

**A new species of freshwater crab of the genus *Potamocarcinus*
H. Milne Edwards, 1853 (Crustacea: Decapoda: Brachyura:
Pseudothelphusidae) from Panamá**

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Abstract.—A new species of freshwater crab from Panamá of the genus *Potamocarcinus* H. Milne Edwards, *P. lobulatus*, is described and illustrated, bringing to 11 the total number of known species in the genus. The new species is distinguished from other congeners by the morphology of the male first gonopod, especially the presence on the cephalic surface of a prominent and wide distal lobe, and a deep, transverse depression narrowing the spermatic channel.

The genus *Potamocarcinus* H. Milne Edwards, 1853 of the Tribe Potamocarcinini Ortmann, 1897, currently includes a group of ten species distributed from Mexico to northwestern Colombia (Rodríguez 1982, 1986, 1992; Prah & Ramos 1987; Rodríguez & Hobbs 1989a, 1989b). Those species are: *P. leptomelus* Rodríguez & Hobbs, 1989b, from Veracruz, Mexico; *P. hartmanni* Pretzmann, 1975 from Tabasco, Mexico; *P. chajulensis* Alvarez & Villalobos, 1998 from Chiapas, Mexico; *P. magnus* (Rathbun, 1896), from Chiapas, Mexico, Guatemala, El Salvador, and Costa Rica; *P. zilchi* (Bott, 1956) from El Salvador; *P. aspoecorum* (Pretzmann, 1968), from southern Mexico and Honduras; *P. nicaraguensis* Rathbun, 1893, from Department of Granada, Nicaragua; *P. armatus* H. Milne Edwards, 1853 from Nicaragua, and Guatemala; *P. richmondi* (Rathbun, 1893) from Nicaragua, Costa Rica and Panamá; and *P. colombiensis* Prah & Ramos, 1987 from Chocó Department, Colombia. Rodríguez (1982) provided a diagnosis of *Potamocarcinus*, and temporarily included *P. chacei* Pretzmann, 1967 in the genus. Subsequently, Rodríguez & Hobbs (1989a) re-

moved *P. chacei* from *Potamocarcinus* and even the Potamocarcinini.

While studying specimens of freshwater crabs in the collections of the National Museum of Natural History, Smithsonian Institution, Washington D.C. (USNM), a new species of *Potamocarcinus* from Panamá was discovered, bringing to 11 the total number of species in this genus. Like other species in the genus, this new species herein described and illustrated, is characterized primarily by the shape of the male first gonopod. Terminology for the male first gonopod is used according to Smalley (1964) and Rodríguez (1982). The abbreviations cb and cl indicate carapace breadth and carapace length, respectively. Color nomenclature follows Smithe (1975).

Family Pseudothelphusidae Rathbun, 1893
Tribe Potamocarcinini Ortmann, 1897
Genus *Potamocarcinus*
H. Milne Edwards, 1853
Potamocarcinus lobulatus, new species
Figs. 1, 2

Holotype.—1 male, cl 25.00 mm, cb 37.20 mm, Gamboa, Panamá, Atlantic

drainage, 6 Jun 1969, leg. L. G. Abele, USNM 1004157.

Type locality.—Gamboa, Panamá, Atlantic drainage.

Diagnosis.—First male gonopod with mesial lobe folded over field of spines. Mesial process triangular, recurved caudocephalically, with tip directed downward. Distal cephalic surface with deep transverse depression narrowing spermatic channel, and prominent, wide, distal lobe. Median cephalic, subapical process with tip recurved caudally. Proximo-lateral process button-like. Apex elongated mesolaterally. Spermatic channel narrow, slit-like.

