

Book Reviews

MAMMALIAN EVOLUTIONARY MORPHOLOGY: A TRIBUTE TO FREDERICK S. SZALAY. Edited by Eric J. Sargis and Marian Dagosto. Dordrecht, The Netherlands: Springer. 2008. 440 pp. ISBN 978-1-4020-6996-3. \$139.00 (hardcover).

Festschrift volumes are often overburdened with faint praise and platitudes about how wonderful and accomplished the honoree is (or was). However, nothing of that sort is true in the case of this volume because the honoree is Frederick S. Szalay, a veritable giant in the field of mammalian evolutionary biology. It would be nearly impossible to overstate his influence on all of those he touched, students and colleagues alike, and his publication record stands as a testament to hard work and insightful observation. Szalay's papers and books are famous for their sometimes impenetrable diatribes concerning those he found unworthy of his words, and yet his writings are also full of beautifully crafted evolutionary scenarios that are rooted in a vast understanding of form and function and how those aspects of morphology influence (or should influence) phylogenetic interpretation.

In the preface to this book, the editors (both former Szalay students) not only detail the professional aspects of Szalay's life but also offer some glimpses into his early life in Hungary and the hardships he suffered as a young boy growing up in the war-ravaged Budapest of the early 1940s. After an escape from Cold-War Eastern Europe in 1956 and a year spent studying with Albert Wood at Amherst, Szalay eventually made his way to New York and Columbia University. In the early 1960s, he worked with Malcolm McKenna, who was curator of fossil mammals at the American Museum of Natural History. From there, Szalay's career took off, in the end producing 212 (and counting) separate papers, twelve books and monographs, and an impressive array of successful graduate students.

The book itself contains 18 chapters of varying lengths (from 10 to over 50 pp) and spans the mammalian taxonomic and temporal spectrum from Early Cretaceous metatherians to extant primates. In the best Szalayan tradition, the predominant focus of most chapters is on the postcranial skeleton, especially his beloved tarsal complex. The first nine chapters include works on non-primate mammalian groups such as: marsupials (Chapters 1 and 2); xenarthrans (Chapter 3); tenrecs (Chapter 4); other possible afrotherians (Chapter 5); South American "condylarths" (Chapter 6); and perissodactyls from North America (Chapter 8). Two other chapters examine skeletal morphology of mammals from Salla, Bolivia (Chapter 7) and the pedal functional morphology of extant marine carnivores (Chapter 9). The broad range of taxa and geographic samples included in these chapters is reflective of just how far Fred's influence has spread.

The next nine chapters deal with primates, one of Fred's first areas of interest and one in which his influence has been most keenly felt—not to mention the area most interesting to readers of this journal. The first two chapters in the primate section examine the bioge-

graphic origins of primates (Chapter 10) and present a detailed discussion of the functional morphology of the limbs of two groups of Paleocene plesiadapiform primates (Chapter 11). These topics were of interest to Fred from the very beginning of his career, as demonstrated by his long dissertation (later published in monographic form) on the origin of primates as documented by Paleocene and Eocene plesiadapiforms and insectivores. Chapter 12 deviates slightly from the overall form of the book in that it concentrates on cranial material of Eocene primates from Europe, presenting a detailed analysis of adapine euprimates. Although Fred spent much of his career studying postcrania, he was equally adept with teeth and skulls, as demonstrated by his many fine studies on Eocene primates.

Chapter 13 returns to the postcranial theme with a short description of enigmatic tibiae from the Eocene of China. This chapter is followed by a reanalysis of one of Fred's favorite primates, the equally enigmatic *Rooneyia* (the skull and only specimen of which features prominently in Fred's *Evolutionary History of the Primates* (1979), coauthored with Eric Delson). *Rooneyia*, from the Eocene of Texas, is championed as a possible early anthropoid by Rosenberger and colleagues (Chapter 14).

The final four chapters present research on extant primates, each concentrating on a skeletal region relevant to Fred's work. Chapter 15 details a study within primates on structures of the middle ear, an area extensively studied by Fred in the past. The next chapter returns to the postcranial skeleton, detailing its phylogenetic implications in extant guenons (Chapter 16). Chapter 17, by Harcourt-Smith and colleagues, examines the geometric morphometrics of hominoid joint surfaces using 3D surface-scanning technology—a technology that Fred no doubt probably wished he had during the time in his career when he was examining mammalian joint morphology in detail. Finally, Chapter 18 presents a study on primate bone microstructure, a topic of several of Fred's recent publications.

The book is esthetically pleasing, having been printed on glossy paper in a quarto size format. The cover illustration, produced by Doug Boyer, is a beautifully rendered skeletal drawing and accompanying color reconstruction of the small plesiadapiform primate *Dryomomys szalayi*. It represents one of the 10-plus taxa named after Fred by appreciative students and colleagues. Illustrations within the book chapters are rather uneven, with some being dark or slightly out-of-focus photographs, whereas others are crisp, clear drawings, and photographic images. There are no color illustrations except for some rather Kandinsky-esque images of long-bone cross sections in Johanna Warshaw's chapter on primate bone microstructure (Chapter 18). This book will be in high demand by serious students of mammalian functional morphology. It is probably too detailed and dense for the casual reader of primate evolutionary biology or paleoanthropology, but there is an enormous amount of new data within its pages that will be essential for professionals and students in those fields.

