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## NEW SPECIES OF PSEUDOTHELPHUSA FROM THE VENEZUELAN ANDES (CRUSTACEA BRACHYURA, POTAMONIDAE)

by

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With 2 text-figures and 2 plates

During a collecting trip in the Venezuelan Andes three species of fresh water crabs were obtained. One of these is here described as a new species, a second as a new subspecies of an already described species.

In these descriptions the abbreviations cb. and cl. have been used for "carapace breadth" and "carapace length", respectively. The material is deposited in the Museum of Biology of the Central University of Venezuela, Caracas (MB). I am greatly indebted to Mr. Andrés Eloy Esteves for his assistance during the field work as well as for the photographs that illustrate this paper.

### ***Pseudothelphusa holthuisi* new species**

Description. — The upper border of the front is marked by an ill-defined ridge that does not possess a row of distinct tubercles. In dorsal view it is convex and in frontal view it is concave. The lower frontal ridge is marginate, almost straight and lies in front of the upper border. The carapace is convex in both directions, however, the gastric region is more elevated than the branchial and thus the outline of the carapace in frontal view is not a regular arch. The postfrontal lobes are almost absent, except for a small swelling and a shallow depression in front of these. The carapace between these shallow depressions and the front is inclined towards the front. The median groove is absent. The cervical groove is sinuous, very deep and

wide proximally, reaching almost to the anterolateral border of the carapace. There is a shallow notch just behind the orbit. Between this notch and the termination of the cervical groove there are approximately 5 small teeth. Behind the termination of the cervical groove the anterolateral border is

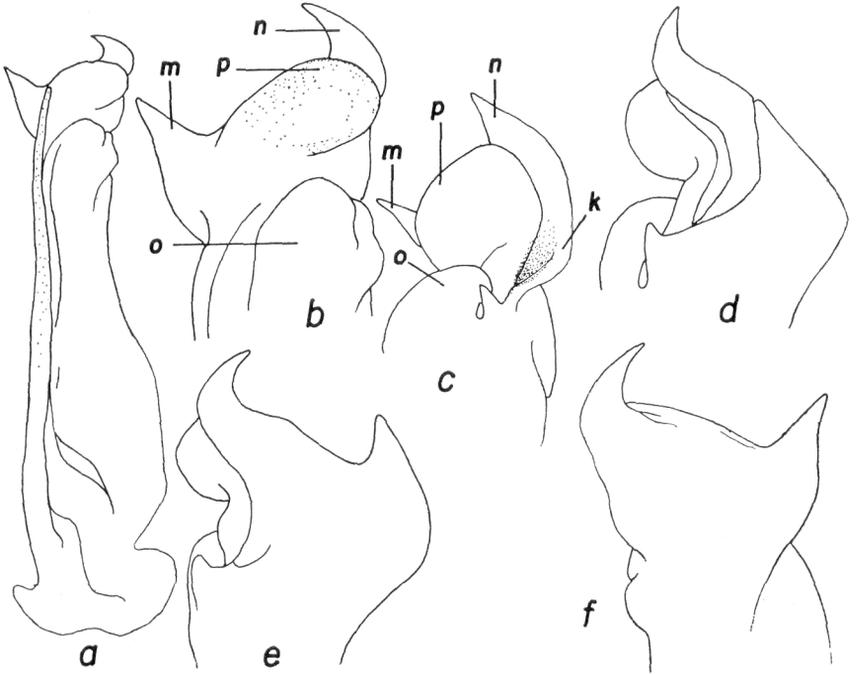


Fig. 1. *Pseudothelphusa holthuisi* new species. First male pleopod, left, holotype specimen from Quebrada Negra, Tachira State; February 16, 1966 (MB XI-1065). a, total view, posterior, including the second pleopod; b, detail of tip, posterior view; c, postero-external view; d, external view; e, antero-external view; f, anterior view. k, external lobe; m, anterior process; n, external process; o, posterior lobe; p, posterior swelling.

divided into approximately 15 small acute teeth. The upper surface of the carapace is covered by closely placed, flattened, minute tubercles and punctae so inconspicuous that at first view the carapace seems to be perfectly smooth.

The third maxilliped has the outer margin of the merus and ischium of the endognath regularly convex. The exognath is less than one third the length of the margin of the ischium. The chelipeds, when fully developed, are very unequal. The larger cheliped is swollen; the hand and fingers at first view are smooth, except for scattered, small tubercles on the upper and lower border of the manus and upper border of the movable finger.

