

A new species of *Macrobrachium* (Crustacea: Decapoda: Palaemonidae) from the Venezuelan Guayana

Guido Pereira y Carlos A. Lasso

Abstract. A new species of freshwater shrimp of the genus *Macrobrachium*, family Palaemonidae, is described based on specimens from the Caroní River Basin in Canaima National Park in the Venezuelan Guayana. Details on morphology, variation, and comparisons with other Amazonian morphologically related species are provided.

Key words. Shrimps. New species. Guiana Shield. Caroní River. Orinoco River Basin.

Descripción de una nueva especie de *Macrobrachium* (Crustacea: Decapoda: Palaemonidae) de la Guayana venezolana

Resumen. Se describe una nueva especie de camarón de agua dulce del género *Macrobrachium* familia Palaemonidae con ejemplares provenientes del Parque Nacional Canaima, cuenca del río Caroní, Guayana venezolana. Se dan detalles sobre su morfología, variación y se compara con otras especies amazónicas relacionadas morfológicamente.

Palabras clave. Camarones. Nueva especie. Escudo Guayanés. Río Caroní. Cuenca del Orinoco.

Introduction

Although the freshwater shrimp fauna of Venezuela is relatively well known, there still are some areas that merit further exploration, specially the Amazon and Guayana regions, which hold very large and heterogeneous river systems in which primary freshwater palaemonids are very common (Pereira 1997). This fauna is not easy to study because of the difficult access to these remote places that makes sampling not easy and expensive. In the last 20 years there are several publications on new species of shrimps from this region (Kensley and Waiker 1982, Rodríguez 1982, Pereira 1985, 1986, 1991, 1993). A recent expeditions for biodiversity study in the area of Auyán-tepui in the Venezuelan Guyana resulted in the finding of a new species of *Macrobrachium*. The purpose of this paper is to present the detailed description of this new species and to compare it with other related taxa in the area.

Material and Methods

Specimens were preserved in 70% ethanol and comparison were completed using the descriptions and terminology of Pereira (1985, 1986, 1991, 1993). The following abbreviations are used: CL, for carapace length; TL, for total length; MHNLS, Museo de Historia Natural La Salle, Caracas (Venezuela); MBUCV, Museo de Biología Universidad Central de Venezuela and USNM, United States National Museum.

Results and Discussion

Macrobrachium manningi, new species

Figs. 1-3

Holotype. Male 39 mm TL, 14 mm CL, MHNLS 1756, Cucurital River, affluent of Caroní River, Orinoco Basin. Canaima National Park, Bolívar State, Venezuela (6°00'N-62°47'W), 380 m a.s.l, collected by Carlos Lasso and Oscar Lasso on April 12 1999.

Paratypes. Male, MHNLS 1755, with the same data as the holotype; males MHNLS 1757, 1761, and 1759, 380 m a.s.l. collected by J. Celsa Señaris on April 15, 1999; male MHNLS 1754, 390 m a.s.l. collected by J. Celsa Señaris on April 15 1999, and other male, MBUCV XI-4779, 390 m a.s.l. collected by Carlos Lasso and Oscar Lasso on April 15 1999.

Additional material. 2 immatures, MHNLS 1758, 1760, 1 immature, MHNLS 1758, 390 m a.s.l., Coll. C. Lasso & O. Lasso, 12 April 1999, 1 male, 1 female, MBUCV XI-4780, 390 m a.s.l., Coll. C. Lasso, J. C. Señaris, O. Lasso, April 15 1999.

Type locality. Cucurital River, Wareipa area, affluent of Caroní River, Orinoco Basin. Canaima National Park, Bolívar State, Venezuela, (6°00'N-62°47'W), 380-390 m a.s.l.

Etymology. The species name is dedicated to the memory of Dr. Raymond Manning, an outstanding scientist in the area of crustacean taxonomy. We dedicate this species to him as a sincere tribute and recognition of his merits to carcinology, personally (GP) to honor and acknowledge his advice and friendship.

