

BOOK REVIEWS



Current Research in Chinese Pleistocene Archaeology. Chen Shen and Susan G. Keates, eds. BAR International Series 1179. Oxford: Archaeopress, 2003.

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China has been for a long time a large landmass of which little was known by way of its prehistoric record. The narratives of human evolution on which I have been brought up focused on various parts of the Old World, almost invariably ending with a caveat: "But we know very little about China. We predict that intriguing things will come out of China that could change the whole picture."

Indeed. Chinese Pleistocene archaeology has not been static or stagnant, but it remained largely unknown to non-Chinese readers. After a long spell of scientific isolation China has opened to the West, and it now reveals riches of prehistoric archaeology that stand up to expectations. The volumes by Aigner (1981) and Wu and Olsen (1985) provided first glimpses of the achievements of Chinese colleagues up to the early 1980s. Shen and Keates' volume follows down the same path, acquainting the reader with the main questions, advances, and shifts in worldviews in Chinese Pleistocene archaeology during the last two decades.

There are two types of contributions in this volume. One group consists of site-oriented papers, elaborating on particular aspects of single sites or site complexes. Such are the two chapters on the early Pleistocene site of Xiaochangliang (dealing with site formation processes combined with lithic technology and with taphonomy, respectively); two papers on the mid-

dle Pleistocene site of Panxian Dadong (on bone taphonomy, site formation processes and human behavior, and on ESR dating); and a contribution dealing with the age of the Jinniushan hominin (also of middle Pleistocene age) and its skeletal remains. Other chapters in the volume take a comparative and/or synthetic approach to the study of lithic technology (Chun Chen, Youping Wang), site formation processes (Chun Chen, Susan Keates), and chronology (Susan Keates, Qi Chen). The compilation of papers results in a volume that speaks in unison to a profound paradigm change in Chinese Pleistocene archaeology. C. Chen characterizes this change as a shift from "culture history" to "scientific archaeology."

One consensual view that emerges from this volume is that the paradigm shift was brought about by increasing collaborative projects between Chinese and foreign colleagues. Cormack's review of Davidson Black's career in China is illustrative in this context. Seemingly out of place and distanced from the realities of the here and now in Chinese prehistory, it provides a historical account of Black's joint work with Chinese colleagues. Cormack underlines the reasons for Black's successful scientific enterprise in China. She identifies his ability to establish true collaborations among equal partners (as opposed to scientific colonialism) as a keystone of his success. Similar sentiments resonate loud and

clear in C. Chen's account of the history of Paleolithic archaeology in China and are implicit in many of the papers by Chinese colleagues. There is a message here to take home (or at least to heart) about the way international research in China (or in other parts of the world, for that matter) should be carried out, as noted also by Shutler in his comments.

The book's title conveys more than simply the time frame encompassed in the volume. As the editors emphasize, the Paleolithic cultural sequence of China is such that internal temporal divisions are not warranted, let alone the use of terminology borrowed from Paleolithic research in the West. Instead, they are of the opinion that the appropriate analytical units for dealing with China's prehistory are temporal, and they emphasize their preference for the terminology of early, middle, and late Pleistocene. Still, the editors seem to have placed a high premium on the early and middle Pleistocene, as the late Pleistocene is discussed less frequently in this volume. It is unavoidable in such a context that the antiquity of the early Paleolithic in China will become of major interest. How do claims for the existence of late Pliocene and/or early Pleistocene sites in China (amply cited throughout the book) stand the test of rigorous research methodologies? This is an especially intriguing question, given the accumulated evidence for the great antiquity of the first out-of-Africa dispersal events (e.g., Anton and Swisher 2004; Bar-Yosef and Goren-Inbar 1993; Gabunia et al. 2000; Swisher et al. 1994 [though rebuttals abound]).

Based on current evidence (discussed extensively by C. Chen in his review and demonstrated by Q. Chen et al. in their evaluation of the validity of ESR dating results), one cannot argue conclusively that the Paleolithic in China goes back all the way to 2 mya or earlier. The critical treatment of newly obtained results is as important as the dates themselves. For instance, ESR results indicate that the site of Xiaochangliang, previously estimated on the basis of magnetostratigraphy to be either c. 1.0 or 1.67 million years old, dates at the

earliest to the end of the early (Lower) Pleistocene, c. .87 mya. However, in this specific case the researchers are acutely aware of the site's properties, which may have caused analytical bias and likely resulted in ages that are too young, and they treat it as inconclusive. Similarly, they report the age of Renzindong, earlier assigned a geologic age of 2.6 mya, as being certainly older than 1.0 mya and *possibly* older than 1.7 mya. Again the authors emphasize the inconclusiveness of the results, this time due to the large dispersion of the dates obtained, and they recognize the need for further clarification. The chronology of Longgupo, where a hominoid mandible was magnetostratigraphically dated to the Olduvai Subchron, is also open to dramatically contrasting interpretations (Brown 2001; Q. Chen et al.: 123). In this particular case the taxonomic identification of the hominoid mandible itself is also debated, though a few crude lithic artifacts are reported from the site (Schwartz and Tattersall 1996; Wanpo et al. 1995; Wu 2000). The stratigraphic description provided in the 1995 publication, however, is not unambiguous with regard to the integrity of the stratigraphic context of these finds.

This brings us to a second important point. Polemics about the early sites in China are not concerned exclusively with their chronologies. The identification of anthropogenic authorship of lithic artifacts within the sites looms as a real issue. With few exceptions (e.g., Xiaochangliang with over 2000 artifacts; Shen and Chen: 69, table 1; but see below), claims for hominin presence in early putative sites are based on very small lithic assemblages of often crude specimens. Until recently, such assemblages have been studied from a strictly typological perspective. A critique voiced in China with regard to the Renzindong assemblage is pertinent here: "Recognition of stone artefacts . . . was entirely based on the empiricist approach in which a conclusion is accepted on the basis of its authorship rather than a critical evaluation of its substance" (Chen: 29). Chinese lithic analysts seem to swerve more and more toward technological studies. The problem, of course, is that little

can be said about operational sequences from collections consisting of few specimens, and this could doom the fate of this particular debate.

Painstakingly prying apart the effects of taphonomy and formation processes from those of human activities, researchers of China's Pleistocene archaeology now feel ready to make some statements about human behavior. Peterson et al. examined an admittedly small sample of bones from Xiaochangliang. To the degree that this sample reflects the true nature of the site (in my mind an open question), they argue for the extreme rarity of both anthropogenic and carnivore marks. On the other hand, they document the presence of abrasion marks and go on to interpret the archaeofauna of this early site as "a jumble of hydraulically processed lithics and fauna" (p. 91). This conclusion is consistent with that of Shen and Chen with regard to the lithics. While the 2000-odd lithic artifacts from the site clearly represent hominin activities at the locale, they are not in primary context and arguably are not associated with the faunal remains. Lithic taphonomy indicates that it was mostly the smaller fraction of the assemblage that had been affected by low-energy inundations. Unfortunately, there are no descriptive statistics with regard to the size of the bone fragments. These in turn could allow for a more nuanced and detailed understanding of site formation processes; for example, a clarification as to whether the same mechanisms shaped the archaeological patterning of both bones and lithics.