On closer examination, punctae similar to those on the carapace can be observed. The palm does not possess the large tubercles that are present at the base of the fingers in some species.

The first pleopod of the male has, on the external side of the apex, a lobe which is continued upwards by a recurved spine-like process. On the posterior side this lobe has an ovoid swelling. On the anterior side of the apex there is another spine-like process directed upwards. The posterior lobe, formed by the folding of the appendage, is short and ends at the base of the external lobe.

Colour. — In life the carapace of the holotype was brown-black. The chelipeds were brown tinged with red above, cream colored internally and below.

Types. — The holotype is a male, cb. 24.2 mm, cl. 14.8 mm, from Quebrada Negra, between Seboruco and Las Mesas, Tachira State, Venezuelan Andes, 790 m altitude, collected on February 16, 1966, by G. Rodríguez and A. E. Esteves and deposited at the Museum of Biology, Central University of Venezuela, Caracas, cat. N° XI-1065. Paratypes from the same locality are a male, cb. 23.6 mm, cl. 14.5 mm, deposited in the Rijksmuseum van Natuurlijke Historie, Leiden (Crust. No. D 23013) and two females, cb. 21.0 and 14.0 mm, cl. 13.1 and 9.5 mm (MB).

Remarks. — This species closely resembles *P. venezuelensis* Rathbun from Central Venezuela in size, shape of the front, postfrontal lobes, cervical groove, structure of the first male pleopod and other details. But it can be readily distinguished by the two spinous processes in the apex of the first male pleopod.

This distinctive species is named in honor of the distinguished Dutch carcinologist, Dr. Lipke B. Holthuis, who has kindly taken an interest in my revision of the Venezuelan species of fresh water crabs.

#### ***Pseudothelphusa garmani trujillensis* new subspecies**

Description. — The upper frontal ridge is well marked by small coalescent tubercles. It has a deep incision in the middle. In frontal view it is concave, inclined towards the middle, and in dorsal view it is bilobed and strongly convex. The lower frontal ridge lies well in front of the upper. It is thin and obscurely tuberculate.

The carapace is uneven, with the branchial and gastric regions elevated and the frontal and hepatic, depressed. The postfrontal lobes are prominent, well defined anteriorly by an oblique depression. The carapace between the postfrontal lobes and the front is inclined anteriorly and towards the middle. The median groove is narrow and well marked, it sharply divides

the postfrontal lobes and becomes wider behind these. The cervical groove is straight and narrow. The lateral margin of the carapace has a wide notch behind the orbit and another shallower notch just before the end of the cervical groove. The anterolateral teeth of the carapace are almost absent or represented by small papillae throughout the border, except over the anterolateral angles where they are distinct. The upper surface of the carapace is covered by numerous and minute tubercles, closely placed and barely visible to the naked eye. They are larger and more conspicuous over the branchial region.

The exognath of the third maxilliped is less than one-fifth the length of the margin of the ischium. The chelipeds are unequal. There is no large tubercle at the base of the fingers. The proximal teeth of the fixed fingers are large but not swollen as is the case in *P. garmani iturbei* Rathbun.

The superior lobe of the first pleopod of the male is narrow and directed upward. Its external surface is ear-shaped, with raised borders and the

