

Boa constrictor Predation and Group Response in White-Faced Cebus Monkeys

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NOTES

***Boa constrictor* Predation and Group Response in White-faced Cebus Monkeys**

THERE HAS BEEN MUCH CONJECTURE in primatology over the relationships between primates and their natural predators, although very few actual predations of primates have been reported (Eisenberg *et al.* 1972). Special emphasis has been placed on whether adult males actually defend group members during predator attacks (Oppenheimer 1968, Altmann & Altmann 1970), whether predation occurs frequently enough to influence primate demographic patterns, or whether predation pressure functions as the primary selective force favouring group living (Schaik 1983).

While conducting a comparative investigation on the ecology and behaviour of the three species of primates in the dry, tropical forest of Santa Rosa National Park, Costa Rica, I observed the white-faced cebus monkey (*Cebus capucinus*) study group mobbing snakes on seven occasions during 159 hours of observation. The cebus monkey group was large, containing 26 individuals, four adult males, 10 adult females, four large-immatures, five small-immatures, and three infants. One of the mobbing episodes involved the successful predation of a small-immature cebus monkey by a *Boa constrictor*. While following the well habituated group on 23 April 1984 I heard a loud commotion. About 40 seconds later I approached a boa which was coiled around an immobile, small-immature cebus monkey. Approximately one-half of the group came to the immediate vicinity, mobbing the boa and giving alarm calls. The adult males and one female of the group approached from the trees above to within 1 meter of the boa giving alarm calls and dropping sticks. One midranking male was particularly aggressive towards the snake throughout the episode; he approached the boa from a small tree and repeatedly picked up a stick and dropped it onto the snake. The stick used was forked such that after it was dropped on the snake, one fork pointed upwards allowing the male to grasp the stick repeatedly without going to the ground. The snake responded to this attack by hissing and striking at the nearest monkey. When hit with a stick, the snake would draw its head towards its body but did not loosen its hold on the captured individual even after 15 minutes of continued mobbing and stick dropping. The group then slowly started to move away from the scene. The last animals to leave were the four adult males of the group who stayed a few minutes after all other members of the group had left. However, alarm calls were still being given 10 minutes after the group had vacated the area. During the mobbing episode the group did not overtly react to the observer who was only 3 m from the snake.

After the group departed, I forced the snake to give up its victim; as the snake retreated, I estimated its length at just over 2 m. At this time I also noticed that there were two 3–4 cm cuts midway along the snake's body, presumably canine punctures received from the victim. The snake's victim was a small immature male weighing 1.7 kg. An autopsy of its body revealed that the snake had bitten the monkey just below the rib cage. No broken bones were found. Boas have been observed attempting to prey on the totally arboreal howling monkey *Alouatta palliata* (L. M. Fedigan, pers. comm.).

It has been argued that increased protection from predators is the major force favoring group living by primates (Alexander 1974, Schaik 1983). Yet the way in which benefits of group living are obtained (detection, or defense), and the responses to actual predation attempts, vary widely across the primate order (Altmann & Altmann 1970, Eisenberg *et al.* 1972, Stelzner & Strier 1981). From the observations presented here, it is obvious that cebus monkeys, particularly the adult males, play active roles in group defense and by doing so may put themselves in positions of danger. It is not known if predation by boas is a rare event in comparison to that by other predators, but the potential exists for boa predation to occur fairly commonly, and for it to be a factor operating in the selection of specific behaviours (Janzen 1970). Within the study group's home range there were at least three boas large enough to prey on a cebus monkey. It seems likely that boa predation on cebus monkeys is seasonal in Santa Rosa National Park. During the dry season the cebus monkeys spend large amounts of time on the ground, thus increasing their vulnerability to boa predation, since boas were most often seen on the ground. This is supported by the fact that 70 percent of the observations of cebus monkeys mobbing snakes occurred in the dry season.

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