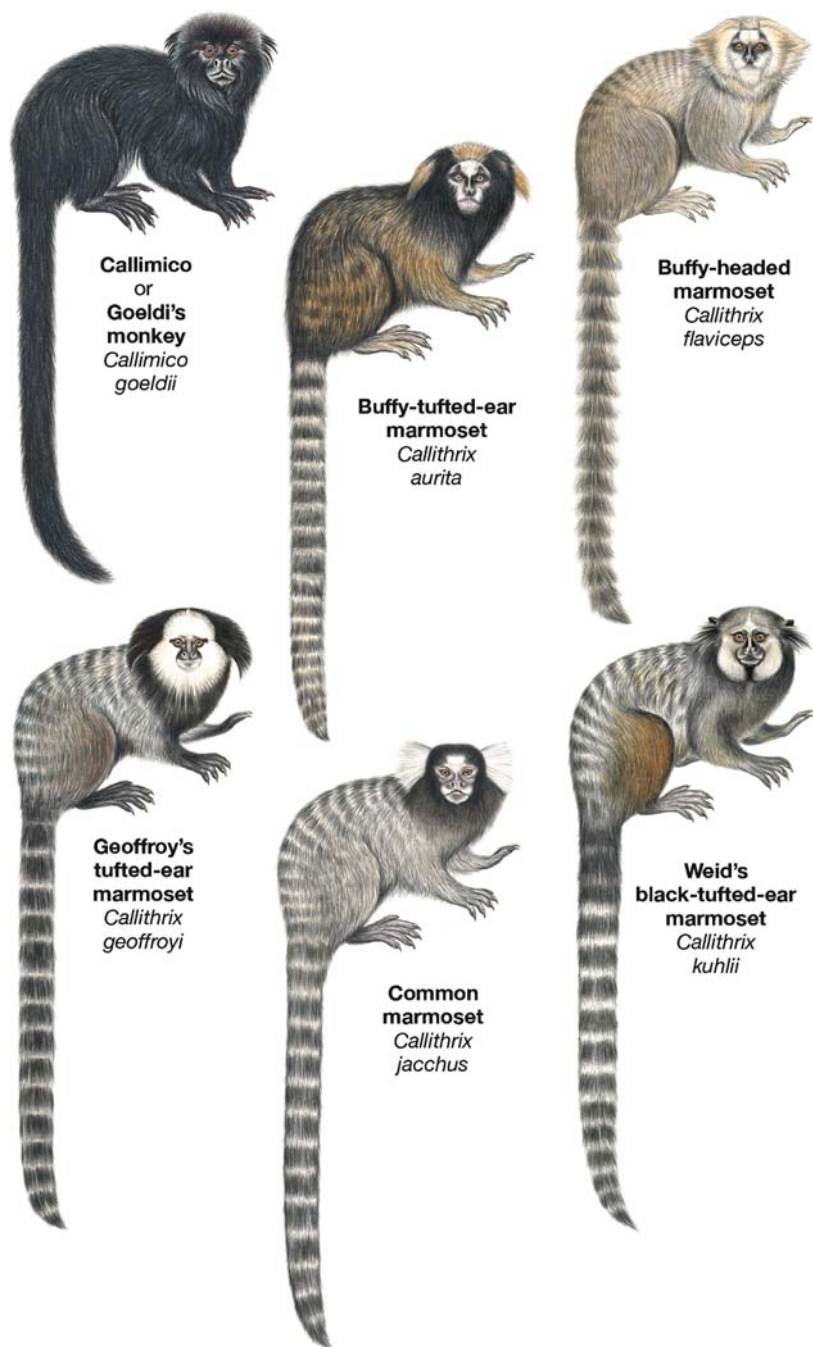


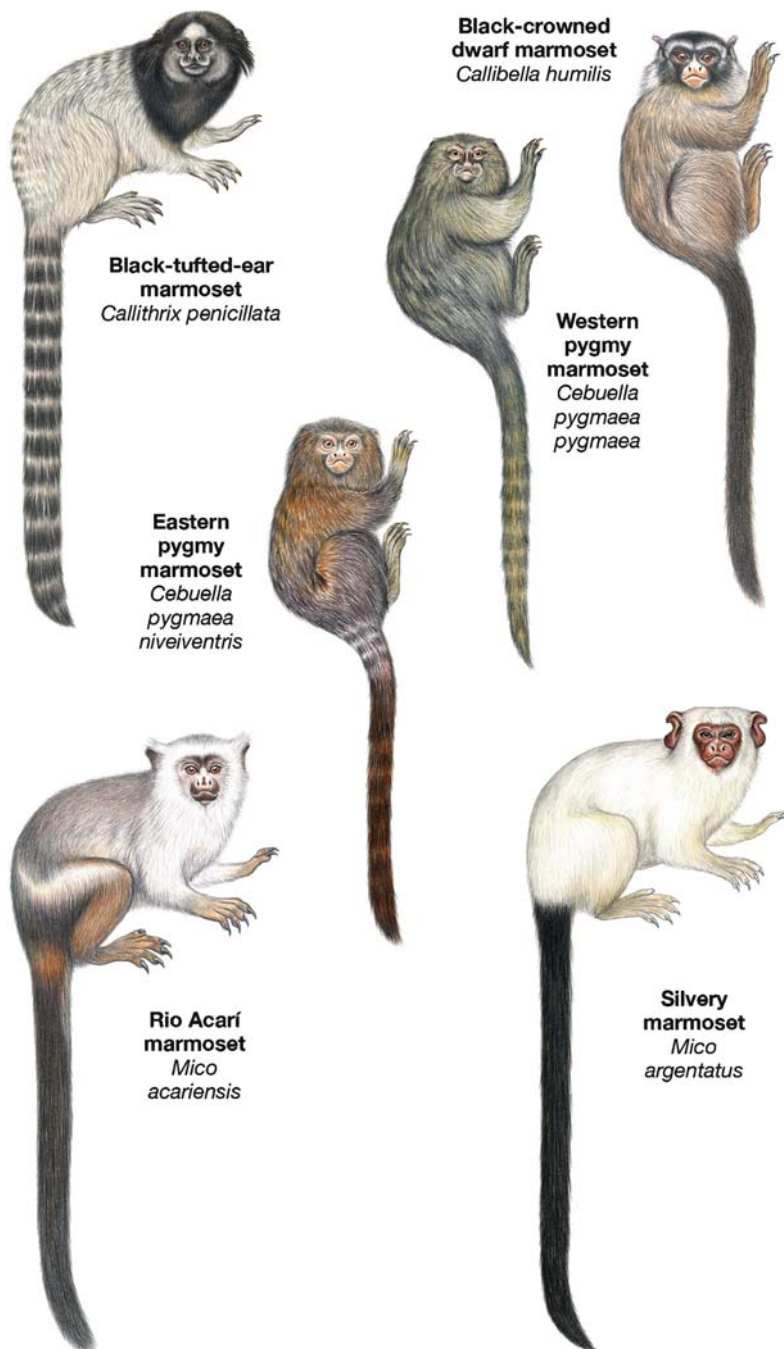
## Preface

The marmosets and callimicos are diminutive monkeys from the Amazon basin and Atlantic Coastal Forest of South America. The marmosets are the smallest anthropoid primates in the world, ranging in size from approximately 100 to 350 g (Hershkovitz 1977; Soini 1988; Ford and Davis 1992; Araújo et al. 2000); callimicos are not much bigger, at around 350–540 g (Ford and Davis 1992; Encarnación and Heymann 1998; Garber and Leigh 2001). Overwhelming genetic evidence, from both nuclear and mitochondrial DNA, now indicates that these taxa represent a unified clade within the callitrichid radiation of New World monkeys, a finding that was unthinkable to all but a few geneticists a decade ago (see review in Cortés-Ortiz, this volume Chap. 2). With increasing evidence that the earliest anthropoids were themselves small bodied (under the 0.8–1 kg threshold that marks all other living anthropoids; see Ross and Kay 2004), the ecology, behavior, reproductive stresses, and anatomical adaptations of the marmosets and callimicos provide the best living models with which to assess the types of adaptations that may have characterized early anthropoids.

