Infanticídio e desaparición de infantes asociados al reemplazo de machos en grupos de *Alouatta caraya*. In: *A Primatologia no Brasil - 2*, M.T.de Mello (ed.), pp.185-190. Sociedade Brasileira de Primatologia, Brasília.

CAPTURE AND RADIO-TELEMETRY OF MASKED TITI MONKEYS, *CALLICEBUS PERSONATUS MELANOCHIR*

Introduction: Masked titi monkeys, *Callicebus personatus*, are extremely shy, quick, and quiet, making behavioral-ecological studies in the wild a difficult task. Their reaction to observers is to flee into the canopy, which in the tall rain forests where they occur can be between 20 and 25 m high. In addition, they are quite small (between 1.5 and 2 kg) and highly cryptic. During a one-year pilot study of the masked titi, *C.p.melanochir*, in southern Bahia, we found that habituation just by following the animals was unsuccessful. Using "play back" of recordings of their calls was helpful only in locating the monkeys, but was equally inefficient for habituating them. The problem was solved only through capturing them and fitting them with radio transmitters.

Study Site: The study site was a forest fragment of about 100 ha in the Lemos Maia Experimental Station, of the Cocoa Research Center (CEPEC) of the *Comissão Executiva do Plano da Lavoura Cacaueira* (CEPLAC), the Regional Cocoa Growing Authority, located in Una, southern Bahia, Brazil. A description of the area was given by Rylands (1982).

Capture Techniques: The first attempts to capture the titi monkeys used five traps placed in trees frequented by them at a height of about 15 m. The traps were baited with a variety of fruits and observed daily over three months. This method was unsuccessful. We then resorted to chemical immobilization using a carbon dioxide powered dart gun (Telinject, Römerberg, Germany: Type Vario IV.3 1 NP) and reusable syringe darts with a 20 mm needle. The darts were loaded with a mixture of 0.6-0.9 ml (30-45 mg) Ketavet (Ketamine hydrochloride±50 mg/ml) and 0.3-0.45 ml (6-9 mg) Rompun (Xylacine, 20 mg/ml). If it was necessary to prolong anaesthesia, 0.3 ml (15 mg) of Ketavet was injected subsequently. For revival, we injected a mixture of 0.3 ml Yohimbin (5% solution) and 0.3 ml Effortil (Boehringer, Germany). To prevent bacterial infection, we gave 0.4 ml Tardomyocel (Bayer, Germany). All injections were given intramuscularly into the hind leg. Darting attempts were limited to individuals within 8 m and with the thigh or rump prominent in order to prevent injury. Because of the extended period of recovery and because the group requires several hours to find a sleeping tree, no monkey was darted after 12 a.m.

Results: Five successful dartings were carried out between July 1992 and November 1993. See Table 1 for the details of each. The first animal (No.1), a subadult male, was darted by fixing the gun in a sleeping tree of the study group. Early in the morning the dart gun was fired using a long distance switch. The animal was easily caught as it fell. A radio transmitter Type I (weight 42 g: K.Wagener, Köln, Germany) (Fig.1) was strapped to the monkey's neck. The batteries have a lifetime of about nine months. The titi monkeys were measured and marked and the mixture of antibiotic and reviver were injected. They were kept in a burlap bag in the shade until they recovered. The animal's reintegration to the group and its well-being were monitored using a radio-receiver and H-antenna (K.Wagener). Normally the group stayed nearby after one of its members were darted. They emitted long distance calls and quieter "intra-group" calls. After six weeks, the collared animal was found to be in poor condition. There were skin abrasions and infection of the mandible close to the transmitter.

Figure 1. Radio-collar Type I (left), weight 42 g, and Type II (right), weight 22 g.

Table 1. Details of the capture, treatment, and release of *Callicebus personatus melanochir*.

