

Observation on the Occurrence of *Uca victoriana* von Hagen (Decapoda, Brachyura, Ocypodidae) on the Coast of Rio de Janeiro, Brazil

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(With 2 figures)

In Brazil, the family Ocypodidae presents ten representatives of the genus *Uca*: *U. burgersi* Holthuis, 1967; *U. cumulanta* Crane, 1943; *U. leptodactyla* Rathbun, 1898; *U. maracoani* (Latreille, 1802-1803); *U. mordax* (Smith, 1870); *U. rapax* (Smith, 1870); *U. thayeri* Rathbun, 1900; *U. uruguayensis* Nobili, 1901; *U. victoriana*, von Hagen, 1987 and *U. vocator* (Herbst, 1804). From these, only *U. victoriana* was not recorded from the state of Rio de Janeiro; its distribution was limited to the state of Espírito Santo (Melo, 1996, 1998).

According to Von Hagen (1987), *U. victoriana* is found in sympatry with *U. rapax* and appears to have a certain similarity with *U. thayeri*; besides which, the movements of the chelipeds (waving display) appear very similar in these species.

U. victoriana presents a small and convex carapace, with a large front. A shallow pilose depression between the palm and fingers. Opposable margins of fingers with small teeth and with a hiatus between them, larger in the males. The tubercles of the palm present great variation, with a row, or several continuous rows from the carpal cavity to the upper margin. The number and distribution of the tubercles of the intermediary area vary widely. Merus of the ambulatory legs slender in the males and convex in the females. Abdomen with free segments (Melo, 1996, 1998) (Figure 1).

The crabs were collected manually in the Itacuruçá mangrove forest (22° 54' 06" S and 43° 53' 42" W) (Figure 2) during low tide and were taken to the laboratory of the Marine Biology Station at the Universidade Federal Rural do Rio de Janeiro. They were then sorted, identified, sexed, fixed in 10% formol and preserved in 70% alcohol. Some specimens were deposited in the Museu de Zoologia da Universidade de São Paulo, under the number MZUSP - 17.163.

A total of 120 specimens were collected from July, 2005 to February, 2006. They include 24 males and 96 females, one of which was ovigerous.

The carapace width and length in the specimens of *U. victoriana* collected in the Itacuruçá mangrove varied from 2.67 to 6.71 mm (4.54 ± 0.85 mm) and 1.75 to 4.0 mm ($2.67 + 0.49$ mm) in males, and from 2.83 to

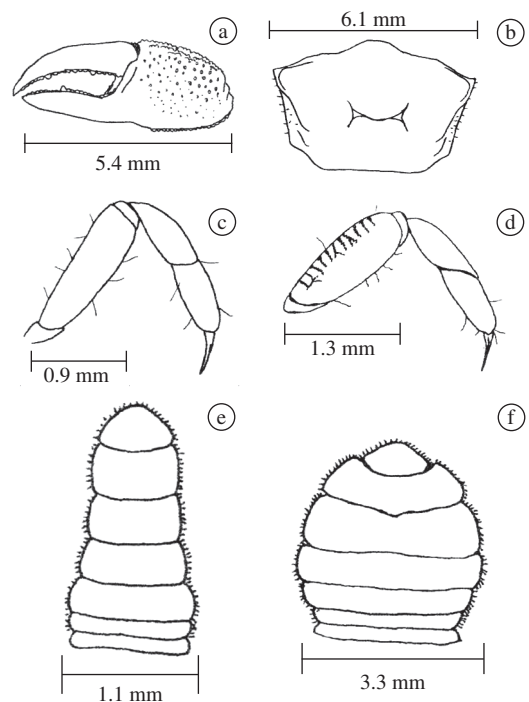


Figure 1. *Uca victoriana*. A, C, E = left major chela, meru and abdomen of male. B, D, F = carapace, meru and abdomen of female. Scales: a = 5.4 mm, b = 6.1 mm, c = 0.9 mm, d = 1.3 mm, e = 1.1 mm, f = 3.3 mm.

7.58 mm ($5.27 + 0.89$ mm) and 1.92 mm to 4.75 mm ($3.42 + 0.56$ mm) in females. The ovigerous female was found in November 2005; its carapace width was 6.42 mm and length 4.08 mm.

The individuals of *U. victoriana* were found in the same habitat occupied by *U. cumulanta* and *U. thayeri*, in the mud sediments of the mangrove. Von Hagen (1987) found *U. victoriana* and Thurman II (1987) found *U. thayeri* in similar habitats.

Various studies of species of the genus *Uca* have shown that differences in sediment and vegetation, as well as the degree of salinity, temperature and exposure

