

Behavior of an albino vampire bat, *Desmodus rotundus* (E. Geoffroy) (Chiroptera, Phyllostomidae), in captivityWilson Uieda¹

ABSTRACT. Albinism in the common vampire bat *Desmodus rotundus* (E. Geoffroy, 1810) was already reported for seven individuals, six of them did in Brazil. Although this species is relatively easy to keep in captivity and many studies with normally pigmented bats were did under laboratory conditions, no reports on detailed observations of captive albino vampire bats were found in literature. This paper reports some behavioral observation of a single albino female *D. rotundus* kept in captivity in Brazil between 1991 and 1993. Information on feeding behavior, interactions with normally colored individuals and reproduction were recorded.

KEY WORDS. *Desmodus rotundus*, albinism, vampire bats, sanguivory, behavior

Complete albinism is a rare phenomenon in bats and which has only been recorded in at least 64 individuals from 38 species and eight families (UIEDA 2000). It is characterized by a complete lack of melanin, so that the bat's skin is light-colored, the fur is white, and the eyes are red (HERRIED & DAVIS 1960; QUAY 1970). The literature was surveyed for information about albinism in bats, especially in the common vampire bat *Desmodus rotundus* (E. Geoffroy, 1810), and found records of only seven albino individuals, six of them captured in Brazil (UIEDA 2000). This paper reports some behavioral observations of a single albino female *D. rotundus* kept in captivity in Brazil between 1991 and 1993.

In October 1990, a young, female, albino *D. rotundus* was captured in a cave of Apiaí (24°31'S, 48°51'W), State of São Paulo, southeastern Brazil, by field technicians of the Escritório de Defesa Agropecuária of Sorocaba, which is the state institution responsible for the control of vampire bats in that area. This albino female was transferred to bat laboratory at Universidade Estadual Paulista in Botucatu, São Paulo in 1991 together with four normally pigmented individuals. At her arrival in Botucatu she weighed 42 g and her forearm length was 66.5 mm.

The common vampire bat is relatively easy to keep in captivity and many aspects of its behavior have been studied under laboratory conditions (JOERMANN 1988). However, no reports on detailed observations of captive albino vampire bats were found. Although GREENHALL (1993) published a black and white photograph of the live albino *D. rotundus*, he did not present any information on its captive maintenance or behavior.

Between January 1991 and May 1993, the albino female was kept in a flight cage (3 x 3 x 2.5 m). In the first 16 months she was kept together with three males (two adult and one young individuals) and one adult female. In May 1992, two more

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adult females were added to the colony. Except for the albino female all the other bats were normally pigmented. At daytime, all bats were kept together inside a wooden box (50 x 30 x 30 cm). At dusk the box was opened to let the bats go. The bats were maintained at room temperature and humidity throughout the 28-month period. Air temperature in the bat cage over the dry season ranged from 4 to 33°C and in the rainy season from 12 to 33°C. Humidity in the dry season ranged from 42 to 90% and from 51% to 100% in the rainy season. A water pool (30 liters) was constantly available for *ad libitum* use but water consumption by captive bats was only observed during the dry season (mainly from July to August). Captive bats were frequently observed drinking water before their meals. At dusk, the bats would fly out of the box toward the walls and stay there side by side without any body contact, for some minutes. After that, some bats, including the albino, would fly onto the water pool to drink some water. Then, they would go to the preys, which were resting on the floor of the cage, to have their meals.

All females were examined for pregnancy by having their abdomen palpated at irregular intervals. According to SCHMIDT (1978), palpation can determine pregnancy in *D. rotundus* about four weeks after mating occurs. This author reported that females born in captivity became sexually mature during their second year of life. WILKINSON (1985) observed that wild females reached sexual maturity after one year. Therefore, in 28 months of captivity, it was assumed that the captive albino female had enough time to reach sexual maturity, mate, and become pregnant. During the course of my observations only two of the normally pigmented, dark brown females became pregnant. This suggests that mating was unsuccessful for the albino female possibly because she was discriminated by the normally pigmented males. However, DUBKIN (1952) observed a copulation between a normally pigmented male and an albino female in a free living colony of *Myotis lucifugus*, which suggests that albino individuals may not be discriminated in other species.

In the present study, the captive vampire bats fed upon live pigs or chickens over the first year. Thereafter, they were maintained on defibrinated bovine blood (fresh or frozen) for the remainder of the study period. In general, the normally pigmented individuals fed upon the live food (pigs or chickens) one hour after sundown. Pigs were bled frequently on their back, ears, nose and nipples while chickens on their legs, wings and combs. The albino vampire was only observed feeding upon back and nipples of pigs and legs of chickens. She ate (Fig. 1) alone only after all the normally pigmented bats in the group had fed, suggesting that she was submissive to the group and had an inferior rank within the group. Agonistic interactions between the normally pigmented individuals and the albino female were not observed at feeding sites. On one occasion, a normally pigmented individual was observed side by side with the albino female and they took turns to feed. No other agonistic behavior against her was observed during the present study.

Unfortunately, all the individuals in this group died in May 1993 due to bacterial infection, probably salmonellosis. The carcass of the albino female was prepared in alcohol and deposited as a voucher specimen in the bat collection of Universidade Estadual Paulista, Botucatu.

It seems that there is no significant behavioral difference between albino vampires and normally pigmented individuals. HARADA *et al.* (1991) found almost no differences in flight capability and certain morphological features between albino and normally pigmented *Myotis macrodactylus*. DUBKIN (1952) also reported no behavioral differences between albino and normally pigmented *Myotis lucifugus* in a free living colony, but noted that albino bats are more conspicuous than normally pigmented bats while resting in the roost and during foraging flights. SAZIMA & POMBAL (1986) suggested that albinism does not seem to markedly affect the natural behavior of *Rhamdella minuta*, a solitary, small, secretive, and nocturnal catfish. It is believed that albinism does not affect the behavioral ecology of vampire bats significantly enough to jeopardize their survival and fitness in the wild.



Fig. 1. An albino female *Desmodus rotundus* while feeding from a fresh wound on the back of a dark pig. See the bat's tongue touching the blood.

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