

A NEW SPECIES OF FRESH WATER CRAB FROM NORTHWESTERN MEXICO  
(*PSEUDOTHELPHUSA*, POTAMONIDAE)

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*Pseudothelphusa sonorensis* sp. n. (Fig. 1)

DESCRIPTION. — Carapace broad, smooth, sprinkled with minute punctae, slightly more marked in the lateral areas. Sides of carapace round in outline,

slightly recurved behind orbits. Cervical grooves broad and shallow, almost reaching the antero-lateral border, straight to more or less convex posteriorly. Faint anterior median groove extending onto front. Posterior, intestinal angle of carapace obtuse, marked, not rounded, in larger specimens. Antero-lateral and lateral edges of carapace bearing small denticles, just visible in dorsal view.

Front curved gradually forward, slightly flattened along inferior third, bilobed in dorsal view and more or less straight or bilobed in frontal view. Front reaching about two-thirds the depth of orbits. Faint transverse groove crossing anterior medial groove opposite upper orbital margin, extending about half the frontal width. No superior margin to front. Orbits subquadrate in outline. Edge of orbits and

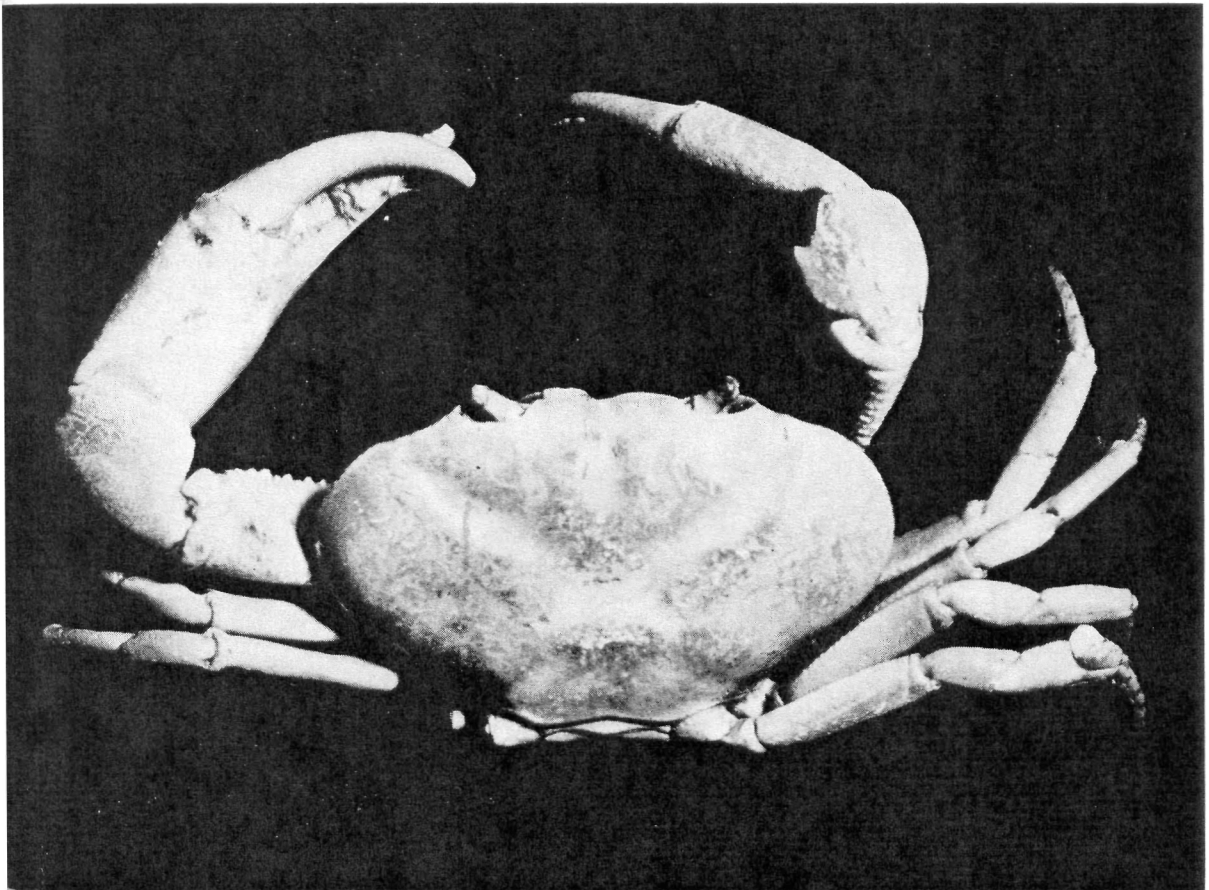


Figure 1.—*Pseudothelphusa sonorensis*. Dale. Dorsal view of type specimen.

inferior margin of front slightly rimmed, the rim bearing minute denticles.

Merus subtriangular in outline, slightly broader than long. Outer edge of merus arcuate, forming a broad angle with the outer edge of the ischium, which curves in at the attachment. The palp of the endognath extends the full interior length of the merus. Exognath extends about two-thirds the length of the ischium.