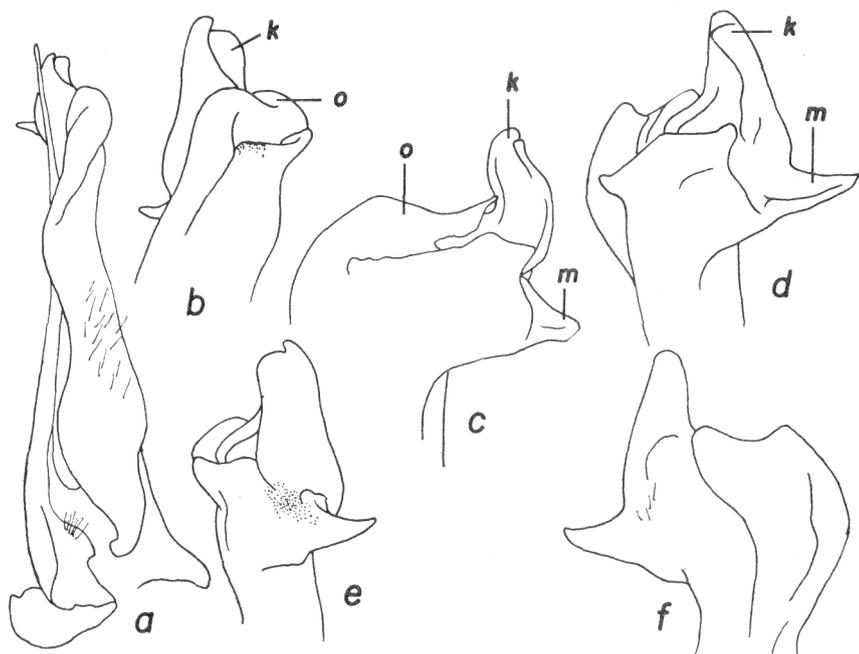


Fig. 2. *Pseudothelphusa garmani trujillensis* new subspecies. First male pleopod, left, holotype specimen from Escuque, Trujillo State; February 14, 1966 (MB XI-1068). a, total view, posterior, including the second pleopod; b, detail of tip, posterior view; c, external view; d, antero-external view; e, anterior view; f, postero-internal view; k, external lobe; m, anterior process; o, posterior lobe.

apex notched. The anterior spiniform lobe is long and subtriangular, its upper border is slightly concave, its lower border is slightly convex. This lobe appears bent laterally towards the right when the left pleopod is seen in anterior view. The lobe on the posterior side is conspicuously bent over the apex of the appendage.

Colour. — In life the carapace and outer surface of the chelipeds of the holotype are dark brown with a lighter spot over the gastric region; the pereopods are of a lighter shade. The carapace of the paratype is grayish and the chelipeds and pereopods light brown.

Types. — Holotype is a male, cb. 74.5 mm, cl. 46.5 mm, from a creek above the town of Escuque, Trujillo State, Venezuela, 1125 m altitude, collected February 14, 1966 by G. Rodríguez and A. E. Esteves and deposited at the Museum of Biology, Central University of Venezuela, Caracas, cat. N° XI-1068. Paratype is a male, cb. 56.4 mm, cl. 34.5 mm, from the same locality and deposited in the Rijksmuseum van Natuurlijke Historie, Leiden (Crust. No. D 23014).

Additional material examined. — Bumbis River, near Aparición, Portuguesa State, Venezuela; April 8, 1955; S. Pérez-Salas. — 1 male, cb. 27 mm, cl. 17 mm (MB). I incorrectly assigned this specimen to the subspecies *P.g ranchograndensis* Rodríguez (Rodríguez, 1966: 129).

Remarks. — The subspecies of *P. garmani* dealt with in this and in a previous paper (Rodríguez, 1966) can be distinguished from each other as follows:

- |   |   |
|---|---|
| 1. A very large, rounded tubercle at the base of the fingers . . . . .  | 2 |
| — No tubercle at the base of the fingers . . . . .  | 3 |
| 2. The superior lobe of the first pleopod of the male is narrow, its apex is not notched. The anterior lobe has the upper border short and directed transversely to the axis of the appendage; the lower border is sinuous. <i>P. garmani garmani</i> |   |
| — The superior lobe of the first pleopod of the male is wide, its apex is notched. The anterior lobe has the upper margin perpendicular to the axis of the appendage and the lower border straight. <i>P. garmani ranchograndensis</i>                |   |
| 3. Two prominent tubercles on the external surface of the two largest teeth of the fixed finger in the larger chela. <i>P. garmani iturbei</i>  |   |
| — No prominent tubercles on the external surface of the two largest teeth of the fixed finger in the larger chela. <i>P. garmani trujillensis</i>   |   |

The subspecies are not only well differentiated morphologically, but geographically as well. The geographical distribution of the subspecies from east to west is as follows: *P. garmani garmani*: Margarita and Trinidad Island and Venezuela's eastern mainland. *P. garmani iturbei*: Río Guaire and Río Tuy basins in Central Venezuela. *P. garmani ranchograndensis*: Northern slope of the Venezuelan Central range, from Distrito Federal

to Carabobo State. *P. garmani trujillensis*: Northern portion of the Venezuelan Andes, Portuguesa and Trujillo States.

### ***Pseudothelphusa angulata* Rathbun**

*Pseudothelphusa angulata* Rathbun, 1915: 98.

I have recorded this species previously from the Sierra de Perijá (Rodríguez, 1966) and Rathbun's type comes from the Santa Marta mountains. The present record considerably extends the range of the species.

Material examined. — Mesa Bolívar, Mérida State, Venezuela; 1050 m altitude; February 16, 1966; G. Rodríguez and A. Esteves. — 1 male, cb. 42 mm, cl. 28 mm, 1 female, cb. 42 mm, cl. 28 mm; 3 juveniles (MB).