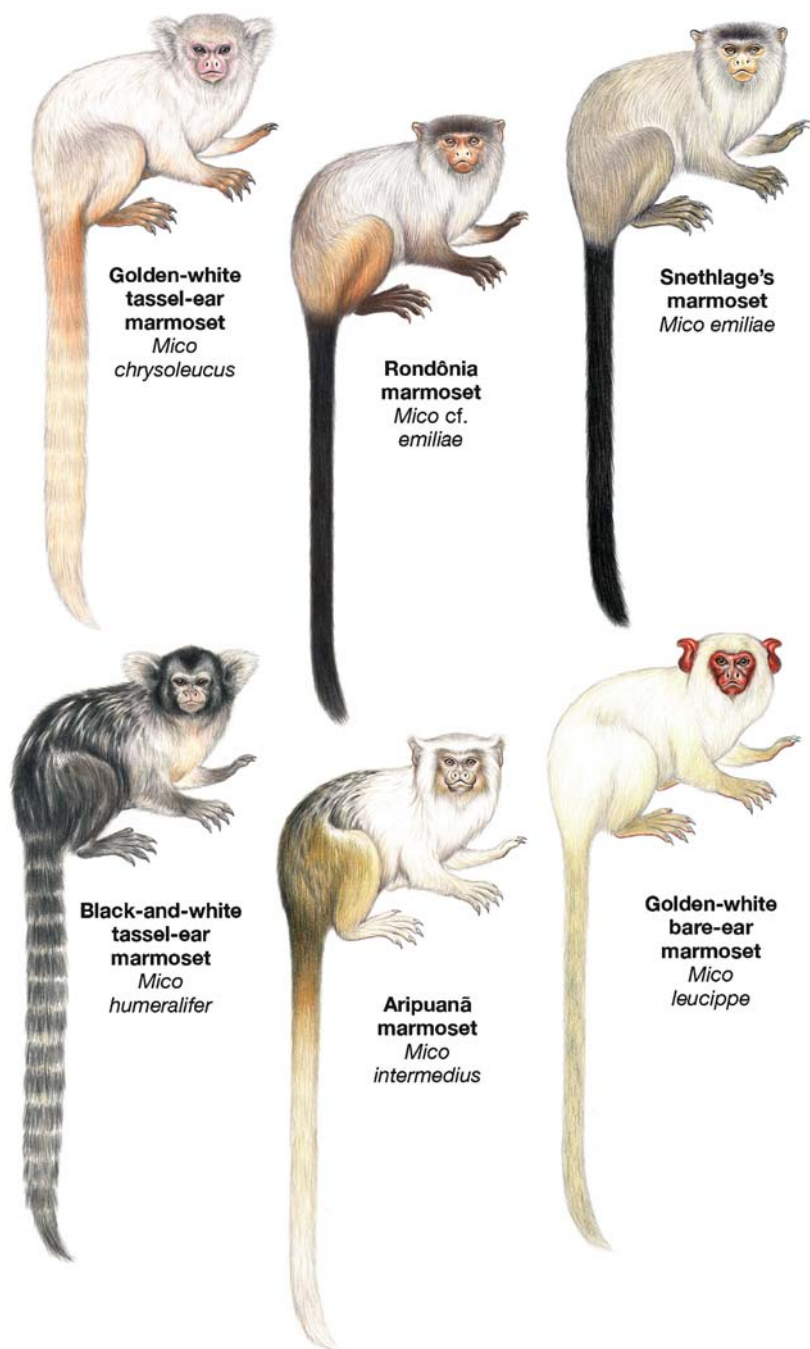
When Anthony Rylands' *Marmosets and Tamarins: Systematics, Behaviour and Ecology* was published in 1993, contributions focused almost entirely on tamarins due to the scarcity of data on marmoset behavior and the almost total lack of knowledge about the enigmatic callimicos. Fortunately, this has changed (see Fig. 1). In the last 15 years, there has been an explosion of new information on the South American marmosets and callimicos. In 1977, in his seminal work, Philip Hershkovitz recognized only four species of marmosets: *Cebuella pygmaea* (the pygmy marmoset), *Callithrix jacchus* (the tufted-ear or common marmoset), *Callithrix argentata* (the bare-ear marmoset), and *Callithrix humeralifer* (the tassel-ear marmoset). Since then, many other species have been accepted, and the Amazonian non-pygmy marmosets have been raised to generic level, *Mico* (Rylands et al. 2000). An entirely new monotypic genus, *Callibella humilis*, was first discovered in 1998 (van Roosmalen et al. 1998) and raised to genus level in 2003 (van Roosmalen and van Roosmalen 2003). This is the first new genus of a New World monkey discovered since *Callimico* 100 years ago (Thomas 1904), and it remains enigmatic and poorly known (see, in particular, Aguiar and Lacher Jr Chap. 18, and Ford and Davis Chap. 21). Six other new species have been identified: *Mico nigriceps* (Ferrari and Lopes 1992), *M. mauesi* (Mittermeier et al. 1992), *M. marcai* (Alperin 1993), *M. saterei* (Silva Jr and



**Fig. 1** Illustrations of the diminutive anthropoids of the marmoset-callimico radiation. Drawings by Stephen Nash, Conservation International



