

## A Note on an Interaction between *Rhinopithecus bieti* and a Buzzard at Baima Snow Mountain

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### Key Words

Anti-predator behaviour • Buzzard attack • Predation • *Rhinopithecus bieti*

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### Introduction

Predation avoidance relies primarily on behavioural mechanisms [van Schaik and van Hooff, 1983]. Primates alarm call at predators, including most birds and mammals [Cheney and Wrangham, 1987]. Alarm calls could be used to signal to the predator that it has been spotted [Zuberbühler et al., 1999], thereby probably decreasing the likelihood of an attack [Schultz, 2001], and they also inform prey of the presence of the predator, thereby increasing overall attention levels [Schülke, 2001]. Although eagles are reported to be one of the predators of *Rhinopithecus bieti* [Bai et al., 1987], few interactions between these monkeys and raptors have been documented to date. Here I document an interaction witnessed between *R. bieti* and a buzzard [*Buteo* sp., Yang X-J, pers. comm.].

### Methods

The observations were made during a field study (from November 2000 to November 2001) on *R. bieti* at Sharong (99° 04' E, 28° 37' N), Baima Snow Mountain, China. These monkeys are mostly found in groups containing 1 male, several females and their offspring (i.e. one-male units, OMU), though at least 1 all-male unit is present in the area [Kirkpatrick, 1996].

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## Results

5th November 2001, 1500 h. On seeing a buzzard, *Buteo* sp., flying from a distance, adult monkeys in the group instantly emitted alarm calls and the group members immediately dropped from the upper to the middle/lower canopy of the fir trees they were in. When the buzzard was soaring over the canopy in search of them, the monkeys continued to descend and emitted loud alarm calls. 1502 h, the buzzard perched motionless in a nearby emergent fir tree, gazing intently at the group, while the monkeys were concealed in fir trees giving alarm calls off and on. 1505 h, the buzzard flew away from the fir tree and circled over the monkeys for 15 s, then it perched in another fir tree nearer the monkeys and appeared to focus its gaze on them. The group continued to move down the trees and was almost hidden in the lower part of the canopy. The adult females were calling intermittently at this time. 1510 h, after circling for 40 s, the buzzard perched in another fir tree, again watching the monkeys. The band kept quiet with the exception of some intermittent calls given by females and immatures. 1513 h, after hovering for 40 s, the buzzard suddenly dived onto the monkeys in an OMU in a fir around which other trees were sparse. When the buzzard approached the OMU, the adult females enfolded the infants in their arms, the juveniles clasped their mothers tightly and all the monkeys emitted strident calls. Meanwhile, the adult male attacked the buzzard around the fir tree, opening his mouth and showing his large, sharp canines and giving loud calls. 1514 h, the attack on the monkeys having been unsuccessful, the buzzard flew away from the group and disappeared from sight several minutes later. The group gradually became quiet. At 1522 h, the group began to travel/forage in lower forest strata than usual; at 1548 h, they resumed foraging in normal canopy layers and the sounds of breaking branches were heard.

## Discussion

It is generally assumed that eagles often attack after circling above the canopy [Maisels et al., 1993]. Shultz [2001] suggested that crowned eagles frequently attack using a sit-and-wait strategy. The anecdotal evidence presented here indicates that a buzzard might attack prey using a circle-and-wait strategy, circling above the canopy in search of unwary individuals and locating them. This implies that monkeys might suffer higher predation risks in sparse forests than in dense ones.

The most common response of monkeys to aerial predators is to drop to the middle/lower canopy of the forest [Shultz, 2001; Vasquez and Heymann, 2001] or to run into bushes [Tomasello and Call, 1997]. In this case, the monkeys' response was similar to that reported in other studies [Bai et al., 1987], except that the adult male tried to attack the predator. Although an attack on predators by males is common, no studies have yet discovered if such anti-predator behaviour occurs most among males who have fathered most of the offspring in a group [Cheney and Wrangham, 1987]. It is presumed that the male fathered almost all the immatures in the OMU observed here. Thus the fact that the adult male strongly defended the group from the buzzard when his immatures were attacked supports the nepotism hypothesis [Cheney and Wrangham, 1987]. The adult females might have been alarm-calling more than the adult male because females are more vulnerable to

avian predators than males due to the sexual dimorphism in their weight (M:F = 2:1) [Kirkpatrick, 1996], or because the females contribute more to the offspring than the male.

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