The detailed taphonomic work conducted on lithic as well as faunal assemblages has had a significant impact on understanding the evolution of culture in China. An influential model had argued that in northern China there existed two parallel cultural traditions, distinct from one another on the basis of the size (small and large) of the raw material packages used for lithic production. As many assemblages originally allotted to the "Large Tool Tradition" have now been recognized as secondary, water-transported deposits (or are simply surface collection), it is necessary to

rethink the validity of the Two Tradition model. There are additional problems with this model that render it naïve and unsatisfactory (C. Chen: 26). In its stead, explanatory scenarios now incorporate differences in site structure and function (e.g., open-air vs. cave sites).

In contrast to the results of the Xiaochangliang faunal taphonomic studies, the detailed taphonomic work carried out on the faunal material from Panxian Dadong underlines the role of human behavior as an agent of archaeological patterning. Schepartz et al. identify a stratigraphic zone in which isolated teeth of large animals (especially rhinoceros) were arguably introduced to the cave selectively. They suggest (p. 104) that this was an attempt to boost raw material availability, indicating that lithic raw material at the site was of low quality. Indeed, modified tools were found at the site that had been made on large animal teeth. This intriguing scenario does not explain why the use of teeth is restricted to a specific stratigraphic zone (and by extrapolation, a relatively restricted time span), but this is nevertheless an example of the way taphonomic studies lead to innovative ideas about human behavior during the middle Pleistocene.

There are several now-classical models attempting to characterize and explain the evolution (or lack thereof, as the case is often argued) of lithic traditions and lithic technology in the Chinese Paleolithic. Possibly the best known of these is the model arguing for the existence of the "Movius line." Corvinus (2004) noted that the occurrence of biface assemblages in "truly Early Paleolithic" contexts is rather sporadic, and that no Chinese Paleolithic site can be definitely connected with an Acheulean tradition. Jian and Shannon's (2000) results concur with those of Corvinus in that they do not identify a real tradition of biface production in East Asia. Contrary to Movius, they relate the differences in lithic assemblages to the availability of potential raw materials and the adaptive needs and preferences of different early hominid groups, rather than to the presence of two mutually exclusive cultural spheres.

I found it a bit surprising that—despite recent pertinent discoveries (e.g., in Bose; Hou et al. 2000)—this debate and new approaches to the problem are not more extensively reflected in the volume.

In contrast, several papers deal at variable length with the evolution of flake industries. While a sort of general agreement seems to have emerged that Pleistocene lithic technology did not change qualitatively during the Pleistocene in China, the patterning of variability does not seem to be agreed upon. Wang's summary of the Yangzi River's prolific archaeological record (almost the only contribution that deals extensively with the late Pleistocene) reveals a development in southern China from cobble tool manufacture (choppers and picks) during the early and middle Pleistocene to the production of flake tools (points and scrapers) in the late Pleistocene. Importantly, in his opinion the occurrence of regional characteristics does not mask a real overall similarity that exists between the Paleolithic cultures of southern and northern China, especially in the earlier stages of the Pleistocene. Wang's reconstruction of the conditions under which hominins existed prior to the late Pleistocene leads him to identify important similarities with Eurasian and East African sites of comparable periods. Not the least among these are the diachronic changes in raw material acquisition, where a tendency can be seen to procure and transport raw material over longer distances.

The identification by Zun'er Lu of the Jinniushan hominin as an archaic *Homo sapiens* in a "transitional stage" (132) is in line with a model of regional continuity. However, the facial skeleton and cranium are heavily distorted. Argued to be around 260 kyr old, a more likely age estimate for this hominin is c. 200 kyr ago (Brown 2001:142). Dates for unquestionable *H. erectus* fossils in China, such as Zhoukoudian Locality 1 and Hexian (5), are indeed older than either one of the two dates cited for Jinniushan. And yet, the Chinese middle Pleistocene record is not ideal for pursuing the origins of modern humans through fossils. Identification of some hominin skeletal remains, as well as age

determinations of many of the pertinent stratigraphic levels, are currently in a state of flux. The very late ages suggested for Indonesian *H. erectus* (Swisher et al. 1996) certainly bring home the question of temporal relationship among hominin species in China as well. However, there are substantial discontinuities in the distribution *H. erectus*, "archaic" *H. sapiens* (a problematic term in its own right), and modern *H. sapiens* occurrences in China, and fossil-bearing sites are not known from the time of marine isotopic stage (MIS) 5 to at least MIS 2 (Chen and Zhang 1991; Hedges et al. 1992 [both cited by Brown 2001]).

So what's new on the eastern front? A lot—and nothing much. From his perspective of many years of research in eastern Asia, Shutler declares Chinese Pleistocene archaeology as "coming out of age." The papers in this volume certainly reflect this profound change, not only in methodologies and the use of more sophisticated analytical tools but—probably most significantly—the depth of conceptual changes in Chinese Pleistocene archaeology.

That said, the jury seems to still be out on many of the major questions that we ask of the Chinese record. This is not a bad thing in itself. The volume in front of us is a reasonably produced (though some of the graphics are not sufficiently clear) interim report, a stepping-stone to future works that will probably answer some of the current questions and will raise many others. My professors were right all those many years ago, and they still are: Great discoveries will come out of China.

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China before China: Johan Gunnar Andersson, Ding Wenjiang, and the Discovery of China's Prehistory. Magnus Fiskesjö and Chen Xingcan. Museum of Far Eastern Antiquities Monograph Series No. 15. Stockholm, Sweden. 2004. 159 pp., bibliography. ISBN 91-970616-3-8.

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China before China is a companion volume for the new exhibit under the same title at the Museum of Far Eastern Antiquity (MFEA) in Stockholm. It comprises three major components. First, it chronicles the little-known stories of the discoveries of the founding collections of MFEA. Second, it discusses how archaeology and politics intertwine in China through the praises and criticisms directed to Johan Gunnar Andersson. Third, it reflects the future of

these collections and their status as world cultural heritage.

Andersson and his Chinese colleagues gathered the prehistoric collections in question in the 1920s from sites distributed in the middle and upper reaches of the Yellow River. Although they were not the first known Neolithic collections in what is now China (Torii Ryuzo discovered the Hongshan deposits in Japanese-controlled Manchuria in 1908), they were widely

known in the world because of the works of Andersson.

Andersson was widely regarded as the one foreign specialist in the history of Chinese archaeology who made the most substantial contributions toward the development of the science in the Chinese context. Prehistory and Neolithic were then notions exotic to China, a country of a long written tradition. By the early twentieth century, Chinese historians became increasingly skeptical about the authenticity of the documentation of the sage kings and legendary heroes handed down in the classical writing. Right at this time, Andersson discovered an early culture totally unknown before. Its relation to traditional Chinese culture naturally aroused a great deal of interest. Archaeology gradually became the major apparatus in the reconstruction of a national history of the preliterate past in the following decades.

Based on Andersson's journals, field notes, and correspondence housed and catalogued in MFEA, Fiskesjö and Chen give a colorful account of his archaeological journey. The survey expedition from Xi'an to Lanzhou was particularly adventurous because this area was not controlled by the republic's government but by the warlords. The expedition had to be protected from bandits by armed guards and soldiers. The collections of artifacts were packed and floated down the Yellow River on yakskin rafts. These sound more like episodes from Indiana Jones than regular archaeological campaigns.