No.	Date	Dosage (ml)		Locality of hit	Introduction period of anesthesia (min.)	Antidote (min.)	Reappearance of palpebral reflex (min.)	Time of first movement (min.)	Released after (min.)	Behavior after release	Reintegration in the group
		Ketavet	Rompun								
1	09.VII.92	0.9	0.45	paravertebral muscles	<1	63	104	120	220	fled on the ground vocalization	group nearby integrated after 45 min.
2	26.VIII.92	0.6	0.3	femoral muscle	<1	25	44	65	310	fled on the ground vocalization	group nearby integrated after 30 min.
3	01.V.93	0.6 0.72 *	0.3 0.36 *	upper abdomen	30 35	40	80	95	133	uncoordinated climbed up tree	group remained integration immediate
4	20.VI.93	0.9	0.45	left part of abdomen	4	19	66	92	120	uncoordinated climbed up tree	group nearby integrated after 40 min.
5	06.XI.93	0.6 0.3 *	0.3	right lower leg muscle	10 15	55	62	69	120	uncoordinated climbed up tree	group found by vocalization, integrated after 162 min.

* 2nd dose.

In the second darting (No.2), the group was easier to follow, and a male was darted directly while feeding in a fruit tree. The radio-transmitter Type I was fitted to the hip. During the first two weeks it showed some problems when jumping but was not injured. It was recaptured (No.3) nine months later, and a smaller transmitter (Type II, weight 22 g) was fitted to its neck, which, however, failed after six weeks. It was captured again (No.4), and we found minor lacerations of the skin on both sides of the mandibular region. As a result we refitted a transmitter (Type I) to the hip again (No.4). Two biologists continued the observations and the transmitter was replaced again (No.5).

Conclusion: The attachment of a radio-collar to the neck of a titi monkey is evidently dangerous. It resulted in infections through wounds caused by the tight radio-collar. The angular region of the titi's mandible is very large. The caudoventral part of the lower jaw is extended to provide for a resonance cavity and the space required for the radio-collar on the neck is insufficient. On the other hand, attachment of a radio-collar to the hip of a female would be dangerous in the case of pregnancy. The best solution is to use a hip attachment only on males. For females, we will be designing and testing a backpack-style harness (see, for example, Savage *et al.*, 1993).

Acknowledgements: We thank Dr Alcides Pissinatti (Centro de Primatologia do Rio de Janeiro - CPRJ/FEEMA) for his helpful advice, and our assistant Clea Serra Silva for help in the field. The project was supported by the Deutscher Akademischer Austaschdienst (DAAD), and the equipment was provided by the Deutsches Primatenzentrum (DPZ), Göttingen.

Klaus-Heinrich Müller, German Primate Centre (DPZ), Kellnerweg 4, D-37077 Göttingen, and **Bernd J. Schildger**, Zoological Garden of Frankfurt, Alfred-Brehm Platz 3, D-60316 Frankfurt, Germany.

References

Rylands, A.B. 1982. The Behaviour and Ecology of Three Species of Marmosets and Tamarins (Callitrichidae, Primates) in Brazil. Unpublished Ph.D. thesis, University of Cambridge, Cambridge.

Savage, A., Giraldo, L.H., Blumer, E.S., Soto, L.H., Burger, W. and Snowdon, C.T. 1993. Field techniques for monitoring cotton-top tamarins (*Saguinus oedipus oedipus*) in Colombia. *Am.J.Primatol.*, 31:189-196.

THE NISIA FLORESTA COMMON MARMOSET RESEARCH STATION

Introduction: The psychobiology group at the Federal University of Rio Grande do Norte (UFRN), Natal, Brazil, began using the common marmoset (*Callithrix jacchus*), native to north-east Brazil, as a research model in the early 1970's. The "Núcleo de Primatologia" was established in 1985: a breeding colony to support the increasing research demand. It was not long, however, before the need was felt to establish a field site to carry out studies on the ecology and behaviour of wild groups in order to complement or gain a better understanding of the behavioral and physiological research being carried out on the captive population.

Our search for an adequate field site resulted in the choice of the Experimental Forestry Station (EFLEX) of the Brazilian Institute for the Environment and Renewable Natural Resources (Ibama), 2 km from the town of Nisia Floresta and 45 km from Natal. Following due permission obtained from the Brazil