

Nest and egg description of an endemism of the Brazilian north-east: the Cactus Parakeet, *Aratinga cactorum*

Luciano Nicolás Naka

Cidade Universitária UFSC, C.P.5184, 88040-970, Florianópolis, SC, Brazil. E-mail:a94128119@ccb2.ccb.ufsc.br

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RESUMO. Descrição do ninho e ovo de um endemismo do nordeste brasileiro: o periquito-da-caatinga, *Aratinga cactorum*. São descritos quatro ninhos do periquito-da-caatinga (*Aratinga cactorum*) achados em Curaçá, região norte do estado da Bahia, durante os meses de janeiro, fevereiro e março de 1997, assim como alguns comportamentos reprodutivos observados. Todos os ninhos encontrados foram feitos dentro de cupinzeiros arbóreos ativos. O conteúdo dos ninhos se encontrava depositado em uma câmara interna construída pelo casal de *A. cactorum* e conectado ao exterior através de um túnel. O número médio de ovos por ninho foi igual a $5,0 \pm 0,82$ ($N = 4$). Os ovos apresentavam um formato levemente ovóide sendo brancos com uma tonalidade opaca, com dimensões médias de $24,86 \pm 0,38$ mm de comprimento e $20,38 \pm 0,72$ mm de largura ($N = 14$).

PALAVRAS-CHAVE: *Aratinga cactorum*, caatinga, endemismo, ninhos, ovos, Psittacidae, reprodução.

KEY WORDS: *Aratinga cactorum*, caatinga, eggs, endemism, nests, Psittacidae, reproduction.

The voice of the Cactus Parakeet (*Aratinga cactorum*) is undoubtedly one of the most common and more characteristic sounds of the Brazilian Caatinga. This parakeet occurs in the Brazilian north-east, from Piauí, Ceará and Pernambuco to Minas Gerais (Meyer de Schauensee 1970), occurring mainly in the caatinga (Sick 1997). As most of its eight Brazilian congeners (Altman and Swift 1993), this parakeet lives in open landscapes, being common and conspicuous, so the lack of information about this species is, to some extent, surprising. This paper describes the nest and eggs of this species, as well as some reproductive behaviour observed during nest construction and incubation.

The field study was undertaken near the town of Curaçá, 92 km east of Juazeiro, located on the northern part of the state of Bahia. All the data presented here were obtained near the Field Base of the Ararinha-azul Project

(9°10'S, 39°47'W) at Fazenda Concórdia, and the nearby Fazenda Caraíbas, both with an elevation of 350 m.

The caatinga is characterized by usually flat, strongly eroded and stony soils, with a very irregular and intense dry season. The rainy season in the Curaçá area starts in December and goes until March (Rizzini 1979).

The caatinga, in a phytogeographic perspective, can be thought of as a seasonal, deciduous, sometimes thorny, dry forest, characteristic of semiarid north-eastern Brazil (A. Fernandes *in* Monteiro and Kaz 1995). Together with this dry habitat (for a full description see the characterisation of the shrubby or low caatinga of A. Fernandes *in* Monteiro and Kaz 1995), there are other distinctive and more humid regions in the Curaçá area, associated with streams, including varzeas and matas de galeria (Juniper and Yamashita 1991).

Once the nests were found and the presence of a

breeding pair was confirmed, a small loophole was made on the opposite side of the tunnel entrance of the termitarium with a machete. The entire portion that was removed was placed in the same position after the manipulation of the eggs, which were left as they were originally found. As a result, the removed part would then serve as a cover, to eventually be repaired by the termites. After realizing that the termites were taking a long time to repair the damage, or not doing it at all, the sides of the covers were filled with wet mud, which dries very quickly, in order to fill the cracks.

Pairs of Cactus Parakeets were seen building their nests on three occasions, on 6 and 15 January and 14 March, 1997. In all three cases, the pairs displayed the same behaviour. While one of the birds was digging the nest's tunnel, its mate was keeping guard on a nearby branch in a vertical position, giving off alarms when somebody approached the building nest. The first pair was working on a small termitarium about the size of a soccer ball, which was 1.6 m up, and I was informed by local people that the pair had been working there for about a week. The second pair was also working on a small termitarium, located on a baraúna-do-sertão tree (*Schinopsis brasiliensis*: Anacardiaceae), 5 m up. The last pair observed had its nest under construction on an aroeira-do-sertão tree (*Myracrodruon urundeuva*: Anacardiaceae), on a middle-sized termitarium, with a diameter of about 30 cm, 1.7 m up. Its tunnel was already 15 cm long.