The reason why Andersson took such a dangerous journey demonstrates his scientific rigor. His motive was to test the hypothesis that the prehistoric tradition discovered in situ at Yangshao village in 1921 originated in the west. In his first published paper about Yangshao, Andersson noted a striking similarity in design between the Yangshao polychrome sherds and those of Anau in southern Turkmenia and Tripolje in the Ukraine. To supplement the authors, Andersson had consulted leading scholars of the time, sending them pictures of the Yangshao designs. Hubert Schmitt, a German archaeologist who participated in the

excavation at Anau, maintained that those few elements of geometric designs selected by Andersson for comparison were very simple and that similarities, if any, were far from convincing. On the contrary, R. H. Hobson, then the Chinese ceramic specialist at the British Museum, argued that these geometric designs were first invented in Mesopotamia and diffused to the other parts of the world, including Yangshao China, in later dates (see Andersson 1973). The western expedition had a clear research question.

Chapter 3 is an interesting shift of focus from discussing the works of Andersson to discussing how the Chinese evaluate his works. The communist government has a reputation of high-handedly limiting the interpretive frameworks that humanities and social science scholars could use, and it does not hesitate to bend history to serve the present political goals. Therefore, the attitude toward Andersson's legacy and Andersson as a person is a reflection of the entire history of modern Chinese archaeology in particular and the relationship between contemporary politics and academic pursuits in general. This chapter should not only intrigue archaeologists but should also students who study modern Chinese political and intellectual history.

In this regard, the evaluation of Andersson's works during the precommunist era was surprisingly fair and justifiable. He was praised as a pioneer in Chinese archaeology and criticisms were directed to his scholarly views and field procedures, which sounded more like salvage operations than systematic excavation. Academic freedom shrank during the communist era, when criticism of Andersson concentrated on his argument of the Western origin of Yangshao, despite Andersson later changing his position in the face of new evidence that the Yangshao people were the ancestors of the modern Han Chinese population. Extreme nationalists also accused Andersson of being a supporter of imperialism and colonialism. Finally, recent economic reforms have brought China back into the international community. Andersson is once again praised as a pioneer in Chinese archaeology.

Looking back after nine decades, the collaboration between Andersson and the Chinese can serve as a model between Western museums and antiquity authorities of the Third World. The vast collections of Asian objects in European and American museums represent either the forced removal of cultural heritage under unequal terms, the purchase through auctions and antique dealers, or the private donations of such purchased objects. They are fragments of cultural heritage without documented provenance. The Andersson collections, in contrast, were gathered on the basis of mutual agreement with the country of origin, governing the partition of the collections between East and West. In accordance with the Chinese-Swedish agreement, approximately half of the material was returned to China, after which it disappeared and was subsequently forgotten there, seemingly without a trace, in the fog of war. In fact, almost nothing was done to protect the incomparable cultural heritage sites of China during the early twentieth century. Andersson's effort was the first of its kind.

Because of past history, current legislation in China prohibits the exportation of objects of cultural heritage. This act threatens the survival of Western museums since as public institutions they see their primary role as showcasing world culture to their audiences. As a result, they have never stopped purchasing antiques from the market, which fuels looting activities in China. I see the Andersson model as providing a solution by balancing the needs of protecting the local cultural resources and displaying them to a world audience. Today's new global interconnectedness offers an unprecedented potential for transcending that pattern. Fiskesjö states in this volume that the MFEA now emphasizes cooperation with Chinese and other Asian museums in the global mission of caring for world cultural heritage based on equal respect for nations' rights and duties in the management of the heritage in its care and of explaining its importance to both local and global audiences. My hope is that museums worldwide might adopt this model and assume a

joint responsibility for our world cultural heritage, balanced with respect for the local caretakers.

A nice bonus of this volume is the selection of the ethnographic and folklike photographs of China taken by Andersson during the first quarter of the twentieth century. They are preserved in surprisingly good condition. In spite of being considerably enlarged, they are reasonably sharp. In addition to pictures of archaeological sites, there are also images of Andersson's Chinese colleagues, many of whom were then leading intellectuals, and pictures of the indigenous life in North China. There is reason to suspect that what is printed in this volume is a small selection of the photographic assemblage housed and catalogued in MFEA. This is an invaluable source of visual anthropology of North China.

Andersson's spirit of internationalism is also reflected in the coauthorship of the reviewed volume, which is a joint effort of two of the leading archaeologists in Sweden and China. The viewpoints from both sides are equally expressed. Appropriately, the volume reviewed is a bilingual edition in English and Chinese.

Underscored in the subtitle, one of the goals of this volume is to highlight how Andersson and Ding Wenjiang intertwined in their pursuit of science. This effort is unsuccessful simply because Ding's contribution to China's prehistory is minimal. Ding was the founding director of China's National Geological Survey. He was an acclaimed administrator and politician who was one of the Chinese delegates at the Treaty of Versailles and later became the mayor of Shanghai, the largest city in China. It is apparent that the authors' intention is to make the discovery of China's prehistory look like a joint endeavor between a Swedish and a Chinese scholar. I appreciate their sensitivity, but the effort is excessive.

Before the emergence of pinyin, a system of transliterating Chinese into the roman alphabet, there was no official standard of transliteration. In dealing with old documents, one needs to decide whether to follow the pinyin system throughout and

change the old transliterations into pinyin or follow the old system used in the documents. However, this volume fails to do so; for example, “Henan” is sometimes spelled “Honan.” Readers who are unfamiliar with the history of transliteration would easily be confused by the inconsistency.

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Bulletin of the International Jomon Culture Conference, Vol. 1 2004. Richard Pearson, ed. Tokyo: International Jomon Culture Congress (nonprofit organization). 163 pp.

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What is the Jomon? It is a group of cultures that occupied the Japanese archipelago during the Jomon period, which is dated from about 16,000 to 3000 years ago, a long time span that Japanese archaeologists divide into six subperiods: Incipient, Initial, Early, Middle, Late, and Final. “Affluent” Jomon foragers in Japan utilized a wide range of foodstuffs, including nuts, mountain vegetables, fish, shellfish, and mammals. Key features of the Jomon include a highly developed storage economy, large-scale settlements with planned spatial organization, permanent buildings displaying a diversity of architectural types, sophisticated craft works including fine pottery and lacquer products, and extensive exchange networks of prestige objects such as jadeite ornaments. During the past decades, Japanese archaeologists have investigated and documented the very rich archaeological record of the Jomon period. There are probably more archaeological investigations undertaken in Japan than in any other country in the world. In the mid-1990s, permits were issued for over ten thousand investigations a year. It is quite difficult, however, for non-Japanese-speaking audiences to read through the mountains of excavation reports, articles, and books. This makes it difficult for the development of international Jomon studies in a worldwide context.