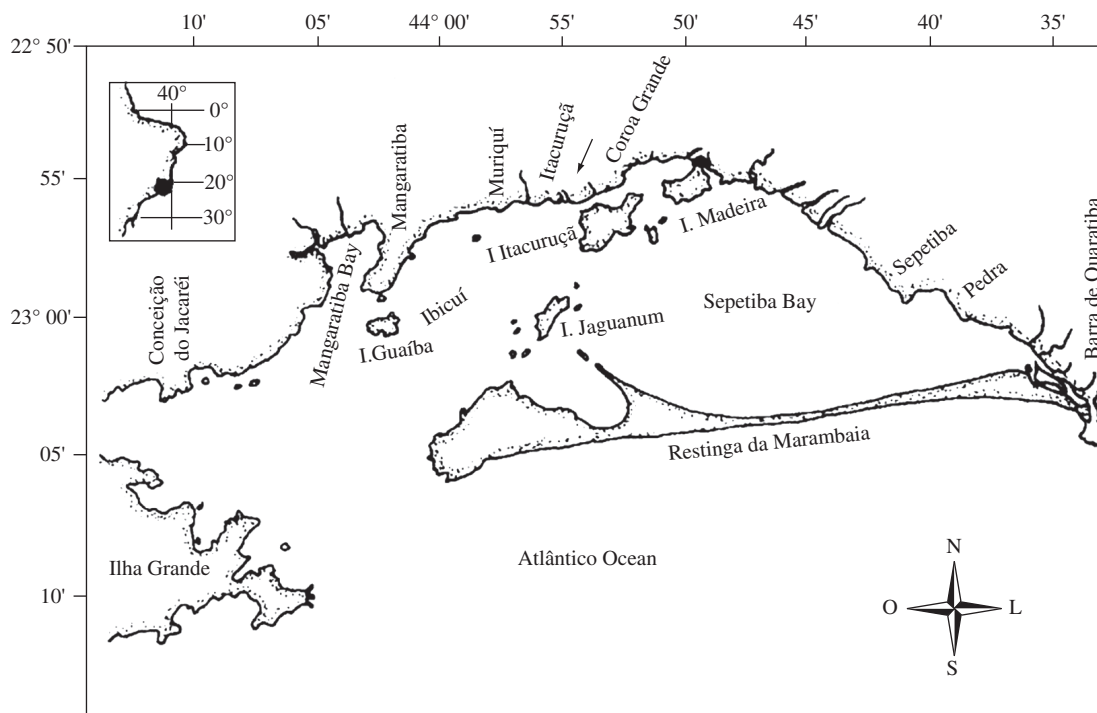


Figure 2. Localization of Itacuruçã Mangrove, Mangaratiba, Rio de Janeiro.

to drying, appear to be the main factors that regulate the occurrence and distribution of the species in different mangrove forests (Aspey, 1978; Icely and Jones, 1978; Rabalais and Cameron, 1985; Ewa-Oboho, 1993; Thurman, 1998; Nobbs, 2003; Ribeiro et al. 2005; Santos and Coelho, 2001).

In addition to these characteristics, probably difficulties in identifying the species of the genus *Uca*, as well as the small size of individuals of *U. victoriana*, have contributed to limiting the occurrence of this species in Brazil.

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References

- ASPEY, WP., 1978. Fiddler crab behavioral ecology: burrow density in *Uca pugnax* (Smith) and *Uca pugilator* (Box) (Decapoda, Brachyura). *Crustaceana*, vol. 34, no. 3, p. 235-244.
- EWA-OBOHO, IO., 1993. Substratum preference of the tropical estuarine crabs, *Uca tangeri* Eydoux (Ocypodidae) and *Ocypode cursor* Linne (Ocypodidae). *Hydrobiologia*, vol. 271, p. 119-127.
- HAGEN, HO. VON., 1987. Morphologie und Winkbalz einer neuen *Uca*-Art (Crustacea:Brachyura) aus dem Staat Espírito Santo (Brasilien). *Hamburgischen Zoologischen Museum und Institut*, vol. 84, p. 81-94.
- ICELY, JD. and JONES, DA., 1978. Factors affecting the distribution of the genus *Uca* (Crustacea: Ocypodidae) on an East African shore. *Estuarine and Coastal Marine Science*, vol. 6, p. 315-325.
- MELO, GAS., 1996. *Manual de identificação dos Brachyura (caranguejos e siris) do litoral brasileiro*. São Paulo: Editora Plêiade Fapesp, 603p.
- , 1998. Malacostraca – Eucarida. Brachyura. Oxyrhyncha and Brachyrhyncha, p. 455-515 (Série Livros, n. 6). In: YOUNG PS (ed). *Catalogue of Crustacea of Brazil*, 1998. Rio de Janeiro: Museu Nacional, 717p.
- NOBBS, M., 2003. Effects of vegetation differ among three species of fiddler crabs (*Uca* spp.). *Journal of Experimental Marine Biology and Ecology*, vol. 284, p. 41-50.
- RABALAIS, NN., and CAMERON, JN., 1985. Physiological and morphological adaptations of adults *Uca subcylindrica* to semi-arid environments. *Biology Bulletin*, vol. 168, p. 135-146.
- RIBEIRO, PD., IRIBARNE, OO. and DALEO, P., 2005. The relative importance of substratum and recruitment in determining the spatial distribution of the fiddler crab *Uca uruguayensis* Nobili. *Journal of Experimental Marine Biology and Ecology*, vol. 314, no. 1, p. 99-111.
- SANTOS, MAC., and COELHO, PA., 2001. Crustacea Decapoda of the Paripe River Estuary, Pernambuco, Brazil. *Hydrobiologia*, vol. 449, p. 77-79.
- THURMAN II, CL., 1987. Fiddler crabs (genus *Uca*) of eastern Mexico (Decapoda, Brachyura, Ocypodidae). *Crustaceana*, vol. 53, no. 1, p. 95-105.
- THURMAN, CL., 1998. Osmoregulation by six species of fiddler crabs (*Uca*) from the Mississippi delta area in the northern Gulf of Mexico. *Journal of Experimental Marine Biology and Ecology*, vol. 291, p. 233-252.