Four occupied nests of the Cactus Parakeet were found during the rainy season of 1996-1997. All the nests followed the same pattern, being found exclusively in

arboreal active termitaria, with nestlings and eggs lodged in a chamber built by the parakeets inside the structure (figure 1). The chambers (table 1) were usually built in the middle part of the termitarium, and the entrance tunnel had its opening in the basal portion of the structure, sloping up to the nest chamber. No lining was found in the nests, the nestlings and eggs being in direct contact with the termitarium, although there were no termites around them. All of the 14 eggs examined were slightly ovoidal with a dull white tone (table 2). Nest 1, which had 6 eggs, was found on 4 January and was located on a big rounded termitarium located on a limb of a baraúna-do-sertão tree (figure 1). Nest 2 was found on 6 January on a spherical *Nasutitermes* termitarium located on an aroeira-do-sertão tree. The day the nest was found, there were 5 eggs in the chamber, but one week later one of them disappeared. Nest 3 was found on 7 January in an elongated termitarium located on a quixabeira tree (*Bumelia sartorum*: Sapotaceae). There were 5 eggs inside the chamber, one of them cracked, containing fresh yolk. Nest 4 was found by local people during the last week of February, and was shown to me on 4 March. It contained 3 nestlings with feathers on the tail and wings, and one addled egg inside the chamber. This nest was built on a dead baraúna-do-sertão tree in an antropic area, 50 m from a local house.

Everytime the nests were checked during the incubation period, at least one member of the pair was inside the termitarium, and two times both were inside.

During the study period, due to heavy and constant rains, some of the loopholes that were made in order to

Table 1. Nests' height above ground and chambers' measurements (cm). The height is from the base of the termitarium to the ground.

Nest	Height above ground	Length	Width	Height	Tunnel length/diameter
1	250	33	20	15	19/7
2	170	27	13	24	12.5/6
3	270	30	23	17	11/5
4	250	30	15	20	24/7

Table 2. Clutch-size and average measurements of the eggs per nest, with their respective standard deviation. Egg measurements are in mm.

Nest	Clutch-size	Average measurements of the eggs per nest
1	6	24.83 ± 0.54 x 20.69 ± 0.25 (N = 6)
2	5	24.50 ± 0.62 x 19.56 ± 0.32 (N = 4)
3	5	25.25 ± 0.45 x 20.90 ± 0.24 (N = 4)
4	4*	
Average	5.0 ± 0.82	24.86 ± 0.38 x 20.38 ± 0.72 (N = 14)

*Probable number of eggs, 3 nestlings and 1 addled egg found.

examine the nest contents, collapsed leading to the abandonment of the pairs in nests 2 and 3. In nest 1 two of the eggs hatched, but the nestlings were lost between 18 and 24 January due to unknown reasons.

Certain species of invertebrates and vertebrates often seek refuge in the termitaria during long dry periods. The former include ant colonies, spiders, scorpions and centipedes, and the latter, serpents, lizards and small rodents (Monteiro and Kaz 1995). This kind of reproductive behaviour has been recorded in a few other Brazilian birds' species, including some parrots, but none of them are known to be exclusively related to the termitaria, as seems to be the case of the Cactus Parakeet in the Caatinga. These other species are the Peach-fronted Parakeet *Aratinga aurea* (Antas and Cavalcanti 1988, Sick 1997), the Yellow-chevroned Parrotlet *Brotogeris chiriri* (Antas and Cavalcanti 1988, Paranhos 1995, Sick 1997), the White-eyed Parakeet *Aratinga leucophthalmus* (Y. de Melo Barros pers. comm.) and the Dusky-headed Parakeet *Aratinga pertinax* (Forshaw and Cooper 1978), which itself is closely related to the Cactus Parakeet (Sick 1997). The utilisation of termitaria by certain species to build their nests should be favoured, as pointed out by Sick (1997), by the constant humidity and temperature conditions inside

the structure. Hardy (1963), also remarks that such relationship, termite-parakeet, makes it very difficult for most predators to reach the eggs or youngsters without being exposed to the irritated termites. The fact that all the nests were located on active termitaria shows the importance of the termites to the parakeets, providing protection to their nests and repairing any damage made on the external surface, which greatly stimulates the photodermatic sense of the termites, leading workers and soldiers to repair the wrapper (Von Hagen, 1930, cited by Hardy, 1963). This was also seen by Paranhos (1995) and Hardy (1963), who reported that parakeets never use deserted termitaria, which may become dry and are easily broken.

