collected off the west coast of Florida in 1872 by W. Stimpson. This report is the first subsequent record of this taxon and has made the description of the male possible with notes on variation and ecology. The material on which this study is based agrees closely with the original description of Rathbun (1937:121) with the exception of the following minor points: (1) Rathbun describes and figures a medial rostral tooth on the type specimen. Our specimens possess 2 rostral teeth, closely approximated medially; (2) our material has only branchial regions with numerous large tubercles, whereas Rathbun reports "surface finely granulate, a few larger tubercles in advance" (1937:121); (3) the large teeth of the lateral margins with large, well-defined spines, not "minute spinules"; (4) pterygostomial ridge of largest specimens armed with 12 to 15 spinules; and (5) a large superior lateral tooth. The variance exhibited in these characters is relatively minor and within the range for natural variation when considering the size differences and sexual maturity of available material.

No ecological data was presented with the description. The range for this species may now be expanded to cover the entire west coast of Florida, from south of Mobile Bay to northwest of the Dry Tortugas in 67 to 180 m of water. Collection data indicate substrata of coarse sand to silty,

very fine sand composed primarily of carbonates.

Clythrocerus granulatus (Rathbun, 1898)
(Figure 2)

Cyclodorippe granulata Rathbun, 1898:293, pl. 9, fig. 1.

Clythrocerus granulatus: Rathbun, 1937:119, text-fig. 31, pl. 33, figs. 5–8; Williams, McCloskey and Gray, 1968:45, fig. 3.

Diagnosis — Single dorsolateral tooth at widest part of carapace; carapace and appendages densely granulate, margins of carapace spinuliferous in posterior 1/2; interorbital region with teeth; rostral and orbital region depressed with remainder of carapace little inflated; pterygostomial region with deep furrow. Carapace slightly broader than long.

Material examined — 1 ♀ (ovig), 28°49'59"N, 85°37'02"W, November 1977, 175 m, clayey, sandy silt; 1 ♀ (ovig), 27°57'00"N, 84°47'59"W, September 1977, 189 m, silty, very fine sand; 1 ♀ (ovig), 26°45'00"N, 84°15'00"W, 17 July 1981, 170 m, medium sand; 2 ♂♂, 2 juveniles, 25°45'00"N, 83°59'00"W, 27 July 1981, 170 m, medium sand.

Remarks — Our records constitute the first reported occurrence of *C. granulatus* from the Gulf of Mexico. *Clythrocerus granulatus* is a distinctive little crab ranging from North Carolina, Florida and the type-locality of Trinidad

