

## Book Reviews

CHIMPANZEES OF THE LAKESHORE: NATURAL HISTORY AND CULTURE AT MAHALE. By Toshisada Nishida. New York: Cambridge University Press. 2012. 340 pp. ISBN 978-1-107-60178-9. \$50.00 (Paper).

The late Toshisada Nishida was one of primatology's leading lights for nearly 5 decades. He conducted field research on chimpanzees in Tanzania's Mahale National Park, was the Executive Director of the Japan Monkey Centre, and the long-running Editor-in-Chief of the journal *Primates*. *Chimpanzees of the Lakeshore* is his swansong to a long and illustrious career, a memoir of sorts written in the form of an accessibly written and very informative monograph about the chimpanzees of Mahale. It is partly history and partly an overview of Mahale chimpanzee behavior and ecology, the story of the animals, their behavior and ecology, and the conservation issues facing them. It is also a good read for any student interested in primate field studies, and for colleagues interested in gaining some insight into this man and his perspectives on research, career, and life in the field.

The book is organized conventionally, with an introductory overview of Japanese research into human origins and great ape behavior in Africa, starting with a tribute to Nishida's mentor Kinji Imanishi, the founder of Japanese primatology. Nishida then describes the Mahale Mountains and their animal inhabitants. The chapter contains much interesting backstory of how the Japanese came to establish the field camp in Mahale, and on the emergence of great ape studies from the tradition of Japanese primatology that had mainly focused on their native macaques.

The second chapter describes chimpanzee fission-fusion society and the role that food plays in molding it. It was Nishida's research team that finally figured out the inner workings of the fission-fusion social organization, a society which had for years seemed to lack a structure. We learn that Nishida himself ate, or tried to eat, each of the food items in the chimpanzee diet (at least the plant foods; it appears he wisely avoided raw colobus monkey meat. . .). His conclusion: most chimpanzee foods are reasonably palatable to humans as well. He summarizes the evidence for chimpanzee meat-eating and relates it to the record of hominin meat-eating in the same region 3 million years ago. There is also an intriguing account of chimpanzees as prey, when a lion moved into the home range of M group.

A chapter on growth and development, which focuses on the acquisition of social and foraging skills, is

followed by chapters on play and communication. Nishida details the cultural distinctions between Mahale and Gombe National Parks, and compares and contrasts his chimpanzees with those at other sites. Chapter 6 provides some valuable description and analysis of female life histories, with information on home range use, migration, and intercommunity relations. He discusses the strange case histories of infanticides at Mahale: strange because the eight cases do not fit a consistent pattern amenable to evolutionary interpretations (fathers appear to have potentially killed their own offspring in some of the cases). Chapters on mating strategies and male political struggles highlight the section of the book that covers social behavior. The Mahale project has at times described a nearly linear hierarchy of adult males in the community, which some researchers might take issue with. But the lineages and transitions of alphas, and the case histories of dominance upheavals, have always been highlights of the Mahale data going back four-plus decades. Nishida presents the entire history of alphas at Mahale, including their tenures and how they achieved and then lost alpha status.

The book closes with conservation issues, as Nishida details the changes in Mahale over the years, from the arrival of cultivated fruit trees before and during the study years, to intractable and ongoing deforestation around the national park's perimeter.

*Chimpanzees of the Lakeshore* is enhanced by a wealth of black-and-white photos, a gallery of color photos, and selected graphs and tables that augment Nishida's points for specialists, and are kept to a same number for non-specialists.

I leave the last words of this review to Toshisada Nishida himself, his summation of a life well spent. "One might curiously ask, 'Why on earth have you continued to conduct research for so long? The best possible answer I could muster would be: because every single thing about the chimpanzee fascinates me. Their behaviour is so rich in variety that no matter how many years I watch them, I never grow bored.'" (p. 293).

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HUMAN BIOARCHAEOLOGY OF THE TRANSITION TO AGRICULTURE.  
Edited by Ron Pinhasi and Jay T. Stock. West Sussex,  
UK: Wiley-Blackwell 2011. 484 pp. ISBN 978-0-470-  
74370-8 \$159.95. (Hardcover).

In the three decades that have passed since the publication of Cohen and Armelagos' 1984 seminal volume *Paleopathology at the Origins of Agriculture*, the view that the transition to agriculture signaled a general

decline in health has become entrenched in anthropology. The various authors in that volume and research in subsequent years have generally emphasized that the intertwined shifts to sedentism and predominantly carbohydrate-based diets of agriculturalists resulted in a universal decline in health, including a rise in infectious diseases and dental caries, reduced stature, and lower life expectancy, prompting Jared Diamond to con-

sider agriculture “the worst mistake in the history of the human race.” But, as Pinhasi and Stock point out in their excellent edited volume *Human Bioarchaeology of the Transition to Agriculture*, one challenge lies with reconciling this “paleopathological paradigm” with the great demographic success of the foraging-farming transition.

