Preliminary Notes on Nesting Biology of the Broad-nosed Caiman (Caiman latirostris) in São Paulo, Brazil

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Introduction

There are many reports of succesfull crocodilians captive propagation. Broad-nosed caiman specifically has also been reported to have been succesfully reproduced in captivity (Rocha e Silva & Zuquim Antas, 1981; Anonimous, 1986; Widholzer et al., 1986; Lamiera, 1988 and Verdade & Lavorenti, 1990). However, its large distribution zone demands more information on its nesting Biology to increase its captive propagation.

Materials & Methods

We reported 17 nests of broad-nosed caiman in captivity in São Paulo State from 1986 to 1992. Nine of these nests were located in the facilities of ESALQ / University of São Paulo, six in Zoos, and two in other institutions.

Results & Discussion

The number of reported nests can be considered small compared to studies conducted with other crocodilians (Wilkinson, 1984 and Carboneau & Chabreck, 1990). However, this paper represents the major report for this species in Brazil.

Generally, the nest materials followed the mound-nest pattern described in the literature (Greer, 1970; Martin, 1977 and Ferguson, 1985). The nest sizes presented in Table, 1show that there is no significant difference between nests that have soil as a content, and those that do not. As a result, we can infer that nests are built up with a relatively constant size. Soil, at least in captivity, can be used only to complete the "normal" nest size. The fact that soil as a content was found only where there was apparently not enough amount of leaves and debris seems to corroborate this idea. Larriera (personal communication) has been finding two basic nesting sites in the Argentinean "pampas": savanna-nest and forest-nest. The latter usually presents soil as one of the main contents, probably also due to the smaller offer of leaves and debris on the forest ground than on the savanna ground.

Table 2 shows some other results on nesting Biology. The nests were located around 2 meters far from the water pond in average, ranging from 0 to 7 meters. The incubation period ranged from 73 to 93 days (77.5 in average). The clutch size ranged from 18 to 49 (33 in average) with a relatively low rate of alive hatchlings per nest: 7.33 ranging from 0 to 31. The mean egg weight was 70.89 g each, ranging from 60 to 82.2 g. The eggs major diameter measured 6.73 cm, ranging from 6 to 7.5 cm, while the minor diameter measured 4.28 cm, ranging from 3.4 to 4.5 cm. The hatchlings weighted 47.61 g in average, ranging from 36 to 63g each, and measured 24.65 cm total length, ranging from 21.3 to 27 cm. The dams weighted 29.52 kg in average, ranging from 15 to 59.7 kg, and measured 88.83cm mean snout-vent length, ranging from 70 to 110 cm. The sires weighted 37.99 kg in average, ranging from 30 to 64 kg and measured 95.04 cm mean snout-vent length, ranging from 90 to 109 cm.

The nesting period started in late October and finished in mid February with a pick in January, while the hatching period started in early February and ended in middle April, with a peak in March (Fig. 1).

Almost all of the females (94.4%) exibited maternal behavior during incubation period, but contrary to the observations of Widholzer et al. (1986), no male had been seen to exhibit nest protective behavior.

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Table 1: Nest sizes

	Nests (samples A & B)		Nests with soil (sample A)		Nests without soil (sample B)	
	mean	CV%	mean	CV%	mean	CV%
Height (cm)	49.2	35,18	42	10.65	54.3	39.59
Length (cm)	134,2	30,56	118	34.63	145,7	27,41
Width (cm)	103,4	42,55	104	17,47	102,9	56,05

Chi-square Test:

