

SHORT COMMUNICATION**Interspecific Interaction and Predator Avoidance Behavior in Response to Tayra (*Eira barbara*) by Mantled Howler Monkeys (*Alouatta palliata*)**

NORBERTO ASENSIO and FRANCISCO GÓMEZ-MARÍN

Universidad Veracruzana

ABSTRACT. This paper reports the response of one howler monkey group (*Alouatta palliata*) to a group of potential predators, the tayra (*Eira barbara*). The apparently successful predator avoidance behavior of the monkeys was recorded in detail. We observed a group of four adult tayras moving around the *Alouatta* group displaying a species-typical aggressive behavioral pattern. The two adult females of the howler group successfully chased the tayras away by repeatedly moving closer to the mustelids and even following them until the predators moved off.

Key Words: Howler monkey; *Alouatta palliata*; Tayra; *Eira barbara*; Interspecific interaction; Predation.

INTRODUCTION

Predation on arboreal primates has been described anecdotally in several species (ANDERSON, 1986). Identified predators for new world primates such as howler monkeys (*Alouatta* genus) include harpy eagles, *Harpia harpyja* (PERES, 1990; SHERMAN, 1991), crested eagle, *Morphus guianensis* (JULLIOT, 1994), jaguar, *Panthera onca* (PEETZ et al., 1992; CUARON, 1997), ocelot, *Felix pardalis* (CARPENTER, 1934; BRAZA, 1978), boa constrictor, *boa constrictor* (CHAPMAN, 1986), and anaconda, *Eunectes marinus* (HEYMANN, 1987).

The tayra (*Eira barbara*, Mustelidae, Carnivora) is found in the forests of southern Mexico through Central and South America to Paraguay and Argentina plus Trinidad (PRESLEY, 2000). The tayra is active at night and in the morning. It climbs, runs, and swims well, and is frequently found in pairs or family groups of four individuals (MARTINEZ & SANCHEZ, 1997). *Eira barbara* has been described as a polyphagous mustelid that consume a variety of fruits, carrion, small vertebrates, insects, and honey (CABRERA & YEPES, 1960; EMMONS & FREER, 1990; GALEF, 1976; HALL & DALQUES, 1963). It has been reported to attack iguanas, *Iguana iguana*, agoutis, *Dasyprocta punctata*, squirrel monkeys, *Saimiri sciureus*, and red-handed tamarins, *Saguinus midas midas* (GALEF, 1976) and is recognized as a possible predator on mantled howler monkeys, *Alouatta palliata*, white-faced capuchins, *Cebus capuchinus* (PHILLIPS, 1995) and white fronted capuchins, *Cebus albifrons* (DEFLER, 1980). However, observation of a successful primate predation by the tayra has not been reported.

METHODS AND STUDY SITE

The observation of the interaction between howler monkeys and tayras was made during a

long term study concerning the social play and ecology of mantled howler monkeys (*Alouatta palliata*) in Playa Escondida (18°27' – 18°36'N and 95°03' – 95°03'30''O), a fragmented rain-forest in Los Tuxtlas, Veracruz, Mexico. At the time, the howler monkey group comprised seven members: two adult males, two adult females, one male infant, and two female infants. We used the focal animal sampling method (ALTMANN, 1974); all individuals could be distinguished by their natural markings on the fur.

RESULTS

The interaction of the howlers with the tayras occurred between 14:30 and 14:32 on October 25, 1998, during an afternoon feeding period. The monkeys were eating ripe fruit from a large fig tree *Ficus trigonata* (Moraceae) 25 m in height. We observed a group of four tayras at a distance of 30 m from the monkey group. They were moving around the monkeys, climbing, and descending trees constantly. The tayras displayed a species-typical aggressive behavior which includes moving their bodies up and down in a stance and making grunting vocalizations that are synchronized with this motor pattern. The howler monkeys immediately stopped feeding. The oldest male monkey made a faltering vocalization, whilst continuing to stay with the other male and the infants in the central part of the fig tree. Subsequently, the two adult female monkeys silently approached the tayra group, without apparent threat. They entered a tree closer to the tayras, constantly observing them. As a consequence, the tayras retreated to another tree, further away from the females and the howler group and continued their aggressive postural displays and vocalizations. The female howlers moved closer to the tree, which had been occupied by the tayras. This sequence of retreats by the tayras and subsequent following by the two howlers occurred three times until the tayra group disappeared into the jungle. The female howlers then returned to the fig tree and the group resumed feeding, following their normal pattern of activity.

DISCUSSION

In contrast to the present report, the only other observation of an interaction between a single tayra and a group of howler monkeys reported that the monkeys vocalized loudly during the course of the encounter (PHILLIPS, 1995). *Alouatta seniculus* have also been observed to vocalize when a group was witness to the predation of a young spider monkey, *Ateles paniscus*, by a Crested Eagle, *Morphus guianensis* (JULLIOT, 1994). In the present case, however, it was a group of four adult tayra (presumably a family group), threatening a group of howler monkeys. The monkeys apparently remained calm rather than vocalizing, suggesting that their antipredation behavior may depend on both the predator species and the situation. There was a possibility that tayra aimed at fig fruits than the monkeys. However, more *ficus trigonata* individuals with ripe fruit were available at the moment to consider an aggressive encounter for the food. Moreover there is not any report of genus *ficus* in the diet of this mustelid (PRESLEY, 2000).