The *Bulletin of the International Jomon Culture Conference* aims to provide up-to-date information about Jomon archaeology for audiences both within Japan and overseas. In this volume, ten contributors deal with various topics concerning Jomon cultures. All articles are written in both English and Japanese. Three reviews provide detailed and high-quality outlines of Jomon archaeology. Richard Pearson discusses recent discoveries and studies including settlement pattern, social organization, the building of stone monuments, and lacquer production. Pearson concludes that the Jomon shares a number of features in common with other cultures of the North Pacific region and also with the East Asian continent, but that it also has a number of special qualities, including the domestication of some plants, gathering techniques that approach the level of domestication, a highly developed storage economy, and wide exchange networks for the circulation of prestige objects. Jomon was a complex forager society that achieved sedentism with large-scale settlements and permanent buildings and maintained a high level of craft production. Tatsuo Kobayashi describes the history of Jomon archaeology with a focus on Sugao Yamanouchi (1902–1970), the great pioneer of Jomon studies. Kobayashi stresses the importance of Yamanouchi’s achievement—the establish-

ment of a detailed chronology for Jomon pottery—which provides the foundation for all new approaches after Yamanouchi, such as the reconstruction of subsistence patterns and the analysis of social structure. He also explores the nature of the “Jomon revolution” in terms of new technologies, villages, landscape, and cosmology and its influence on later Japanese culture. Simon Kaner considers some notable excavations and innovative approaches to the study of Jomon settlements and suggests that the reconstruction of the occupational histories of settlements is important for addressing the development of social complexity in the Japanese archipelago.

Various case studies encourage a better and deeper understanding of Jomon life and society. C. Melvin Aikens investigated the Godo site located on the coast of Paleo-Tokyo Bay in the Early Jomon. The bay was created by raised sea levels during the Jomon Transgression caused by global warming in the Early Jomon, and it covered a great deal of what is now metropolitan Tokyo. A wide diversity of food remains, including fish, shells, and mammals, was excavated from well-preserved deposits. Circular clusters of fire-broken rocks probably used for cooking and processing activities were found, although there is no evidence for any actual dwellings. Aikens suggests that people might have come to Godo to obtain and prepare food and returned to their homes elsewhere in the vicinity of Godo at night. They commuted varying distances on a daily basis for collecting, hunting, fishing, and processing. He suggests that the concept of a “commuter economy” from studies of Native American people might be useful for interpreting the lifestyle of the Godo visitors.

Brian Chisholm has been carrying out stable isotope analysis for the reconstruction of diet in the Jomon since about 1987. The result of his analysis reveals that people from all sites in his sample had a substantial intake of marine protein in their diets, while in Hokkaido (in northern Japan) average dietary values are more positive (marine) than those for central Japan, and considerably more positive (marine) than western Japan. The coastal versus inland differences

imply that people in inland sites had less access to marine resources. There are weak indications of some sort of gender-related differences in diet in a few sites, but there is as yet no clear explanation of the cause.

Noriyuki Yamamoto considers the possibility of uxori-local postmarital residence in the early Middle Jomon through an analysis of distribution patterns of two pottery types and technological analysis of hybrid-type vessels in sites of the Kanto region. He also argues that seasonal residence patterns and subsistence patterns could be detected through the analysis of stone tool assemblages.

Ilona Bausch deals with distributional characteristics of jadeite ornaments and polished serpentinite adzes. The Hime River area in the Hokuriku region was the sole source of Jomon jade ornaments, such as pendants and beads. During the Late and Final Jomon, exchange networks of jade products noticeably widened, extending throughout the Japanese archipelago from Hokkaido to Kyushu. Bausch points out that this extension of circulation may be regarded as a response to declining population and a decrease in site numbers caused by environmental change associated with the end of the post-Early Jomon climate optimum.

Minako Togawa focuses on the phenomenon of the sudden and brief appearance of baked clay figurines in Kyushu at the transition from the Late to Final Jomon. Lithic assemblages and plant remains indicate that small-scale cultivation was being practiced in the region. In most horticultural societies, women perform the majority of garden labor and have responsibility for plant resources. For these reasons, Togawa suggests that clay figurines represented females who played important roles in the production of plant resources.

Critical comments in some of the papers will hopefully encourage some self-reflexive review on the part of Japanese archaeologists. Since 1999 Japanese archaeology has been surprised by calibrated AMS radiocarbon dates for the beginning, middle, and end of the Jomon period, because these dates were all older than previously thought. Charles T. Keally regards “shock

and confusion” among Japanese archaeologists as resulting from the lack of understanding of radiocarbon dating. Japanese archaeologists should understand at least the fundamental aspects of major dating methods.

Mark J. Hudson reexamines the concept of “style” (*yoshiki* in Japanese) defined by Tatsuo Kobayashi, a very influential concept in Jomon studies. He concludes that the regression analysis he conducted between the diameters of style zones and Jomon population densities do not support a link between ceramic style zone and reproductive networks.

In order to develop these innovative case studies, it may be helpful to discuss two important matters of concern to recent Jomon archaeology. First, as Pearson and Yamamoto emphasize, the Jomon is not a homogeneous entity but a group of cultures expressing regional diversity in environmental and social conditions. The results of Chisholm’s stable isotope analysis support this concept. Comparative and regional approaches to the Jomon period are becoming more important and may allow us to understand both the general and particular nature of life and society in the Jomon period. Archaeological data from the Jomon is of sufficient quantity and quality for new approaches such as this to flourish. Second, it is necessary to reexamine the decrease in population in the Late and Final Jomon. This might have an effect on Bausch’s inference that there may be causality between the expansion of the jadeite exchange network and population decrease and on the result of Hudson’s analysis using Shuzo Koyama’s data of Jomon population densities. Decreases in the number of pit buildings and sites on terraces have long been considered evidence of a general population decline in the archipelago caused by climate cooling after the Early Jomon global warming. However, increasing discoveries of lowland settlements in the Final Jomon show that many settlements shifted their locations from river terraces to lowlands, especially in coastal areas. Considering that there are still many fewer excavations in lowlands and

sand dunes than on the terraces, it seems quite probable that we have been underestimating the whole population and density in the Late and Final Jomon.

Publications of immediately translated up-to-date studies and improvements in accessibility are essential for allowing the Jomon to make a significant contribution to world archaeology. Hudson, Pearson, and Kaner emphasize that Jomon archaeology is well placed to contribute to international studies of affluent hunter-gatherers in terms of social complexity and marriage networks. Publications such as this provide new opportunities for non-Japanese-speaking scholars to study Jomon cultures. In addition, different scholarly approaches from outside Japan will bring new directions to Jomon studies. Japanese archaeologists should be aware of the great potential of the rich archaeological record from Jomon Japan. Through this interrelationship, Japanese archaeologists will receive a variety of responses to Jomon archaeology from outside Japan. It will promote not only mutual understanding but also active debates and open a new window on Jomon archaeology.

The different interpretations of the distribution patterns of pottery styles and types by Hudson and Yamamoto may represent the beginning of a new phase in Jomon archaeology. Hudson concludes that the correlation between the diameters of pottery style zones and population networks is very low, while Yamamoto considers that the technological characteristics of pottery decoration could be used in order to identify types of descent system. This difference also shows the large gap between recent theoretical perspectives in Japanese and Western archaeology. Continuous debate may lead to conflict within different academic traditions and may be somewhat stressful for Japanese archaeologists. However, the variety of comments from different perspectives in this book will provide opportunities to rethink the established interpretations and theoretical settings of Japanese archaeology and help clarify the differences and similarities between Japanese and Western archaeology. In sum, the

papers in the *Bulletin* represent a critical collaborative body of work. Furthermore, this reciprocal relationship will make possible a new generation of international research projects, because we will be able to set up better-informed research questions through the debate they engender.

