*Check List* **5**(3): 513–517, 2009.
ISSN: 1809-127X

**NOTES ON GEOGRAPHIC DISTRIBUTION**

# *Uncancylus concentricus* (Mollusca, Gastropoda, Ancylidae): New occurrence in state of Rio de Janeiro, Brazil

Sonia Barbosa dos Santos
Luiz Eduardo Macedo de Lacerda
Igor Christo Miyahira

[1] *Universidade do Estado do Rio de Janeiro, Instituto de Biologia Roberto Alcantara Gomes, Laboratório de Malacologia. Rua São Francisco Xavier, 524, PHLC, sala 525/2, Maracanã. CEP 20550-900. Rio de Janeiro, RJ, Brazil. E-mail*: sbsantos@uerj.br / gundlachia@yahoo.com.br

The freshwater pateliform pulmonate snails considered as Ancylidae are represented in South America by seven genera according to Santos (2003): *Anisancylus* Pilsbry, 1924; *Burnupia* Walker, 1912; *Ferrissia* Walker, 1903; *Gundlachia* Pfeiffer, 1849; *Hebetancylus* Pilsbry, 1913; *Laevapex* Walker, 1903 and *Uncancylus* Pilsbry, 1913. The knowledge about occurrence, distribution and systematic of these snails is poorly known in Brazil, although fundamental to studies concerning biodiversity, not only by the continental dimensions of the country, but also considering the reduced number of malacologists.

In this paper, we report the first record of *Uncancylus concentricus* (d´Orbigny, 1835) to *Ilha Grande* island (23°04'32" S, 23°13'42" S and 44°05'24" W, 44°22'41" W), state of Rio de Janeiro, Brazil based on two specimens obtained from *Praia do Sul* Biological Reserve. Previous surveys on the freshwater limnic snails from *Ilha Grande* (Haas 1953; Thiengo 2004a; Santos et al. 1999; Santos et al. 2007) and to the state of Rio de Janeiro (Thiengo et al. 1998; 2001; 2002a; b; 2004a; b; 2006; Santos et al. 2003) were unable to find *U. concentricus*.

According to the literature and data from scientific collections, *U. concentricus* was firstly described to Uruguay, in the vicinities of Montevideo. It is widely distributed, occurring from Costa Rica (Pilsbry 1920; Lanzer 1996) to the Patagonian region (Hylton-Scott 1963; Lanzer 1996; Santos 2003). In Brazil, it is found at Central-Western region (Thiengo et al. 2005), South and Southeast regions (Lanzer 1996; Santos 2003).

The records from Moricand (1845) to Bahia, van Benthem-Jutting (1943) to Rio Grande do Norte, Haas (1949a; b; 1952) and Irmler (1975) to the Amazon region need to be confirmed, as previously assigned by Lanzer (1996). According to Santos (2003) it is not observed in North and Northeast regions.

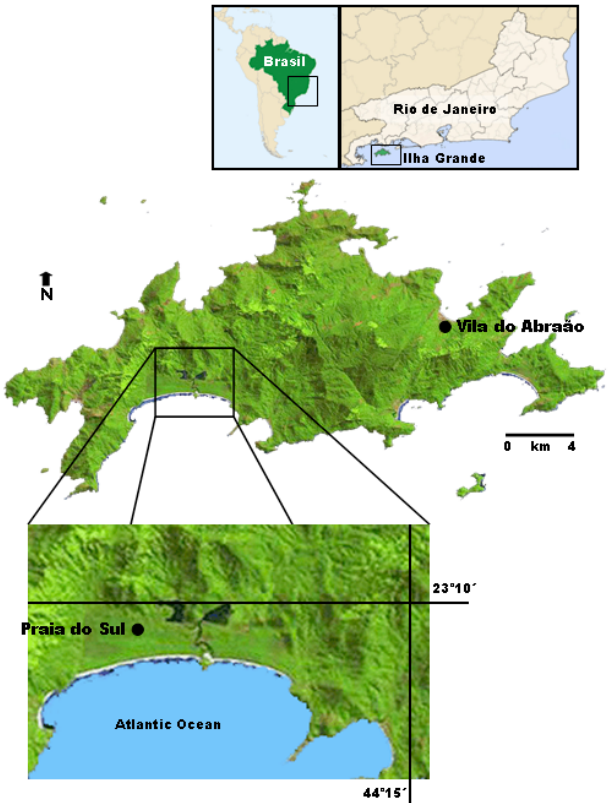


**Figure 1**. Map of *Ilha Grande*, Rio de Janeiro, Brazil, showing the sampling point at *Praia do Sul* Biological Reserve.

