



Scientific Note

First reported occurrence of pregnant and neonate, *Rhinoptera brasiliensis* (Chondrichthyes, Rhinopteridae) caught off Guarujá city, São Paulo state, Brazil

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Abstract. This paper presents the occurrence pregnant female and neonate of *Rhinoptera brasiliensis*, Muller, 1836 caught off Pereque and Guaiuba beaches, Guarujá City, Sao Paulo State (23°59' 18"S-46°14'32"W).

Keywords: reproduction, embryo, rays, rhinopteridae, fisheries

Resumo. Primeiro registro de ocorrência de fêmea grávida e neonato de *Rhinoptera brasiliensis* (Chondrichthyes – Rhinopteridae), capturados em Guarujá, São Paulo, Brasil. Este trabalho apresenta a ocorrência de uma fêmea prenha e um neonato de *Rhinoptera brasiliensis*, Muller, 1836, no litoral do Estado de São Paulo, capturados frente às praias de Perequê e Guaiúba, Guarujá-SP, (23°59' 18"S-46°14'32"O).

Palavras-chave: reprodução, embrião, raias, rhinopteridae, pesca.

The genus *Rhinoptera*, Cuvier, 1829, is represented by eight species of rays, distributed around the world. They are present in tropical, subtropical and warm-temperate waters, except around Oriental Pacific Island (Last & Stevens 1994). They are very common in coastal and estuarine regions (Last & Stevens 1994). According to Cavalcanti *et al.* (1997), two species occurred off the Brazilian coast, the cownose ray *Rhinoptera bonasus* (Mitchill 1815) and the Brazilian cownose ray *R. brasiliensis*, Muller 1836.

Bigelow & Schroeder (1953) noted that the species was identified as *R. brasiliensis*, based on 9 series upper jaws teeth in samples collected in Brazil. Nevertheless, the species validity was questioned by Compagno (1999), and after confirmed by Menni & Stehmann (2000); based on the species occurrence off Rio de Janeiro, and Rio Grande do Sul.

The ticon cownose Ray, *R. brasiliensis* is

distributed from Rio de Janeiro to Rio Grande do Sul States, 23°–32°S (Bigelow & Schroeder 1953, Menni & Stehmann 2000). It is found in depths up to 20 m off Rio Grande do Sul State, suffering intensive artisanal fishery pressure (Vooren *et al.* 2005). Reproductive information is poorly known. A case of matrotrophic viviparity (incipient histotrophy *sensu* Hamlett *et al.* 2005), was observed in embryos feeding initially on yolk, and then receiving nourishment from the mother by indirect absorption of uterine fluid enriched with mucus, fat and protein through specialized structures (Breder & Rosen 1966, Carrier *et al.* 2004). Generally one embryo per litter was observed (Vooren *et al.* 2005).

A pregnant female and a neonate of *R. brasiliensis* were caught by artisanal fishery (depths of 3 to 20 m) off Pereque and Guaiuba beaches, in Guarujá City (23° 59' 18" S; 46° 14' 32"W), Sao Paulo State, in March and October 2008, respectively (Fig. 1).

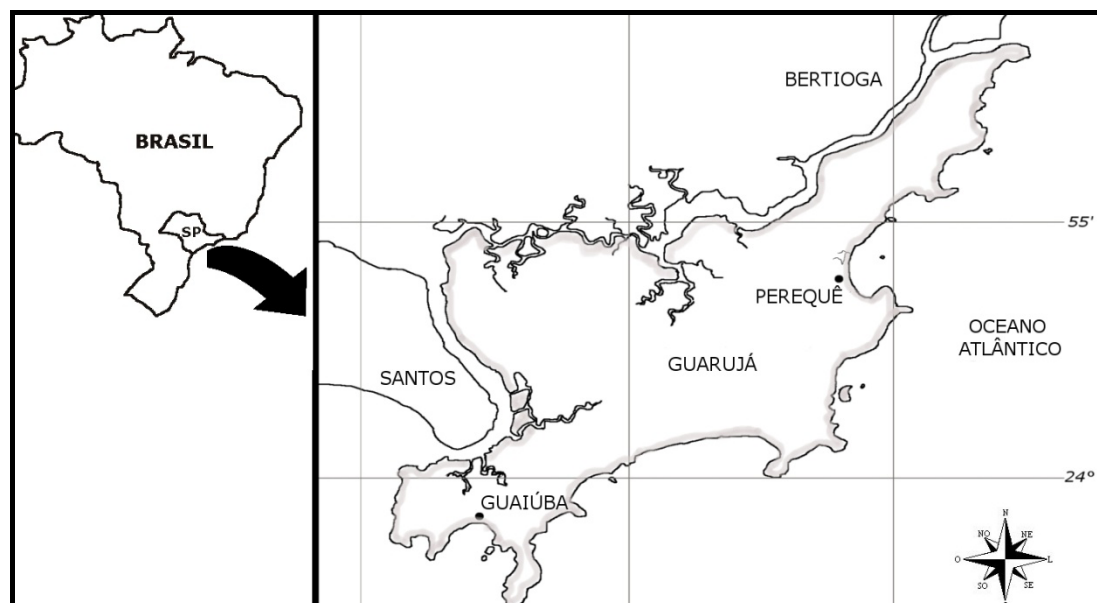


Figure 1. Guaiuba and Pereque beaches at Guarujá City, São Paulo State, location of cownose ray catch.