Description of holotype.—Carapace (Fig. 1A) with cervical groove nearly straight, shallow, ending short distance before reaching lateral margin. Anterolateral margin with shallow depression behind external orbital angle; with 4 small, low tubercles between orbital angle cervical groove, and about 15 teeth beyond cervical groove diminishing in size posteriorly. Postfrontal lobes small, rounded, delimited anteriorly by shallow, transverse depression; median groove narrow, deep, with incision on upper margin of front. Surface of carapace in front of postfrontal lobes flat. Upper border of front almost straight, marked with row of tubercles in frontal view, slightly bilobed in dorsal view; lower margin sinuous in frontal view; surface of front between upper and lower borders high and slightly excavated. Upper and lower orbital margins each with row of small tubercles. Surface of carapace covered with small papillae; limits between regions weakly demarcated. Third maxilliped (Fig. 1B) with merus of endognath regularly curved, with shallow depression on distal part of external margin; exognath approximately 0.54 times length of ischium.

First pereopods heterochelous, left cheliped larger than the right. Merus with 3 longitudinal crests as follows: upper one with rows of tubercles, internal lower one with row of teeth, and external lower one with row of tubercles. Carpus with 5 tuber-

cles on internal crest, and prominent acute spine distally. Chelae (Fig. 1C) of both chelipeds with palms smooth, somewhat swollen; fingers not gaping when closed, tips crossing, surfaces with rows of minute tubercles.

Walking legs (pereopods 2–5) slender (Fig. 1A). Dactyls each with papillae and 5 longitudinal rows of large spines diminishing in size proximally. Number of spines and papillae on each dactyl arranged as follows: 1 anterolateral row and 1 anteroventral row each with 6 spines; 1 external row with 5 spines and 1 pair of proximal papillae; 1 posterolateral row with 5 spines and 1 posteroventral row with 4 spines.

First male gonopod (Fig. 2) straight, slightly expanded laterally at midpoint in caudal view; with rows of conspicuous setae on distal portion of mesial margin and scattered short setae on lateral margin. Caudal lobe (Fig. 2 E,3) rudimentary. Mesial lobe (Fig. 2 E,2) folded over field of spines. Mesial process (Fig. 2 F,1) triangular, recurved caudocephalically, with tip directed downward. Distal cephalic surface with deep transverse depression (Fig. 2 F,4) narrowing spermatic channel; distal cephalic lobe (Fig. 2 F,5) prominent, wide; median cephalic, subapical process (Fig. 2 F,6) with distal portion recurved caudally, and median incision; proximo-lateral process (Fig. 2 F,7) button-like. Apex elongated mesolaterally. Spermatic channel (Fig. 2E) narrow, slit-like.

Color.—Preserved in alcohol, the holotype is light brown (near 121B, Brussels Brown) with pale brown (Verona Brown, 223B) specks on the dorsal side of the carapace. The walking legs and chelipeds are cinnamon brown (near True cinnamon, 139) dorsally and ventrally. The ventral surface of the carapace is buffy-brown (Sayal Brown, 223C).

Etymology.—The specific name is derived from the Greek *lobos*, a rounded projection or protuberance. The name refers to the presence of a distal cephalic lobe on the cephalic surface of the male first gonopod,

