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Notes on a Distributional River Boundary and Southern Range Extension for Two Species of Amazonian Primates

Despite over twenty years of intensive field research in the Neotropics, new species of large mammals, particularly primates, are still being discovered today (e.g., Ferrari and Queiroz, 1994; Lorini and Persson, 1990; Mittermeier *et al.*, 1992). However, from a conservation viewpoint, new distribution records for endangered and threatened species are as important, for example, the significant population of giant otter, *Pteronura brasiliensis*, recently encountered in eastern Bolivia (Taber *et al.*, in prep.). As further regions of the vast Amazonian basin are explored it is vital to recognise the scientific and conservation importance of publishing sightings of rare and endangered species, particularly if localities represent range extensions.

Recent analysis has demonstrated the importance of river boundaries as limiting factors for the distribution of Amazonian primates (Ayres and Clutton-Brock, 1992). Intuitively, the low water width and annual discharge of a given river are important factors to consider when assessing the similarity of primate communities on each bank, since both are likely to affect the river-crossing ability of a given primate species. Ayres and Clutton-Brock (1992) measured the width of a river during the dry season at the midpoint of the river's length, and found that body size and the ability to colonize *várzea* (white-water inundated) or *igapó* (black-water inundated) forest habitats seem to be the most important interspecific differences in how rivers affect different primate species' distributions.

The following observations were made whilst conducting mammalian surveys and ecological research at "Lago Caiman" (13° 35.64' S, 60° 54.74' W) in the Flor de Oro region of the Noel Kempff Mercado National Park, between September 1991 and December 1992, and again from February to December 1995. This protected area is situated on the edge of the Brazilian Shield in north-eastern Santa Cruz Department, Bolivia. The eastern limit of the park is the Guaporé/Iteñez river which is also the border with neighbouring Brazil. At Flor de Oro the dry season river width is between 100-150 m.

In early April 1992, two primates, identified as white-faced bearded saki monkeys (*Chiropotes albinasus*) were observed in *igapó* forest at the river's edge in Brazil (13° 32.63' S, 60° 56.49' W). Both individuals had a striking red colouration around the nasal and genital areas. This species was not encountered again during this field season, probably because it predominantly occurs in *terra firme* forest, with only occasional reports

in flooded forest (Ayres, 1989). In 1995 we observed groups of *Chiropotes albinasus* in *igapó* forest on three occasions between March and April, suggesting a seasonal use of this habitat at the end of the wet season. Previous distributional records suggest these sightings represent a new southern limit for this threatened Brazilian endemic (Ayres, 1989; Emmons, 1990; Ferrari, 1995; Hershkovitz, 1985), extending its known range by about 129 km (see Fig. 1).

Similarly, between April and June 1992, bare-eared squirrel monkeys, *Saimiri ustus*, were encountered on three occasions during research activities, exclusively in a 500 metre stretch of *igapó* forest on the Brazilian side of the river (13°33.75' S, 60°55.47' W). Group size varied from 10 to 40 individuals, although further undetected animals were probably present. Observed individuals foraged along the lower level of the riverside vegetation, once in association with a group of brown capuchin monkeys (*Cebus apella*). In 1995, *Saimiri ustus* was encountered in the same area of *igapó* forest three times between March and April, again suggesting a seasonal use of this habitat. On a fourth occasion *Saimiri ustus* was observed in close association with *Chiropotes albinasus*. Following Hershkovitz (1984), these sightings represent a southern range extension of about 130 km for this taxon (see Fig. 1).

In the Flor de Oro region, primate communities residing on either side of the Guaporé/Iteñez river appear to be considerably different. On the Bolivian side of the river the community includes *Callithrix argentata melanura, Aotus azarai, Cebus apella, Alouatta seniculus, A. caraya,* and *Ateles chamek* (Wallace *et al.*, in prep.). All of these, apart from *Callithrix* and *Aotus*, were recorded on the Brazilian bank along with *Callicebus brunneus, Saimiri ustus, Pithecia irrorata* and *Chiropotes albinasus*. It should be noted that the Brazilian observations were restricted to those primates encountered whilst travelling on the river, whereas the Bolivian information is a product of all sightings during extensive field work. Using analytical techniques adopted by Ayres and Clutton-Brock (1992), and considering only species observed from the river (i.e., *Aotus* and *Callithrix* are not counted for Bolivia), the area has a bank similarity index score of 75%, calculated as: % species on side A common to side B + % on side B common to side A, divided by two. In fact, reliable anecdotal reports suggest that both *Aotus* sp. and *Callithrix* sp. occur on the Brazilian side of the river (L. Garcia, pers. comm.). Following Hershkovitz (1983), the Guaporé represents a boundary for *A. azarai* and the Brazilian *Aotus* is probably *A. nigriceps*, though we have no specimens. Also, according to previous distributional information, the *Callithrix* on the Brazilian side is probably *C. argentata* (Emmons, 1990). Using this rather speculative approach results in a bank similarity score of 66.5%.