The neonate was caught by the bob-shrimp double throw boat Maria Gabriela, and a pregnant female was caught by the boat 'Gabriela' operating with gill net for bone fish. Both were donated by fisherman of artisanal fishery.

The identification was based on Bigelow & Schroeder (1953) and morphometric measurements followed Figueiredo (1977), Last & Stevens (1994) and Notarbartolo-di-Scaria (1987) (Table I). The morphometric data are expressed in percentages of

the disc width (DW). The identification of the exemplars as *Rhinoptera brasiliensis* can be considered as the first record in the region.

Table I presented the average percentage of the specimens in order to contribute with the species identification. Also it was observed nine tooth plates in all jaws specimens. Comparing the biometrics parameters, the female and neonate were very similar to each other and a little different from embryo.

Table I. Morphometric measurements (in mm) and percents of disc width (DW) carried out in the adult female and its embryo and the neonate of *Rhinoptera brasiliensis*.

Measurements	Female	%	Embryo	%	Neonate	%
Sex	F		M		M	
Disk Width	94	100	27.5	100	36	100
Snout to pectoral fin	58	61.70	17.2	62.55	22	61.11
Snout to pelvic fin	62	65.96	17.5	63.64	24	66.67
Snout to nostril	6,5	6.91	2	7.27	3	8.33
Snout to mouth	10,9	11.60	2.5	9.09	4	11.11
Snout to cloaca	56	59.57	15.1	54.91	20	55.56
Snout to eye	4	4.26	1.8	6.55	1,5	4.17
Snout to 1 ^a branchial cleft	15,5	16.49	4.7	17.09	6	16.67
Snout to 2 ^a branchial cleft	18	19.15	5.6	20.36	6,7	18.61
Snout to 3 ^a branchial cleft	21	22.34	6.4	23.27	7,7	21.39
Snout to 4 ^a branchial cleft	23	24.47	6.9	25.09	8,6	23.89
Snout to 5 ^a branchial cleft	25	26.60	7.3	26.55	9,4	26.11
Distance between 1 e 5 branchial cleft	9,7	10.32	2.8	10.18	3,6	10.00
Spine Length	#	#	2.3	8.36	3	8,33

The male of 36 cm DW hooked was considered neonate because of the umbilical cord scar. Nevertheless, according to Bigelow & Schroeder (1953) the birth size of that species ranges

from 43 cm to 48 cm and Vooren *et al.* (2005) observing pregnant female at Rio Grande do Sul inshore found embryos up to 37 cm DW.

With the dissection of the pregnant female,

it could be observed the typical fetal position (enrolled with the pectoral fins overlapping the dorsal region) of the single embryo (Figs. 2 and 3).

Apparently the right uterus was not functional. According to Vooren *et al.* (2005), the species presents only one embryo per litter.



Figure 2. Female cloacae showed the posterior region from one embryo.

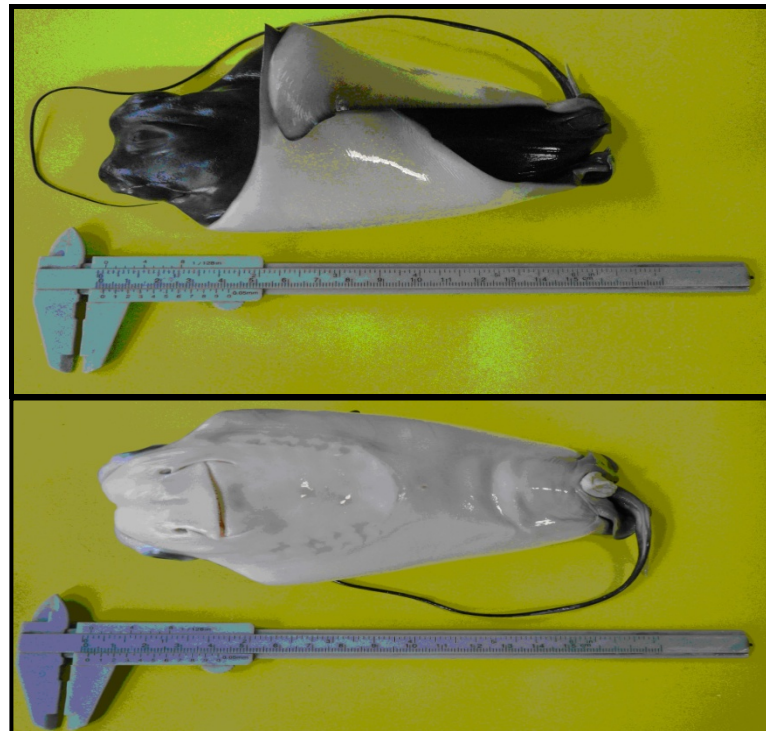


Figure 3. Dorsal and ventral view of embryo.

The embryo measured 27.5 cm DW and weighed 5.1 g (Table I). It showed dark gray uniform color darker than the neonate color. Also it was observed “uterine milk” which nourishes the developing embryos.

The presence of neonate in March and pregnant female in October off Guarujá City, São Paulo State, suggests that this place could be one of the nursery areas for the species.

According to the fisherman *R. brasiliensis* is rejected in the fishery because of its low value. Nevertheless the species must be better studied because it was included in the Red List as endangered (Vooren 2004).

The specimens were deposited in the Ichthyological Collection of the “Núcleo de Pesquisa e Estudo em Chondrichthyes-NUPEC” (neonate No 2146, female No 2147 and embryo No 2147.1).

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