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A REDESCRIPTION OF *PROCAMBARUS RUTHVENI* (PEARSE)  
FROM LA LAJA CREEK AT CUATOTOLAPAM, VERACRUZ,  
MEXICO (DECAPODA, ASTACIDAE)BY HORTON H. HOBBS, JR.<sup>1</sup>

ALTHOUGH the original description of *Procambarus ruthveni* (Pearse, 1911) is admirable in many respects, recent investigations by Alejandro Villalobos have disclosed the presence in Veracruz of additional closely related forms. Accordingly, it has been necessary to re-examine critically the type specimens of this species. Because Pearse restricted his figures to those of the first pleopod of the male and the annulus ventralis and last thoracic sternite of the female, it is desirable that a more completely illustrated description of this species be made available.

I wish to thank Dr. Reeve M. Bailey of the University of Michigan Museum of Zoology<sup>2</sup> for permitting me to examine the types of this species on which the following descriptions are based.

*Procambarus ruthveni* (Pearse)

*Cambarus* (*Procambarus*) *ruthveni* Pearse, *Thirteenth Rept. Mich. Acad. Sci.*, 1911, pp. 110-11, 4 figs.

*Procambarus ruthveni* Hobbs, *Amer. Midl. Nat.*, 28 (2) (1942): 342 (by implication).

HOLOTYPE (Male), Form I.—Body subovate, compressed laterally; abdomen slightly shorter than carapace (28.8-29.9 mm.). Height and width of carapace in region of caudodorsal margin of cervical groove subequal; greatest width of carapace a little caudad of caudodorsal margin of cervical groove (14.0 mm.).

Areola almost obliterated in middle with scarcely room for a single

<sup>1</sup> University of Virginia.

<sup>2</sup> During the interval between the preparation of this paper and its publication the crustacean collections of the Museum of Zoology were presented to the U. S. National Museum and now form a part of the collections of that museum.

row of widely spaced tubercles. Cephalic section of carapace about 1.9 times as long as areola (length of areola about 35.1 per cent of entire length of carapace).

Rostrum of moderate length, excavate; sides are subparallel for a very short distance at base and converge distally to base of short acumen which is indistinctly set off from remaining part of rostrum. Acumen reaching cephalad to base of ultimate podomere of peduncle of antennule. Margins of rostrum little swollen, but distinctly elevated. Upper surface subplane, with scattered setae and prominent punctations near base. Subrostral ridges poorly developed, but evident in dorsal aspect almost to base of acumen.

Postorbital ridges moderately prominent, shallowly grooved laterad, and terminating cephalad without tubercles. Suborbital angle obtuse, almost obsolete. Branchiostegal spine moderately strong. Sides of carapace devoid of spines, but markedly granulate laterally and punctate dorsally.

Cephalic section of telson with three spines in each caudolateral corner. Epistome as figured, with margins but little elevated (ventrally). No cephalomedian spine present.

Antennules of the usual form with a strong acute spine present on ventral side of basal segment.

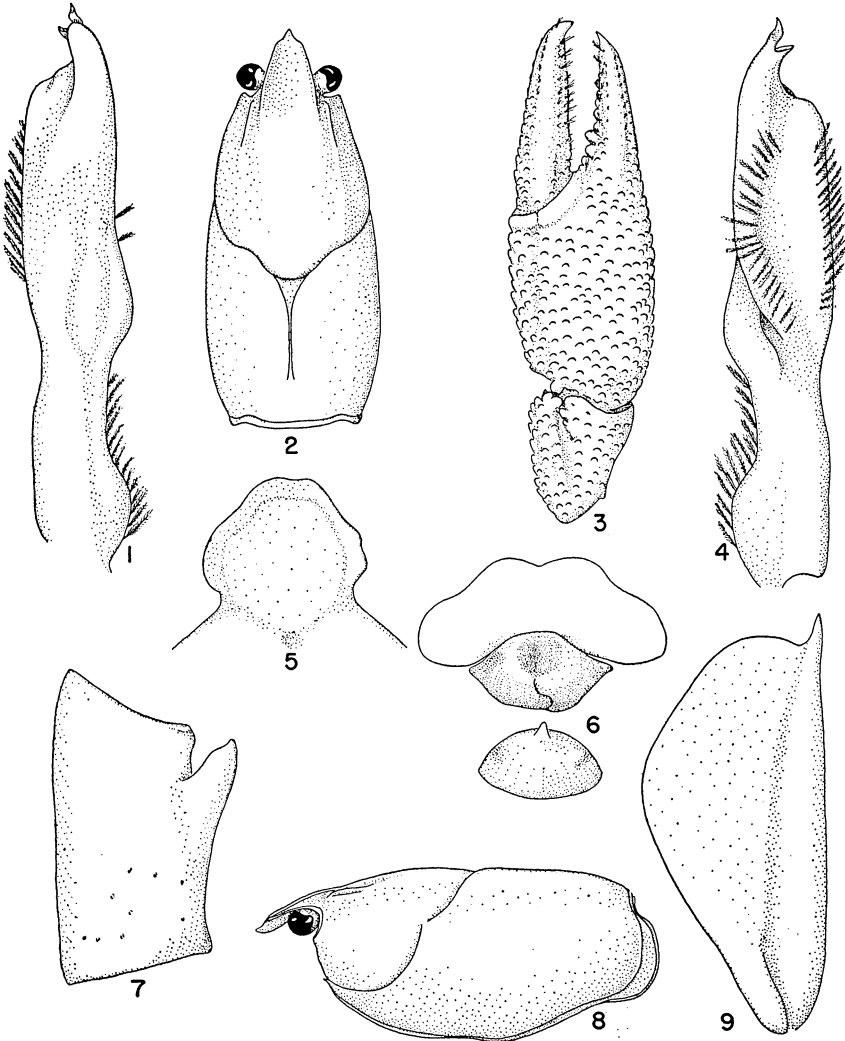
Antennae extend caudad to third abdominal segment. Antennal scale as in Figure 9.