*Check List* **5**(3): 513–517, 2009.
ISSN: 1809-127X

**NOTES ON GEOGRAPHIC DISTRIBUTION**

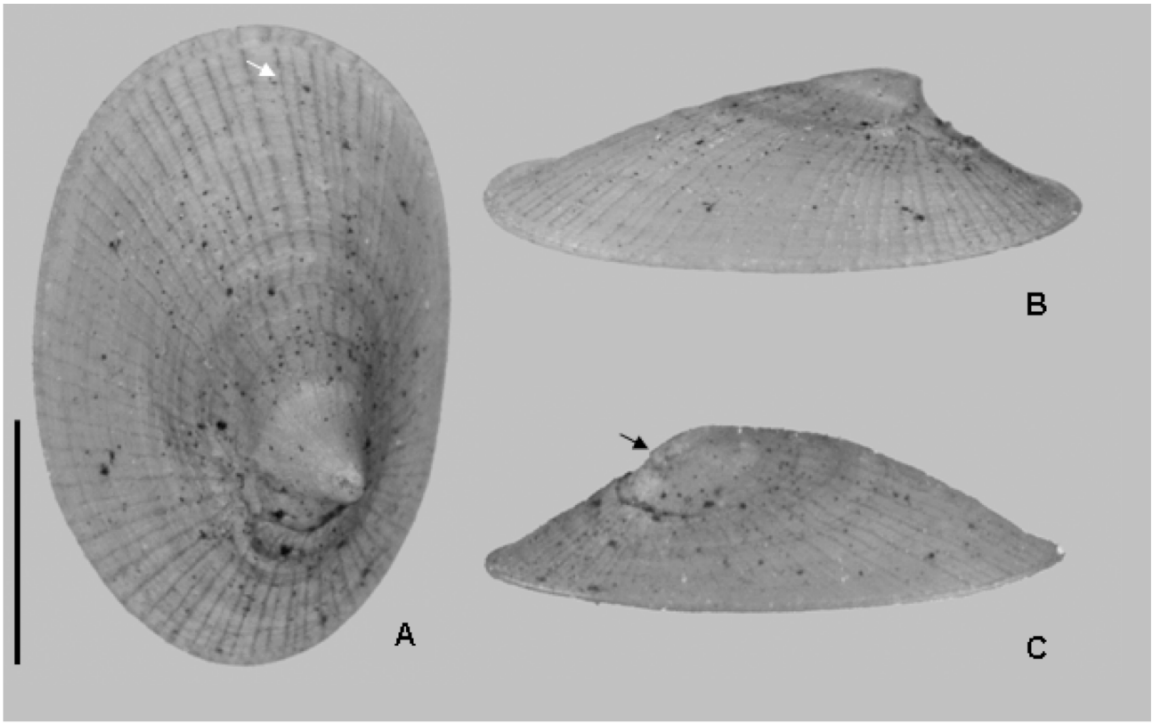


**Figure 2**. *Uncancylus concentricus*. Photos of specimen Col. Mol UERJ 7372 b. (A) Dorsal view, (B) left lateral view, (C) right lateral view. White arrow shows the radial lines. Black arrow shows the pointed apex flexed to the right. Scale = 1mm. Photo by Antonio Carlos de Freitas.

Field work was conducted at *Praia do Sul* Biological Reserve, on the oceanic side of *Ilha Grande* (Figure 1), on 11 November 2006. This area is included in one of the last remnants of arboreal *restinga* in the state of Rio de Janeiro. The ancylids were found at a small stream (23°10'30" S, 44°18'13" W) in a swampy area, over decayed leaves. The snails were collected by three people using a handled metallic scoop for 15 minutes.

