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Preface

Speciation and Taxonomy: Neotropical Primate diversity

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During the last three decades Dr. Van Roosmalen has surveyed by boat, canoe, and on foot entire basins of some major tributaries of the mighty Amazon River in order to study primate diversity and distributions across the entire Amazon Basin (including large parts of the Precambrian Guiana and Brazilian Shields).

This way he tested and empirically came to fully validate Alfred Russel Wallace's river-barrier hypothesis first laid down in his 1852 account On the Monkeys of the Amazon. Wallace points at the larger rivers he sailed as the principal evolutionary cause of the Amazon's uniquely rich extant primate diversity and complex biogeography, for many rivers together with their floodplains effectively block off gene flow between populations along opposite riverbanks.

As the Amazon represents a largely pristine and vast natural realm not (yet) modified by human interference, no better place to retrace evolutionary processes that may have acted upon primates (including our own ancestors) and other mammals since the Pliocene. Moreover, Van Roosmalen's biodiversity surveys revealed a number of new monkeys from all over the Amazon (described elsewhere) and other megafauna (somefrom the Rio Aripuanã Basin described here), among which even a new genus - the dwarf marmoset *Callibella humilis* M. van Roosmalen, T. van Roosmalen, Mittermeier et de Fonseca, 1998.

This peaceable, non-territorial, enigmatic, second smallest monkey in the world (here depicted in the upper left corner) occupying the smallest distribution of any monkey on the planet stands at the base of the phylogenetic tree of all extant marmosets. Interestingly, the whole family of advanced Callitrichidae (i.e., the genera *Cebuella* Gray, 1866 *Callithrix* Erxleben, 1758, *Mico* Thomas, 1920, *Saguinus* Hoffmannsegg, 1807, *Leontopithecus* Lesson, 1840) exhibits social groupings that fiercely defend a common living space or territory (Fig. 1).

Speciation, radiation and rate of metachromic bleaching among primatesseem to be related to territoriality and social rather than sexual selection (as is the case in other mammals and birds). Consequently, the strictly territorial Amazonian marmosets (*Mico*), tamarins (*Saguinus*), lion tamarins (*Leontopithecus*), ouistitis (*Callithrix*), titis (*Callicebus* Thomas, 1903) and howling monkeys (*Alouatta* Lacépède, 1799) are the most diversified, species-rich and colorful genera among a total of 19 New-World monkeys, in striking contrast to Goeldi's Monkey Callimico and dwarf marmoset

Figure 1. Neotropical Primate diversity - Amazon Basin, Brazil.

Callibella - the only two Neotropical primate genera being monotypic and archetypic in skin and coat coloration (eumelanin black, brown and/or agouti).