Río Umuquena, between Umuquena and La Grita, Táchira State, Venezuela; 700 m altitude; February 15, 1966; G. Rodríguez and A. E. Esteves. — 1 immature male, cb. 29.5 mm, cl. 17 mm; 2 immature females, cb. 40 and 30 mm, cl. 25.8 and 29.4 mm, 1 juvenile (MB).

#### LITERATURE CITED

RODRÍGUEZ, GILBERTO, 1966. The freshwater crabs of the genus *Pseudothelphusa* from northern Venezuela and Trinidad (Brachyura, Potamonidae). — *Zool. Meded.* **41**: 111-135, fig. 1-10, pl. 1-7.

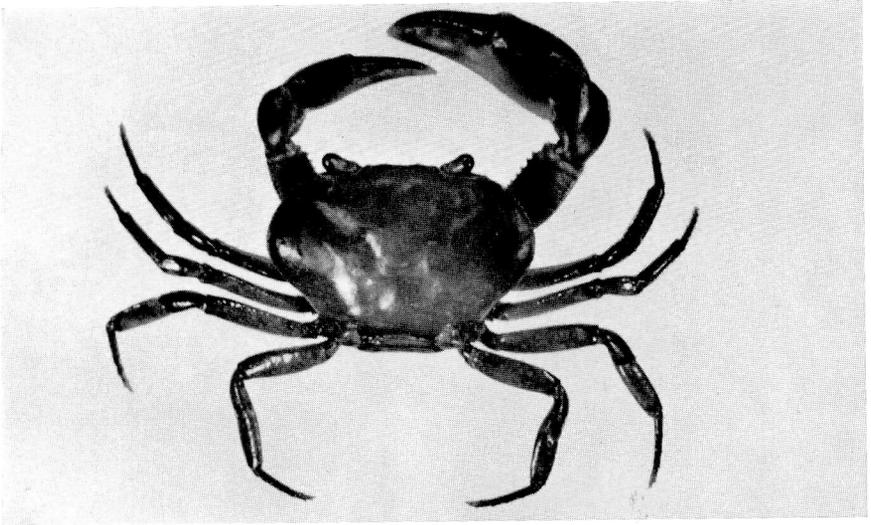
#### EXPLANATION OF THE PLATES

##### Pl. 1

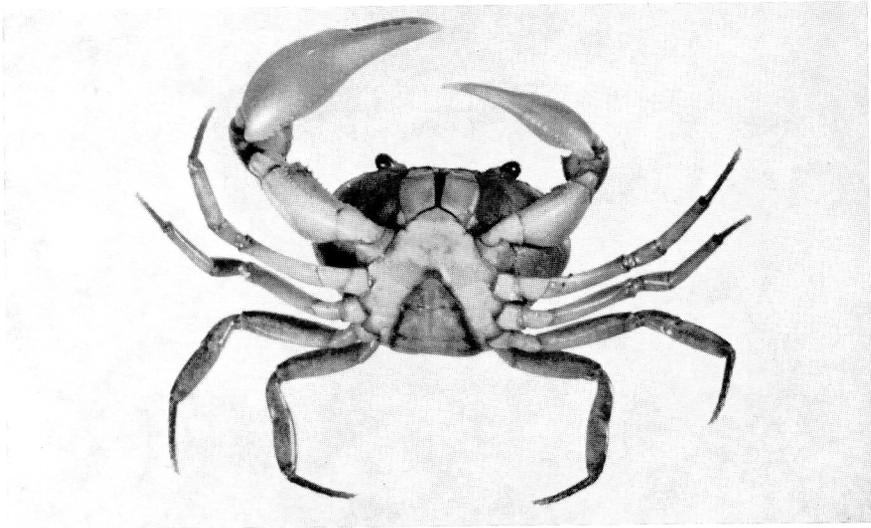
*Pseudothelphusa holthuisi* new species. Male holotype from Quebrada Negra, Tachira State, Venezuela, February 16, 1966 (MB No XI-1065). 1, dorsal view; 2, ventral view; 3, detail of the front.