Live snails were transported with biotope water to the laboratory where, after stereomicroscope examination, we found the two specimens of *U. concentricus* together with 57 specimens of *Gundlachia ticaga* (Marcus & Marcus, 1962), the most widespread ancylid in the state of Rio de Janeiro (Thiengo et al. 2001; 2002a; b; 2004a; b; 2006), already cited to Abraão village in Ilha Grande (Santos et al. 2007). These species were found living together in other places like *Serra da Mesa* dam (Thiengo et al. 2005).

Field works were done under legal authorizations: *Instituto Brasileiro de Meio Ambiente e Recursos Renováveis* (IBAMA), license Sisbio 10812-1; *Instituto Estadual de Florestas* (IEF- RJ), license 18/2007 and Praia do Sul Biological Reserve, license 2/2006.

The shells fit well the genus diagnosis (Pilsbry 1913) with the typical protoconch bearing a pointed apex flexed to the right, well marked radial lines all over the shell and a yellow-amber periostracum with periostracal hairs (Figure 2); mantle with pigmentation concentrated at the left, right muscle scar moon-shaped, left muscle scar oval-shaped and the posterior one rounded (Lanzer 1996; Santos 2003). The elongated-oval shells measures, respectively, 2.95 mm length, 1.95 mm width and 0.7 mm height and 2.45 mm length, 1.55 mm width and 0.55 mm height (Figure 3). The specimens are deposited at the Malacological Collection of the *Universidade do Estado do Rio de Janeiro* (Col. Mol. UERJ 7372 a, b).

*Check List* **5**(3): 513–517, 2009.
ISSN: 1809-127X

## NOTES ON GEOGRAPHIC DISTRIBUTION

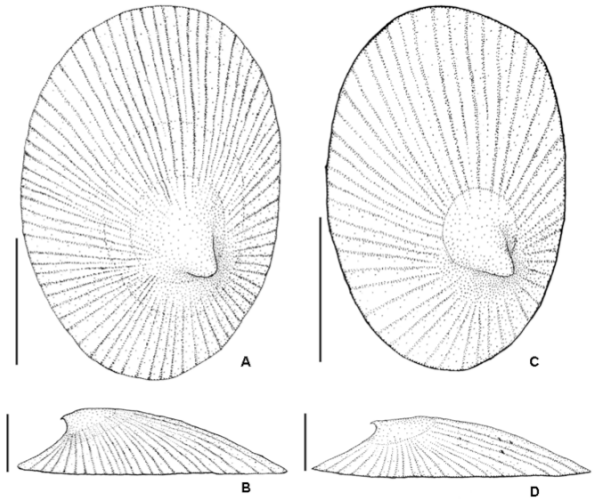


**Figure 3**. Drawings of *Uncancylus concentricus*. (A) and (B) - biggest specimen, Col. Mol UERJ 7372 b. (C) and (D) smallest specimen, Col. Mol UERJ 7372 a. (A and C) dorsal view; (B and D) lateral view. Scale = 1mm.

Haas (1953) reported *Burnupia* (*Anisancylus) obliquus* (Broderip & Sowerby, 1832) to Ilha Grande, a misidentification according Santos et al. (1999) because this species is restricted to Chile, Argentina and South Brazil (Lanzer 1996; Santos 2003). *Anisancylus obliquus* and *U. concentricus* are similar because of the elevated shell with projected apex flexed to right and teleoconch with well marked radial lines, differing by the shape of the muscle scars. *Uncancylus concentricus* have a moon-shaped anterior right muscle scar whereas in *A. obliquus* it is elongated, almost reaching the medium of the mantle length; the posterior muscle scar is elliptical in *U. concentricus* and rounded in *A. obliquus*. The mantle pigmentation is scarce, sometimes more concentrated at the left side in *U. concentricus* (Figure 4A) whereas *A. obliquus* shows a dense pigmentation all over the mantle (Figure 4B), almost completely dark in some specimens (Santos 2000). More details about ancylids morphology in Santos (2003). It was not possible to examine Haas´s specimens (Haas 1953) to verify if they were in fact *U. concentricus*.