Pinhasi and Stock aim to present current bioarcheological and multidisciplinary approaches to understand the transition to agriculture (mobility, behavior, diet, growth, population dynamics, and genetics). The book comprises numerous excellent case studies incorporating traditional osteometric methods with newer approaches such as stable isotopes, biomechanics, and paleogenetics, casting a much broader net than Cohen and Armelagos’ volume, which focused explicitly on paleopathological indicators of health. The 484-page book includes 19 chapters divided fairly evenly into four sections. The five chapters in Section A, loosely entitled “Subsistence Transitions”, focus primarily on isotopic evidence of dietary change dovetailed with other bioarcheological indicators. Section B focuses on variability in bone growth and body proportions, while the four chapters in Section C employ biomechanical approaches to infer changes in habitual activity. The final, and more heterogeneous, Section D covers paleogenetic evidence of population movement and adaptation, demographic trends, and craniodental changes.

In their introduction, the editors underscore the need for studies that move beyond the hunter-gatherer-farmer dichotomy and examine the impact of agriculture across time and space and the importance of local human-environment interactions. A number of chapters use a wide array of bioarcheological approaches (e.g., stable isotopes, body size, paleopathology, and biomechanics) to do just that, painting not one, but multiple, rich and textured pictures of this very significant “social and biological transition in human history” (p. 348). Several chapters, for instance, reveal fine-grained details about gender-based differences associated with the transition. Lillie and Budd, for example, carefully pull together paleopathology data with direct evidence of diet from stable isotope to show that the Mesolithic-Neolithic transition in Eastern Europe resulted in unequal gender access to protein in some areas, while Ruff and Larsen’s use of biomechanics reveals that in US prehistoric groups, local ecological setting impacted female bone robusticity change differently, with females in inland groups increasing in robusticity while coastal females decreased, presumably reflecting heavier workloads for the former. Biomechanics are also used to show that, contrary to general assumption, the transition to farming did not necessarily lead to reduced mobility, as demonstrated by Marchi et al. for agropastoralist groups in Northwest Italy. A number of chapters (Auerbach, Temple) use body size and bone growth data to demonstrate positive health impacts associated with increased reliance on domesticated food sources in some areas.

The chapters in Section D by Burger and Thomas and Linderholm cover recent important applications of genetics to the issues of Neolithic farmer’s expansion in Europe and gene-culture coevolution, providing

excellent illustrations of the book’s explicit focus on biocultural and current approaches. Both chapters attest to the centrality of ancient DNA in clarifying genetic relationships between Mesolithic foragers and Neolithic farmers. Both also include discussions of the relationship between domestication of cattle and selection for the lactase persistence allele in Central European populations, a vivid illustration of gene-culture coevolution.

Although I enjoyed all the chapters, the one by Lieverse et al. on activity and diet change in the Siberian Cis-Baikal region spoke to me in particular because it illustrates the book’s goals so clearly. The authors weave musclostress markers, biomechanics, isotopes, ecological, and archeological data to paint exquisitely detailed and vivid scenes of human groups adapting to a rich but challenging and changing boreal environment, showing for instance that the correlation between higher male upper limb strength in later groups and isotopic evidence of deep water fish exploitation suggests increased use of efficient watercraft on open waters.

The tables included in most chapters present useful data, in particular Schulting’s excellent Table 2.1 which provides an exhaustive catalog of human  $\delta^{13}C$  and  $\delta^{14}C$  values for numerous European Mesolithic and Neolithic sites, and Auerbach’s Table 9.2, listing body size and proportion statistics for numerous North American samples that will be most useful for comparative studies. Most of the chapters include clear figures illustrating results. In addition, six color plates, in particular Plates 15.1 and 15.2, respectively provide effective depictions of Neolithic expansion throughout Europe and the spread of the lactase persistence allele from its center of origin in Central Europe.

One minor criticism might be that, while geographic coverage includes case studies from Europe, the Levant, Japan, and North and South America, the volume is more Euro-centered than the Cohen and Armelagos volume. Only three of the 19 chapters focus on New World case studies (one in Argentina and two in the US). However, this does not detract from the quality of this excellent book. Anyone interested in the transition to sedentism and domestication will find the book a precious reference. The volume would also make an excellent text for upper level courses on bioarcheology, in particular to illustrate the power of the biocultural approach. The human skeleton is sometimes referred to as a “biological archive,” and the multidisciplinary approaches employed in many of the chapters demonstrate this concept beautifully, and reinforce the central role human skeletal remains play in bioarcheology.

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