

## Número Aniversario



# CELEBRATING TWENTY-FIVE YEARS OF *MASTOZOLOGÍA NEOTROPICAL*

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*Mastozoología Neotropical* completed 25 years of uninterrupted publication in 2018. The first issue of the journal appeared in 1994, about a decade after the formation of SAREM (Sociedad Argentina para el Estudio de los Mamíferos), the professional society that has fostered the journal since its inception. As the first editorial (Ojeda 1994) published in *Mastozoología Neotropical* made clear, the goal of establishing the journal was to create “una revista sin fronteras.” This international, collaborative perspective was evident in both the initial panel of Associate Editors selected and the suggested topical coverage, which extended to all aspects of Neotropical mammalogy. A quick look at the contents of the journal in 2019 (volume 26) reveals authors from Argentina, Brazil, Chile, China, Colombia, Ecuador, Perú, Switzerland, Uruguay, and the USA, suggesting that the original vision of an international forum for reporting research on mammals has been realized. Currently, *Mastozoología Neotropical* combines a highly professional publishing process with unrestricted open access, no publication charges for members of SAREM or partner organizations such as the Sociedade Brasileira de Mastozoologia (SBMz; Bonvicino & Flores 2016), and only modest page charges for authors who are not members of either society. These are no small feats for any journal, let alone for one backed by relatively small professional organizations with limited (and often unpredictable) financial support.

To celebrate twenty-five years of publication of *Mastozoología Neotropical*, SAREM and SBMz

charged us with preparing a special issue of the journal, one that would contain a limited number of concise, timely perspectives on diverse aspects of Neotropical mammalogy. We proceeded to solicit perspectives from leading (although not necessarily senior!) scholars in mammalian biology, with the intent of including a diverse range of disciplines that capture some of the major developments in Neotropical mammalogy over the last quarter of a century. In addition to highlighting accomplishments in mammalogy, we encouraged authors to identify promising avenues for future research. The resulting compilation, which we are eager to share, consists of eight contributions that reflect the breadth, depth, and excitement of studies of Neotropical mammals.

The first section of this anniversary issue opens with a contribution by Escalante & Morrone (2020), who provide a fascinating historical perspective on the nature of the Neotropics, from the original formal description by Sclater in 1858 to our current understanding of this portion of the globe. As the authors note, knowledge of the Neotropics has benefited from the work of towering historical figures in mammalogy, including Wallace, Ameghino, Simpson, Pascual, and Reig. Based on current definitions, the Neotropics consist of “three subregions, two transition zones, seven dominions and 54 provinces”, attesting to the substantial internal structure of this biogeographic realm. Appropriately, this initial contribution is followed by a review by (Patterson 2020), who seeks to identify the drivers

behind the stunning diversity of extant Neotropical mammals. Possible contributing factors include both environmental and intrinsic biological processes of diversification (e.g., adaptive divergence, lineage splitting) discussed by Darwin and Wallace, as well as dispersal (including, but not limited to the Great American Biotic Interchange) and vicariance events. Additionally, Patterson identifies ecological opportunity as a potential source of diversification that is in need of further scrutiny. In the third contribution to this section, Maestri (2020) explores this latter theme in detail via his review of the macroecology of two major clades of Neotropical rodents – the caviomorphs and the sigmodontines. As this work reveals, the marked contrasts between these two lineages with respect to phylogenetic history, body size and general biology lead to strikingly different patterns in their geographic distributions. Maestri concludes by noting that basic information on natural history as well as substantially greater field sampling and museum-based documentation of diversity are critical to further advances in this arena.

The second section of this volume contains three articles that address the conservation biology of Neotropical mammals. These contributions approach the challenge of conservation from distinct geographic scales, taxonomic perspectives, and research strategies, thereby highlighting the complexity of the issues and information surrounding efforts to preserve mammalian diversity. González & Duarte (2020) focus their discussion on Neotropical deer, emphasizing the critical role of systematics in conservation biology. Recent decades have witnessed dramatic changes in our understanding of the systematics of cervids, including – as is the case for many taxa – the recognition of a substantial number of new or re-elevated species. Particularly striking are data indicating that longstanding genera such as *Mazama* are polyphyletic, reflecting the recurrent evolution of specific, classically cervid morphological features. More generally, this review highlights the interconnected roles of genetics, cytogenetics, and molecular phylogenetics in revealing the diversity that is the foundation for conservation efforts. Superina & Abba (2020) explore the conservation of the Xenarthra, an emblematic group of Neotropical mammals. As with cervids, recent decades have produced significant changes in the systematics of these animals and this contribution provides a

robust review of those changes. Building upon this framework, Superina & Abba outline ongoing efforts to conserve xenarthran species, with a clear call for greater international and regional coordination to protect vulnerable taxa. To close out this section, Pereira et al. (2020) provide an insightful perspective on the past 25 years of carnivoran conservation in Argentina. The Carnivora are noteworthy for their long global history of conflict and cooperation with humans and Neotropical carnivorans are no exception. Given that 38% of Neotropical species of carnivorans occur in Argentina, this perspective provides an important and revealing synopsis of efforts to conserve this lineage of mammals, ranging from response to widespread actual or perceived conflict with livestock to the specific challenges of preserving individually rare or endangered species.

The final section of the volume explores two important and rapidly emerging areas of research on organismal function in mammals, with emphasis on connections between environmental conditions, phenotypic traits, and underlying genomic structures. Luna et al. (2020) explore the first half of this equation, providing a wide-ranging overview of research on the eco-physiology and eco-immunology of mammals from the southern cone of South America. Focusing on energetics as well as glucocorticoid and immune responses, these authors emphasize the importance of environmental conditions in shaping the physiology of these animals. Nery et al. (2020) take this discussion to the level of the genotype, outlining the opportunities offered by genomic technology to further our understanding of Neotropical mammals. Beginning with an overview of “omic” sequencing technologies, these authors then provide an insightful overview of the contributions that “omic” data are making to phylogenetics, molecular ecology, and functional, developmental, and conservation biology. At the time of writing, genome sequences were available for only 15 species of Neotropical mammals, indicating that we are only just beginning to tap the power of this technology to explore diversity among the taxa that are the focus of this volume.

In closing, we trust that this collection of papers serves to illustrate the achievements of *Mastozoología Neotropical* during its first quarter century of existence. Clearly there are many aspects of mammalogy that are not covered in this special edition and thus the perspectives included here should be viewed as a snapshot of the increasingly

rich, detailed, and sophisticated research being conducted on Neotropical mammals. We hope that these contributions will help to inspire future scientists, whose efforts will shape mammalogy over the next twenty-five years and beyond.

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