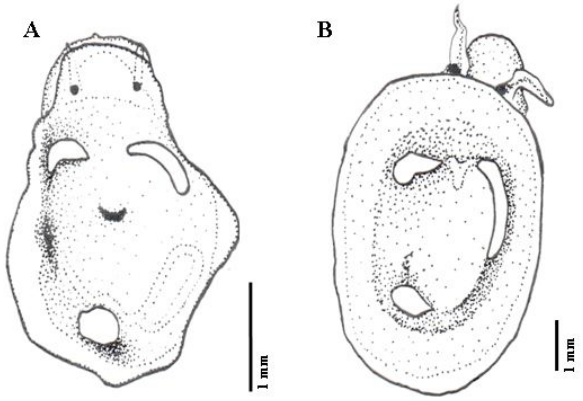


**Figure 4**. Drawings of mantle scars (A) *Uncancylus concentricus,* and (B) *Anisancylus obliquus* (Broderip & Sowerby, 1832).

The occurrence of these specimens at a so restricted habitat apart from the continental landmass could be explained by bird transport (Rees 1965; Green and Figuerola 2005). This record is the first about freshwater snails to the *Praia do Sul* Biological Reserve, extending the distribution of *U. concentricus* to Rio de Janeiro state and also of *G. ticaga* to *Praia do Sul* Biological Reserve.

**Acknowledgements**
To biologist Norma Crud Maciel, administer of Praia do Sul Biological Reserve, to Mr. Antonio C. de Souza (Vovô), Mr. Clementino T. da Silva and Mrs. Deise C. L. Benevides, from the staff of Praia do Sul Biological Reserve for logistic support and help to field work. Thanks to Conselho Nacional de Desenvolvimento Científico e Tecnológico for a research grant (CNPQ 476682/2004-5) to the corresponding author (SBB); ICM had a CNPq scholarship (2005-2007) and LEML had a UERJ/EIC scholarship (2005-2006).

*Check List* **5**(3): 513–517, 2009.
ISSN: 1809-127X



## Literature cited

Benthem-Jutting, W. S. S. van. 1943. Über eine Sammlung nichtmariner Mollusken aus dem niederschlagsarmen Gebiete Nordost-Brasiliens. Archiv für Hydrobiologie 39: 458-489.

Green, A. J. and J. Figuerola. 2005. Recent advances in the study of longdistance dispersal of aquatic invertebrates via birds. Diversity and Distributions 11: 149-156.

Haas, F. 1949a. Land und Süsswassermollusken aus dem Amazonas-Gebiete. Archiv für molluskenkunde 78 (4/6): 149-156.

Haas, F. 1949b. On fresh water Mollusks from the Amazonian region. Anales del Instituto de Biología de México 20: 301-314.

Haas, F. 1952. South American non-marine shells: further remarks and descriptions. Fieldiana, Zoology 34 (9): 107-132.

Haas, F. 1953. Mollusks from Ilha Grande, Rio de Janeiro, Brazil. Fieldiana, Zoology 34: 203-209.

Hylton-Scott, M. I. 1963. Moluscos terrestres y de agua dulce de la Patagonia; p. 385-398 *In* C. D. Debouteville and E. Rapport (ed). Biologie de I'Amerique Australe. Paris, Centre National de la Recherche Scientifica, vol. 2.

Irmler, U. 1975. Ecological studies of aquatic soil invertebrates in three inundation forests of Central-Amazonia. Amazoniana 3: 337-409.

Lanzer, R. M. 1996. Ancylidae (Gastropoda: Basommatophora) na América do Sul: sistemática e distribuição. Revista Brasileira de Zoologia 13: 175-210.

Moricand, S. 1845. Troisiéme Supplément au Mémoire sur les coquiles terrestre et fluviatiles de la province de Bahia. Memoires de la Societe de Physique et d' Histoire Naturelle de Genève 11: 537-544.

Pilsbry, H. A. 1913. Notes on *Gundlachia* Pfr. Appendix to Fred Baker's paper on the land and fresh-water mollusks of the Stanford Expedition to Brazil. Proceedings of the Academy of Natural Sciences of Philadelphia 65: 668-671

Pilsbry, H. A. 1920. Costa Rican land and freshwater mollusks. Proceedings of the Academy of Natural Sciences of Philadelphia 72: 2-12.

Rees, W. J. 1965. The aerial dispersal of Mollusca. Proceedings of the Malacological Society of London 36: 269-282.