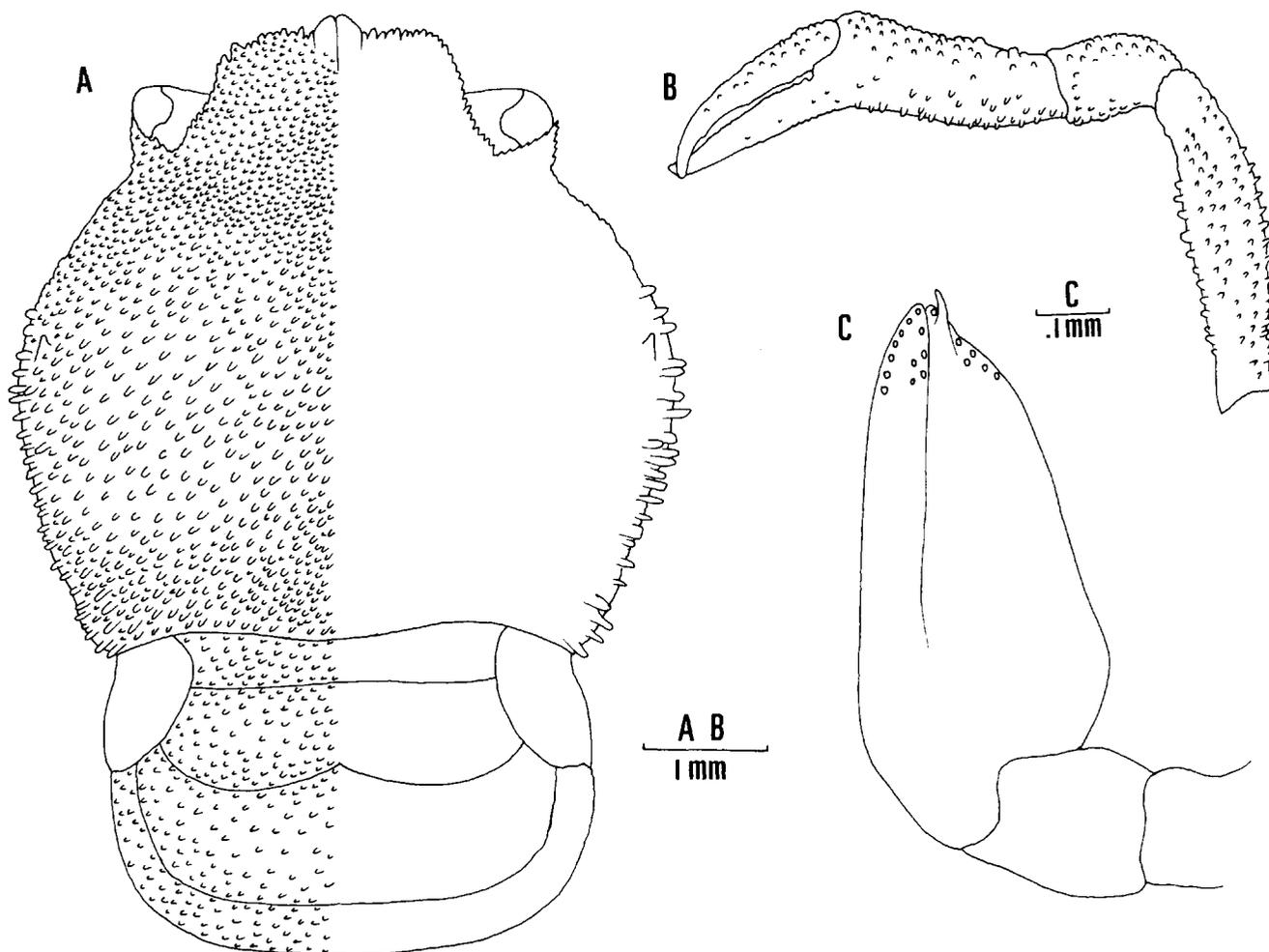


Figure 2. *Clythrocerus granulatus*. A. Female, legs removed; B. Male, cheliped outer face; C. Male, gonopod one.

to Venezuela, in waters as deep as 567 m. In the Gulf of Mexico this species has been collected along the west coast of Florida as shallow as 29 m. Material from the eastern Gulf agrees well with descriptions of Rathbun (1937). Our specimens were collected on substrata of clayey, sandy silt and medium coarse sand of carbonate origin.

Clythrocerus perpusillus Rathbun, 1901

Figure 3

Clythrocerus perpusillus Rathbun, 1901:90, fig. 14;
Rathbun, 1937:111, text-fig. 28, pl. 33, figs. 3 and 4;
Williams, McCloskey and Gray, 1968:44.

Diagnosis — Carapace flat, very finely granulate, slightly broader than long; a single tooth at widest part of carapace on margin, margins sometimes pubescent; a slight indentation in margin of carapace in front of lateral teeth.