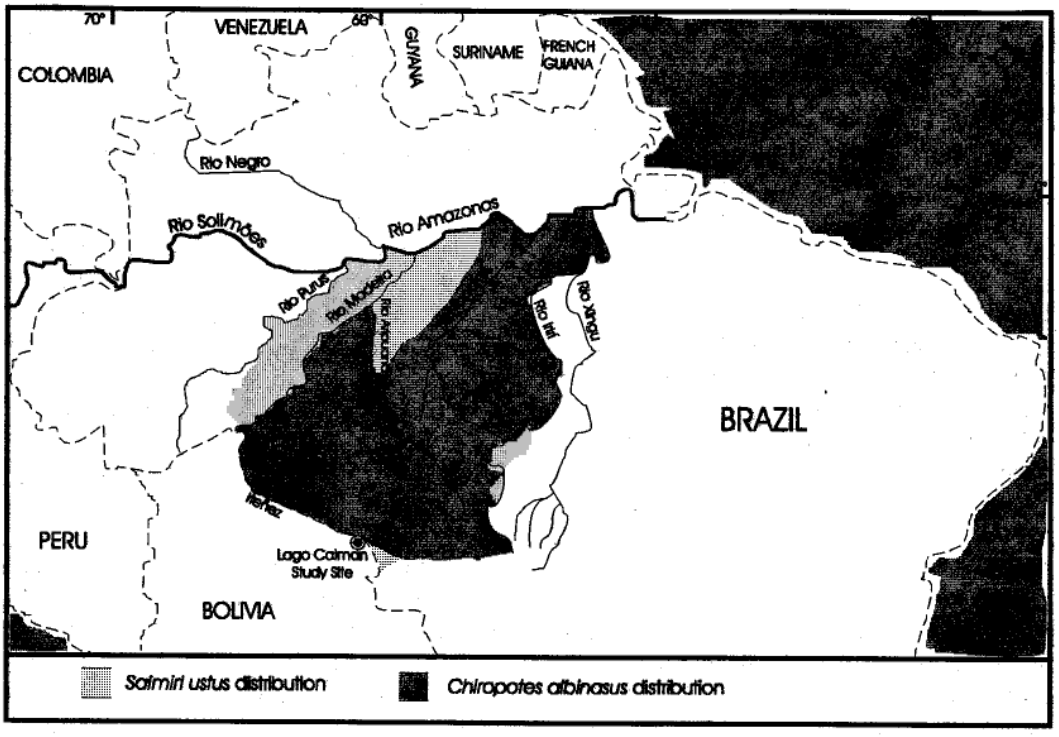

Figure 1. Hypothetical distribution maps for *Chiropotes albinasus* (*v.* Hershkovitz, 1985) and *Saimiri ustus* (*v.* Hershkovitz, 1984), and the location of the Lago Caiman study site. x marks closest previously known site for *Saimiri ustus* and + marks the closest previously known site for *Chiropotes albinasus*.

Both these bank similarity scores are lower than black water rivers of similar width previously considered in Amazonian Brazil (Ayres and Clutton-Brock, 1992). Given the provisos that we have sampled extensively only in one area, and that anecdotal reports suggest *Chiropotes* may occur in Bolivia further east, it appears that the Guaporé/Iteñez represents a natural boundary for several species of primate in this region. Previously published distributional information regarding these species, and the hypothetical range maps drawn up are in agreement with this observation (Ayres, 1989; Emmons, 1990; Hershkovitz, 1984, 1985, 1987). Whether these species' distributions are limited purely by the physical river boundary, which seems dubious given the relatively large size of some of the taxa halted and the narrowness of the river, or if vegetational differences in the two banks also play an important role remains to be investigated.

Reports from local Brazilian inhabitants of a primate species known locally as "macaco barrigudo", suggest that the interior forests of this region of Brazil also include woolly monkeys (*Lagothrix lagotricha*). This suggestion underlines the need for further primate surveys in this region, especially on the Brazilian bank where primate diversity appears to be high and includes several threatened species (*Chiropotes albinasus*, *Ateles Chamek*, and possibly *Lagothrix lagotricha*).

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Wallace, R.B., Painter, R. L. E. and Taber, A. B. In prep. Primate diversity, habitat preferences and population density estimates in Parque Nacional Noel Kempff Mercado, Santa Cruz, Bolivia.Platyrrhines in Pimenta Bueno, Rondônia, Brazil.

PLATYRRHINES IN PIMENTA BUENO, RONDÔNIA, BRAZIL

The Pimenta Bueno Municipal Park (*Parque Natural Municipal de Pimenta Bueno*) is part of one of the largest and best preserved fragments of native forest habitat in the vicinity of the BR-364 federal highway; pivot of colonisation in southwestern Amazonia, in southern Rondônia (Fig. 1), but an area where the primate fauna is still relatively poorly known (de Vivo, 1985). The park was visited during four days at the beginning of June 1996 as part of a survey of the state's mammalian