**Fig. 1** (continued)

**Fig. 1** (continued)

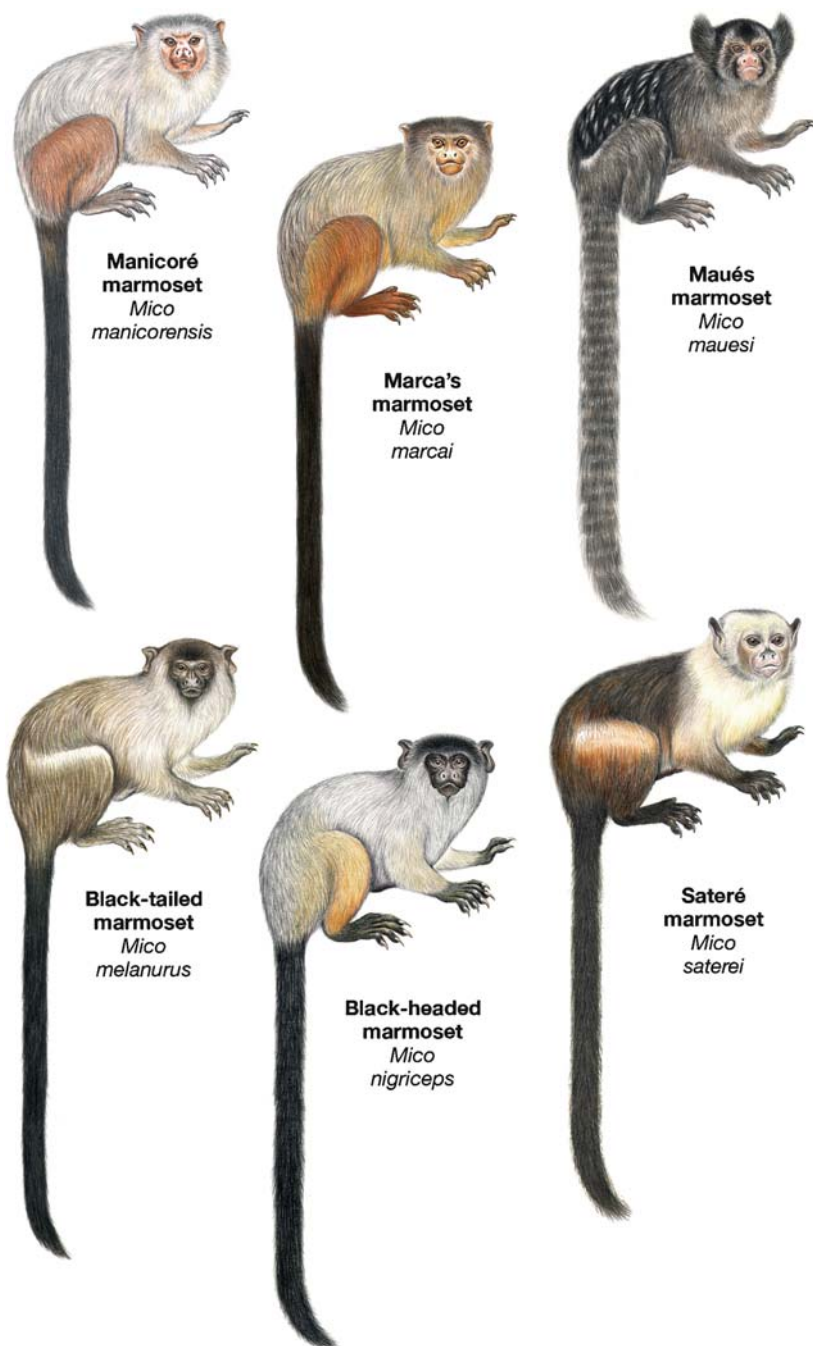


Fig. 1 (continued)

Noronha 1998), *M. acariensis* (van Roosmalen et al. 2000), and *M. manicorensis* (van Roosmalen et al. 2000). Ten others have been raised to full species status, including *Callithrix aurita*, *C. flaviceps*, *C. geoffroyi*, *C. kuhlii*, *C. penicillata*, *Mico chrysoleucus*, *M. emiliae*, *M. intermedius*, *M. leucippe*, *M. melanurus*, with at least one other pending: *Mico* cf. *emiliae* [Rondônia]. Therefore, this radiation of diminutive monkeys is currently recognized as comprising 4 genera and 22 species of marmosets plus one of callimicos. The taxonomic status, distribution, and descriptions for each of these is reviewed by Rylands et al. (Chap. 2), and the differences between them are discussed in a number of chapters, particularly in the Phylogeny and Anatomy sections of the volume.

We have also dramatically improved our understanding of their anatomy, locomotion, diet, ecology, and social behavior, much of which has been quite surprising. We now know that members of this radiation may form monogamous, polyandrous, and occasionally polygynandrous groups; *Cebuella* vertically clings but does not often leap; *Callibella* may not twin all of time; *Callimico* eats fungi, and may have twinned in the distant past; and the group displays measurable craniodental and postcranial differences related to the unique ways they exploit their respective habitats. In addition, many of these species are at risk or are highly endangered (see, in particular, de la Torre et al. Chap. 22 and Ferrari Chap. 23).