Diagnosis. Rostrum short, with apex reaching slightly beyond end of antennular peduncle, carapace with minute spines on anterolateral borders. Second pereopods unequal in size and shape, stronger second leg reaches with distal third of carpus beyond scaphocerite, palm cylindrical not compressed. No tubercles present on fingers.

Description of type material. Rostrum straight, with apex reaching slightly beyond

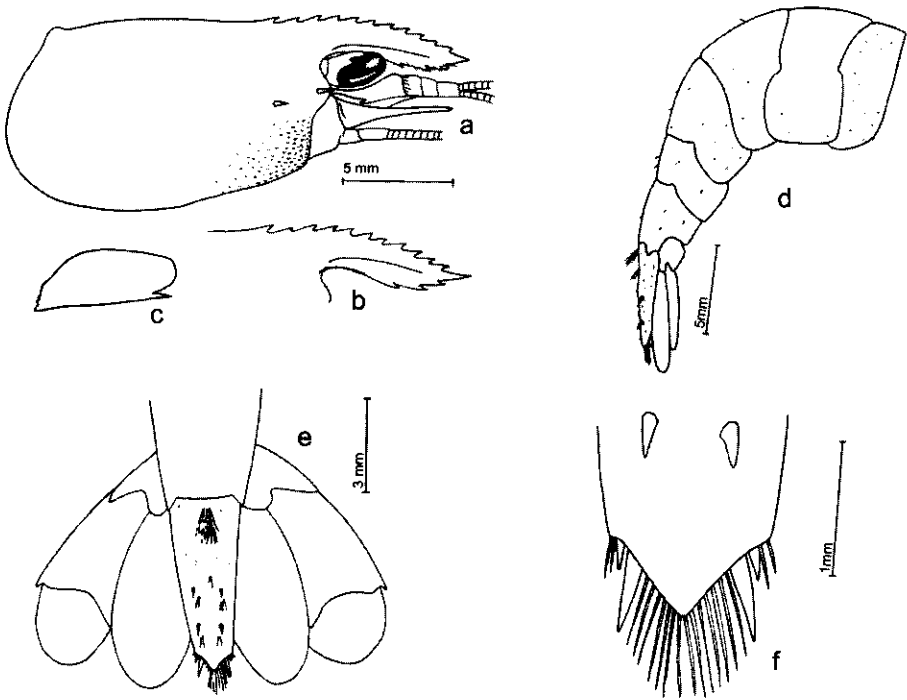


Figure 1. *Macrobrachium manningi*, new species: male paratype MBUCV XI-4779. a) lateral view of cephalothorax and cephalic appendages, b) rostrum, c) scaphocerite, d) lateral view of abdomen, e) telson, f) tip of telson.

antennular peduncle; upper border bearing 11 regularly distributed teeth (10-11 paratypes), three of which situated behind posterior orbital margin; lower margin with three teeth (two-three in paratypes) (Fig. 1a, b). Carapace with scattered hairs and numerous spinules on lower anterolateral border (Fig. 1a), scaphocerite 2.3 times longer than wide (Fig. 1c). Abdomen with few scattered hairs, posteroventral angle of fifth pleuron acute (Fig. 1d). Sixth abdominal segment 1.4 times length of fifth, 0.6 times length of telson. Telson (Fig. 1e, f) with two pairs of dorsal spines situated at $1/2$ and $3/4$ of its length from base; posterior margin tapering abruptly to a median apex, bearing two pairs of lateral spines, inner overreaching median apex by $1/2$ of its length; bearing about 12-14 plumose setae uniformly spaced between inner spines. First pereiopods with scattered hairs, slender (Fig. 2a), overreaching distal border of scaphocerite by $1/2$ carpus length; palm cylindrical in cross section, 1.2 times length of dactyl; carpus 3.1 times the length of palm, 1.1 times length of merus. Second pair of pereiopods (Fig. 3a, b) unequal in size and shape, one of them weaker than the other, either the right or the left could be larger and stronger (5 males including holotype

with right leg larger and stronger and 3 with left leg larger and stronger); both with scattered hairs and numerous spines. The stronger pereiopod overreaching distal border of scaphocerite by distal third of carpus; fingers straight, fixed finger with large tooth on proximal 1/3, movable finger with large tooth about midlength and two smaller ones proximally, no tubercles are present. Palm cylindrical in cross section, 2.7 times longer than wide and 1.8 times length of dactyl, with numerous longitudinal rows of