The International Jomon Culture Congress (IJCC) is a nonprofit organization

that aims to transmit information about the Jomon to the world and enhance Jomon studies, both in Japan and abroad. The IJCC publishes an annual bulletin and newsletters. This bulletin is not only an excellent guide to Jomon archaeology, but it also shows the great potential of Jomon archaeology for making a significant contribution to world archaeology.

The Indus Civilization: A Contemporary Perspective. Gregory L. Possehl. Walnut Creek, CA: AltaMira Press, 2002. 280 pp., paperback. \$32.95. ISBN 075-910-172-8.

Reviewed by MONICA L. SMITH, *Department of Anthropology, UCLA*

It is a marker of the increasing visibility of South Asian archaeology that there are now textbooks on the subject for undergraduate audiences, the most recent of which is Gregory Possehl's *The Indus Civilization: A Contemporary Perspective*. Drawing on a lifetime of research on the Harappan (Indus) culture of the regions now encompassed in Pakistan and western India, Possehl's book is a welcome and affordable addition to the comprehensive literature. Although it was purposefully written to be a textbook, the volume contains many features that make it a suitable reference volume for anyone working in Asia and especially for those interested in the Bronze Age. Its organization and the repetition of themes, along with cross-referencing within the volume, make it particularly useful for nonspecialists who may want to read selectively about aspects such as ritual, writing, and exchange.

Throughout the book, Possehl seeks out the humanity of the Indus people rather than treating the era as a mysterious collection of artifacts. The physical environment is presented as challenging and diverse, in which entrepreneurship and problem solving were valued traits. The evocative language enables us to picture the skills and labor needed not only to create abstractions

such as cities but also real commodities like bricks, food, pots, and textiles. The book begins by showing how the people of the Indus area consisted of interdependent agriculturalists, traders, and herders, a theme repeated throughout the volume. Chapter 1 also has biographical sketches of the main individuals who have contributed to Indus studies, highlighting the many important contributions of local and foreign scholars over the past century. The tone of the chapter is rather measured; especially in a book written as a course text, one might wish for a somewhat more dramatic introduction of this rich Bronze Age cultural tradition with its walled cities, elaborate craft traditions, undeciphered script, and curiously absent elites (to date, while there have been labor-intensive portable goods throughout Indus sites, there are no fancy burials or elaborate temples).

Chapter 2 examines the beginning of the Indus age by placing the region in a broader Old World context, emphasizing how food production became and remained the critical factor in increased social complexity. Many archaeobotanists and faunal analysts have worked in the Indus area, and Possehl draws on the work of individuals such as Richard Meadow, Lorenzo Costan-

tini, and Steven Weber to propose that subsistence strategies were not based on a simple adoption of the Near Eastern domesticates of wheat, barley, cattle, sheep, and goats. Instead, faunal evidence and local environmental conditions suggest that the domestication of some species, particularly cattle and wheat, was likely to have been accomplished locally.

The full flavor of the Indus culture is discussed starting in chapter 3, focusing especially on what Possehl calls the “four aspects of Indus ideology.” First, he notes that conscious nihilism and renewal were practiced on a large scale, using as one example the urban site of Mohenjo-Daro, which appears to have been established on the plains as a new habitation with planned components including a street grid, monumental platforms, and elaborate drainage. Second, the Indus culture had a considerable fascination with water, for which Possehl borrows from Michael Jansen the term “wasserluxus” to describe the Indus peoples’ careful attention to the construction of drains, wells, and bathing platforms, as well as the frequent appearance of the water buffalo in iconography. Third, the Indus was a time of technological sophistication and innovation, including the development of a writing system, metallurgy, maritime technology, and lapidary arts including beads and intricate stone seals. Finally, Possehl highlights the way in which cities were a focal point for both ideology and skilled craft production. The Indus culture had at least five cities, including the relatively newly discovered sites of Dholavira, Rakhigarhi, and Ganweriwala, in addition to the well-known Harappa and Mohenjo-Daro, which remain the most extensively excavated urban zones. A discussion of these and other sites including Possehl’s own work at Rojdi round out this chapter, which could function on its own as a primer on current research.

The next section of the volume contains a chapter each on technology, architecture, and art. Each chapter is a stand-alone encapsulation, making the subject accessible to scholars from other regions seeking comparative material and ideas. Indus technological studies are particularly abundant

in the past 20 years, thanks to J. Mark Kenoyer and his colleagues, including Heather Miller, Kuldeep Bhan, William Belcher, and Massimo Vidale; one would wish for a longer chapter on technology—or perhaps a separate book—to more fully examine the technological capacity of the Indus people. A chapter on writing is tantalizing but brief, giving the reader a glimpse of the many challenges of decoding the Indus script. The script may represent multiple languages, and at about 400 signs, the number of different glyphs is too many to constitute an alphabet but too few to be a pictographic system (as Chinese and Japanese are, for example). Indus texts are also short, meaning that even when decipherment occurs there are unlikely to be lengthy passages of historical or ritual information.

A chapter on religion recaps many of the themes discussed in earlier sections, utilizing portable objects and architecture to parse out Indus ritual traditions and practices. This is followed by a chapter on burial practices that outlines what we know about mortuary traditions from extensive cemeteries at the sites of Kalibangan and Harappa, as well as the scattered human remains found in the upper levels of Mohenjo-Daro. Ritual practices are also evident in the following chapter on gender, in which Possehl discusses the work on figurines by Catherine Jarrige. Principally working with the finds from the village-sized site of Mehrgarh, Jarrige found that figurines of uncertain gender from the earliest phases were replaced by those with increasingly female physical characteristics by around 4000 B.C., culminating in figurines with elaborate hairstyles and ornaments by c. 2900–2600 B.C. (the same time that cities were being established throughout the Indus culture area). Male figurines were also present, proportionately increasing over time until they comprised 85 percent of the Mehrgarh assemblage. By the end of the Mehrgarh sequence, in an unusual reversal of the usual perception of figurines serving as fertility icons, some of the male Mehrgarh figures hold infants while females lose their formerly bountiful proportions. As he does elsewhere in the book, Possehl frames

this discussion in human terms, inviting the reader to consider the universals of how people express themselves and attempt to come to terms with larger social and natural processes.

Possehl ends his substantive discussion of the Indus culture with a detailed and comprehensive chapter on the "Middle Asian Interaction Sphere," his term for the economic and social relations among the Bronze Age cultures of Mesopotamia, the Persian Gulf, and the Turanian Basin of Central Asia. This excellent chapter brings together a wealth of scholarship on regions that are often examined separately but are shown to have sustained significant amounts of contact through long-distance exchange. The chapter shows the nature and importance of "foreign" trade for Indus peoples, but it also puts those other regions in perspective. Treated from the Indus point of view, Mesopotamia is just one among many flourishing zones of Bronze Age commerce and innovation. Indeed, we are likely to learn a great deal about the Indus from places elsewhere in the Near East (one potential scenario is that the now heavily looted sites of Iraq may yield a bilingual Indus-cuneiform inscription that could enable us to decipher the Indus script; archaeologists would do well to prepare themselves in advance for the ethical dilemmas that would follow such a discovery).