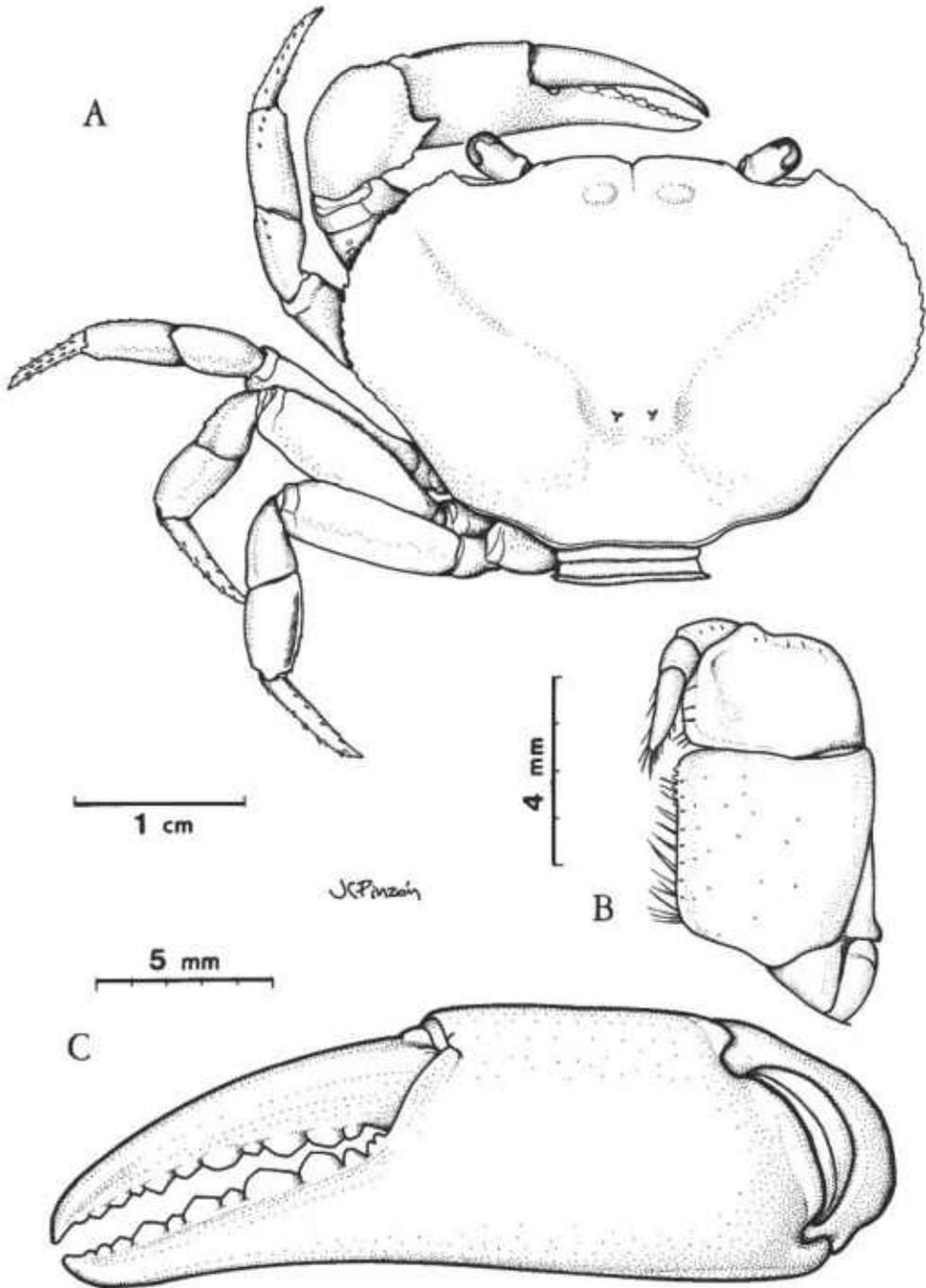


Fig. 1. *Potamocarcinus lobulatus*, new species, male holotype, USNM 1004157: A, carapace and left pereopods, dorsal view; B, left third maxilliped, external view; C, left cheliped, external view.