Unlike harpy eagles, jaguars, and ocelots, tayras do not seem to constitute a serious threat to howler monkeys as a group. Here, *Alouatta palliata* have demonstrated that they are able to ward off a group of tayras, rather than hiding or escaping. It is also interesting to note that it was the adult female howlers who displayed the offensive predator avoidance behavior towards the tayra group rather than the adult males.

Antipredator strategies are key components in aspects of the social organization and evolu-

tion of primate societies and there are large variations that remain poorly understood (ANDERSON, 1986). Further observations should reveal whether female howlers have a special antipredation role when faced with medium sized predators.

Acknowledgments. We thank CATARINA CASANOVA and MATTHIAS LASKA for reading an earlier draft of this paper. Financial support by the Departamento de Educación, Universidades e Investigación, Eusko Jaurlaritz-Gobierno Vasco, is gratefully acknowledged. Special thanks go to the staff of the Parque de Flora y Fauna Silverstre Tropical.

REFERENCES

- ALTMANN, J. 1974. Observational study of behavior: sampling methods. *Behaviour*, 49: 227 – 267.
- ANDERSON, C. M. 1986. Predation and primate evolution. *Primates*, 27: 15 – 39.
- BRAZA, F. 1980. El araguito rojo (*Alouatta seniculus*). *Rev. De Vertebrados de la Estac. Biológica de Doñana*, 5-7: 1 – 132.
- CARPENTER, C. R. 1934. A field study of the behavior and social relations of howling monkeys. *Comp. Psychol. Monogr.*, 10: 1 – 168.
- CABRERA, A.; YEPES, J. 1960. Mamíferos sudamericanos (2nd ed.). Ediar, Buenos Aires, 1: 1 – 187.
- CHAPMAN, C. A. 1986. Boa constrictor predation and group response in white-faced cebus monkeys. *Biotrop.*, 18: 171 – 172.
- CUARON, A. 1997. Conspecific aggression and predation: costs for a solitary mantled howler monkey. *Folia Primatol.*, 68: 100 – 105.
- DEFLER, T. R. 1980. Notes on interactions between the tayra (*Eira barbara*) and the white fronted capuchin (*Cebus albifrons*). *J. Mammal.*, 61: 156.
- EMMONS, L. H.; FREER, F. 1990. *Neotropical Rainforest Mammals: A Field Guide*. Univ. of Chicago Press, Chicago.
- GALEF, B. G.; MITTERMEIR, J. R. A.; BAILEY, R. C. 1976. Predation by the tayra (*Eira barbara*). *J. Mammal.*, 57: 760 – 761.
- HEYMAN, E. W. A. 1987. Field observation of predation on a monstached tamarin (*Saguinus mystax*) by and anaconda. *Int. J. Primatol.*, 8: 193 – 195.
- HALL, E. R.; DALQUEST, W. W. 1963. The mammals of Veracruz. Univ. of Kansas Publ., Museum of Natural History, 14: 165 – 362.
- JULLIOT, C. 1994. Predation of a young spider monkey (*Ateles paniscus*) by a crested eagle (*Morphnus guianensis*). *Folia Primatol.*, 63: 75 – 77.
- MARTINEZ, R.; SÁNCHEZ, V. 1997. Historia natural de algunas especies de mamíferos terrestres. In: *Historia Natural de Los Tuxtlas*, GONZÁLEZ, E.; DIRZO, R.; VOGT, R. C. (eds.), UNAM, México, pp. 591 – 609.
- PEETZ, A.; NORCOK, M. A.; KINZEY, W. G. 1992. Predation by jaguar on howler monkeys (*Alouatta seniculus*) in Venezuela. *Amer. J. Primatol.*, 28: 223 – 228.
- PERES, C. A. 1990. A harpy eagle successfully captures and adult male red howler monkey. *Wilson. Bull.*, 102: 560 – 561.
- PHILLIPS, K. 1995. Differing responses to a predator (*Eira barbara*) by *Alouatta* and *Cebus*. *Neotro. Primates*, 3: 45 – 46.
- PRESLEY, S. J. 2000. *Eira barbara*. *Mammalian Species*, 636: 1 – 6.
- SHERMAN, P. T. 1991. Harpy eagle predation on a red howler monkey. *Folia Primatol.*, 56: 53 – 56.

— Received: March 7, 2001; Accepted: June 25, 2002

Authors' Names and Address: NORBERTO ASENSIO, Instituto de Neuroetología, Universidad Veracruzana, Apdo. Postal 88, 95870 Catemaco, Veracruz, Mexico (personal address: Norberto Asensio, Anboto 4, 1°F, 48200 Durango, Spain). e-mail: norashe@mixmail.com; FRANCISCO GÓMEZ-MARÍN, Instituto de Neuroetología, Universidad Veracruzana, Apdo. Postal 88, 95870 Catemaco, Veracruz, Mexico.