Material examined — 3 ♂♂, 10 ♀♀, 28°38'00"N, 97°20'00"W, 90 m, 27 May 1979, coarse sand; 1 ♂,

27°37.2'00"N, 83°53.5'00"W, 50 m, 9 August 1977, coarse sand; 1 ♂, 26°24'56.8"N, 84°15'00"W, 168 m, 9 August 1977, silty fine sand; 1 ♂, 28°49'59.1"N, 85°37'01.9"W, 175 m, August 1977, clayey, sandy silt; 1 ♂, 29°42'59.9"N, 85°15'28.6"W, 67 m, February 1977, coarse sand; 1 ♂, 27°56'29.5"N, 83°52'59.5"W, 43 m, February 1977, coarse sand.

Remarks — This material represents the first reported occurrence of *C. perpusillus* in the Gulf of Mexico where it was the most commonly occurring species of *Clythrocerus* collected in our study. Specimens were examined from south Florida to the DeSoto Canyon in the northeastern Gulf. In the western Atlantic this species has been reported from the type-locality of Puerto Rico, Barbados, and North Carolina; in depths of 27–175 m. Our material occurred in depths of 43 to 175 m on substrata composed of clayey silt to coarse sand. All specimens from the Gulf of Mexico fit the description of Rathbun (1937) except for lack of lateral marginal pubescence on our specimens.

