

REVISIÓN DE LIBOS



PRIMATOLOGY IN ARGENTINA

Martin M. Kowalewski & Luciana I. Oklander (eds). 2017. SAREM Series A, Mammaological Research Volume 2. ix + 283

Nonhuman primates represent a highly successful radiation of some 500 species of principally tropical and subtropical, forest dwelling, arboreal mammals. Thirty-four per cent of these species are Neotropical, and are distributed across Mexico, Central America, and South America. Among mammals, only bats and rodents represent a more specious Order than Primates. A recent review of the conservation status of the world's primates indicate that 75% have declining populations and 60% of all species are threatened with extinction (Estrada et al. 2017). Although primates first appear in the South American fossil record some 40 million years ago (Tejedor & Novo, Chapter 3), unless immediate action is taken to study, conserve, and protect primates and their environments, many taxa will become extinct or effectively extinct by the beginning of the next century (Estrada et al. 2017).

The volume **Primateology in Argentina** is an important compendium of 15 review and research chapters detailing the 40-year history of primate studies in Argentina. In the 1970's, primatology in Argentina was directed principally to biomedical research and the use of monkeys as models for examining the etiology and treatment of diseases that impact humans. Building on this foundation, Argentinean primatologists have greatly expanded their research foci, and today play a leading role in studies of primate ecology, behavior, nutrition, cognition, population genetics, reproduction, mating systems, endocrinology, social cooperation, and evolution. Argentina is home to five primate species; the black and gold howler monkey (*Alouatta caraya*), the brown howler (*Alouatta guariba clamitans*), Azara's night monkey (*Aotus azarae*), the black-horned capuchin (*Sapajus nigritus*, formerly *Cebus apella nigritus*), and the brown-capped capuchin (*Sapajus paraguayanus*, formerly *Cebus cay*). Although the Argentine

primate radiation is limited to these five species (20 million years ago the fossil record indicates there were more than 12 primate species present in Argentina (Tejedor & Novo, Chapter 3), it is taxonomically diverse and represented by two families (Cebidae, Atelidae) and three subfamilies (Cebinae, Aotinae, and Atelinae) of Neotropical monkeys. The two howler species in Argentina are dichromatic, and therefore provide important models for examining questions of sexual selection and female mate choice. Azara's night monkey is one of the few genetically monogamous primate species, and adult males provide care for infants. This species offers critical insight into studies linking the neuroendocrine correlates of pair-bonding, with male parenting behavior. Like other *Aotus* species, *A. azarae* is principally active at night. However, in colder regions individuals also may forage during part of the day, and thus adopt a cathemeral activity pattern (Juarez et al. Chapter 14). Finally, although several capuchin species have been observed to use stone or wooden tools to forage for embedded foods, this has not been reported for Argentine capuchins (there currently exists very limited field observations of *S. paraguayanus*). Thus, comparative studies across capuchin taxa and environments are needed to better understand ecological and evolutionary relationships between cognition, problem-solving, social learning, and foraging strategies.

Primateology in Argentina is divided into four major sections and 15 chapters. Section one is the introduction to the volume (Kowalewski and Oklander, Chapter 1) and outlines the main goals of the book which are (1) to present a comprehensive review of the state of primatology in Argentina and (2) to highlight several new and innovative approaches used by Argentinean researchers to address critical questions in the study of primate behavior, ecology, and conservation. Section Two

focuses on the history, phylogeny, and evolution of primates in Argentina and includes five chapters. It begins with an extensive review by Tejedor and Novo (Chapter 3) of platyrrhine evolution, and provides support for the hypothesis that South American primates are descendants of ancestors who rafted from Africa, across the south Atlantic, some 40 million years ago. This section also includes a chapter by Aristide & Perez (Chapter 4) on phylogeny, phenotypic diversity, and evolutionary changes in size and shape among New World monkeys. These authors conclude that evolutionary stasis and well as random genetic changes provide the strongest explanation for size variation among platyrrhines, which are characterized by living species that vary in adult body mass from 100 g to 10000 g. In Chapter 5, Nieves et al. use the genetic techniques of fluorescence in situ hybridization (FISH) and comparative genetic hybridization (CGH) to identify phylogenetic relationships among extant taxa. The final chapter in this section (Oklander et al., Chap. 6) examines genetic variability across several populations of black and gold howler monkeys. Their results indicate both the negative consequences of forest fragmentation and anthropogenic habitat disturbance as well as the positive effects of continuous forests and migration corridors on howler genetic diversity.