As a final, personal thought, the editors noted in their preface that being Fred's students was both inspiring and terrifying. Having been one of those students "from the other side," I can attest to the terrifying part. I have

never been more intimidated than when standing up at a meeting in front of my fellow students and our mentors and speaking words that I *knew* would irritate Fred, invariably seated no more than 10 feet away in the front row. And yet I managed to survive, and Fred was never anything but helpful, albeit in his occasionally blunt manner. In the end, we all have learned a great deal from Fred Szalay, and this book stands as a great testament to both the man and his influential work.

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THE BONOBOS: BEHAVIOR, ECOLOGY, AND CONSERVATION.
 Edited by Takeshi Furuichi and Jo Thompson. New
 York: Springer. 2008. 330 pp. ISBN 978-0-387-74785-9.
 \$149.00 (hardcover).

The bonobo (*Pan paniscus*) has been recognized as a species for over 70 years and studied in the wild for over 25. Restricted to the Democratic Republic of the Congo (DRC) south of the Congo River, the bonobo remains the least studied and least understood of the African apes. Before multiple civil wars interrupted field research, several unique aspects of bonobo behavior and ecology were revealed. While superficially similar to chimpanzees, bonobos have codominant societies that are more cohesive than chimpanzee communities. During the enforced hiatus in field research, tremendous progress was made through research on captive bonobos and ecological research on the other African apes. Now, field workers are testing the hypotheses developed through study of captive populations and other species, while further expanding our knowledge of bonobo behavioral ecology. *The Bonobos: Behavior, Ecology and Conservation* stems from a symposium at the 2006 International Primatological Society Congress. The editors, experts in bonobo behavior, ecology, and conservation, introduce the volume with a brief history of bonobo research, lay out the volume's main sections (behavior, ecology, and conservation), and briefly discuss conservation action plans for bonobo populations.

The book's first section, on behavior, is introduced by Frans de Waal, who focuses on the significance of bonobos and chimpanzees to our understanding of human evolution and behavior. This is unfortunate, because by focusing on the debate regarding which of our sister species is the best model for early hominins, de Waal chooses not to address a major issue in the study of bonobo behavior: the lack of wild data. In Part I, data are presented on dominance, play, and gestural communication among captive bonobos. Chapters 1 and 2 focus on dominance in different conditions, confirming earlier findings from captive and wild data. In Chapter 3, Palagi and Paoli review new data on play and suggest that it is a tension-reduction tactic in bonobos. In Chapter 4, Pollick, Jeneson, and de Waal review gestural communication in bonobos and propose that gestural communication may be the root of the evolution of language. This is the strongest of the behavioral chapters and shows that bonobo gestural combinations elicit stronger reactions from group mates. Unfortunately, the chapters in this section provide little new data and none from wild studies, limiting their utility and scope.

Richard Wrangham introduces the ecological section and reviews the history and current understanding of ecological studies on bonobos, focusing on the potential impact of ecology on the evolutionary divergence of bonobos and chimpanzees. The contributions to Part II are much stronger than those in the behavioral section and provide important new information about the behavioral ecology of bonobos. In Chapter 5, Hashimoto et al. use long-term behavioral and genetic data to not only confirm male philopatry but also show that bonobo communities are capable of a level of flexibility not seen, and probably impossible, in chimpanzees. In Chapter 6, Mulavwa et al. use data collected during a period in which the Wamba community was not provisioned to confirm that female bonobos are more gregarious than female chimpanzees and that fruit abundance is less variable for bonobos than for chimpanzees. In Chapter 7, Furuichi et al. show that Wamba bonobos in large parties do not suffer reduced access to food, supporting the hypothesis that scramble competition is less intense for bonobos than for chimpanzees.

Chapters 8–10 present new data on bonobo population densities in different areas of Salonga National Park, DRC. In Chapter 8, Mohnke and Fruth provide valuable data on bonobo densities around Lui Kotal in the southwestern corner of the park and advance our understanding of using nest surveys to estimate ape population sizes. In Chapter 9, Reinartz et al. survey nests across a wider area of Salonga, confirming that bonobos are found in mature forests with high edible-herb density. Further, they suggest that bonobo habitat might be identifiable using satellite imagery, a potentially huge advance for ecological and conservation work. Grossmann et al. (Chapter 10) conclude the section with their survey of all major park areas, totaling 1,869 km². Their results, while potentially subject to error, provide useful general information on population density variation between different habitats and regions. Taken together, this section's chapters provide new data, new methods, and new perspectives that will be invaluable for researchers focusing on bonobo behavior, ecology, and conservation.

Dr. Cosma Wilungula Balongelwa introduces the conservation section by stressing the endemic nature of bonobos in the DRC and the urgency this creates for conservation efforts. His contribution is prescient, powerful, and occasionally poetic as he drives home the need for greater knowledge, new perspectives, and a concerted effort to conserve bonobos and their habitats. Interestingly, Dr. Balongelwa appears to be introducing the entire volume and not just the conservation section, as