

Extragroup Copulations in *Alouatta Guariba Clamitans*

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- Felton A., A. M. Felton, R. B. Wallace, H. Gómez. 2006. Identification, distribution and behavioral observations of the titi monkeys *Callicebus modestus* Lönnberg 1939, and *Callicebus olallae* Lönnberg 1939. *Primate Cons.* 20: 40–46.
- Hershkovitz P. 1990. Titis, new world monkeys of the genus *Callicebus* (Cebidae, Platyrrhini): A preliminary taxonomic review. *Fieldiana Zool.*, New Series 55: 1–109.
- Kinzey W. G. 1981. The titi monkeys, genus *Callicebus*. In: *Ecology and behavior of Neotropical primates*. Coimbra-Filho A.F., Mittermeier R.A. (eds.). Vol 1. pp. 241–276. Academia Brasileira de Ciências. Rio de Janeiro.
- López-Strauss H., R. B. Wallace. Submitted. Density estimates of two Bolivian primate endemics, *Callicebus olallae* and *C. modestus*. Submitted to *Mastozoología Neotropical*.
- Mandujano S., L. A. Escobedo-Morales, R. Palacios-Silva. 2004. Movements of *Alouatta palliata* among forest fragments in Los Tuxtlas, Mexico. *Neotrop. Primates* 12(3): 126–131.
- Martínez J., R. B. Wallace. 2007. Further notes on the distribution of endemic Bolivian titi monkeys, *Callicebus modestus* and *Callicebus olallae*. *Neotrop. Primates* 14: 47–54.
- Martínez J., R. B. Wallace. 2010. Pitheciidae. In: *Mamíferos medianos y grandes de Bolivia: distribución, ecología y conservación*. Wallace R.B., D. Rumiz & H. Gomez (eds.). pp. 305–330. Editorial: Centro de Ecología y Difusión Simón I. Patiño, Santa Cruz, Bolivia.
- Mourthe I. M., D. Guedes, J. Fidelis, J. P. Boubli, S. L. Mendes, K. B. Strier. 2007. Ground use by northern muriquis (*Brachyteles hypoxanthus*). *Am. J. Primatol.* 69:706–712.
- Pozo Montuy G., J. C. Serio-Silva. 2007. Movement and resource use by a group of *Alouatta pigra* in a forest fragment in Balancán, México. *Primates* 48: 102–107.
- Van Roosmalen M. G. M., T. van Roosmalen, R. A. Mittermeier. 2002. A taxonomic review of the titi monkeys, genus *Callicebus* Thomas, 1903, with the description of two new species, *Callicebus bernhardi* and *Callicebus stephennashi* from Brazilian Amazonia. *Neotrop. Primates* 10: 1–52.
- Wright P. C. 1986. Ecological correlates of monogamy in *Aotus* and *Callicebus*. Pp. 159–167. In: *Primate ecology and conservation*. Else J. & P. C. Lee (eds.). Cambridge University. New York.
- males (Kowalewski and Garber, 2010; Di Fiore et al., 2011). Extragroup copulations (EGCs) have been reported for *A. arctoidea* (Agoramoorthy and Hsu, 2000), *A. canaya* (Kowalewski and Garber, 2010), *A. guariba clamitans* (Fialho and Setz, 2007), *A. palliata* (Glander, 1992), and *A. pigra* (Van Belle et al., 2008). EGCs in *Alouatta* spp. have been related to a female strategy to increase paternity confusion (both inside and outside the group) and decrease the risk of infanticide following alpha male takeover (Kowalewski and Garber, 2010) and to female choice of higher quality or unfamiliar males (Fialho and Setz, 2007). Considering that fertility and compatibility may vary among males, EGCs may also maximize the reproductive success of promiscuous females (Reeder, 2003). These hypotheses are not mutually exclusive.

Here we report seven EGCs between an adult male brown howler monkey (*Alouatta guariba clamitans*) from a group monitored from dawn to dusk during 26 days from January to July 2011 in a ca. 1-ha forest fragment (30°19'57"S, 51°00'47"W; ca. 45 m a.n.s.l.) in Itapua District, Viamão, state of Rio Grande do Sul, Brazil, with an adult female from a neighboring group. In January, our study group was composed of six individuals: an adult male (Jorge), two adult females, one juvenile, and two infants. An adult female died electrocuted in a power line in March. In May, a birth increased group size to six individuals again. Also, the juvenile was classified as subadult and the infants as juveniles beginning this month. The neighboring group was composed of, at least, four individuals, including two adult males, an adult female (Jane), and a subadult male. We have no information about the degree of relatedness between individuals both within and between groups. The forest fragments that they inhabited are separated by a 20 m-wide dirty road.

Intergroup interactions were witnessed between April and July. These are described in chronological order below.

When Jorge reached the canopy, the neighboring adult males chased him back to the post. Jorge rubbed his chin at the post and was supplanted by a male. Then, the male also rubbed his chin in the same place, while Jorge observed him from the electric wire. When the adult male left the pole and returned to a place behind Jane in the canopy, Jorge attempted to approach her again and was once more chased by her male mates. Finally, Jorge went back to the other side of the road and his group left the border of the fragment.

