

Agradecimientos

Agradecemos a los doctores Margaret Clarke, Clara Jones, Kenneth Glander y John Eisenberg, su disposición para apoyar este trabajo y sus valiosos comentarios y sugerencias sobre el mismo.

Liliana Cortés-Ortiz, Instituto de Neuroetología, Universidad Veracruzana, Apartado Postal 566, C.P. 91000, Xalapa, Veracruz, México y **Manuel Martínez-Morales**, Maestría en Inteligencia Artificial, Universidad Veracruzana.

Referencias

- Carpenter, C. T. 1965. The howlers of Barro Colorado Island. En: *Primate behavior: Field Studies of Monkeys and Apes*, I. DeVore, I. (ed.), pp. 250-291. Holt, Reinhart and Winston, Inc, New York.
- Clarke, M. R. 1983. Infant killing and infant disappearance following male takeovers in a group of free-ranging howling monkeys (*Alouatta palliata*) in Costa Rica. *Am. J. Primatol.* 5:241-247.
- Clarke, M. R. y Glander, K. E. 1984. Female reproductive success in a group of free-ranging howling monkeys (*Alouatta palliata*) in Costa Rica. En: *Female Primates: Studies by Women Primatologists*, M. F. Small (ed.), pp. 111-126. Alan R. Liss, New York.
- Cortés-Ortiz, L., Rodríguez-Luna, E., Martínez-Morales, M. y Carrera-Sánchez, E. 1994. Parámetros demográficos y reproductivos de un grupo de monos aultadores (*Alouatta palliata*) en semilibertad. *La Ciencia y el Hombre* (18):141-166.
- Crockett, C. M. y Eisenberg, J. F. 1986. Howlers: Variation in group size and demography. En: *Primate Societies*, B. B. Smuts, D. L. Cheney, R. M. Seyfarth, R. W. Wrangham y T. T. Struhsaker, (eds), pp. 54-68. University of Chicago Press. Chicago.
- Estrada, A. 1982. Survey and census of howler monkeys (*Alouatta palliata*) in the rain forest of "Los Tuxtlas", Veracruz, Mexico. *Am. J. Primatol.* 2:363-372.
- Glander, K. E. 1980. Reproduction and population growth in free-ranging mantled howling monkeys. *Am. J. Phys. Anthropol.* 53:25-36.
- Jones, C. B. 1985. Reproductive patterns in mantled howler monkeys: estrus, mate choice and copulation. *Primates* 26(2):130-142.
- Milton, K. 1982. Dietary quality and population regulation in a howler monkey population. En: *The Ecology of a Tropical Forest: Seasonal Rhythms and Long-term Changes*, E. G. Leigh Jr., A. S. Rand y D. M. Windsor (eds.), pp. 273-289. Smithsonian Institution Press, Washington, D. C.
- Rodríguez-Luna, E., García-Orduña, F. y Canales-Espinosa, D. 1993. Translocación del mono aullador (*Alouatta palliata*): una alternativa conservacionista. En: *Estudios Primatólogos en México, Vol. I*, A. Estrada, E. Rodríguez-Luna, R. López-Wilchis y R. Coates-Estrada (eds.), pp. 129-177. Biblioteca Universidad Veracruzana. Xalapa, Veracruz.
- URBAN MONKEYS - *ALOUATTA FUSCA* IN THE MUNICIPALITY OF PORTO ALEGRE**
- The occurrence and distribution of the brown howler monkey (*Alouatta fusca clamitans*) is being studied in the municipal district of Porto Alegre (30°S 51°W), the capital of Rio Grande do Sul, the southernmost state of Brazil. The presence of the brown howler monkey was mentioned in the "List of the Vertebrates of the Great Porto Alegre" (Fundação Zoobotânica do Estado do Rio Grande do Sul, 1976). However, very little is known about where in Porto Alegre it occurs and how well (or poorly) preserved its populations are. Only by gathering more information on the status of the species will it be possible to define strategies for its conservation in the region.
- Porto Alegre is near the southern boundary of the distribution of *Alouatta fusca clamitans* (Prates et al., 1990). The municipality covers 47,152,28 ha and has a population of about one million 200 thousand people, mostly concentrated in the northern part. As the city develops, and formerly forested areas are occupied, the distribution of *A. fusca* is becoming more and more restricted. The study aims to provide data on the status of the populations of the brown howler monkey in the face of the current urban growth and to establish a basis, through the analysis of habitat quality, for the management and preservation of the remaining populations.
- The area was divided into a 25 ha grid and the squares with remaining forests are being visited and thoroughly searched for the presence of the howlers. Occurrences are being registered on the basis of actual sightings and also by the presence of feces. Vocalizations and reports by local inhabitants are considered as additional information. Subsequently, vegetation analyses will be carried out in some of the 25 ha squares visited to assess any relationship between habitat structure and the presence or otherwise of the brown howler monkey. The study is divided into three phases, each covering a third of the area of Porto Alegre, and will last twelve months. The work is being developed by a group of researchers from the Department of Zoology of the Federal University of Rio Grande do Sul (Luis Fernando Guimarães Brutto, Sidnei Dornelles, Rodrigo Cambará Printes, Gerson Buss and Márcia M. de Assis Jardim, under the coordination of Helena Piccoli Romanowski

and Luis Flamaron B. de Oliveira; and is receiving support from the Fundação de Amparo à Pesquisa do Estado do Rio Grande do Sul (FAPERGS), the Pró-Reitoria de Pesquisa e Pós-Graduação da Universidade Federal do Rio Grande do Sul" (PROPESP-UFRGS) and the Secretaria Municipal do Meio Ambiente. Porto Alegre (SMAM-PMPA).