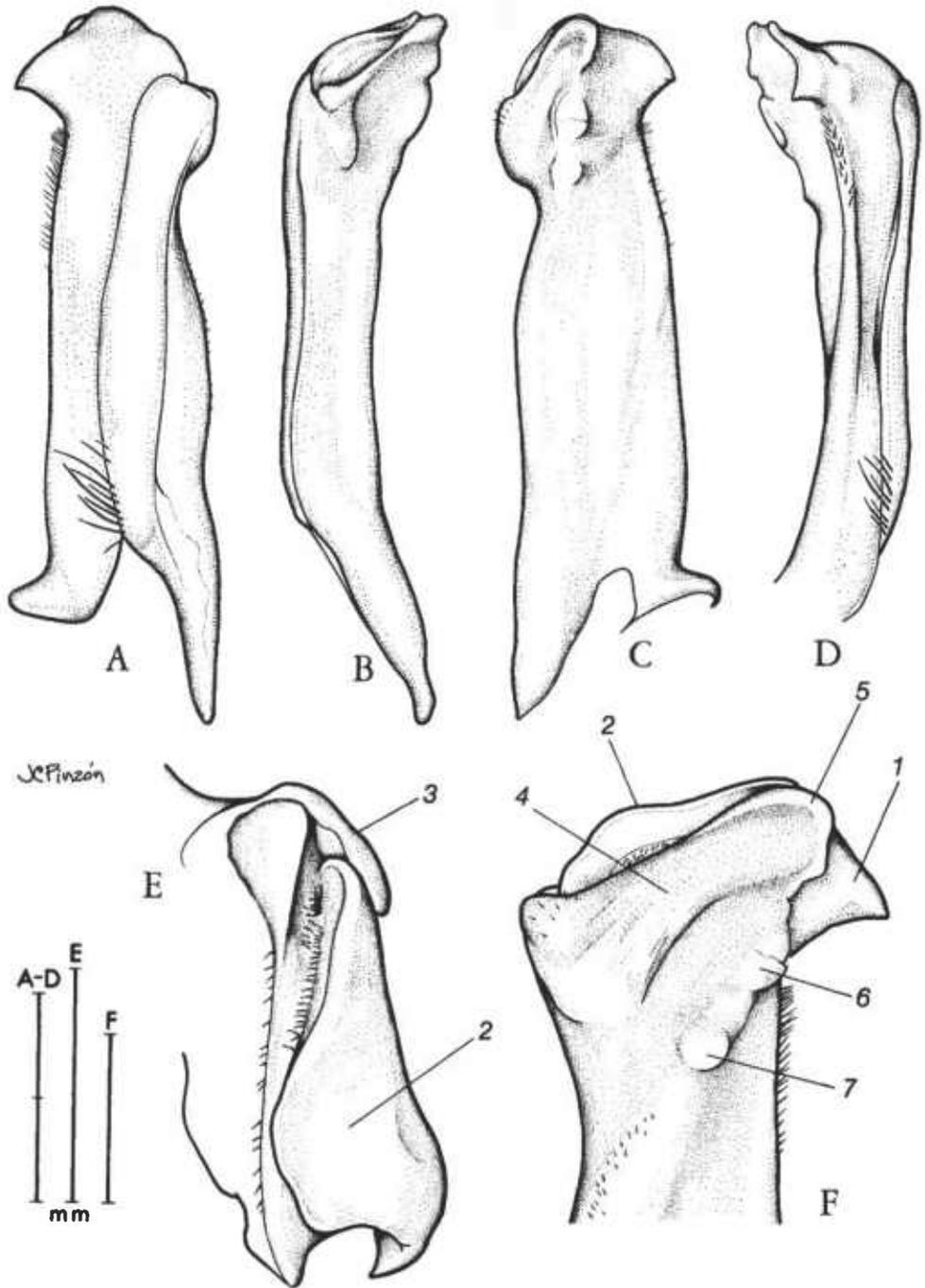


Fig. 2. *Potamocarcinus lobulatus*, new species, male holotype, USNM 1004157: A, left first gonopod, caudal view; B, same, lateral view; C, same, cephalic view; D, same, mesial view; E, same, apex, distal view; F, same, cephalo-lateral view. 1, mesial process; 2, mesial lobe; 3, caudal lobe; 4, transverse depression; 5, distal cephalic lobe; 6, median cephalic, subapical process; 7, proximo-lateral process.

a distinguishing characteristic of this new species.

