INFANTICIDE IN THE BROWN HOWLER MONKEY, *ALOUATTA FUSCA*

Fatal aggression by adult males toward infants (infanticide) has been reported in several of the Neotropical howler monkey species, including *Alouatta seniculus* (see Crockett and Sekulic, 1984), *A.palliata* (see Clarke, 1983), and *A.caraya* (see Zunino *et al.*, 1985). We observed infanticide for the first time in the brown howler, *Alouatta fusca*, during a long-term study of the species at the Santa Genebra Reserve, Campinas, state of São Paulo. The Reserve is a 250 ha fragment of Atlantic coastal forest, known for its high density of howlers, the highest yet recorded throughout its distribution (Chiarello and Galetti, 1994). For information on the Reserve and the research there see Chiarello (1993a, 1993b, 1994) and Galetti *et al.* (1994).

The study group was composed of one adult male, one female + infant, and one young juvenile male. On 23 November 1989, we observed the group's adult male fighting and chasing a solitary male we had seen occasionally near to the group. The fighting was preceded by howling sessions by both males. One week later, we found a dead infant in the area, which had bites on the head and shoulder, and was missing a leg (Fig. 1). The infant, weighing 170 g, was deposited in the Natural History Museum at the State University of Campinas (UNICAMP, ZUEC 1315). We discarded the possibility of predation because Santa Genebra is too small to support large predators such as eagles or wild cats, and the pattern of injuries was similar to that reported for *A.seniculus* in Venezuela by Crockett and Pope (1988). The possibility of infanticide was strengthened when we found the group to have a new male, and lacking the infant. The young juvenile remained in the group for another two weeks, but subsequently disappeared. We had no evidence that the new male had expelled him. Although infanticide was reported only once for our study site, we expect that the increase in the already large population there might result in more cases being observed in the near future.

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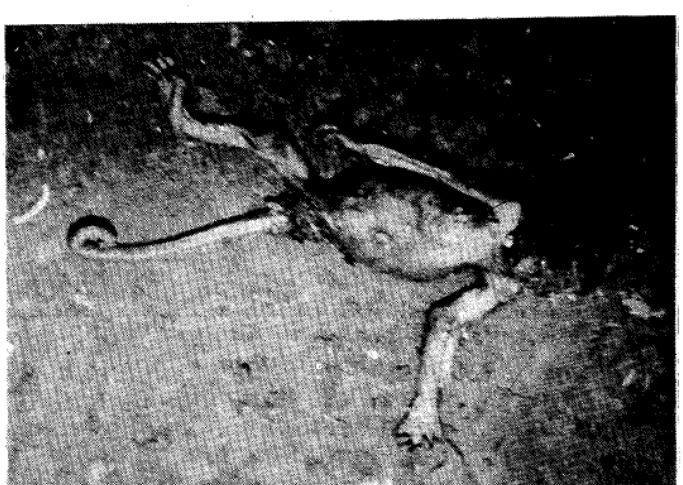

Figure 1. Infant *A.fusca*, presumed to be victim of infanticide.

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.