While this book obviously has much to

offer the professional, it is ironic that it is somewhat less successful as an actual textbook. Possehl's writing style is highly inclusive to scholars but is a bit arcane for undergraduates, with its numerous asides on archaeological and social theory. Similarly, the complex discussions of Indus geographic phases and stages, many of which are based on relatively subtle distinctions in the material record, are likely to confuse students who will be more focused on general similarities throughout the Indus cultural region and the explanation of human behaviors that accompanied the development and decline of Indus characteristics such as urbanism. When I used this volume in an upper-division university course on South Asian archaeology, I found that the students lacked the anthropological and historical background to appreciate how the Indus fit into a larger picture of world cultures. One solution to this might be to have an introductory chapter or supplemental reading on today's South Asia to give students a sense of how archaeology there is viewed as an important touchstone of political and social life in a manner that is very different from the way in which archaeology is practiced and reported in the United States.

Overall, this volume is well worth owning, and it will stand as a useful and comprehensive account of the Indus culture for many years to come.

Integrating Archaeology and Ethnohistory: The Development of Exchange between Yap and Ulithi, Western Caroline Islands. Christophe Descantes. BAR International Series 1344. Oxford: Archaeopress, 2005. vi + 124 pp.; illustrations, maps, bibliography, appendices. £29.00. ISBN 1-84171-690-1.

Reviewed by ROSALIND L. HUNTER-ANDERSON,
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Integrating Archaeology and Ethnohistory (hereinafter *IAE*) contains eight chapters well illustrated with maps, diagrams, profiles, and plans. In sequential order, they

are: Introduction; Theoretical and Methodological Approaches in Exchange Studies; Environmental Setting of Yap and Ulithi; Historical Ethnography of Western

Carolinian Interaction; Archaeology of the Western Carolines and Micronesian Ceramic Provenance Studies; Archaeological Investigations: Spatial and Ceramic Analyses; Discussion; and Conclusion. Two appendices—AMS Radiocarbon Determinations and Instrumental Neutron Activation Analysis Data—and the bibliography conclude the work. *IAE* is a revision of Descantes' 1998 University of Oregon doctoral dissertation. As with other monographs in the far-too-expensive BAR International Series, this one has not been edited professionally, and minor irritations remain: typos, subject-verb disagreements, dangling and misplaced modifiers, alphabetical errors in the bibliography, and numerous awkward phrases and usages (a particularly annoying one is "materialist" for "material"). These flaws aside, *IAE* is valuable for its new data—and provocative as well.

IAE explicates a phenomenon that has been documented ethnographically, in this case exchange practice between Yapese and Ulithians, and tries to add something new to the picture. New and valuable for regional archaeology are 28 radiocarbon dates that provide tighter temporal control on technological changes in Yapese ceramics, on the adoption of stonework architecture on Yap and Ulithi, and on the onset of land reclamation along the Gachpar Village (Yap) shoreline. The new dates complement the research contributions of Michiko Intoh, who has established a still-longer occupation sequence for Fais than is evident in Ulithi from Descantes' results (e.g., see Intoh 1996). *IAE*'s technical analyses provide information on the chemical composition and provenance of clays used in Yapese pots and on vessel size differences (pots used in Ulithi were larger than contemporaneous pots in Gachpar).

IAE is provocative in combining science-based analytical techniques and statistics with an epistemology that denies the possibility of universality in cultural adaptive responses. Stating that his work "is part of a trend to historicize anthropological inquiry (citing Biersack, Kirch, Sahlins, and Thomas)," Descantes offers a "history of the development of exchange" between

Yapese and Ulithians rather than an explanation invoking general principles. In Chapter 7, this exchange history takes the form of a narrative comprising several "factors" that may have had an effect upon the phenomenon under study. Among others they include intrinsic population growth in Yap and Ulithi, competitive political maneuvers on Yap that included Ulithians, European contact and its technological introductions, and the practice of exchange (more on this below). Meanwhile, the physical environments of Yap and Ulithi (climate and sea level, for instance) are assumed to have been static (although contrasting in basic geology) over the thousand years of presumed exchange history.

As in other works aimed at explication of a topic, *IAE* begins with a dictionary definition; exchange "refers to the establishment and maintenance of relationships between persons. In order for social relationships to exist we must exchange something—whether it is the communicative exchange of language, the economic and/or ceremonial exchange of goods or the exchange of spouses."

Once we know what the topic is, the Yap/Ulithi case is presented. This involves a review of the literature describing the *sawei* system, pertinent historic information from travelers' accounts and oral history, and justification for pursuing exchange archaeologically.

Practicality dictated a focus on one village in Yap (Gachpar) and one islet in Ulithi (Mogmog), both important locales in the *sawei* literature. Because the research topic was exchange, a culturally mediated behavior, yet archaeological fieldwork generates static observations, there was an immediate methodological problem: how to recognize the behavioral phenomenon of interest archaeologically. Descantes' solution was to simply declare that pottery sherds in prehistoric deposits at Mogmog are a proxy for exchange behavior (the sherds could not have been made in Ulithi, which lacks clay, and *sawei* ethnohistory indicates that pots were given by Gachpar Yapese to Ulithians at Mogmog). From this follows another declaration, that pot-

tery sherd density in the excavated deposits is a proxy for “exchange intensity,” a variable that as used in *IAE* means quantity and frequency of items exchanged. Thus pot sherd “behavior” in the deposits was used as a proxy for cultural behavior. This is a very old problem that emerged in the polemics of the “new archaeology”: Are anthropological archaeologists supposed to study cultural variables (like “exchange” defined archaeologically), or are we to study the archaeological record directly and then explain it using whatever frame of reference is appropriate? This matter is far from resolved, as *IAE* shows.

Incidentally, Descantes’ use of potsherds contrasts with the common use of proxies for past processes in the historical sciences. Usually proxies are accepted for use within a research community only after studies have proved that regular relationships exist between the proxies and phenomena they are said to represent. That is not so here. Descantes provides no actualistic or experimental warrants for using potsherds as a proxy for any aspect of the complex behavior pattern, exchange, or sherd density for exchange “intensity.” I found this misuse of a scientific convention unsurprising, given the following from the Introduction:

Permeating all aspects of island life, exchange is integral to human island adaptations. The primary purpose of this book is to construct a diachronic model of exchange between the residents of Gachpar Village (Yap) and Mogmog Island (Ulithi Atoll) through the integration of archaeological and ethnohistoric data. . . . This model contributes to our understanding of past Pacific Island inter-societal networks and their role in the development in two culturally distinct island societies. . . . Internal and external exchange influence [*sic*] societies in many ways. People can acquire ideas, diseases, genes, language, materials, people, and services through exchange. . . . Through exchange practice, society reproduces itself and through those reproductions is transformed. *At the nexus of culture change, interaction between peo-*

ples serves as a mechanism to explain the reproduction and transformation of societies through time. . . . The study of exchange is central in archaeology because it is an important factor in explaining culture change (my emphasis).