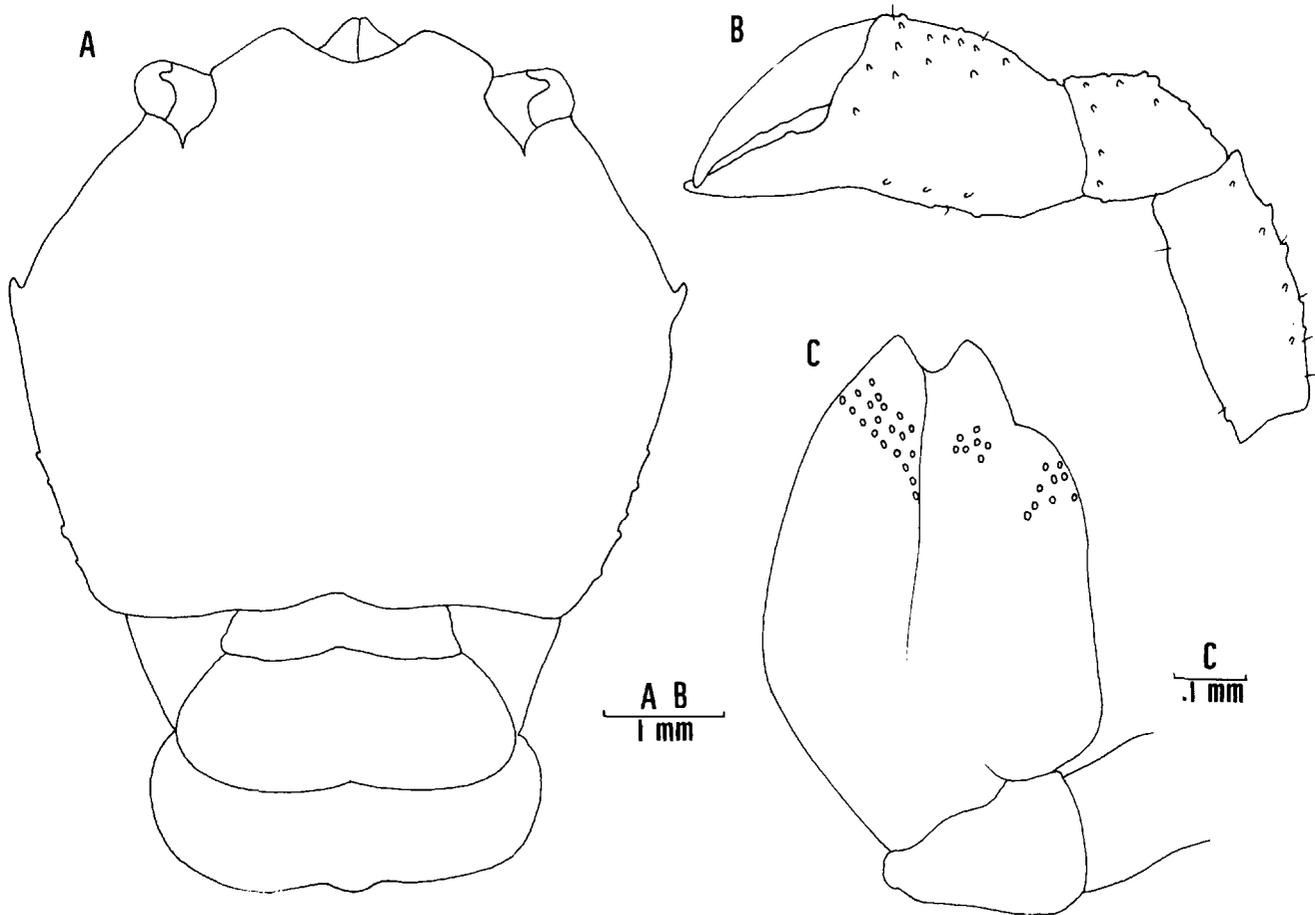


Figure 3. *Clythrocerus perpusillus*. A. Female, legs removed; B. Male, cheliped outer face; C. Male, gonopod one.

Clythrocerus nitidus (A. Milne-Edwards, 1880)

Figure 4

Cyclodorippe nitida A. Milne-Edwards, 1880:24.

Clythrocerus nitidus: A. Milne-Edwards and Bouvier, 1902:90, pl. 18; Rathbun, 1937:109, text-figs. 26, 27, pl. 33, figs. 1, 2; Wass, 1955:170; Powers, 1978:26.

Diagnosis — Carapace slightly oval from side to side, carapace smooth, single supramarginal lateral tooth, no rostral teeth, branchial sutures distinct.

Material examined — USNM 66843, 16 ♂♂, 18 ♀♀ (11 ovig), 16 June 1893, off Sand Key, Florida, 219 m.

Remarks — No specimens of *Clythrocerus nitidus* were collected during this study although previous records include South Carolina, the type-localities of the Florida Keys and Grenada and northwest Florida in depths of 12–479 m. Wass (1955:170) reported this species as “known or expected to occur” from an area southwest of Cape San Blas. That report was based on Rathbun’s (1937) examination of

an ALBATROSS specimen collected 7 February 1885 (USNM 19878). No sediment data was given for that specimen but others are reported from rocky bottoms, coral, sand, and soft coral ooze. Material figured for this report was collected from the southeast Atlantic coast of Florida.

Discussion — Rathbun (1937:109) reported seven members of the genus *Clythrocerus* from the east and west coasts of middle America. This genus is a group of comparatively small crabs (often <5 mm) which may be confused with the closely related genus *Cyclodorippe* A. Milne-Edwards, 1880. This latter genus is represented by two nominal species in the western Atlantic and is separated from *Clythrocerus* by elongate antennules and antennae with a narrow peduncle. The broad range of variation in selected morphological features (i.e. gonopods, carapace spination) within the genus *Clythrocerus* may reflect a polyphyletic origin of the group. The establishment of new generic or subgeneric levels must accompany a review of the group as a whole and is beyond the scope of this contribution.

