

***Pseudothelphusa ayutlaensis*, a new species of freshwater crab
(Crustacea: Brachyura: Pseudothelphusidae) from Mexico**

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Abstract.—*Pseudothelphusa ayutlaensis*, new species, is described from the State of Guerrero, Mexico. The new species is placed in the genus *Pseudothelphusa* based on the presence of a first gonopod with the characteristic broadly rounded mesial process and a well developed subtriangular lateral process. The unique orientation of the mesial and lateral processes of the first gonopod distinguishes *P. ayutlaensis* from other species in the genus.

The genus *Pseudothelphusa* de Saussure, 1857, is one of the most diverse within the family Pseudothelphusidae Rathbun, 1893, with 22 species (Alvarez & Villalobos 1996, Alvarez et al. 1996), distributed exclusively in Mexico, and one, *P. puntarenas* Hobbs, 1991, from Costa Rica. The genus is distributed along the Pacific slope from Sonora to Guerrero, throughout central Mexico, and along the Gulf of Mexico slope in Veracruz (Rodríguez 1982, Alvarez 1989). Although species of *Pseudothelphusa* exhibit a great variety of gonopod morphologies, all exhibit a broadly rounded mesial process and subtriangular lateral lobe (Rodríguez 1982). In the majority of species of *Pseudothelphusa* the mesial process of the first gonopod is oriented proximally, descending from the apex towards the base of the gonopod and is reniform in shape, while the lateral process projects laterally. In *P. ayutlaensis*, new species, the mesial process is oriented distally, extending upwards from the apex; and the lateral process is projected cephalically. All the specimens are deposited in the Colección Nacional de Crustáceos, Instituto de Biología, Universidad Nacional Autónoma de México (CNCR). Carapace width and carapace length are abbreviated as cw and cl, and expressed in millimeters.

Pseudothelphusa de Saussure, 1857
Pseudothelphusa ayutlaensis, new species
Figs. 1, 2

Holotype.—♂, cw 24.3 mm, cl 16.1 mm; junction of Pinela and Tonala rivers, Municipio de Ayutla de los Libres, Guerrero (16°52'N, 99°12'W), 18 Dec 1987, coll. J. P. Gallo; CNCR 8715.

Paratypes.—2 ♂, cw 23.0, 22.0 mm, cl 15.0, 14.4 mm; same locality, date, and collector as holotype; CNCR 8715. 2 ♀, cw 36.3, 28.2 mm, cl 23.5, 18.6 mm; same locality, date, and collector as holotype; CNCR 8715.

Description.—Dorsal surface of carapace covered with small papillae (Fig. 1a). Inferior frontal border continuous, thick, slightly sinuous in dorsal and frontal views, extending laterally to form superior margin of orbits (Fig. 1b). Superior frontal border formed by the folding of the carapace with an irregular row of blunt tubercles, divided by median groove, inclined towards the center (Fig. 1b). Postfrontal lobes present as two distinct elevations. Median groove deep, extending posteriorly beyond postfrontal lobes. Cervical groove wide and deep, curved slightly posteriorly, reaching anterolateral margin (Fig. 1a). Cardiac region of carapace weakly marked. Anterolateral margin between orbit and cervical

