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*Introduction*

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## **Contemporary Issues in Ecology, Behavior and Evolution of the Atelin Primates**

**Anthony Di Fiore<sup>1,3</sup> and Christina J. Campbell<sup>2</sup>**

In the early 1990s, when we were graduate students beginning our respective dissertation projects on atelin primates, the number of studies available to us for background information was limited. Long-term field research on the genera discussed in this issue was restricted to a few sites scattered around Central and South America and it was being carried out by an equally limited number of scientists. If one were interested in spider monkeys (*Ateles* spp.), Cant, Chapman, Klein, Symington, and van Roosmalen were among the few researchers who had each authored multiple publications on the ecology and behavior of the genus. Even fewer had contributed to the literature on woolly monkeys (*Lagothrix* spp.)—most notably Defler, Nishimura, Peres, and Soini—while Milton and Strier were the only scientists associated with multiple publications on muriquis (*Brachyteles* spp.).

We are very pleased that in the intervening decade, the number of long-term studies conducted on atelin primates has grown dramatically as a diverse international group of new researchers and established veterans have made substantial contributions to our understanding of

<sup>1</sup>Department of Anthropology, New York University and NYCEP (New York Consortium Evolutionary Primatology), New York.

<sup>2</sup>Department of Anthropology, Pomona College.

<sup>3</sup>To whom correspondence should be addressed at Department of Anthropology, New York University, Rufus Smith Hall, Room 802-803, 25 Waverly Place, New York, NY 10003; e-mail: anthony.difiore@nyu.edu.

their biology. Our goal in organizing this special issue of the *International Journal of Primatology* (and for the symposium at the 72nd annual meeting of the American Association of Physical Anthropologists, Tempe Arizona, April 26, 2003, from which the papers originated) was to highlight this expansion in research on atelins and to expose the wider scientific community to the growing body of knowledge that has accumulated about them.

For primatologists interested in socioecological theory, the atelins comprise an exemplary set of taxa for comparative study. Inarguably a monophyletic grouping that shared a common ancestor as recently as 12–14 million years ago (Meireles *et al.*, 1999; Hartwig, 2005), the extant atelins display a diversity of ecological strategies and patterns of social organization. Early studies, especially of the highly frugivorous spider monkey, were influential in the development of ecological models of primate grouping patterns, in which the role of intragroup feeding competition was afforded prominence. Like chimpanzees, spider monkeys consistently show a fluid, or fission-fusion social system wherein subgroups vary in size and composition, apparently in relation to the availability of ripe fruit (Klein, 1972; Symington, 1987, 1990; Chapman *et al.*, 1995). But while fission-fusion sociality was once considered to be the standard social organization for atelins, data from long-term research on *Brachyteles* and *Lagothrix* argue in favor of a more nuanced interpretation of atelin social systems, one in which all of the genera share an adaptation for flexibility in grouping patterns (rather than fission-fusion sociality *per se*), with the degree of flexibility varying both among and within taxa in response to demographic as well as ecological conditions (Di Fiore and Strier, 2004). Undoubtedly, the continuing expansion of studies on atelins, such as those represented in this volume, will permit stronger tests of current socioecological theory and represent an important addition to the primatological literature.

The expansion in atelin studies over the past decade has also provided new insights into the importance of incorporating intraspecific variation into comparative models of primate behavior (Strier, 2003). We are increasingly coming to appreciate that only when data from multiple long-term studies are compared across sites can we begin to fully comprehend and interpret behavioral and ecological variation. Thus, an exciting feature of this volume is the two papers that investigate data collected on *Ateles* spp. from multiple study sites. As far as we are aware, they are among the first such collaborations of this kind by atelin researchers, and we hope that they represent only the beginning of such ventures.

In organizing the series of papers, we had several goals in mind. First, we wanted to gather together studies on the biology and behavior of atelins being conducted at new field sites and by junior researchers. As such, many

of the senior scientists usually associated with publications on atelin primates are notably absent, though we readily acknowledge that it is the dedication, inspiration, and invaluable contributions of many of them that continues to motivate new students to take up the mantle of fieldwork on atelins. Second, we wanted to showcase methodologies and perspectives that have not been widely represented in previous atelin research, such as the use of field playback experiments (Ramos-Fernandez, 2005), the integration of behavioral and genetic (Di Fiore and Fleischer, 2005), or morphological and genetic (Hartwig, 2005) data, and, as alluded to above, the meta-analysis of data collected across multiple field sites (Russo *et al.*, 2005; Campbell *et al.*, 2005). The resulting set of 9 papers cover a diverse array of theoretical topics studied by an even more diverse array of researchers. We acknowledge the preponderance of work on *Ateles* in the papers presented here, which is likely related to the much wider geographical distribution of *Ateles* versus those of *Lagothrix* and *Brachyteles*. In the coming years, we expect to see further expansion of work on them as well.

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