This volume is an outgrowth of a lunch conversation between the three co-editors and Paul Garber during the 2003 Annual Meeting of the American Association of Physical Anthropologists in Tempe, Arizona, when we realized that there was considerable new information available with which to reassess the complexities of callimico and marmoset behavior and anatomy. In 2005, the co-editors chaired a symposium at the Annual Meeting of the American Association of Physical Anthropologists in Milwaukee, Wisconsin (*Advances in Marmoset and Goeldi's Monkey (Callimico) Research: Anatomy, Behavioral Ecology, Phylogeny, and Conservation*). Expanded versions of the presentations from that symposium form the core of this volume, with the addition of a number of other important contributions.

This volume presents the work of primary researchers from three continents, and it explores these diminutive primates from several different perspectives. In Section I, phylogeny of the group is examined through genetics, morphology, distribution, and vocalization. Behavior and ecology are examined both in the wild and in captivity, in their reproductive, social, and cognitive dimensions (Section II) as well as ranging and locomotion (Section III). These include studies on four of the five genera (*Callimico*, *Callithrix*, *Mico*, and *Cebuella*; there are still no in depth studies on *Callibella*, although new information on ecology is included in Aguiar and Lacher Jr, Chap. 18). The functional and phylogenetic anatomy of all five genera is discussed in Section IV, including chapters on cranial anatomy, postcranial anatomy, and jaw mechanics and musculature associated with the marmosets' distinctive diet of exudativory. The volume closes with consideration of conservation issues and concerns (Section V).

For consistency throughout the volume, we have adopted certain taxonomic conventions (largely following Rylands et al. 2000; Rylands et al. Chap. 2). Although

not all authors fully agree with the classificatory choices made here, all have agreed to use the following names in their chapters: all marmosets, tamarins, and callimicos are in the family Callitrichidae; no subfamily names are used; and any reference to the twinning callitrichids (excluding callimicos) is to the “marmosets and tamarins.” The common name used for *Callimico* is callimicos, although they are often referred to as Goeldi’s monkeys elsewhere. The first time any platyrrhine is mentioned in a chapter, both the scientific and common names are given; after that, individual author(s) may adopt either scientific or common terminology.

Much of the work on these smallest anthropoids has been published in languages other than English or in sources that can be difficult to acquire. It is our hope that by bringing the work of these authors together in one place and one language, with abstracts in both Spanish and Portuguese, this volume will provide readily accessible information on the evolution, behavior, adaptations, and conservation needs of the marmosets and callimicos both for people interested in these wonderful monkeys for themselves, and for those who discover that knowledge of the diminutive marmosets and callimicos aids their understanding of other organisms and the diverse ecosystems in which marmosets and callimicos live.

**Acknowledgments** The editors are particularly indebted to several individuals for advice, critique, and assistance, without which this volume could not have been completed. These include Dr. Anthony Rylands for leading a spirited and inspiring discussion after the original symposium; Drs. Paul Garber and Anthony Rylands (plus two anonymous reviewers) for suggesting some additional contributors and generally much-welcomed advice; Dr. Dan Gebo for critique of some chapters; the authors themselves, some of whom read and provided input on other chapters; Dr. Liliana Cortés-Ortiz and Mr. José Romulo Sanchez for translating most of the abstracts into Spanish; and Drs. Maria B.C. de Sousa and Gabriel Marroig, and Ms. Ana Carolina Castro for translating most into Portuguese. Several graduate students provided editorial assistance, including Rose Hores, Chihiro Shibata, Karen Wolf, and for the index: Elliott Forsythe and Aimee Hosemann. Conservation International and Dr. Russell Mittermeier underwrote the marvelous color plates by Stephen Nash, to whom we are particularly indebted. Drs. Jennifer Rehg and Tab Rasmussen provided the hospitality of their cottage for one memorable weekend of work. LCD is grateful for the organizational talents of Avril Murray and Felicia Elliott in the early stages of the book, and for the enduring gift of JM’s support. SMF especially thanks her husband, Al Allen, for assistance with many illustrations and Al, David and Emily for their patience, love, and good humor (mostly) throughout the production of the book.

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The Smallest Anthropoids

The Marmoset/Callimico Radiation

Ford, S.M.; Porter, L.M.; Davis, L.C. (Eds.)

2009, XXII, 508 p. 94 illus., Hardcover

ISBN: 978-1-4419-0292-4