Current Research in Chinese Pleistocene Archaeology

Chen Shen and Susan G. Keates (eds.)
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This volume, edited by C. Shen and S. G. Keates, comprises 12 papers (23 authors) and is dedicated to Professor Wei Qi for his "life-long research on the geoarchaeology, biostratigraphy and Palaeolithic Archaeology of the Nihewan Basin." The volume resulted from papers presented at the symposium, "Theory and Practice in Chinese Pleistocene Archaeology," at the 65th annual meeting of the Society for American Archaeology in 2000 in Philadelphia, PA, USA. The papers include an introductory chapter by the editors as well as general concluding remarks by Richard Shutler, Jr. The preface is provided by O. Bar-Yosef, who was a discussant at the symposium. He introduces the theme, Chinese prehistoric archaeology, in a positive manner and points out the paleoanthropological wealth of the geographic region encompassed by China. The different chapters or papers cover a mixture of diverse topics ranging from historical perspectives, reviews, new discoveries, biostratigraphy and taphonomy, hominin subsistence, faunal studies, geochronology, and hominin paleontology. These papers, some of which were added after the original symposium, are described below, followed by some general comments on the volume.

The first paper, "Current Research in Chinese Pleistocene Archaeology: An Introduction," is by the editors, C. Shen and S. G. Keates. They begin by highlighting some of the more seminal publications of Chinese and Western scholars on the subject of Asian Paleolithic studies and go on to list a number of important studies carried out by various researchers in recent years. In addition, they briefly mention the relevance of the work of key pioneers in Chinese prehistoric studies, thus also laying the groundwork for the remaining papers and preparing the reader for the included topics. Some of the classic works they mention are Davidson Black, W. C. Pei, and Jia Lanpo.

K. L. Cormack authors the second paper, "Davidson Black and His Role in Chinese Palaeoanthropology." This historical narrative discusses the impact of Davidson Black and his research efforts in China and basically is a short professional biography of the Canadian scientist. Following excerpts from Black's journal, explanations of how Black was influenced by other palaeoanthropological discoveries at the time in Southeast Asia (by Eugene Dubois) are also included. The majority of the chapter however, focuses on Black's experiences and work in Beijing/Peking. The main contribution of this chapter is the recreation by Cormack of the academic atmosphere of the time, revealing various factors that influenced and triggered the scientific events at Zhoukoudian and the resulting interpretations.

The next paper, "Retrospect of Fifty years of Palaeolithic Archaeology in China" by Chun Chen, is similar to the previous paper, as it deals with a historical review of Paleolithic research in China over the last five decades. As Cormack does, Chen offers readers a condensed but informative overview of various historical events including key discoveries in Chinese paleoanthropology. More than just a historical review, however, Chen delves into an interpretive "diary" of important factors and implications and divides the chapter into three formal chronological sections (e.g., 1950-1980). A useful table that guides readers through the text is found on page 24, listing all the major archaeological and hominin fossil sites discussed. Chen's paper is all the more unique as it represents the views of a Chinese researcher rather than a Western researcher, which probably would have been considerably different in perspective and presentation.

The fourth paper is by S. G. Keates, "Biostratigraphy, Taphonomy, Palaeoenvironments and Hominid Diet in the Middle and Late Pleistocene of China." It covers numerous sites in eastern China and Keates attempts to correlate diverse types of evidence including archaeological, faunal, geological, stratigraphical, and geochronological, from various localities that have yielded hominin fossils. By doing so, the author addresses hominin resource subsistence as well as the depositional and palaeoenvironmental contexts of many of these sites. Some of the sites studied are Chijiawo, Dali, Kehe, Zhoukoudian (Localities 1 and 13), Gulongshan, Xujiayao, Banjingzi, and Guanyindong. The various faunal lists compiled from the localities are particularly useful for comparative purposes. The table on page 49 is slightly difficult to follow as the "relative abundance" densities appear to be arbitrary and not easily quantifiable. Short sections on seasonality and hominin diet are also included.

Youping Wang, the author of the next paper, "New Discoveries in the Middle Yangzi River Region, Southern China," focuses on a region in southern China. Following a short review of the work done in the Middle Yangzi River Valley, new discoveries from the same region are discussed at some length. Specific sites reviewed include Quyuanhekou (Yunxian), Huzhaoshan, and Jigongshan. Various tables depicting the stratigraphy, archaeological material, fauna, and raw materials are shown for the sites mentioned. Although comparatively short, this paper covers a large amount of data from a geographically restricted area. All sites have yielded combinations of hominin fossils, vertebrate fauna, stone tool assemblages, and related informa-

tion. This synthesis, predominantly based on published data, concludes with a general discussion of all the sites and the associated evidence. Some of the most unique and well preserved evidence is represented by the stone circles from Jigongshan, estimated to be late Middle Pleistocene in age.