Remarks.—This new species is most similar to *Potamocarcinus richmondi*. The two can be distinguished by features of the male first gonopod. The male first gonopod of *P. richmondi* has been described and illustrated by Rodríguez (1982:114, fig. 73). The mesial process is not as conspicuously recurved in the new species *P. lobulatus* as in *P. richmondi*. In *P. lobulatus* the cephalic surface has a prominent, wide, distal cephalic lobe (Fig. 2 F5); a median process (Fig. 2 F6) with a small incision at midpoint and a distal end recurved caudally; and a button-like proximo-lateral process (Fig. 2 F7). In contrast, the cephalic surface in *P. richmondi* has two sharp teeth separated by a wide gap, and a small angled proximal process. The distal cephalic surface in *P. lobulatus* has a deep transverse depression (Fig. 2 F4) that narrows the spermatic channel, whereas no depression is present in *P. richmondi*.

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Literature Cited

- Alvarez, F., & J. L. Villalobos. 1998. Six new species of fresh-water crabs (Brachyura: Pseudothelphusidae) from Chiapas, Mexico.—*Journal of Crustacean Biology* 18:187–198.
- Bott, R., 1956. Dekapoden (Crustacea) aus El Salvador. 3. Süßwasserkrabben (*Pseudothelphusa*).—*Senckenbergiana Biologica* 36(3/4):229–242.
- Milne Edwards, H. 1853. Mémoire sur la Famille des Ocypodiens.—*Annales des Sciences Naturelles, Zoologie*, 3e série 20:163–228.
- Ortmann, A. 1897. Carcinologische Studien.—*Zoologische Jahrbücher, Abtheilung für Systematik, Geographie und Biologie der Thiere* 10:258–372.
- Prahl, H. von, & G. Ramos. 1987. *Potamocarcinus colombiensis* sp. nov.: un nuevo cangrejo de agua dulce (Decapoda: Brachyura: Pseudothelphusidae) de la Serranía Costera del Baudo, Colombia.—*Revista de Biología Tropical* 35(1): 131–133.
- Pretzmann, G. 1967. Über einige südamerikanische Süßwasserkrabben (Pseudothelphusidae) (Vorläufige Mitteilung).—*Entomologisches Nachrichtenblatt, Wien* 14(2):23–26.
- . 1968. Neue Südamerikanische Süßwasserkrabben der Gattung *Pseudothelphusa*.—*Entomologisches Nachrichtenblatt, Wien* 15(1):1–15.
- . 1975. Die bedornten Arten der Gattung *Potamocarcinus* Milne Edwards, 1853.—*Annalen des Naturhistorischen Museum Wien* 79:615–621.
- Rathbun, M. J. 1893. Descriptions of new species of American freshwater crabs.—*Proceedings of the United States National Museum* 16(959): 649–661, pl. 73–77.
- . 1896. Descriptions of two new species of fresh-water crabs from Costa Rica.—*Proceedings of the United States National Museum* 18: 377–379, pls. 29, 30.
- Rodríguez, G. 1982. Les crabes d'eau douce d'Amérique. Famille des Pseudothelphusidae.—*Faune Tropicale* 22:1–223.
- . 1986. Centers of radiation of freshwater crabs in the Neotropics. Pp. 51–67 in R. H. Gore & K. L. Heck, eds., *Crustacean biogeography. Crustacean Issues 4*. A. A. Balkema, Rotterdam, 292 pp.
- . 1992. The freshwater crabs of America, Family Trichodactylidae and supplement to the family Pseudothelphusidae.—*Faune Tropicale* 31: 1–189.
- , & H. H. Hobbs, Jr. 1989a. A new cavernicolous crab, *Zilchia falcata*, from Guatemala, with notes on the genera of the Pomacarinini (Crustacea: Decapoda: Brachyura: Pseudothelphusidae).—*Bulletin du Muséum national d'Histoire naturelle, Paris*, 4e série, 11, section A, 1:183–192.
- . 1989b. Freshwater crabs associated with caves in southern Mexico and Belize, with descriptions of three new species (Crustacea: Decapoda).—*Proceedings of the Biological Society of Washington* 102(2):394–400.
- Smalley, A. 1964. A terminology for the gonopods of the American river crabs.—*Systematic Zoology* 13:28–31.
- Smithe, F. B. 1975. *Naturalist's color guide. The American Museum of Natural History, New York. Part 1: unnumbered pages.*