Gerson Buss, Departamento de Zoologia, Universidade Federal do Rio Grande do Sul, Avenida Paulo Gama s/n., Prédio 12125, Sala 326, 90049-060 Porto Alegre, Rio Grande do Sul, Brazil.

References

- Fundação Zoobotânica do Estado do Rio Grande do Sul. 1976. *Preceituração Ecológica para a Preservação das Áreas Naturais da Grande Porto Alegre*. Editora Sulina, Porto Alegre. 151pp.
- Prates, J. C., Kunz Jr., L. F. and Buss, G. 1990. Comportamento postural e locomotor de *Alouatta fusca clamitans* (Cabrera, 1940) em floresta subtropical (Primates, Cebidae). *Acta Biologica Leopoldensia* 12(1): 189-200.

A FIELD STUDY OF MURIQUIS IN THE CARLOS BOTELHO STATE PARK, BRAZIL

The Carlos Botelho State Park of 37,432 ha ($24^{\circ} 44' - 24^{\circ} 15'S$, $47^{\circ} 46'48'' 10'W$) in the south of the state of São Paulo takes in part of the municipalities of São Miguel Arcanjo, Capão Bonito and Sete Barras. It protects an important part of the Atlantic forest of the Serra do Mar, more precisely the Serra de Paranapiacaba. The primates occurring in the park include *Cebus apella nigritus*, *Alouatta fusca clamitans*, and the muriqui, *Brachyteles arachnoides*. The first study of the muriqui population there was carried out in 1985-1986 by Paccagnella (1991; see also Mittermeier *et al.*, 1987), who estimated a population of 500-800 animals, concentrated in the forest above 600 m altitude. The importance of this site for muriquis resulted in the establishment of a research program there in August 1988 (Strier, 1992), initially involving the location and habituation of study groups, a difficult task in the steep, mountainous terrain, but resulting eventually in successful studies of the diet and distribution of food resources, ranging behavior, and activity patterns (Moraes, 1992a, 1992b, 1994; Carvalho Jr., 1994). A more recent study was begun in January 1994, and since then 26 months of data have been obtained on the diet and feeding behavior, ranging and daily activity patterns of one of the groups. Samples of food sources were collected during this period in order to carry out nutritional analyses, comparing especially seasonal

differences (Gomes, 1994). Data was also collected on their feeding postures and hand preferences when manipulating the food. The study is jointly supervised by Dr. Karen B. Strier, Department of Anthropology, University of Wisconsin - Madison, and Dr. César Ades, Institute of Psychology, University of São Paulo, São Paulo. Financial support has been kindly provided by the U. S. National Science Foundation (Grant BNS9582998), the Liz Clayborne and Art Ortenberg Foundation, and the Chicago Zoological Society (all to Dr. Karen Strier) and the Brazilian Science Council (CNPq) and FINEP, Rio de Janeiro (to Dr. César Ades and M. Talebi Gomes). The study forms parts of the requirements for a Master's thesis for the Institute of Psychology, University of São Paulo.

Maurício Talebi Gomes, Departamento de Psicologia Experimental, Universidade de São Paulo, Avenida Professor Mello Moraes 1721, Caixa Postal 66261, 05508-900 São Paulo, São Paulo, Brazil.

References

- Carvalho Jr., O. 1994. Ecologia e comportamento do mono-carvoeiro, *Brachyteles arachnoides*, no Parque Estadual Carlos Botelho (PECB) - SP. In: *Resumos. VI Congresso Brasileiro de Primatologia*, p. 66. Universidade Federal do Rio de Janeiro, Rio de Janeiro, 24-29 July, 1994. (Abstract).
- Gomes, M. T. 1994. Aspecto de conteúdo nutricional da dieta e comportamento alimentar de *Brachyteles arachnoides* no Parque Estadual de Carlos Botelho - SP. In: *Resumos. VI Congresso Brasileiro de Primatologia*, p. 62. Universidade Federal do Rio de Janeiro, Rio de Janeiro, 24-29 July, 1994. (Abstract).
- Mittermeier, R. A., Valle, C. M. C., Alves M. C., Santos, I. B., Pinto, C. A. M., Strier, K. B., Young, A. L., Veado, E. M., Constable, I. D., Paccagnella, S. G. and Lemos de Sá, R. M. 1987. Current distribution of the muriqui in the Atlantic forest region of eastern Brasil. *Primate Conservation* (8):143-148.
- Moraes, P. L. R. 1992a. Dispersão de sementes pelo mono-carvoeiro (*Brachyteles arachnoides* E. Geoffroy, 1806) no Parque Estadual de Carlos Botelho. *Rev. Inst. Florest., São Paulo* 4: 1193-1198.
- Moraes, P. L. R. 1992b. Espécies utilizadas na alimentação no mono-carvoeiro (*Brachyteles arachnoides* E. Geoffroy, 1806) no Parque Estadual de Carlos Botelho. *Rev. Inst. Florest., São Paulo*, 4: 1206-1208.
- Moraes, P. L. R. 1994. Disponibilidade alimentar e padrões de distribuição espacial de espécies utilizadas pelo muriqui no Parque Estadual de Carlos Botelho, São Paulo. In: *Resumos. VI Congresso Brasileiro de Primatologia*, p. 61. Universidade Federal do Rio de Janeiro, Rio de Janeiro, 24-29 July, 1994. (Abstract).