June 22nd: At noon, all members of the study group ran to a strip of forest near the road. At 12:15, Jorge and the three males were howling at their home range borders. Jorge moved to the electric post at the other side using the cables and came back without trying to get closer to Jane. At 13:00, Jane crossed the road using the cable. Jorge unsuccessfully attempted to mate with her on the cable and they almost fell to the ground. After that, the couple

EXTRAGROUP COPULATIONS IN *ALOUATTA GUARIBA CLAMITANS*

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Howler monkeys often live in unimale-multifemale or multimale-multifemale cohesive groups in which the alpha male may monopolize estrus females, although females may mate promiscuously with subordinate and extragroup

moved to an electric post and mated. Jorge's group was resting in a nearby tree. There was no attempt of copulation interruption by his group's adult female or her adult male group mates, who remained at the other side of the road. At 13:15, the couple mated again and Jane returned to her group. Jorge vocalized while she crossed the road via the cable.

July 19th: Jorge, the adult female, and the subadult vocalized at 16:15 when Jane arrived at the border of her home range. She crossed the road as usual at 16:30, reaching a tree within the home range of Jorge's group. The couple mated four times near his group while her male group members howled at the other side of the road. At 16:45, Jorge began to slowly moving away from the border of the road, only stopping to rub his chin on tree trunks. He was followed by Jane. An adult male from Jane's group (apparently slightly larger than Jorge) also crossed the road using the electric cable, reaching the trees. The last EGC was recorded at 17:15. After that, Jane returned to her home range, whereas Jorge remained with his group. We don't know whether the adult male from Jane's group left the area prior or together with her.

In sum, both Jorge and Jane sought EGCs, but only her attempts were successful. When Jorge moved to her home range, he was chased away by her adult male group mates. On the other hand, his adult female group mate appeared to ignore his sexual interactions with Jane. We have no data on the occurrence and frequency of EGCs during the days we were not monitoring our study group and whether Jane mated within her group during our study. We also do not know whether Jane got pregnant as a result of these EGCs because our study ended only five weeks after the record of the first event. Therefore, our data do not allow excluding any of the aforementioned hypotheses for explaining the EGCs between Jorge and Jane. This was the second report on EGC in *Alouatta guariba clamitans*.

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References

- Agoramoorthy, G. and Hsu, M. J. 2000. Extragroup copulation among wild red howler monkeys in Venezuela. *Folia Primatol.* 71: 147–151.
- Di Fiore, A., Link, A. and Campbell, C. J. 2011. The atelines: behavioral and socioecological diversity in a New World monkey radiation. In: *Primates in Perspective*, C. J. Campbell, A. Fuentes, M. C. MacKinnon, S. K. Bearder and R. M. Stumpf (eds.), pp. 155–188. Oxford University Press, New York.
- Fialho, M. S. and Setz, E. Z. F. 2007. Extragroup copulations among brown howler monkeys in southern Brazil. *Neotrop. Primates* 14: 28–30.
- Glander, K. E. 1992. Dispersal patterns in Costa Rican mantled howling monkeys. *Int. J. Primatol.* 13: 415–436.
- Kowalewski, M. M. and Garber, P. A. 2010. Mating promiscuity and reproductive tactics in female black and gold howler monkeys (*Alouatta caraya*) inhabiting an island in the Parana river, Argentina. *Am. J. Primatol.* 72: 734–748.
- Reeder, D. M. 2003. The potential for cryptic female choice in primates: behavioral, anatomical, and physiological considerations. In: *Sexual Selection and Reproductive Competition in Primates: New Perspectives and Directions*, C. B. Jones (ed.), pp. 255–303. American Society of Primatologists, Norman.
- Van Belle, S., Estrada, A. and Strier, K. B. 2008. Social relationships among male *Alouatta pigra*. *Int. J. Primatol.* 29: 1481–1498.

THE SOUTHERNMOST RECORD OF *MICO EMILIAE* (THOMAS, 1920) FOR THE STATE OF MATO GROSSO, NORTHERN BRAZIL

Guilherme Siniciato Terra Garbino

The marmoset genus *Mico* comprises 14 species, 13 of which are endemic to Brazil (Rylands *et al.*, 2009; Ferrari *et al.*, 2010). *Mico emiliae* was described by Thomas (1920) based on two specimens collected by Emilia Snethlage in the Rio Curuá, a tributary of the Rio Iriri, that is an affluent of the Rio Xingu (Thomas, 1920; Vivo, 1985). *Mico emiliae* is restricted to the region between the Rio Curuá and Rio Iriri to the north, reaching the Rio Teles Pires to the west (Pimenta and Silva Jr., 2005; Fialho, 2010). The southern limit of the distribution remains unconfirmed but has been proposed by Roosmalen *et al.* (2000) to lie between the Xingú headwaters region and the eastern (or right) margin of the Upper Rio Teles Pires. Besides the aforementioned distribution, *M. emiliae* was believed to occur westwards, in the Madeira/Aripuanã interfluvium (Alperin, 1993; Ferrari and Lopes, 1992; Vivo, 1985, 1991). The form from this region, however, has now been described as a new species, *M. rondoni* (Ferrari *et al.*, 2010). In this note, I report the first record of *M. emiliae* south of the Rio Teles Pires