In other words, Descantes is saying that exchange is a phenomenon that pervades Pacific island societies, that it probably did so in the past at Yap and Ulithi, and that it is an important factor that keeps societies going, changes them over time, and thus kept Yapese and Ulithian societies going and then caused them to change over time. Descantes hereby indicates that he already knows why exchange is important (it is both ubiquitous and causative). His “diachronic model of exchange” presented in Chapter 7 narrates how people from two different cultures (and he assumes they were always from two different cultures) exchanged things, first informally and then formally, *the increasingly intense practice of exchange being the cause* of the trajectory toward formalization that culminated in the ethnographically known *sawei* system. Now where I come from, you cannot have it both ways; your object of explanation is not your means of explanation. It is a little like the idea of pulling oneself up by the bootstraps; something is just not right here. Society does not cause itself to change or stay the same—or does it?

Among Descantes’ dissertation revisions is the insertion of new information on past environments derived from palaeosediment cores in Palau and Yap. The new information, however, is not interpreted as environmental evidence but as behavioral evidence. Apparently Descantes accepts claims that fossil Araceae and *Cyrtosperma* sp. pollen with estimated dates of <cal 4565–4416 B.P. and cal 4565–4181 B.P. (Ngerchau Core 14, on the east coast of Babeldaob, Palau, and charcoal particles with an estimated date of 3300 B.P. [Fool Swamp Core, Yap]) indicate the timing of human colonization of these islands, despite the lack of archaeological sites of comparable age. There are alternative ways to view palaeosediment core data—namely, as

the palaeontological observations that they are. Marine geological studies have found that mid-Holocene sea level at Babeldaob was about 1.5 m higher than today, implying a condition highly favorable for mangroves (Dickinson 2001). The Ngerchau Core 14 (Athens and Ward 2001) shows that mangroves flourished at this time and that the mangrove community contained Araceae (only some of the Araceae pollen is identified as *Cyrtosperma* sp.). As sea level declined, so did the mangroves, and Araceae pollen disappears from the core after c. 2500 B.P. (see Athens and Ward 2001). The *Cyrtosperma* genus contains 12 species, 11 of which are wild, so it is likely that the Araceae pollen recognized in the core is from wild forms. How these plants got to Babeldaob is a biogeographical problem, not an archaeological one (the earliest archaeological sites in the interior of Babeldaob date no earlier than 3000 B.P. [Welch 2001]).

It is also important to realize that since the mid-Holocene, fires have been natural in this region and relate to the onset of seasonal climate with El Niño droughts. The idea that evidence of fire in palaeosediment cores (charcoal particles) is evidence of people assumes that fires cannot start naturally on tropical islands. Nunn et al. (2001) have shown this to be wrong, with evidence of massive fires at Fiji c. 4500 B.P., and similarly early evidence of fires has been found on Guam in palaeosediment cores (summarized in Athens and Ward 2004: Table 3). Regarding Yap, if Descantes had read Dodson and Intoh (1999) more carefully, he would have noticed that charcoal particles were abundant at 280 cm, near the base of the Fool Swamp Core, not just (upward) in the core where he notes they are estimated to date to 3300 B.P. In fact, the 280 cm location on the core lies between two (uncalibrated) radiocarbon dates: 3340 ± 80 at 225–235 cm and 5230 ± 70 at 330–340 cm. This means that fires occurred in the Fool Swamp catchment far earlier than 3300 B.P. The timing of onset of fires in the Fool Swamp catchment as 5200 B.P. (pollen and charcoal were not counted below 280 cm, although the basal radiocarbon dating sample was

taken at 330–340 cm and may have contained charcoal particles) is consistent with the accumulating evidence for late mid-Holocene onset of fires elsewhere in the tropical western Pacific.

IAE presents other fascinating new facts to ponder. The earliest radiocarbon date on charcoal associated with pottery in archaeological deposits at Gachpar is 20–380 cal C.E., close to initial settlement estimates from other Yapese sites. Does this mean we are finally getting a handle on when the Yap Islands were first inhabitable, as opposed to when people “chose” to inhabit them? Why do the dates from Mogmog begin c. 600 years later than those from Fais? Does this mean that prior to c. 600 C.E., Ulithi Atoll islets were not large enough to support human activities, whereas Fais, a raised coral island, was already available? The dates from Gachpar suggest that coastal land reclamation that created more swamp taro growing area started between c. cal 1310 and 1470 C.E. Does this indicate “population pressure” to produce more food, assuming intrinsic population growth as favored by Descantes (and myself until recently) or a climate- and/or sea level-related response? Excavations beneath house platform complexes in Gachpar suggest that architectural stonework was adopted there between cal 1470–1650 and 1510–1800 C.E. Laminated pottery began to be made in Gachpar around 1350–1450 cal C.E. The latter date is similar to that obtained by Michiko Intoh for the adoption of Laminated ware elsewhere in Yap and in the Fais sequence. Why are these signs of cultural change so late in the Yapese prehistoric sequence, and why do they happen to coincide with the Little Ice Age (LIA, c. 1350–1900 C.E.)?

Perhaps the temporal coincidence of the onset of Yap coastal land reclamation for taro patches (and the progradation of sandy shorelines in some of these areas), stonework architecture, and the adoption of Laminated pottery with the LIA is not so strange. Frequent and severe El Niño droughts and slightly lower sea levels associated with the LIA may have been the impetus to increase the growing area for giant swamp taro as a way to *increase food*

storage capacity as rainy seasons shortened for a population that was not increasing but struggling in the face of deteriorating agricultural conditions for breadfruit and yams. My unpublished data from a palaeosedi- ment core taken in the central taro patch at Mogmog in 1990 indicate this agricultural feature was created from a natural depres- sion c. 700 years ago. Is this just a coinci- dence, or do we have a hint that Ulithians were also feeling the pinch and that lower relative sea level helped to enlarge the islet sufficient to form a Ghyben-Herzberg lens?

To conclude, one sympathizes with Descantes' wish to "integrate" ethnographic and historical documentation with archaeo- logical data; clearly we ignore relevant facts at our peril. Yet it is scientific theories, rather than histories, that decide which these are. Descantes' catholic approach (accepting all manner of causes including the phenomenon of interest it- self) is not the model that I would recom- mend students follow. Weak on the ex- planatory side and its trendy rhetoric notwithstanding, *IAE* contains solid infor- mation that will be useful in theory build- ing. Check it out at your university library.

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Archaeological Investigations in the Mangareva Islands (Gambier Archipelago), French Polynesia. Eric Conte and Patrick Vinton Kirch, eds., with contributions by Eric Conte, Patrick V. Kirch, Marshall I. Weisler, Atholl Anderson, Nicole Howard, Trevor H. Worthy, Alan J. D. Tennyson, and James Coil. Archaeological Re- search Facility Contributions No. 62. University of California, Berkeley, 2004. xxix + 172 pp., 86 figures, 25 tables, bibliography, 2 appendices, paperback. \$24 USD + shipping. ISBN 1-882744-16-0.