Santos, S. B. 2000. Morfologia do sistema muscular e do sistema reprodutor de *Anisancylus obliquus* (Broderip & Sowerby) do Chile, como contribuição à sistemática de Ancylidae (Gastropoda, Pulmonata, Basommatophora). Revista Brasileira de Zoologia 17 (4): 995-1006.

Santos, S. B. 2003. Estado atual do conhecimento dos ancilídeos na América do Sul. (Mollusca, Gastropoda, Pulmonata, Basommatophora). Revista de Biologia Tropical 50 (3): 191-224.

Santos, S. B., D. P. Monteiro, M. A. Fernandez and S. C. Thiengo. 1999. Primeiro registro de *Antillorbis nordestensis* (Lucena) (Mollusca, Gastropoda, Planorbidae) para a Ilha Grande, Angra dos Reis, Rio de Janeiro. Revista Brasileira de Zoologia 16(2): 257-259.

Santos, S. B., S. A. P. Magalhães-Fraga, B. S. Braun and T. P. Moulton. 2003. The first list of freshwater molluscs in the "Pedra Branca State Park", Rio de Janeiro, Brazil. Biociências 11(2): 185-186.

Santos, S. B., I. C. Miyahira, and L. E. M. Lacerda. 2007. First record of *Melanoides tuberculatus* (Müller, 1774) and *Biomphalaria tenagophila* (d´Orbigny, 1835) on Ilha Grande, Rio de Janeiro, Brazil. Biota Neotropica 7(3): 361-364.

Thiengo, S. C., M. A. Fernandez, M. F. Boaventura and M. A. Stortti. 1998. A survey of gastropods in the Microrregião Serrana of the Rio de Janeiro, Brazil. Memórias do Instituto Oswaldo Cruz 93 (Suppl. I): 233-234.

Thiengo, S. C., M. A. Fernandez, M. F. Boaventura, C. E. Grault, H. F. R. Silva, A. C. Mattos and S. B. Santos. 2001. Freshwater snails and *Schistosomiasis mansoni* in the state of Rio de Janeiro, Brazil: I – Metropolitan mesoregion. Memórias do Instituto Oswaldo Cruz 96(Suppl.): 177-184.

Thiengo, S. C., M. A. Fernandez, M. F. Boaventura, S. B. Santos and A. C. Mattos. 2002a. Freshwater snails and schistosomiasis mansoni in the state of Rio de Janeiro, Brazil: II - Centro Fluminense Mesoregion. Memórias do Instituto Oswaldo Cruz 97: 621-626.

Thiengo, S. C., M. A. Fernandez, M. F. Boaventura, M. G. Magalhães and S. B. Santos. 2002b. Freshwater snails and schistosomiasis mansoni in the state of Rio de Janeiro, Brazil: III - Baixadas Mesoregion. Memórias do Instituto Oswaldo Cruz 97(Suppl. I): 43-46.

Thiengo, S. C., A. C. Mattos, M. F. Boaventura and M. A. Fernandez. 2004a. Freshwater snails and schistosomiasis mansoni in the state of Rio de Janeiro, Brazil: IV - Sul Fluminense mesoregion. Memórias do Instituto Oswaldo Cruz 99: 275-280.

Thiengo, S. C., A. C. Mattos, M. F. Boaventura, M. S. Loureiro, S. B. Santos and M. A. Fernandez. 2004b. Freshwater snails and schistosomiasis mansoni in the state of Rio de Janeiro, Brazil: V – Norte Fluminense mesoregion. Memórias do Instituto Oswaldo Cruz 99(Suppl.1): 99-103.

Thiengo, S. C., S. B. Santos and M. A. Fernandez. 2005. Malacofauna límnica da área de influência do lago da usina hidrelétrica de Serra da Mesa, Goiás, Brasil. I. Estudo qualitativo. Revista Brasileira de Zoologia 22: 867-874.

*Check List* **5**(3): 513–517, 2009.
ISSN: 1809-127X

## NOTES ON GEOGRAPHIC DISTRIBUTION

Thiengo, S. C., A. C. Mattos, S. B. Santos and M. A. Fernandez. 2006. Freshwater snails and schistosomiasis mansoni in the state of Rio de Janeiro, Brazil: VI - Noroeste Fluminense Mesoregion. Memórias do Instituto Oswaldo Cruz 101: 239-245.

Received January 2009
Accepted May 2009
Published online September 2009