Section Three includes five chapters on the behavior, ecology, cognition and communication of Argentinean primates. This includes a study by Zunino et al. (Chapter 7) on the effects of climate seasonality of the feeding ecology and activity budget of black and gold howler monkeys; and a chapter by Fernandez et al. (Chapter 8) comparing the nutritional ecology of Argentinean primates using a geometric framework. These authors focus on the importance of nutrient balancing in primate food choice and report that surprisingly, howler monkeys consumed a diet with a higher protein to carbohydrate ratio than did capuchins or night monkeys. Chapter 9 is a comprehensive review of spatial memory in New World primates by Tujague and Janson. These authors examine the challenges primates face in locating ephemeral resources, and the ability of different species to encode temporal, quantity, and social information in selecting feeding sites. Chapters 10, by DiBitetti and Wheeler, details an experimental field study of social communication and ontogenetic differences in the adult and infant vocalizations in black-horned capuchins. Chapter

11 is a descriptive study of communication and short-distance vocalizations in black-and-gold howler monkeys by Holzmann et al.

Section Four includes two chapters that examine the conservation threats faced by primates in Argentina, a chapter by Juarez et al. (Chapter 12) that reviews twenty years of continuous field research on Azare's night monkey including comparative data from two study sites (one a national park and the other a private ranch), and a concluding chapter (Oklander et al., Chapter 15) on primate research in Argentina. The conservation chapter by Kowalewski et al. (Chapter 12) examines the relationship between habitat disturbance and internal parasite prevalence in black and gold howler monkeys. Chapter 13 by Agostini et al. highlights the devastating effects of yellow fever outbreaks and deforestation on the conservation status of the brown howler monkey. These authors highlight the need to educate the government and local communities regarding the important public health role played by both black and gold howlers and brown howlers as sentinels in alerting medical personnel to the early stages of a yellow fever epidemic.

Despite the expansion of primate research in Argentina over the past 40 years (three of Argentina's five primates species, *A. caraya*, *S. nigritus*, and *A. azarae* have been the focus of long-term field studies spanning some 20 years), and the presence of a cadre of well-trained and highly qualified in-country environmental scientists, the government of Argentina has yet to develop and implement a national strategy for primate conservation. Currently, the conservation status of *A. g. clamitans* in Argentina is listed as Critically Endangered, *A. caraya* as Vulnerable, *Sapajus nigritus* as Near Threatened with a highly fragmented distribution, *S. paraguayanus* as Data Deficient and therefore not assessed, and *A. azarae* is listed as Least Concern (Kowalewski and Oklander, Chapter 1). Moreover, a recent census of primates in the Atlantic forests of Argentina indicates that yellow fever outbreaks over the past few years have dramatically reduced the population size of both black and gold howlers, and brown howlers (Agostini et al. 2015). Thus, along with deforestation, habitat fragmentation, the planting of monocultures, and hunting, zoonotic diseases are having a highly negative impact on the viability of Argentina's primate populations (Agostini et al., Chap. 13).

It is my hope that the publication of this volume, which is a testament to the dedication, creativity, and scholarly excellence of Argentinean scientists, will represent a critical next step in developing an informed and effective action plan for primate conservation in Argentina. This is an imperative for Argentina. Given that the first 40 years of primatology in Argentina have been so productive, I look forward to new research insights and initiatives in Argentinean primatology in the coming decades. In addition, I encourage students and researchers across Central and South America to read this volume and apply many of the theoretical, technical, behavioral, ecological, and conservation approaches outlined in its chapters, to address current research questions in their studies of New World primates.

