

Even its geographic distribution is controversial and requires investigation, most especially since the results of a short investigation which indicated the possibility of a misunderstanding regarding the origin of the holotype which extends its range to the east of the Rio Xingú, doubling what might be its real distribution (Martins *et al.*, 1988).

At the end of 1994 a project was set up, funded by the *Fundo Nacional do Meio Ambiente*, to assess the status and viability of the wild populations. Field surveys will be carried out in 1995, in several localities along the Rios Tapajós and Tocantins, investigating in particular the southern limits of its distribution, and examining genetic viability, and such population parameters as density, group size, composition, and primary sex ratio. Special attention will be given to the populations inhabiting the Tapajós National Forest, the only protected area for the subspecies.

The project will be supervised by Andrea Nunes (Departamento de Zoologia, Museu Paraense Emílio Goeldi, Belém), and carried out with the help of a team of master's students of the Universidade Federal do Pará. It is part of a cooperation agreement between scientists of the Zoology Department of the Goeldi Museum and the Genetics Department of the Federal University of Pará.

Andrea Nunes, Departamento de Zoologia, Museu Paraense Emílio Goeldi, Caixa Postal 399, 66040-170 Belém, Pará, Brazil.

Reference

Martins, E.S., Ayres, J.M. and do Valle, M.B.R. 1988. On the status of *Ateles belzebuth marginatus* with notes on other primates of the Iriú river basin. *Primate Conservation*, (9): 87-91.

DUETTING IN THE TITI MONKEY *CALLICEBUS CUPREUS*

A detailed study of duetting in wild titi monkeys was carried out by Robinson (1977, 1979a, 1979b, 1981). However, recordings of captive animals permit a more detailed analysis, and in the case of newly-formed pairs, to follow the development of the duet. In this study duets were recorded and analysed from 13 animals (seven females and six males) held at the California Regional Primate Research Center, Davis. Five of these animals had been paired with two different mates, yielding a

total of nine different pair combinations. Two pair combinations involved close relatives, one father-daughter pair and one mother-son. One of the pairs studied was together for only one day, while for another duets were available from three different time periods. The study addressed three main topics: 1) In-depth analysis of the duet structure; 2) Comparison of intra- versus inter-pair variability (i.e., are duets pair-specific?); and 3) If duets are pair-specific, how do they develop over time?

A *Callicebus cupreus* duet¹ is composed of successive sequences sung by both mates. Both female and male sequences are composed of two consecutive and comparably structured parts: bellow-and-pumping and pant-and-pumping, respectively. A duet is composed of alternately uttered male and female sequences, that is while the male is singing bellow-and-pumping, the female is singing pant-and-pumping and vice-versa.

Bellows, the loudest calls in a duet, are individual-specific. Individuals of the same sex housed in the same or adjacent cages always differ regarding their bellow frequencies. Statistical comparison of sequence lengths (the longest repeated units within a duet) across individuals yielded no significant differences, i.e., sequence lengths seem to be species-specific. However, when comparing two pair combinations in which one mate remained constant, differences were found only if the male was changed. If the male changed, the length of male and female sequences altered, whereas this was not the case if the female changed. The difference resulted from new individual part lengths.

Callicebus duets are pair-specific in so far as individuals contribute specific part lengths and bellow frequencies. As a corollary, the pair-specificity of duets results from a summing of individual attributes of the two mates rather than from an adaptation of one mate to the other or from mutual adaptation. The length of the duet parts seem to be determined by the female rather than the male, and the transition between the two parts is most probably induced by the females.

To investigate the development of duets, first those of two newly-formed pairs were compared with duets of established pairs. These first duets showed

¹ Systematics according to P. Hershkovitz (Titís, New World monkeys of the genus *Callicebus* (Cebidae, Platyrrhini): a preliminary taxonomic review, *Fieldiana, Zoologia (new series)*, 55: 1-109, 1990). It follows from this that the animals investigated by Robinson (1979a, 1979b, 1981) and in the present study belong to the same species.

a greater variability in sequence and part lengths than those of established pairs. At the beginning of a new partnership, duets do not follow a very regular pattern. Contrary to some earlier reports, however, in captivity new pairs do perform duets from the first day.