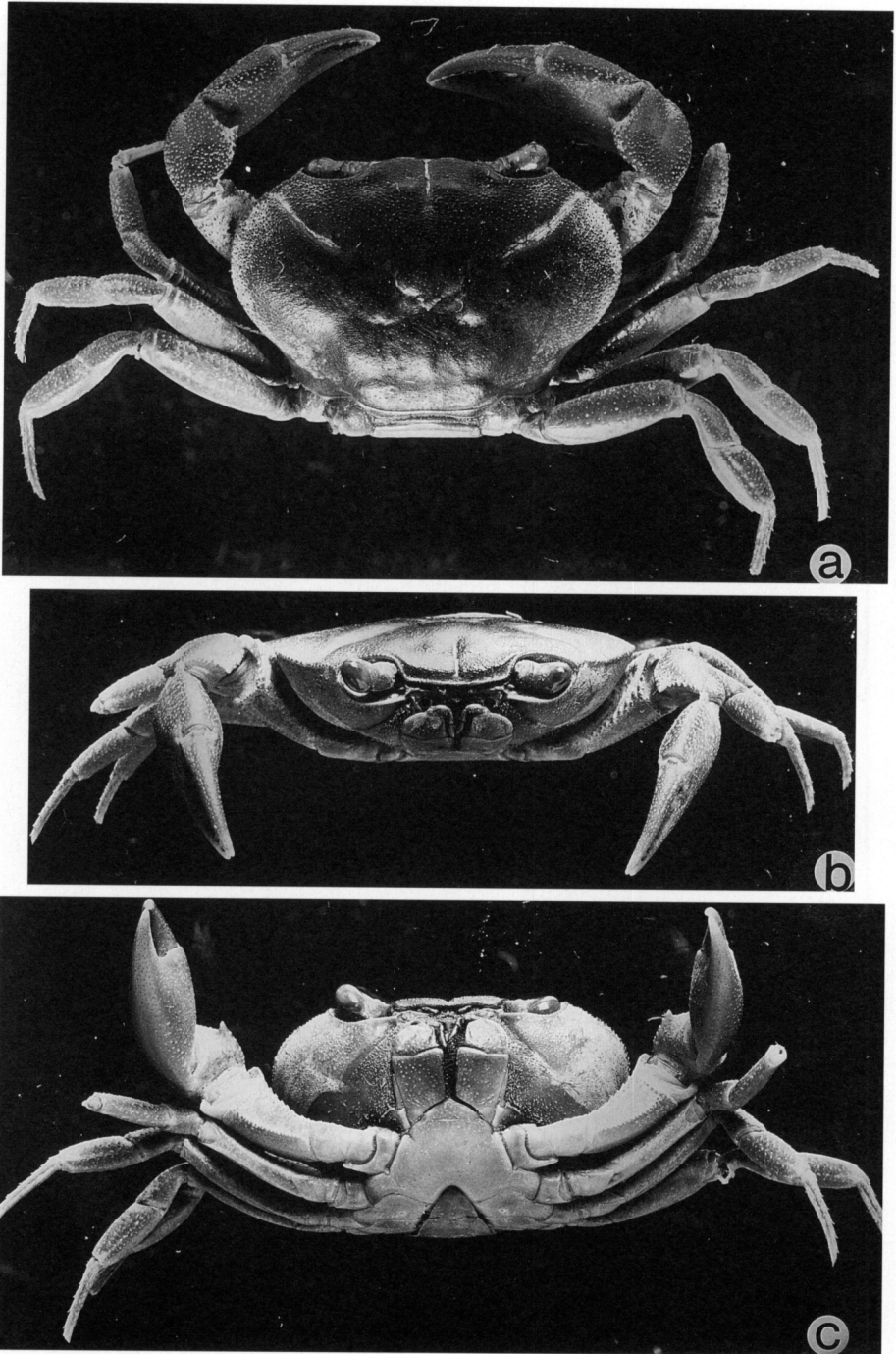


Fig. 1. *Pseudothelphusa ayutlaensis*, new species, male holotype: a, dorsal view; b, frontal view; c, ventral view. Carapace width 24.3 mm, length 16.1 mm.

