We thank I.Vilchez, L.Moya, and J.Penn for their varied and kind assistance in preparing this manuscript. The Chicago Zoological Society, the Amazon Conservation Fund, the Universidad Nacional de la Amazonía Peruana, the Proyecto Peruano de Primatología "Manuel Moro Sommo", and the Dirección Regional de Recursos Naturales y de Medio Ambiente, Loreto, provided logistic and financial support.

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RECOVERY AND RELEASE OF AN INFANT MURIQUI, *BRACHYTELES ARACHNOIDES*, AT THE CARATINGA BIOLOGICAL STATION, MINAS GERAIS, BRAZIL

Unexplained disappearances of primate infants have been reported from a number of long-term field studies, but rarely do observers encounter living infants which have been abandoned by their mothers and other group members. This report describes one such discovery, involving a 4-month old infant muriqui (*Brachyteles arachnoides*) at the Caratinga Biological Station (EBC), Minas Gerais, Brazil, which was successfully returned to her mother in the wild within 27 hours of contact. Muriquis are among the most endangered primates worldwide, and our active intervention was a conscious effort on behalf of this species' conservation.

At 0750 h on 11 November 1992, observers detected cries and movement from the forest floor close to where the 48-member muriqui group had spent the night. A female infant was sighted; she was cold to the touch, her eyes were closed, and her reflexes were poor. The rest of the group was nowhere in sight. One observer (CN) brought the infant back to the research house while another (LO) searched for the group. The infant was given a blanket for warmth, kept in a dimly lit room, and bottle-fed whenever she cried with a mixture of 20 ml powdered milk (Nutrícia, Fábrica de Laticínios Nutrícia S.A.) and 80 ml filtered and boiled water (Table 1). After the second feeding, the infant's temperature and reflexes appeared to return to normal, and her eyes were open and clear. Examination revealed no visible wounds or broken bones; rough measurements are shown in Table 2.

By early afternoon, the rest of the study group was located and the infant's identity was established by confirming the presence of all other members, which are distinguishable by their natural

Table 1. Infant feeding schedule

Date	Feeding	Time	Type*	Quantity
11/11/92	1	0840	Milk	20 ml
	2	0915	Milk	20 ml
	3	0935	Milk	10 ml
	4	1002	Milk	10 ml
	5	1023	Milk	10 ml
	6	1055	Milk	10 ml
	7	1142	Milk	20 ml
	8	1325	Milk	25 ml
	9	1545	Apple	1/4
	10	2027	Milk	20 ml
	11	2125	Milk	30 ml
	12	2310	Milk	30 ml
12/11/92	13/14/15	-	Milk	65 ml**
	16	0600	Milk	20 ml
	17	0743	Apple	3/4

*Composition of powdered milk: lactose-38%, protein-27%, fat-26%, minerals-6%; preservatives-3%.
**Total for three early morning feeds (0000-0500).

markings. The infant's mother was travelling alone, with visibly swollen nipples.

Bottle-feeding continued throughout the day and night whenever the infant cried, and was supplemented twice with mashed apple fed with a teaspoon. Feeding quantities and frequencies are shown in Table 1. Contact with the infant was kept to a minimum; one observer (ARC) assumed principle responsibility for the infant's care. A small branch was brought in from the forest which the infant clung to between feedings. Fecal and urine samples were collected and frozen; ectoparasites were preserved in 94% alcohol, and sent to Dr.Michael Stuart at the University of North Carolina-Ashville for identification. They appeared to be a species of louse, *Cebidicola armatus*, which Stuart had previously identified from *Brachyteles* at two other sites (unpublished).

On 12 November 1992, two observers tracked the study group, while a third stayed with the infant at the research house. When the group was located, one observer kept the infant's mother in sight while the other returned to the house to retrieve the infant, which was carried to the forest inside the blanket so that the other monkeys would not witness her contact with humans. The infant responded to vocalizations exchanged between group members.