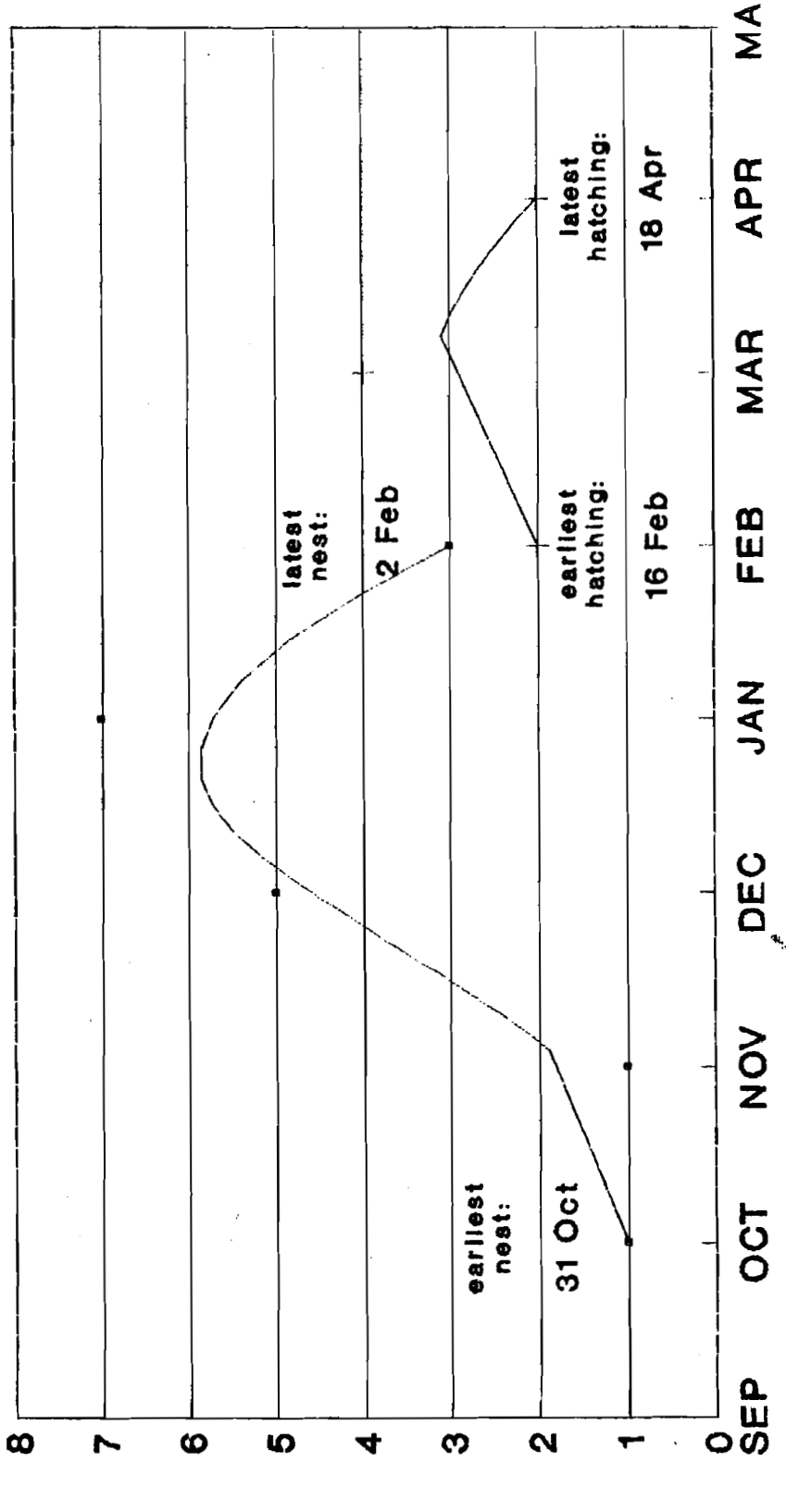
	χ^2	P
Height	1.581	> 20%
Length	0,006	> 20%
Width	2,939	> 5%

Table 2: Nesting behavior of broad-nosed caiman in captivity in São Paulo State. Brazil (Period: 1986 - 1992)

	mean	sd	CV%	minor	major	N
Distance from the water (m)	1,97	1.72	87,3	0	7	16 nests
Incubation period (days)	77,5	3,01	3,88	73	93	90 eggs
No. of eggs per nest	33	10,63	32,2	18	49	12 nests
Size of eggs - length (cm)	4,28	0,2	4,58	3,4	4,5	123 eggs
- width (cm)	6,73	0,3	4,53	6	7,5	123 eggs
Weight of eggs (g)	70,89	5,64	7,95	60	82,2	156 eggs
No. of hatchlings per nest	7,33	11	149,93	1	31	12 nests
Size of hatchlings	24,65	1,15	4,66	21,3	27	50 hatch.
Weight of hatchlings (g)	47,61	8,18	17,18	36	63	50 hatch.
Weight of dams (kg)	29,52	10,61	35,92	15	59,7	15 dams
Weight of sires (kg)	37,99	10,04	26,44	30	64	15 dams
Snout-vent length of dams (cm)	80,33	9,32	11,52	70	110	13 sires
Snout-vent length of sires (cm)	95,04	5,75	6,05	90	109	13 sires

N: Sample size
sd: Standard deviation
CV%: Coeficient of variation

Figure 1: Nesting and hatching period of broad-nosed caiman in Sao Paulo State, Brazil (period of study: 1986 to 1992)



Sample size: 17 nests