

Sanje Mangabey *Cercocebus sanjei* Kills an African Crowned Eagle *Stephanoaetus coronatus*

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Key Words

Mangabey antipredator behaviour · Udzungwa · *Cercocebus* · *Stephanoaetus* · Predation

Abstract

We present the first ever reported observations of a hunting African crowned eagle *Stephanoaetus coronatus* being killed by a primate, in the Udzungwa Mountains of south-central Tanzania. An adult female eagle launched an attack on a young Sanje mangabey *Cercocebus sanjei* who was feeding in a tree, but was intercepted and bitten by an adult mangabey who was feeding nearby. The adult mangabey and the eagle then fell together 25 m to the forest floor below. The eagle subsequently died from her injuries, while the mangabey escaped and is thought to have survived. This rare event is briefly discussed in the context of previous accounts of primate-crowned eagle interactions.

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Introduction

The African crowned eagle *Stephanoaetus coronatus* is a large bird of prey found across much of sub-Saharan Africa. In Africa's equatorial forests, it is well known as a major predator of primates, as well as other medium-sized forest mammals [Brown et al., 1982]. In the forests of the Udzungwa Mountains, Tanzania, crowned eagles prey on several diurnal monkey species, including the endemic Sanje mangabey *Cercocebus sanjei* [Ehardt et al., 2005].

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Although rarely witnessed, reports of crowned eagle attacks on diurnal monkey species have been made from elsewhere in Africa. While monkeys have been observed either escaping [Schultz, 2001; Cordeiro, 2003] or attacking the eagle [Gautier-Hion and Tutin, 1988], there have been no published reports of the eagle being killed. In this paper, we therefore describe the first ever reported observation of a hunting adult African crowned eagle being killed by a primate, in this case an adult male Sanje mangabey.

Materials and Methods

The observations reported here were made in the course of routine monitoring of a semi-habituated group of Sanje mangabeys in the Udzungwa Mountains National Park, Tanzania, close to the Park Headquarters at Mang'ula (36°46' E, 7°47' S). In the course of regular follows of the group, demography, feeding and social behaviours are recorded by two human observers using binoculars. Between mid-2000 and late 2005, the size of the mangabey group varied between 32 and 49 animals.

Results

At approximately 10 a.m. on 25th November 2003, the semi-habituated group of Sanje mangabeys was attending a large *Ficus* sp. tree on a steep east-facing forested slope at 800 m above sea level, in Mwanihana Forest within the Udzungwa Mountains National Park. The *Ficus* tree, 30 m in height, is an emergent in this area from a lower canopy dominated by *Tabernaemontana* sp. and *Grewia* spp. to approximately 15 m. There are also a few *Dracaena mannii* trees to 10 m and some large rocks, resulting in gaps in the canopy.

The conspecific mangabey group, which on this day numbered 35 animals, was spread throughout the *Ficus* tree and on the ground below. Their human observers stood about 20 m from the base of the tree. The eagle flew in silently over the *Tabernaemontana* canopy towards a large juvenile/sub-adult who was on one of the *Ficus* branches, approximately 25 m above the forest floor. As the eagle arrived, a large adult male mangabey (estimated 10–12 kg) jumped across and intercepted the bird, just before it reached its intended prey. (The relationship between the two mangabeys is not known.) The eagle gripped the adult mangabey around the area of the chest and shoulders with its talons, and was attempting to peck at his eyes. The mangabey then grabbed the head of the eagle in his hands and bit into the back of the bird's neck. No other mangabeys were involved in this brief struggle. The two animals, still gripping each other, then plunged about 25 m to the ground, landing about 10 m downhill from the base of the *Ficus* tree. The rest of the mangabey group were all screaming, and as the two animals landed, some of the mangabeys already on the ground approached them, still screaming. The other animals still in the tree rapidly descended to the ground. The large male mangabey quickly freed himself of the eagle and ran with the rest of the group uphill along the forest floor for at least 100 m, until they were out of sight of the human observers. The eagle was left lying on her back in the shallow crater created by the impact, amongst dry leaves and a few of its own feathers, struggling weakly but unable to leave. The eagle died about 1 h later.



Fig. 1. The adult female African crowned eagle *Stephanoaetus coronatus* killed by a Sanje mangabey *C. sanjei* in the Udzungwa Mountains National Park, Tanzania. Photograph by T.J.

Two days later, the mangabey group was located again. The adult male who had killed the eagle was present. A 2- to 4-cm-long horizontal scar was visible on his chest, but he was foraging normally and showing no behavioural signs of ill-health. The longer-term fate of this individual is unknown.

The deceased African crowned eagle (fig. 1) is now preserved at the Headquarters of the Udzungwa Mountains National Park, Tanzania. On inspection of the bird immediately after its death, it appears to have been in healthy condition at the time of the attack. The bite wounds to the back of the neck were apparent. The length of the tail was 410 and wing length was 530 mm, indicating that the bird was a large adult female. In fact, these measurements are beyond the biometric range given for this species in Birds of Africa [Brown et al., 1982], though smaller than a specimen recorded from Uganda [Kalina and Butynski, 1994].

Discussion

In their review of behavioural adaptations to predation among primates, Cheney and Wrangham [1987] highlighted evidence that most acts of aggression against predators are undertaken by adult males of the larger primate species, and usually those living in multi-male groups. Baboons *Papio* spp., rhesus macaques *Macaca mulatta*, chimpanzees *Pan troglodytes*, orangutans *Pongo pygmaeus* and gorillas *Gorilla gorilla* have all been observed mobbing and attacking large feline predators, while adult male red colobus in Gombe, Tanzania, frequently chase their

most common predators, chimpanzees. This behaviour can be an effective strategy for the prey species: two studies at Gombe have found that predation attempts by chimpanzees on red colobus are more successful when they do not involve active defence by adult male red colobus [Busse, 1976; Stanford, 1998]. The predator-prey interaction described here, while only a single observation, is consistent with these findings.

Published accounts describing the behaviour of monkeys towards African crowned eagle are few, and anecdotal in nature. This is mainly because even where the eagles and monkeys are in high density and observations of monkeys by researchers are intensive and prolonged, sightings of attack events are rare [Cordeiro, 2003; Struhsaker and Butynski, pers. comm.; Jones, unpubl. data]. About half of these reported attacks did not elicit 'aggressive defence', defined here as aggressive movement towards the predator by any member of the group under attack [Cordeiro, 1992; Maisels et al., 1993; Shultz, 2001; Cordeiro, 2003]. The remaining accounts do describe some degree of aggression against the attacking eagle, in every case by one or more adult males of blue monkey *Cercopithecus mitis* [Brown, 1971; Cordeiro, 2003], greater white-nosed monkey *Cercopithecus nictitans* [Gautier-Hion and Tutin, 1988], red colobus *Colobus badius tephrosceles* [Struhsaker, 1975] and grey-cheeked mangabey *Lophocebus albigena* [Waser, 1980; Gautier-Hion and Tutin, 1988].

The actions of the Sanje mangabey described here are therefore consistent with the aggressive defence shown by adult males of other African primate species against an attacking crowned eagle. Aggressive defence clearly puts adult male monkeys at severe risk of death, but it also endangers the eagle. Nevertheless, this is the first known case where such an interaction has resulted in the death of the eagle, suggesting that this may be an extremely rare outcome.

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