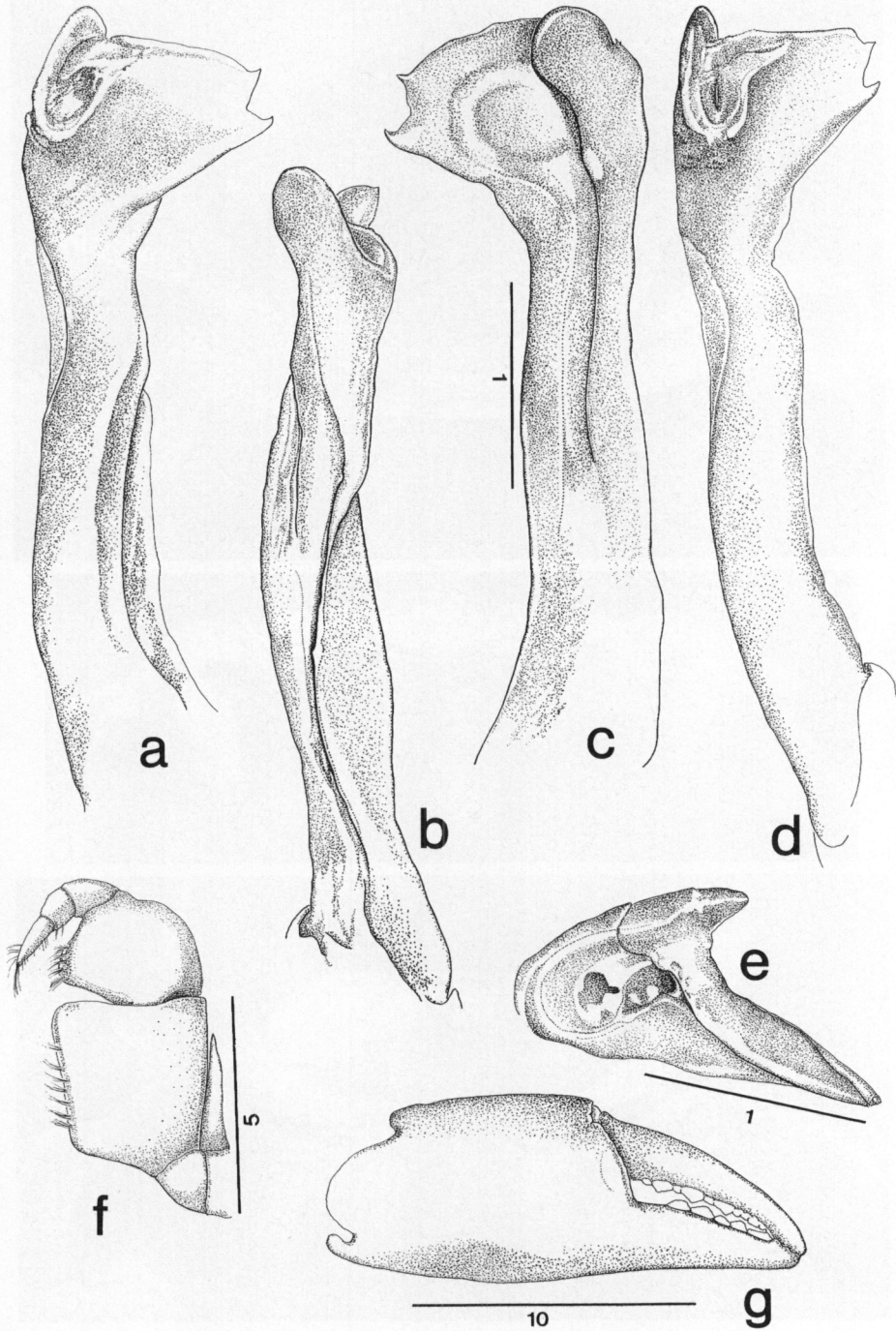


Fig. 2. *Pseudothelphusa ayultaensis*, new species, a-e left first gonopod: a, lateral view; b, mesial view; c, cephalic view; d, caudal view; e, apical view; f, left third maxilliped; g, right chela. Scale bars: a-e = 1 mm, f = 5 mm, g = 10 mm.

groove with irregularly placed denticles, posterior to cervical groove with uniform denticles. Ratio exopod/ischium of third maxilliped 0.73. Ischium of third maxilliped trapezoidal in shape; merus narrower than ischium (Fig. 1c). Right chela the largest; fingers not gaping, teeth worn out in holotype. Both chelae with blunt denticle at base of movable finger.

First gonopod slender, with twisted sperm channel (Fig. 2a). In caudal view (Fig. 2d) with constriction at two thirds its length below cavity of apex. Marginal suture sinuous (Fig. 2b). Marginal process absent from apex of gonopod, except for one sharp tooth at base of mesial process (Fig. 2c). Mesial process rounded, oriented distally (Fig. 2b). Lateral process extending in laterocephalic direction, wide proximally, tapering distally, ending in two sharp tips (Fig. 2d). Cavity of apex oval shaped (Fig. 2e). Crest of cavity of apex low caudally, higher cephalically.