The sixth paper, "New Evidence of Hominid Behavior from Xiaochangliang, Northern China: Site Formation and Lithic Technology," deals with one of the most important archaeological sites in the Nihewan Basin, and in Asia, for that matter. The authors, C. Shen and C. Chen, begin by translating the name of the site—"small and long-narrow hilltop" (p. 67)—and then provide a brief background to earlier research in the area before proceeding in greater detail regarding recent excavations that took place in 1998. Interpretative results for both the lithic assemblages and faunal specimens are discussed. In spite of the overwhelming amount of data yielded by the site, the authors are able to provide an adequate synthesis and useful tables depicting assemblage composition information and related quantification of the use-wear analyses. An important feature of their paper is the type of input and modern conceptual methods utilized to make inferences from the archaeological data. For example, basic methods of geoarchaeology and geomorphology are utilized to understand how the site formed in a lacustrine context. Finally, an in-depth functional analysis of the artifacts is also presented, including microscopic use-wear observations on the working-edges of select lithic specimens. This approach, relatively new in Chinese contexts, provides information about tool use by early Asian hominins. However, despite the high quality of the paper and the associated figures, their conclusion is not proportionate (in length and information) to the amount of data they present and assess. In other words, the conclusion could have been much stronger and substantial overall.

Following an archaeological perspective on Xiaochangliang, the next paper discusses the site's faunal and taphonomic aspects. In "Taphonomy of an Early Pleistocene Archaeofauna from Xiaochangliang, Nihewan Basin, North China," the five authors, C. E. Peterson, C. Shen, C. Chen, W. Chen, and Y. Tang, offer an introduction to the site faunal specimens and highlight the importance and value of such an approach at sites in the Nihewan Basin. This focus on the archaeofaunal assemblage, which is rich in diversity and well-preserved, enables the researchers to reconstruct past habitats at a general level in this region. However, the majority of the specimens are small, fragmented, and non-diagnostic. The most important data discussed are the negative evidence for hominin modification of the some of these fossil bones. The authors make a strong case for their inference based on comparisons with previously reported specimens with alleged cut-marks, SEM analyses of the new specimens, taphonomic observations and site formation processes, and direct comparisons with similar evidence from the *Zinjanthropus* site in Olduvai Gorge, Tanzania. In addition, the faunal specimens with suspected cut-marks from Xianchangliang also were compared with unequivocal evidence of bone modification by hominins from other Chinese sites, namely Hexian, Jinniushan, Miaohoushan, Zhoukoudian, and Wushan. Again, the figures are of high quality and clear, particularly the SEM images. The authors conclude with recommendations for further research, including a cautious note on the lack of conclusive evidence at Xiaochangliang for cut-marked bones. They emphasize the need for taphonomic and site formation studies in the basin, since marks from carnivore behavior and post-depositional abrasion appear to be common.

The next paper, by C. A. Schepartz, D. A. Bakken, S. Miller-Antonio, C. K. Paraso, and P. Karkanas, is "Faunal approaches to Site Formation Processes at Panxian Dadong." This Middle Pleistocene site in southern China is a large karst cave with exceptional faunal preservation. The fauna recovered here is diverse and indicates a mixed woodland environment with some availability of bamboo. The authors provide a detailed description of specimens recovered and related information such as specimen density or the nature of spatial concentrations, body size and body proportion representations, and the quality of preservation. As most artifacts here are made of poor-quality limestone and from the abundance of dental specimens recovered, the authors infer that "teeth of suitable size and shape could have provided an alternative to poor quality raw material" (p. 105). In addition to the large number of animal teeth, five human teeth were also recovered and the site has been dated through the application of U-series and electron spin resonance methods, suggesting an age of 13 – 250 ka for the deposits. In fact, the next paper is primarily concerned with the ESR results at this site ("Electron Spin Resonance (ESR) Dating of Mammalian Tooth Enamel at Panxian Dadong Cave, Guizhou, China") and is co-authored by W. J. Rink, L. A. Schepartz, S. Miller-Antonio, W. Huang, Y. Hou, D. Bakken, D. Richter, and H. L. Jones. The paper is detailed and thorough and contains numerous tables pertaining to specimen location, in situ gamma dosimetry locations, analytical data, and the final ESR dating results. The ESR method is explained and the results are also compared with other comparable sites in China, such as Jinniushan.