Right chela (Fig. 3) somewhat inflated. Hand entirely tuberculate. Inner surface of palm with several irregular rows of tubercles, eight or nine in longest rows. Upper and lower surfaces of both fingers with a longitudinal rounded ridge flanked proximally by tubercles and distally by rows of setiferous punctations. Opposable surface of dactyl with a row of 12 tubercles, of which the fourth from base is largest; this row extends along the proximal three-fourths of the finger. Mesial margin of dactyl with a row of tubercles along entire length, becoming progressively more squamous distally. Opposable margin of immovable finger with a row of nine tubercles, of which the third and fourth from base are largest, along the proximal four-fifths of the finger; at a lower level an additional tubercle is present between the seventh and eighth tubercles. Minute denticles are scattered between, and distad of, the tubercles on the opposable margin of both fingers. Lateral margin of immovable finger with tubercles along proximal third, and setiferous punctations along distal two-thirds.

Carpus entirely tuberculate with tubercles on lateral half more squamous than those on mesial half; only one tubercle near disto-

mesial margin larger than others on mesial half of podomere. Sulcus on upper surface shallow.

Merus mostly without tubercles laterally and mesially; however, both surfaces bear tubercles near distal end of podomere. Upper



*Procambarus ruthveni* (Pearse)

FIG. 1. Lateral view of first pleopod of holotype. FIG. 2. Dorsal view of carapace of holotype. FIG. 3. Upper surface of distal three podomeres of cheliped of holotype. FIG. 4. Mesial view of first pleopod of holotype. FIG. 5. Epistome of holotype. FIG. 6. Annulus ventralis of allotype. FIG. 7. Ischiopodite of third pereopod of holotype. FIG. 8. Lateral view of carapace of holotype. FIG. 9. Antennal scale of holotype.

surface distinctly tuberculate with one tubercle larger than others near distal margin. Lower surface entirely tuberculate with a somewhat well-defined row of eleven tubercles along lower mesial margin.

Ischium with a single row of four tubercles on "lower" margin (i.e., corresponding to the row just mentioned on merus).

Basipodite and coxopodite without tubercles.

Hooks present on ischiopodites of third pereopods only (Fig. 7). Hooks simple.

First pleopod (Figs. 1 and 4) extending cephalad to base of third pereopod when abdomen is flexed. Tip terminating in three distinct parts with a prominent shoulder lying immediately proximad of the central projection on cephalic surface of appendage. Mesial process noncorneous, sinuate, and bulbiform immediately proximad of acute tip which is directed distad and slightly laterad, beyond the other terminal elements. Cephalic process absent. Caudal element represented by the prominent noncorneous caudal knob lying cephalolaterad of central projection. Central projection, the only corneous element, small, subtriangular, and directed cephalad and slightly distad.

ALLOTYPE (Female).—Differs from the holotype in the following respects: Rostrum extends cephalad almost to distal end of penultimate segment of basal part of antennule, and the acumen is more distinctly set off from base of rostrum although no marginal tubercles or spines are present. Areola slightly broader, and chela shorter (see measurements). For annulus ventralis see Figure 6.

MEASUREMENTS (in mm.).—	Holotype	Allotype
Carapace		
Height	13.8	12.4
Width	14.0	12.8
Length	29.9	26.4
Areola		
Length	10.5	9.3
Width	linear	0.2
Rostrum		
Length	6.7	5.8
Width	4.3	4.0
Right chela		
Length of inner margin of palm	10.1	6.4
Width of palm	9.1	6.5
Length of outer margin of hand	23.7	15.5
Length of dactyl	12.8	8.6

TYPE LOCALITY.—La Laja Creek at Cuatotolapam, Veracruz, Mexico. Pearse (1911:111) stated: "Dr. Ruthven says that the species is a burrower, and that the burrows are common along the drainage ditches on the low land at Cuatotolapam."

TYPES.—The holotype and allotype are in the collection of the Museum of Zoology at the University of Michigan (Nos. 41705 and 41704, respectively) and are the only specimens of this species that have been reported.

#### LITERATURE CITED

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