Jugal area and epistome pilose, the hairs dark brown to white. Beneath them the upper jugal area bears small, rounded tubercles.

Abdomen broad, subtriangular, widest at the third and fourth segments. The sixth abdominal segment longer than the seventh, which is rounded at the tip. Fifth segment with concave margins.

Chelipeds unequal and minutely punctate in both sexes, either enlarged in the male and probably also in the female. The lower margin slightly sinuous or convex except under the articulation of the dactylus where it is concave. The upper margin sinuous or convex. No tubercle on propodus. The fingers of the larger cheliped show a broad gape, with the tip of the dactylus resting inferior to that of the propodus. Teeth large, white. Merus of chelipeds with a row of short spines on the inner margin. Outer margin bearing rounded tubercles along its complete length. Lower margin with a line of small tubercles along its complete length. Outer surface rounded, smooth. Carpus with a stout spine on the inner edge followed by two or three small denticles. A short, very faint groove on the upper surface of the carpus.

Ambulatory legs slender but not compressed. Dactylus of legs bearing rows of short spines, three rows above, two below. Merus with faint spines along the upper edge.

Color of live and preserved specimens light brown, legs light tan, with pink tints on mouthparts, eye-stalks and dactyli. Chelipeds light tan with brown shadowing on upper surfaces.

Type: male, length 20 mm; width 33 mm; inferior width of front 9 mm; external width of orbits 19 mm. USNM 000000. Collected August 7, 1959, by M. W. Larson and S. Thomas.

Paratypes: male, length 25 mm; width 43 mm; front 11 mm; orbits 22 mm. Deposited in the Department of Invertebrate Zoology, California Academy of Science (no. 257). Collected August 7, 1959, by M. W. Larson and S. Thomas. Two females, lengths 13 and 25 mm; widths 20 and 44 mm; fronts 12 and 11 mm; orbits 6 and 24 mm, respectively. The smaller, immature specimen, deposited in the Department of Invertebrate Zoology, California Academy of Science (no. 258), was collected in June 1958 by M. W. Larson; the larger, without abdomen or right cheliped, USNM 000000, August 6, 1958, by Larson and H. M. Goldson.

Type locality: The type locality is an abandoned, horizontal mine shaft between Minas Nuevas and Aduana, Sonora, Mexico, in about 27°03' N, 109°00' W. The shaft, several hundred feet in length, has a concave floor which holds 6 to 12 inches of water the year round. Several species of bats, the leopard frog, and the Sonoran mud turtle have also been collected from the shaft. An additional male specimen has since been taken by Merrit S. Keasey near a small stream 50 miles north of Mazatlan, Sinaloa, on September 12, 1965.

DISCUSSION. — *Pseudothelphusa sonorensis* appears to be most closely related to the species group which includes *P. jouyi* Rathbun 1893, *P. terrestris* Rathbun 1893 and *P. americana* Saussure 1857. All of these species occur in western Mexico and all possess a convex external border to the merus of the third maxillipeds, legs which are slender but not compressed, a broad, punctate carapace and stout male abdominal appendages with two distal lobes (Fig. 2) (Rathbun, 1898). *P. sonorensis* may be distinguished from the species of this group by the combination of antero-lateral denticles on the carapace margin which are small but clearly visible, by a feeble inferior margin to the front, not prominent in dorsal view, and by its light brown or tan color.

*Pseudothelphusa jouyi* (Lake Chapala and tributaries, Jalisco; Nayarit, Mexico) and *terrestris* (Cuba, Jalisco, Mexico) are reddish-brown and olive-brown, respectively, and have very small antero-lateral denticles disappearing altogether in larger specimens. *P. jouyi*, unlike *sonorensis*, does not possess a line of tubercles along the lower, outer margin of the merus of the chelipeds, having only a few granules there. *P. americana* (Cuba; Haiti; Guanajuato, Mexico) is dark olive-brown in color and has a stout inferior frontal margin, convex when viewed from the front.

In mature *P. sonorensis* the average ratio of carapace width to length is 1.7, width to front 3.9, and width to orbits 1.8. In *P. terrestris* the ratio of width



Figure 2.—Male abdominal appendage, *P. sonorensis*, 4X. a. Inner view of right appendage. b. Outer (lateral) view of same. c. Ventral view of left appendage.

to length is also 1.7 (Rathbun, 1893). In *P. jowyi* these ratios are 1.65, 4.25, and 1.9, respectively (Rathbun, 1905).

*Pseudothelphusa sonorensis* appears to be the northernmost representative of the Potamonidae in the Americas. Tepic, Nayarit, the most northerly of previous records for the family (Rathbun, 1905), is more than 400 miles south of the type locality.

SUMMARY.— A new species of fresh water crab from northwestern Mexico (*Pseudothelphusa*, Potamonidae). *Pseudothelphusa sonorensis* sp. n. has been collected near Mazatlan, Sinaloa, and from an abandoned mine shaft between Minas Nuevas and Aduana, Sonora, Mexico, in about 27°03' N, 109° 00' W. The locality establishes a new northern record in the Americas for the family.

#### LITERATURE CITED

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