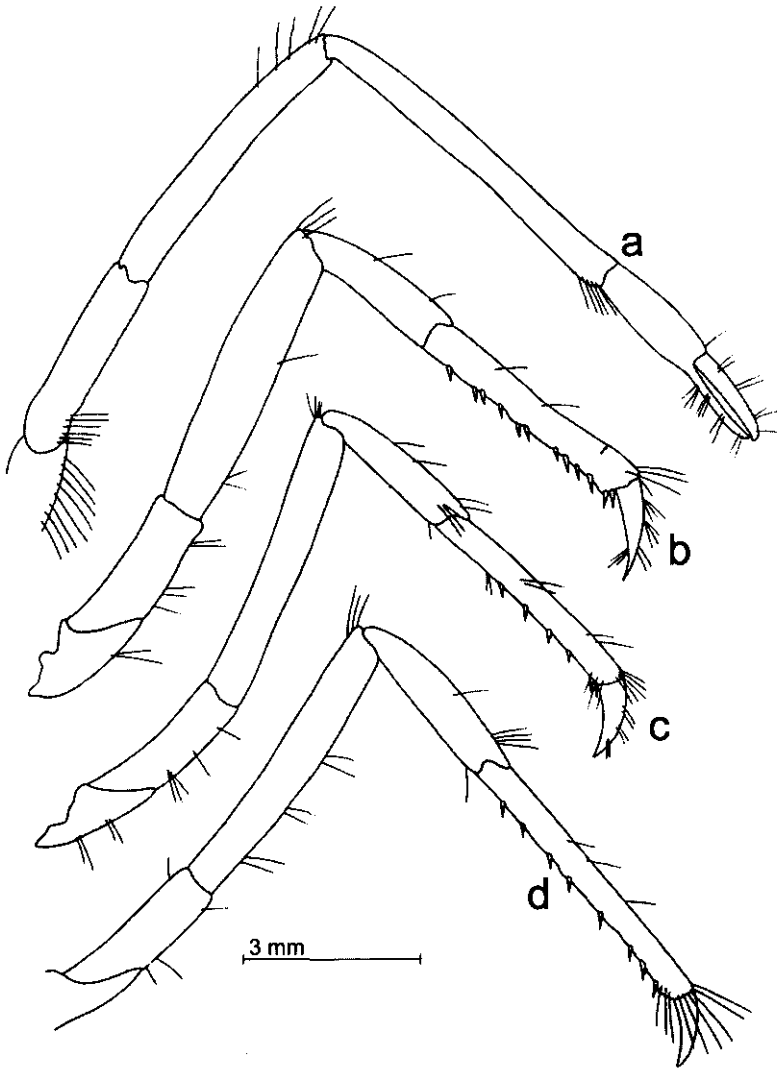


Figure 2. *Macrobrachium manningi*, new species: male paratype MBUCV XI-4779. a) first pereiopod, b) third pereiopod, c) fourth pereiopod, d) fifth pereiopod.

short spines, those on lower surface larger than dorsal; carpus with numerous longitudinal rows of spines, 0.6 times length of palm, 0.9 times length of merus. Merus with scattered hairs and spines located mainly on distal third. Smaller second pereopod (Fig. 3b) overreaching with palm distal border of scaphocerite; cylindrical, with scattered hairs and some longitudinal rows of spines on palm, fewer on carpus and merus, fingers with no spines. Palm cylindrical in cross section, 3.1 times longer than wide, 1.8 times length of dactyl; carpus 0.8 times length of palm, about the same size of merus. Third pair of pereopods (Fig. 2b) not reaching distal border of scaphocerite; propodus with a longitudinal row of 12 (12-13 in paratypes) spines on inner margin, 1.7 times length of carpus. Fourth pair of pereopods (Fig. 2c) not reaching distal border of scaphocerite; propodus with a longitudinal row of 6 spines on inner margin, 2.6 times length of dactyl, 1.3 times length of carpus. Fifth pair of pereopods (Fig. 2d) not reaching distal border of scaphocerite; propodus with a longitudinal row of 8 (12-13 paratypes) spines on inner margin, 4.6 times length of dactyl, 1.6 times length of carpus.