Etymology.—The specific name “ayutlaensis” makes reference to the county, Ayutla de Los Libres, in the State of Guerrero where the species is distributed.

Remarks.—The new species is placed in the genus *Pseudothelphusa* based on the torsion of the sperm channel of the first gonopod, and the presence of a typically rounded mesial process. *Pseudothelphusa ayutlaensis* is closest to those species of *Pseudothelphusa* distributed in western Mexico that lack a marginal process in the apical region of the gonopod (e.g., *P. rechingeri* Pretzmann, 1965; *P. sonorae* Rodríguez & Smalley, 1969; and *P. galloi* Alvarez & Villalobos, 1990) and to those species in which the marginal process is reduced to a series of small teeth (e.g., *P. jouyi* Rathbun, 1893; *P. lophophallus* Rodríguez & Smalley, 1969; and *P. nayaritae* Alvarez & Villalobos, 1994). The new species also resembles *P. galloi* in the shape of the lateral process of the first gonopod. Although this process is oriented differently in both species (cephalically in *P. ayutlaensis* and laterally in *P. galloi*), in both spe-

cies it is roughly triangular and ends in two sharp tips. In southern Guerrero *Pseudothelphusa ayutlaensis* and *P. galloi* share the same drainage system, 10 km away from each other.

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Literature Cited

- Alvarez, F. 1989. *Smalleyus tricristatus*, new genus, new species, and *Pseudothelphusa parabelliana*, new species (Brachyura: Pseudothelphusidae) from Los Tuxtlas, Veracruz, Mexico.—Proceedings of the Biological Society of Washington 102:45–49.
- , & J. L. Villalobos. 1990. *Pseudothelphusa galloi*, a new species of freshwater crab (Crustacea: Brachyura: Pseudothelphusidae) from southwestern Mexico.—Proceedings of the Biological Society of Washington 103: 103–105.
- , & ———. 1994. Two new species and one new combination of freshwater crabs from Mexico (Crustacea: Brachyura: Pseudothelphusidae).—Proceedings of the Biological Society of Washington 107:729–737.
- , & ———. 1996. Especie nueva de cangrejo de agua dulce del Género *Pseudothelphusa* (Brachyura: Pseudothelphusidae) de Guerrero, México.—Anales del Instituto de Biología, Universidad Nacional Autónoma de México, Serie Zoológica 67(2):297–302.
- , ———, & E. Lira. 1996. Decapoda. Pp. 103–129 in J. Llorente, A. N. García-Aldrete, & E. González, eds., Biodiversidad, Taxonomía y Biogeografía de Artrópodos de México: Hacia una Síntesis de su Conocimiento. Instituto de Biología, Universidad Nacional Autónoma de México-CONABIO, 660 pp.
- Hobbs, H. H., III. 1991. A new pseudothelphusid crab from a cave in southern Costa Rica (Decapoda: Brachyura).—Proceedings of the Biological Society of Washington 104:295–298.
- Pretzmann, G. 1965. Vorläufiger Bericht über die Familie Pseudothelphusidae.—Anzeiger der Mathematisch-Naturwissenschaftlichen Klasse der Österreichische Akademie der Wissenschaften 179:14–24.
- Rathbun, M. J. 1893. Descriptions of new species of American freshwater crabs.—Proceedings of the United States National Museum 16:649–661.

- Rodríguez, G. 1982. Les crabes d'eau douce d'Amérique. Famille des Pseudothelphusidae.—*Faune Tropicale* 22:1–223.
- , & A. E. Smalley. 1969. Los cangrejos de agua dulce de México de la familia Pseudothelphusidae (Crustacea: Brachyura).—*Anales del Instituto de Biología, Universidad Nacional Autónoma de México* 40:69–112.
- Saussure de, H. 1857. Diagnoses de quelques Crustacés nouveaux des Antilles et du Mexique.—*Revue et Magazin de Zoologie Pure et Appliquée* 9:304–306.