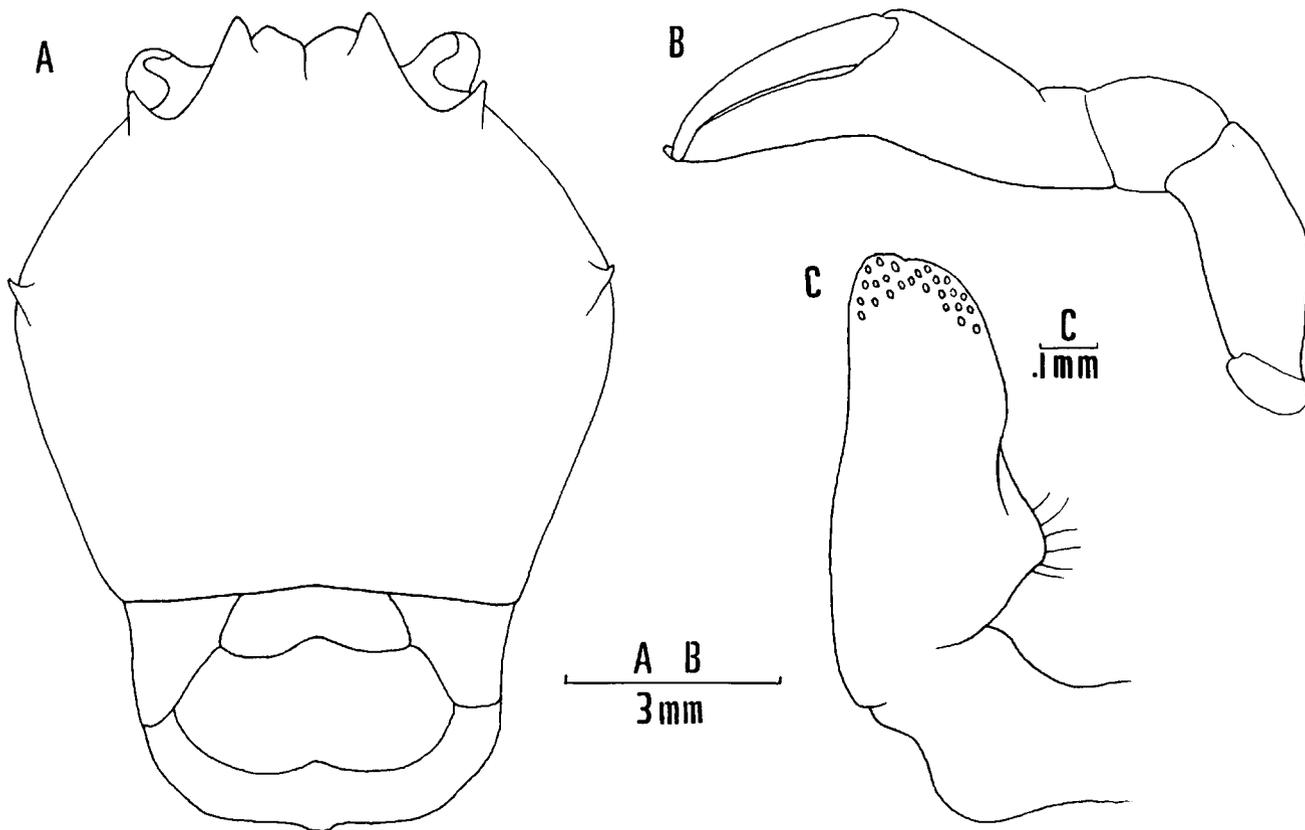


Figure 4. *Clythrocerus nitidus*. A. Female, legs removed; B. Female, cheliped outer face; C. Male, gonopod one.

PRELIMINARY KEY TO THE GENUS *CLYTHROCERUS* IN THE WESTERN ATLANTIC

1. Lateral margins of carapace unarmed except for single tooth at widest part 2
 Lateral margins of carapace with tooth at widest part above margins and with spinules or additional teeth 3
2. Carapace smooth, shiny, convex from side to side; pseudorostrum not developed forward; interocular teeth acute
Clythrocerus nitidus
 Carapace finely granulate, flat; pseudorostrum developed beyond frontal teeth; interocular teeth blunt
Clythrocerus perpusillus
3. Surface of carapace densely covered by coarse granules, single large lateral tooth with most accessory spinules in posterior half of margins of carapace *Clythrocerus granulatus*
 Surface of carapace finely granulate, 3 lateral teeth with accessory spinules on the 2 marginals.
Clythrocerus stimpsoni

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