The paper, "ESR Dating of Early Pleistocene Archaeological Sites in China," by T. Chen and Q. Yang, also addresses the use of ESR on select Chinese sites but at a more general level than the previous paper. It presents a detailed description of the ESR method and its application at Xiaochangliang, Renzidong, and Longgupo. The results from the first two sites are reported here for the first time. The Longgupo results are presented here again as a case study for ESR in conjunction with palaeomagnetic results. Although comparatively short, the article reveals important conclusions about the application of the ESR method—most particularly that "it is reasonable to treat the ESR-EU age as the lower limit of the real sample age" (p. 123). For example, age underestimates at Xiaochangliang (0.21 – 0.87 ma) are attributed to the extremely high uranium content in the enamel as well as in the dentine. Most importantly, the authors reach the conclusion that the three sites dated using ESR indicate the presence of hominins in China prior to 1 mya.

The final technical paper, "The Jinniushan Hominid in Anatomical, Chronological, and Cultural Context," is by Z. Lu. Following a brief introduction to the site, Lu discusses the depositional context and chronology of the hominin fossil material, which comprises cranial and post-cranial specimens. A late Middle Pleistocene age has been assigned to the Jinniushan hominin, though this estimate and the contexts are contentious. The paper essentially deals with renewed excavations that were to address these unresolved contextual issues. The excavation yielded additional faunal specimens as well as new information on the depositional context of the sediments and associated material such as hominin-modified bones, stone artifacts, and several ash features thought to represent "hearths" or fire activity. Firstly, the investigators prove that the site is a cave deposit and not a funnel-shaped fissure as argued previously by others. In an assessment of previously dated ESR samples, the authors criticize the results due to erroneous calculations of data from different layers and state that the dates of 228 ka and 187 ka cannot be accepted (p. 131), and that a 260 ka estimate is more likely. In addition to the ESR data, the hominin fossils are also discussed and described at considerable length. The authors arrive at the new conclusion that the hominin individual is a 20–22 year old female rather than a 25–30 year old male, as previously reported.

Richard Shutler, Jr., offers his views as another discussant, through the final contribution, "Remarks on Chinese Pleistocene Archaeology." He provides a brief review of the papers presented at the conference and then touches upon important concepts in Asian paleoanthropology such as the Movius Line, an issue not discussed directly in the volume. Here, one critical error is made by Shutler—he mentions Geoffrey Pope as the primary advocate of the "bamboo hypothesis," which explains the scarcity of Acheulian handaxes throughout most of Asia. To the contrary, P. I. Boriskovskii seems to be the original proponent of this model, predominantly based on his research and ecological observations in Vietnam in the 1960's. Following individual mention of most papers in the symposium, Shutler concludes with brief but interesting descriptions of his own archaeological experiences in various parts of Asia over the last four decades.

Most of the sites and associated evidence discussed in this volume are either Middle or Lower Pleistocene in relative age. The individual contributions advance new empirical data and also raise important questions and theoretical issues that can only be addressed through longitudinal and multidisciplinary research projects. There are minor typographical errors that could have been corrected through tighter editing. In some cases, schematic stratigraphic columns with sedimentary descriptions could have replaced the simple text tables that unconventionally depict stratigraphy. Also, the editors could have insisted on a consistent format for all papers. For example, in some papers, figures and tables are at the end, and in other papers, these features are embedded within the main body of the text.

So what does this book offer overall to specialists in Old World paleoanthropology? The volume is most important because, first and foremost, it deals with evidence from Asia, a region yet to be clearly understood. It highlights a region of Asia—China—that is geographically crucial to advancing models and theories regarding early and modern human biological evolution, ecological adaptations, and critical technological innovations. Another important asset of this volume is the lists of references accompanying each paper, collectively representing a useful source for further readings. Many of the papers will be a practical and informative source of multidisciplinary data for those not very familiar with Chinese paleoanthropology, and thus represent a good starting point for further research. Chinese paleoanthropology is currently at a critical juncture where new multidisciplinary data is emerging at a more rapid pace in Western journals and volumes than ever before, but still not at a pace comparable to its Western counterparts, such as Europe, Africa, and the Levant. Therefore, more volumes like this one are crucially needed.