##### Pl. 2

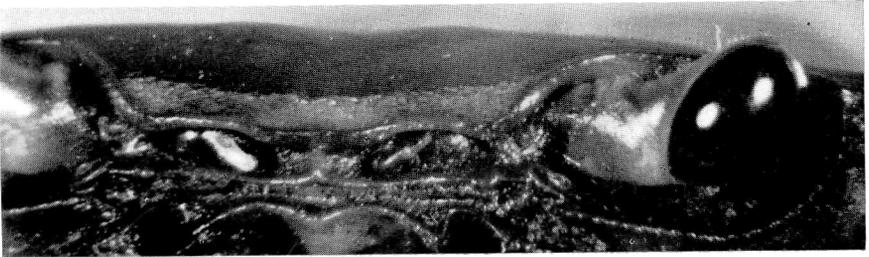
*Pseudothelphusa garmani trujillensis* new subspecies. Male holotype from Escuque, Trujillo State, Venezuela, February 14, 1966 (MB No XI-1068). 1, dorsal view; 2, ventral view; 3, detail of the front.



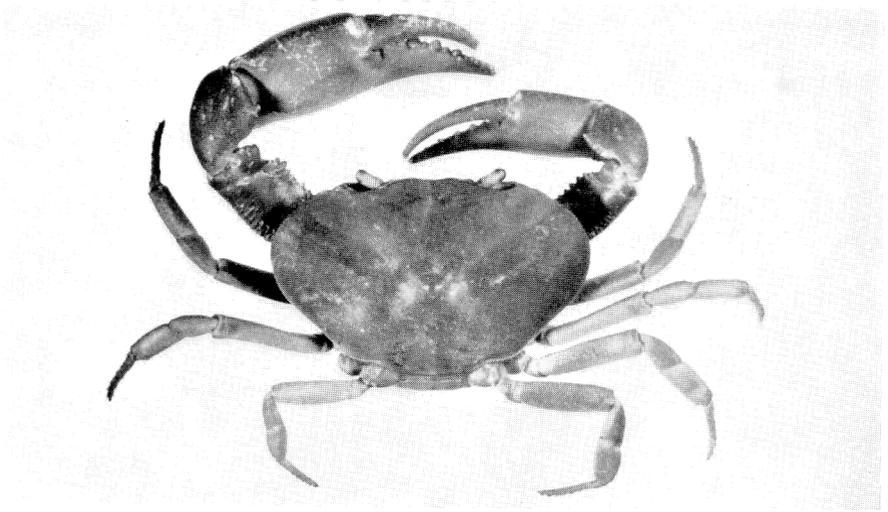
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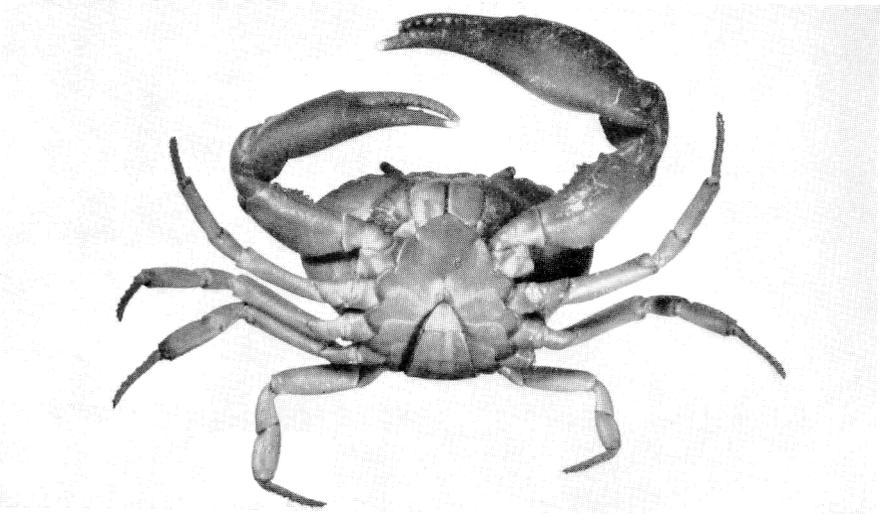
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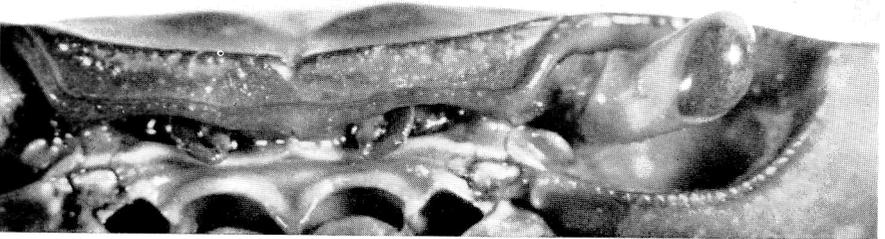
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