At 1039, the infant was left inside the blanket at the base of a small tree closest to her mother; the observers withdrew from view. The infant immediately climbed the tree and vocalized. Her mother had been feeding; when her daughter vocalized she immediately stopped and looked in the direction of the calls. She spotted her infant, and moved toward her. Other females in the group also oriented toward the calls but did not approach. At 1051, the mother pulled her infant onto her back and began to move off. Two minutes later, the infant climbed off her mother and screamed. Her mother remained within a meter, calling to her infant. At 1105, the infant approached her mother's ventrum, but when her mother began to move she separated herself and screamed again. Her mother maintained close proximity, softly clucking to her infant, and five minutes later, the infant returned to her mother's ventrum and began to suckle. The infant continued to nurse as her mother began to move off as if no separation had occurred. The infant is now apparently healthy and developing normally.

We do not know why this infant was alone on the forest floor in the first place. During the 10 years that this group has been under study (Strier, 1991, 1992), falls involving infants and other age classes have been observed occasionally, but usually they climb back up the trees immediately or, in the case of young infants, are immediately retrieved by their mothers. In this case, the distance between the rest of the group and the infant when she was discovered suggests that she had been abandoned after she fell. She was her mother's first offspring, and it is possible that her mother's inexperience was responsible for her neglect. In any case, the infant's young age and poor condition when she was found suggest that she would have died without human intervention.

Once she was brought to the research house, two options for her future were discussed. One was to care for her until arrangements could be made to send her to the Centro de Primatologia do Rio de Janeiro where captive breeding facilities for this species exist (Coimbra-Filho *et al.*, 1993). In addition to concern for her survival during the 10-12 hours of transit, however, we have never observed a wild female muriqui adopt an infant, and we did not know how she would fare with other unrelated muriquis in a captive setting. Consequently we opted to attempt to return her to her mother in the wild.

Table 2. Measurements of the 4-month old female *Brachyteles arachnoides*.

Weight	*c.*900 g (weighed with 5 kg scale)
Body length	21.0 cm (top of head to base of tail)
Tail length	27.0 cm (base of tail to point)
Foot length	8.0 cm (heel to tip of middle digit)
Hand length	6.0 cm (wrist to tip of middle digit)
Head length	9.5 cm (tip of nose to occipital)

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The success of the return may have been facilitated by our ability to identify the infant and to release her near her mother. Furthermore, by not feeding the infant immediately prior to her release, she may have been hungry and therefore more responsive to her mother's initiative.

We recognize that similar recoveries of wild primates may not always be merited. In particular, if a primate has had extended contact with humans, it may be risky to return it to the wild, because it may transmit infectious pathogens. Similarly, if a dependant infant cannot be returned to its biological mother, releasing it in the wild may be condemning it to starvation. However, the success of our release indicates that such efforts are feasible and, under circumstances similar to those we describe, may be desirable, particularly for species as endangered as the muriqui.

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MURIQUIS AT THE RIO DE JANEIRO PRIMATE CENTRE

Very few muriquis, *Brachyteles arachnoides*, have been kept in captivity. Without exception, these were housed in inappropriate cages and lacked adequate husbandry, often being maintained alone, or in conditions which were unfavourable for reproduction, and receiving diets which in no way corresponded to their nutritional requirements. The continuing and drastic degradation and loss of habitat for these monkeys, the Brazilian Atlantic forest from the states of Bahia to Paraná (see Aguirre, 1971; Coimbra-Filho, 1972; Strier, 1992), has long since obviated the urgent need for an *ex situ* breeding program, and in 1984 the Rio de Janeiro Primate Centre (CPRJ/FEEMA) completed the construction of a large enclosure, designed specifically for the species (Anon., 1985; Coimbra-Filho *et al.*, 1993). It was financed by Wildlife Preservation Trust International (WPTI). It consists of a large exercise area (15.4 x 5.8 x 4.7 m), with a lean-to at each end, one for preparing food and the other as a retreat for the animals and to facilitate their capture. Part of one end of the exercise area is covered to provide shade and shelter from the rain. As such, the enclosure took into account the need to maximize space, and opportunities for exercise were also provided by positioning poles and supports in such a way that they could fully use their capacity for semi-brachiation.

The experimental colony obtained its first member,