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LITERATURE CITED

- AGOSTINI, I., E. PIZZIO, C. DE ANGELO, & M.S. DI BITETTI. 2015. Population status of primates in the Atlantic forest of Argentina. *International Journal of Primatology* 36:244-258.
- ESTRADA, A., ET AL. 2017. Impending extinction crisis of the world's primates: Why primates matter. *Science Advances* 3: e1600946. DOI: 10.1126/sciadv.1600946

LOS CARNÍVOROS DE CHILE, SEGUNDA EDICIÓN REVISADA

Agustín Iriarte y Fabián Jaksic. 2017. Ediciones Flora & Fauna Chile y CENTRO UC CAPES, P. U. Católica de Chile, Santiago, Chile, 260 pp

Agotada ya la primera edición publicada en 2012, Agustín Iriarte y Fabián Jaksic (más 4 colaboradores, uno de ellos argentino, Ariel Farías) nos entregan esta Segunda Edición Revisada de su texto: **Los Carnívoros de Chile**. Su prólogo (pp. 17-18) ha sido escrito por otro colega argentino, Claudio Sillero-Zubiri, presidente del Grupo de Especialistas de Cánidos de la Comisión de Sobrevivencia de Especies de la UICN.

La estructura de este libro está dada por 5 capítulos y 4 cajas (recuadros): la primera hace referencia a “Estudios sobre la ecología de carnívoros en el Parque Nacional Torres del Paine”; la segunda al “Proyecto sobre ecología y conservación del zorro de Darwin en la isla de

Chiloé”; la tercera al “Manejo del Zorro Gris o Chilla en Chile”; la cuarta, y última, a la “Variación Latitudinal en la dieta de la nutria de mar o chungungo en Chile”.

El Capítulo I entrega Antecedentes sobre el ¿por qué estudiar los carnívoros? y el historial de éstos en Chile (pp. 21-22). Agradezco la mención a mi nombre entre los que aportaron en el número de publicaciones en 1960, pero debo aclarar que pertenezco a la generación de los mastozoólogos chilenos que comenzamos a hacer aportes en 1982 (p. 25).

El Capítulo II trata sobre Ecología y Conservación (pp. 27-84), donde se abordan aspectos biogeográficos, biológicos, ecológicos, de conser-

vacación y legislación, el conflicto entre carnívoros y la ganadería, finalizándolo con técnicas para el estudio de este elusivo grupo. De interés (a mi juicio) en la Tabla 1 se entrega información (rangos, $n=11$) para las masas corporales, MC (k) y superficie de los rangos de acción, RA (km^2) de los carnívoros chilenos. Contrario a mis expectativas, esta relación no fue log-log sino que es lineal ($RA=0.195 + 1.313MC$, $r^2=0.901$, $P < 0.0001$). Las técnicas describen con dominio y experiencia el uso de trampas para captura, inmovilización química y radio-telemetría, trampas cámaras, improntas de los signos y, brevemente, análisis dietario.

El Capítulo III constituye el grueso del libro, con más de la mitad de sus páginas totales (87-219). Tal como se indica en la Presentación (pp. 15-16), para cada especie se entrega toda la información disponible hasta la fecha sobre: taxonomía, nombres científicos y comunes en español e inglés, descripción, distribución y hábitat, conducta, reproducción, dieta, estado de conservación y referencias bibliográficas. Todas

las especies ($n=15$) están también presentes en Argentina con la única excepción del endémico zorro de Darwin, *Pseudalopex fulvipes*.

El Capítulo IV corresponde a una extensa y actualizada bibliografía (pp. 221-250), con cerca de 600 referencias hasta el año 2017 (varias referencias corresponden a investigaciones realizadas en Argentina).

Por último, el Capítulo V finaliza con los Anexos (pp. 251-259). En el 2 se entregan los nombres de los 44 fotógrafos que aportaron con imágenes a este libro, que destaca por la excelencia de su presentación, dibujos, mapas y fotografías de especies muy poco conocidas no solo en Chile y Argentina sino que también a nivel mundial. Destaco muy especialmente el Anexo 5, con los nombres indígenas de carnívoros chilenos.

El texto en general está muy bien escrito, de manera amigable, pero técnicamente correcta, (el Anexo 3 presenta un comprensivo Glosario de términos) y supera con creces a la primera edición. Mis más cálidas felicitaciones a los autores por esta importante contribución.

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