AN ALBINO BAT FROM THE BRAZILIAN CERRADO

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Introduction

Albinism is a chromatic anomaly that has been observed in many vertebrate taxa (Uieda 2000). Complete, or true, albinism is characterized by complete lack of melanin, resulting in pale skin, white fur, and red eyes (Buchanan 1985). Albinism is a rare phenomenon in bats. In a recent review, Uieda (2000) reported records of complete albinism in 38 species among the 1,045 bat species occurring in the world (Simmons 2005). One to five albino bats in each of these 38 bat species have been recorded, representing a total of 64 individuals (Uieda 2000). Here we describe the first case of true albinism in an individual of Artibeus (Dermanura) cinereus in the Brazilian Cerrado.

Material and Methods

Study area: the study was done at the Ecological Station of Águas Emendadas (ESECAE) situated at 15°32'-15°38'S 47°33'-47°37'W, in the town of Planaltina, northeast of Brasilia, Federal District of Brazil (Figure 1). ESECAE covers approximately 10,500 ha and is surrounded by private landholdings, principally comprised of farms and ranches. Machado et al. (1997) described the urbanization of the local area surrounding the reserve, which has resulted in an increasing isolation of the reserve. Although bats comprise more than 50% of the mammals in the Cerrado region (Aguiar & Zortea 2008), this particular reserve had never been surveyed for its bat fauna.
Bat Collection: fieldwork was conducted in October of 2007 and January of 2008. Bats were captured using nine 36 mm mist nets (Avinet, Inc.) set at ground level, with eight nets measuring 12 x 2.6 m, and one measuring 6 x 2.6 m. Sampling generally began at dusk and was conducted for six hours.

Results and Discussion

On 6 January 2008, at 2130 h, we captured an albino *Artibeus cinereus* (Figure 2) individual in a mist net set in gallery forest (15°32.558’ S 47°34.703’ W); no other bats were found in the mistnet at the time of capture. The pelage of the entire body was white and the eyes were red (Figure 2). The individual was an adult male with forearm length of 39
milimeters and body mass of 12 grams. The bat was preserved as a voucher specimen in a 70% alcohol solution and deposited in the Embrapa Cerrados Bat Collection (CMEC), Planaltina, DF (number 72).

Albinism in an organism is characterized by complete absence of melanin, which results in pale skin, and red eyes, due to the reflection of the colour of capillaries of the retina. Although albinism in bats is rare, it has been recorded in 22 countries, including Brazil. In Brazil, complete albinism has been observed in *Molossus molossus*, *Eumops glaucinus*, *Desmodus rotundus* and *Artibeus planirostris*.

This represents the first record of complete albinism in *Artibeus (Dermanura) cinereus* (Gervais, 1856), a small frugivorous, foliage-roosting bat that is distributed in Mexico, Guyana, Brazil, Bolivia, Peru, Trinidad, and Grenada (Simmons 2005). Although there is some information available regarding the chromosomal structure of *A. cinereus* (Santos et al. 2002), few ecological data are available (Rodriguez-Herrera et al. 2007).

Most bat species in which albino individuals have been recorded are known to occupy sheltered roosts like caves, mines, galleries and buildings (Uieda 2000). Such roosts may be
essential for the survival of albino bats, as they provide protection against sunlight, water loss, and predation by visually-orientating predators. However, it is not clear whether this represents a sampling bias that might be attributed to a relatively higher inspection frequency of these roost types (Buys et al. 2002).

Albinism is known to occur in Rhinophylla pumilio (Peters 1865) (Charles-Dominique et al. 2001), with an albino individual observed roosting with three non-albino individuals in foliage (Astrocaryum sciophilum); this represented the first recorded case of albinism within the Phyllostomidae, and the second for a foliage-roosting species (Uieda 2000). Like R. pumilio, which typically use foliage for roosts (Charles-Dominique et al. 2001), A. cinereus uses 11 kinds of foliage for roosts, sometimes modifying foliage to create “tent” roosts (Rodriguez-Herrera et al. 2007). Similarly, Ectophylla alba, a naturally white bat, modifies the leaves of Heliconia spp. into tents.

Conclusions

Although data presented by Uieda (2000) indicate that albinism has been found less frequently in foliage-roosting bats than in species that use sturdier, more permanent roost types, he argues that white fur is an advantage for foliage-roosting bats. During daytime, white fur appears to be pale green due to light filtering through the leaf, thus they are well camouflaged and less visible.

References