Little is known about the number of eggs that hatch, but nest 4 had three nestlings with feathers on the tail and wings. In January 1996, a nest with 5 nestlings was seen in the area (Y. de Melo Barros pers. comm., 1997). From the scarce data available on the reproduction of the neotropical parrots in the wild, an average of 5 eggs per nest seems quite high if compared with other species of the genus, however, it must be taken in consideration the favourable conditions in the area due to the abundant rains during the rainy season of 1996-1997. Forshaw and Cooper (1978) report an average of two eggs for the Blue-crowned

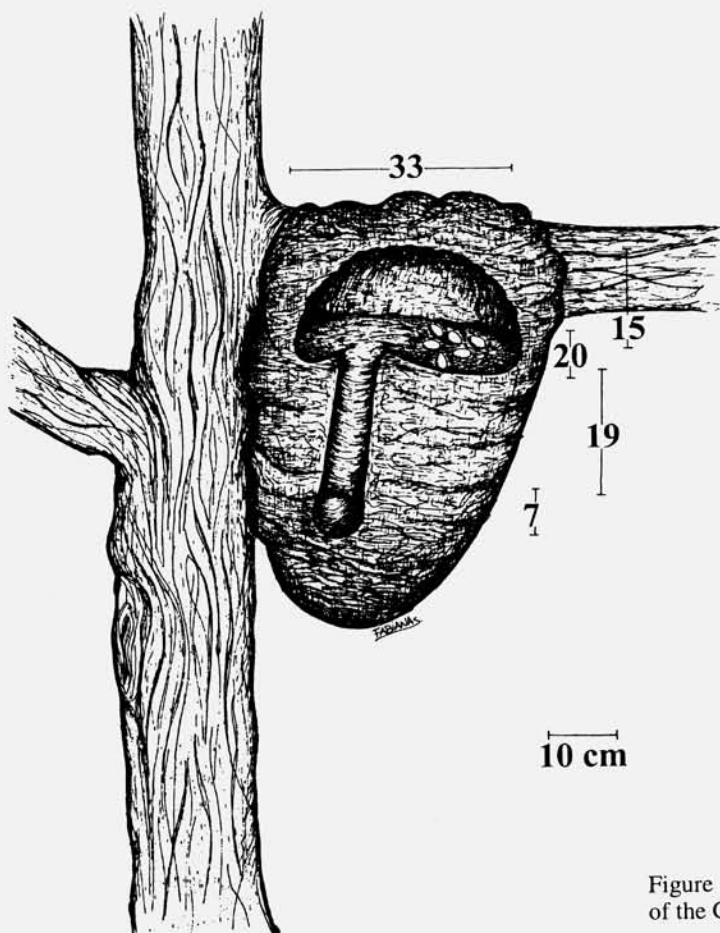


Figure 1. Cross section of the nest of the Cactus Parakeet (nest 1).

Parakeet *A. acuticaudata*, and De la Peña (1987) reports two nests with 3 eggs each. In the studied area, I have found two nests of this species, with 4 eggs each. The White-eyed Parakeet *A. leucophthalmus* clutches 3 or 4 eggs, and the Peach-fronted Parakeet *A. aurea* 2 or 3 (Forshaw and Cooper 1978). These authors give some information from captive individuals: the Jandaya Parakeet *A. jandaya*, lays 3 eggs, the Sun Parakeet *A. solstitialis*, 4 eggs and the Brown-throated Parakeet *A. pertinax*, 4 to 7 eggs, being the only example with such a high number. Apparently the only information about the Cactus Parakeet is from captive birds, reported in 1914 by Lovell-Keays, with 4 eggs (Forshaw and Cooper 1978). According to the same information, the female is the only one that incubates, and the male feeds the female during this period.

According to the observations made by the author and by M. A. Da-Ré (pers. comm., 1997), the termitaria are abundant and widely available for the Cactus Parakeet, so they should not represent a limiting factor.

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