

COLONY REPRODUCTION OF THE WHITE-FACED MONKEY  
(*CEBUS CAPUCINUS*) IN PANAMA

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Napier and Napier (1967) observed that breeding of *Cebus* species in captivity is relatively rare in consideration of world zoo records, which gave a total of only 133 births over 4 years. A recent report by Hayes *et al.* (1972) and a review bibliography by Morrow and Terry (1973), indicated a paucity of published information on capuchin reproduction subsequent to a note by Hill (1941). We have maintained the 2 Panamanian subspecies of *Cebus capucinus* as hosts for human malaria during our investigations with New World monkeys (Young *et al.*, 1975). They represent the typical form *C. c. capucinus* (Linnaeus), found east of the Canal Zone, and a western geographical variant, *C. c. imitator* Thomas; differentiation is by a greater transverse extent of the premolars in the latter (Goldman, 1920; Hall & Kelson, 1959; Handley, 1966). Both adapted remarkably well to the laboratory environment.

The animal facilities were located outdoors at the Gorgas Memorial Laboratory compound in Panama City. Pens with concrete floors and chain-link walls and ceiling (4 x 4 x 2 m) served as cages. Shade and protection from rain was afforded by partial overhang of corrugated metal sheets. Each cage contained peripheral steel tubing for resting and a centrally located swing. Food consisted primarily of high protein monkey chow (Ralston Purina) supplied twice daily, supplemented with in season fruit and vegetables. Water was available *ad lib.*

Two troops of *C. c. imitator*, captured in Alanje, Chiriqui Province, were retained as separate entities. The first acquired in March, 1970, was comprised of 12 males and 8 females. Of these, 6 males and 6 females (adults and subadults) were confined together for 1 1/2 years (Group 1). The second troop, also captured intact as 5 adult and 1 juvenile males with 2 adult and 1 juvenile females, was obtained in July, 1970; all were housed in another gang cage for one year (Group 2). Each social unit thereafter was reduced in size by occasional removal of individuals through June, 1975. As shown in Table 1, during the inclusive 5-year period at least five colony female *C. c. imitator* conceived and produced full term offspring. A total of 10 progeny was recorded, plus one infant from a feral pairing; the latter birth occurred one month after acquisition. The first progeny resulting from cage mating were realized 14 and 11 months after arrival of the 2 respective family groups. Three mothers were multiparous, with 4 interbirth intervals ranging from 15 to 27 months ( $\bar{X}=19$ ).

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Table 1. Colony Births of *Cebus capucinus*.  
(M=Male, F=Female, NR=Not Recorded)

	Female	Deliveries
<i>C. c. imitator</i>		
Group 1	4902	24 April 1970(M) <sup>a</sup> ; 3 July 1972(M); 8 February 1974(M)
	4885	20 May 1971(F)
	4889	9 June 1971(F); 5 September 1972(M)
	4901	8 February 1972(M)
	NR	17 March 1975 (unsexed)
Group 2	5298	1 June 1971(M); 15 October 1972 (unsexed)
	NR	13 December 1973 (unsexed)
<i>C. c. capucinus</i> <sup>b</sup>		
	684	December 1968(F); 24 April 1970(F); 1 July 1971(F); 6 May 1972 (unsexed) <sup>c</sup>
	206D	12 March 1971(M)
	NR	9 May 1969(F)
	NR	9 April 1971(F)
	NR	11 April 1971(M)
	NR	14 January 1974(F)
	NR	27 February 1974(M)

<sup>a</sup>Conceived prior to captivity

<sup>b</sup>Data not recorded for two additional infants, mother(s) unknown.

<sup>c</sup>Mother and fetus died during parturition.

*Cebus c. capucinus*, from scattered localities, were purchased on an individual basis beginning October, 1965. Males and females (adults and juveniles) were randomly pooled after acclimation into units of less than 10 animals. In subsequent holding, 2 to 4 cages of these monkeys were maintained, with *ad hoc* removal and reintroduction of subjects. Captive pairings in the above, to mid-year 1975, gave a total of nine viable births. In most instances, the mothers were not monitored and thus the frequency of multiparous females is not known. One individual (No. 684), over 3 1/2 years, was identified as having 3 live births. She died during her fourth parturition, 11 months after the third.

Mating males for the two subspecies of *Cebus* could not be established, however dominant individuals were seen to couple with more than one female. The gestation period for *Cebus* is given as six months (Napier & Napier, 1967). Although births occurred virtually throughout the year, the fewest (2 of 19 with known dates) were evidenced from August to November, corresponding to the season of heaviest rainfall in Panama. Infant mortality was negligible as abandonment was rare during the three-month period of close postpartum maternal association. While all progeny have remained with their family groups, thus far only one second generation pregnancy (in a 5-year-old *C. c. capucinus*) has been noted which ended in a stillbirth at approximately 5 months.

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