Size. Largest male 39 mm TL and 14 mm CL. Largest female 30 mm TL and 10 mm CL. Oviparous females not available.

Remarks. This species has spinules on the anterolateral border of carapace, a character shared only with *Macrobrachium potiuna* (Müller 1880), *M. brasiliensis* (Heller 1862), *M. nattereri* (Heller 1862) and *M. iheringi* (Ortmann 1897). *Macrobrachium manningi* clearly differs from them because of the smaller body length and the very unequal size of the left and right second pereopods. Additionally, *M. potiuna* has the fingers of the second legs gaping while they appear relatively straight in the other species mentioned. The second leg reaches with almost all or entire carpus beyond the scaphocerite in *M. brasiliensis* and *M. nattereri*, while only with the distal third at the most in *M. manningi*. The palm/finger length relationship is 2.6 for *M. brasiliensis*, 1.2 for *M. iheringi*, 1.6 in *M. nattereri*, while 1.8 for *M. manningi*. Additionally, *M. nattereri*, *M. brasiliensis*, *M. potiuna*, and *M. iheringi* has tubercles in the fingers of second leg, which are absent in *M. manningi*. Although the new species is similar to *M. nattereri* in the general morphology, the meros presents numerous longitudinal rows of spines in the latter while *M. manningi* present just a few distally; also, there is only one large tooth on the fixed finger of the stronger second leg in *M. manningi*, while there are one to three in *M. nattereri*. Finally, the palm in *M. nattereri* is rather compressed and there is a conspicuous longitudinal groove laterally, while the palm in *M. manningi* is cylindrical without a groove.

Habitat. The specimens were found in either black or clear water rivers (Sioly 1965). The average pH for black waters was 4.5, while 5.4 to 7.0 for clear waters. The shrimps were found along the margins, in small pools and very frequently in riffles and areas of fast moving waters.

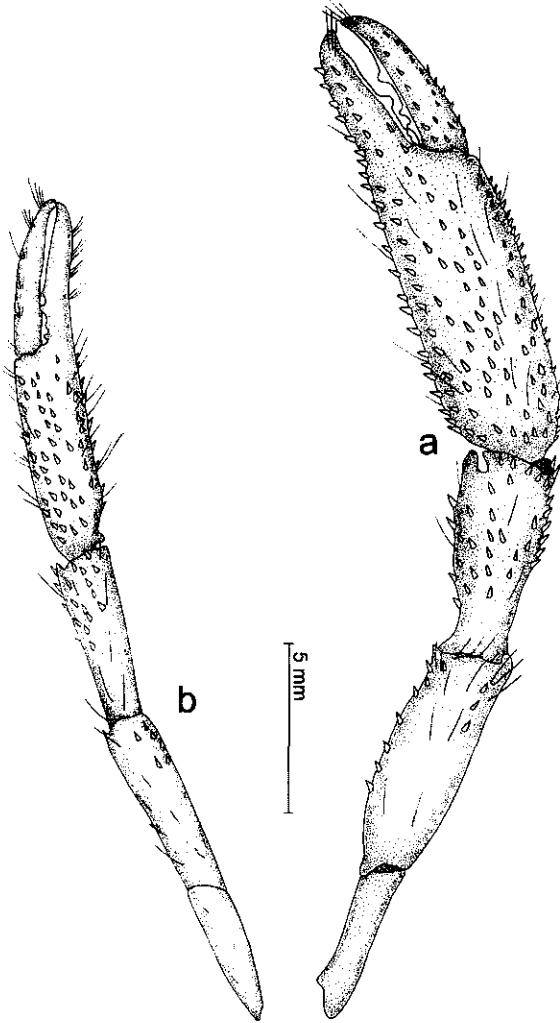


Figure 3. *Macrobrachium manningi*, new species: male paratype MBUCV XI-4779. a) right second pereiopod, b) left second pereiopod.

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