This text is a summary of a diploma thesis supervised by Dr G. Anzenberger and Prof. R. D. Martin. The thesis (in German) may be requested from Alexandra Müller at the address below. A full publication in English is in preparation.

Alexandra Müller, Anthropologisches Institut, Universität Zürich-Irchel, Winterthurerstrasse 190, CH-8057 Zürich, Switzerland.

References

- Müller, A. 1994. Duettieren bei Springaffen (*Callicebus cupreus*). Diploma thesis, University of Zürich, Zürich.
- Robinson, J.G. 1977. Vocal Regulation of Spacing in the Titi Monkey *Callicebus moloch*. Ph.D. dissertation, University of North Carolina, Chapel Hill.
- Robinson, J.G. 1979a. An analysis of the organization of vocal communication in the titi monkey *Callicebus moloch*. *Z.Tierpsychol.*, 49: 381-403.
- Robinson, J.G. 1979b. Vocal regulation of use of space by groups of titi monkeys *Callicebus moloch*. *Behav. Ecol. Sociobiol.*, 5: 1-15.
- Robinson, J.G. 1981. Vocal regulation of inter- and intragroup spacing during boundary encounters in the titi monkey, *Callicebus moloch*. *Primates*, 22: 161-172.

MURIQUI IN THE ITATIAIA NATIONAL PARK, BRAZIL



The Itatiaia National Park, situated in the Atlantic forest of the Serra da Mantiqueira in south-east Brazil, was created in 1937, and as such the first protected area in Brazil. Although quite frequently reported to occur in the Park over

the last decades (see, for example, Aguirre, 1971; Coimbra-Filho, 1972), concrete evidence for the presence of the murequi, *Brachyteles arachnoides*, has been lacking and cast doubts on its continued survival there (Fonseca, 1994). Visiting the Park in

January 1995, I found a complete skeleton of *B. arachnoides* in the possession of Prof. Elio Gouvêa. The animal had been electrocuted while crossing transmission lines near to the Park's headquarters. This happened within the last five years, although due to the brevity of my visit I was unable to ascertain the exact date, which is, however, recorded in the Park's registers. Adding to the list of new localities reported by Martuscelli *et al.* (*Neotropical Primates*, 2(2): 12-15, 1994), confirmation of the continued existence of a population of murequis in this Park of 30,000 ha, which is also contiguous with other forested areas, indicates yet another and significant stronghold for this threatened species.

Ibsen de Gusmão Câmara, Fundação Brasileira para a Conservação da Natureza (FBCN), Rua Miranda Valverde 103, 22281-000 Rio de Janeiro, Rio de Janeiro, Brazil.

References

- Aguirre, A.C. 1971. *O mono*, *Brachyteles arachnoides* (E.Geoffroy). *Situação Atual da Espécie*. Academia Brasileira de Ciências, Rio de Janeiro. 53pp.
- Coimbra-Filho, A.F. 1972. Mamíferos ameaçados de extinção no Brasil. In: *Espécies da Fauna Brasileira Ameaçadas de Extinção*, pp. 13-98. Academia Brasileira de Ciências, Rio Janeiro.
- Fonseca, G.A.B. da. 1994. Mono-carvoeiro, murequi, *Brachyteles arachnoides* (E.Geoffroy, 1806). In: *Livro Vermelho dos Mamíferos Brasileiros Ameaçados de Extinção*, G.A.B. da Fonseca, A.B. Rylands, C.M.R. Costa, R.B. Machado and Y.L.R. Leite (eds.), pp.191-199. Fundação Biodiversitas, Belo Horizonte.

GERALD M. DURRELL, O.B.E., D.Sc. 1925-1995

Gerald Durrell, naturalist, writer, and founder of the Jersey Wildlife Preservation Trust (JWPT), died on the 30th January 1995. Few people have accomplished so much during their lifetime for the conservation of wildlife. The Jersey Zoo he set up in 1959 led the way for the establishment of the new role of zoos not only as breeding centres for the preservation of endangered species but as institutions which are deeply committed to the conservation of wildlife, through research, international training programmes, and *in situ* projects for reintroduction and the preservation of the habitat of the species under their care. Gerald Durrell argued that no species are difficult to