Reviewed by MELINDA S. ALLEN, *Department of Anthropology, University of Auckland*

In November of 2000, Patrick Kirch and Eric Conte hosted the Eastern Polynesian Archaeology: Retrospect and Prospect conference, which saw an international

group of participants sharing ongoing studies and debating future research directions (see *Asian Perspectives* fall 2002). It was in this context that a major expedition to Mangareva, at the southeast margin of East Polynesia, was conceptualized and financial support secured from the French Polynesian government. Dedicated to Roger Green, this volume reports on the first two field seasons and builds on Green's pioneering Mangareva research (e.g., Green and Weisler 2000; Weisler and Green 2001).

The volume begins with an overview of recent themes in East Polynesian research, many also reflected in the conference papers. Kirch and Conte consider questions of settlement chronology, regional variation, landscape evolution, long-distance exchange and interaction, and the development of diverse economic and social orientations. With respect to the timing of East Polynesian settlement, they suggest that Mangareva occupied a central position at the southeastern confluence of the Tuamotu and Austral Island chains and may have been a source area for populations that settled Pitcairn, Henderson, and Rapa Nui. The recent work thus had the potential to inform on settlement not only on Mangareva but also in this southeast province generally. Not surprisingly, the theme of landscape evolution is also prominent, being a research area to which many of the contributors previously have made substantial contributions. Mangareva offers a particularly interesting case, as historic accounts describe a highly degraded landscape and, while human populations have been implicated in this process, their role in this transformation and the dynamics of cultural-environmental relationships have thus far been largely undemonstrated. The place of Mangareva in long-distance interaction networks is also highlighted, the islands previously having been identified as a central player in the southeast interaction sphere (Weisler and Green 2001). A final theme is the temporal development of Mangarevan society and its differentiation from those elsewhere in East Polynesia. Interesting in this regard are characterizations

of Mangareva as a small stratified society, but one with parallels to "open societies" in which sociopolitical statuses are fluid and often nonhereditary. These discussions lead directly to the four main objectives of the 2001–2003 field research and provide the context for the remainder of the volume.

Chapter 2 (Kirch) backgrounds the natural and cultural environments of Mangareva. Three environmental features stand out: the isolation of the group, the small land area (only 24.4 km²), represented by ten main volcanic islands, and the extensive lagoon and encircling barrier reef. Kirch's overview of traditional Mangarevan society draws extensively on the research of Te Rangi Hiroa (Peter Buck). The tremendous changes experienced by both the land and people are highlighted, particularly the loss of native flora and fauna in prehistory and cultural change at the hands of Roman Catholic missionaries after 1834.

Approximately one-third of the volume is devoted to detailing the archaeological field studies undertaken by Conte, Kirch, Weisler, and Anderson (chapter 3). The field strategy was explicitly extensive rather than intensive, in an effort to sample a diversity of localities and as many islands as possible. Surface surveys, coring, and test excavations were carried out at six main localities on seven islands. The work is well reported and accompanied by useful illustrations (photos, maps, and profiles), but unfortunately the photos are poorly reproduced (no fault of the authors). Where appropriate, the new findings are integrated with the earlier survey of Kenneth Emory, the 1959 excavations of Green (Green and Weisler 2000), and a recent surface survey by Weisler (1996).

An important contribution here is the enlarged corpus of radiocarbon determinations, from 8 to 32, with five islands represented by new samples (Kirch, Coil, Weisler, Conte, and Anderson, chapter 4; see also Anderson et al. 2003). Settlement is suggested "in the first few decades of the 11th century" (p. 85) or more optimistically "no later than the end of the 10th century A.D." (p. 104), based on new evi-

dence from Onemea, Taravai Island. While the authors caution that the two early radiocarbon samples do not derive from an in situ occupation, human activity seems incontrovertible, given their association with an abundance of seabird bones (including extinct and extirpated species), human-dispersed land snails (*Allopeas gracile*), volcanic manuports, and rat bone (*Rattus exulans*). At Atituiti, a sample from a large platform (pp. 55–57)—possibly the solar observatory recorded by nineteenth-century missionary Père Honoré Laval—leads the authors to suggest (p. 104) that monumental architecture was being constructed by the fifteenth century A.D. A third important finding is evidence for marked environmental deterioration relatively late in the sequence, in the seventeenth to eighteenth centuries A.D.

Howard and Kirch (chapter 5) and Worthy and Tennyson (chapter 6) report on the faunal materials, considering vertebrate assemblages from two sites and molluscan remains from three. Dog and pig, while present early in the sequence, are never abundant and disappear before European contact. Rats are present, but there is little evidence for rat consumption (p. 117), which is notable given the losses of other terrestrial protein resources. The land snail analysis revealed two human-aided dispersals and four extinct endemics. Two new extinct bird species were recovered—a large petrel (*Pseudobulweria*) and a pigeon (*Ducula*)—bringing the number of archaeologically recovered native bird species to 19 (see also Steadman and Justice 1998). Overall, the vertebrate evidence indicates a decided emphasis on marine resources and significant human impact on native terrestrial species.

The authors also consider but are not able to demonstrate the possibility that marine fauna were negatively affected by human predation. Two of the more abundant shellfish species were evaluated, but no statistically significant temporal trends were observed. However, in the case of *Gafarium* from the Atiaoa Site, the basal sample is quite small and it is unclear how much time is represented. At the Nenega-Iti

Rockshelter, the lack of directional size changes in the vulnerable *Cellana* over six levels (representing a 200-year period between the late thirteenth to mid-fifteenth centuries) is more convincing, although again sample sizes are variable. While the authors may be correct in arguing that human impact on local marine resources was negligible, evidence from other atolls has demonstrated the reverse, and application of a wider range of measures (e.g., changes in proportion of large-bodied prey, age structure, etc.) on larger samples in the future might prove interesting.

The small artifact assemblage is reviewed by Weisler, Conte, and Kirch in chapter 7, with the stone adzes receiving the most detailed attention. Among the excavated assemblage of 234 objects, derived largely from the Onemea Site and Nenega-Iti Rockshelter, are fishhooks of varied size, *Acropora* coral files, pounders, bone needles/awls, and a large number of flakes. Thirty-eight adzes and axes, most from a private collection, represent six types on the basis of Green's typology (Weisler and Green 2001), and some show affinities with other East Polynesian islands. Outside of the adzes, none of the recovered artifacts is particularly diagnostic with respect to time period or regional styles.

Insights into Mangareva's linkages with other East Polynesian archipelagos (see also Weisler and Green 2001) come from an artifact-based geochemical analysis. A preponderance of local materials is indicated, but one adze derived from Eiao in the Marquesas Islands, c. 1750 km distant, and three flakes were sourced to the more proximate Tautama source on Pitcairn, c. 400 km away. In a somewhat Mangarevan-centric view, the group is identified as the "center of a long-distance interaction network that linked the Pitcairn group, the Marquesas, the Society Islands, and undoubtedly the Tuamotus until sometime in the 15th century when the collapse of long-distance voyaging may have been triggered regionally by late prehistoric social unrest on several island groups" (p. 142). The documentation of geochemical variability within Mangarevan lithics and dem-

onstration of linkages between local communities and with more distant island groups are significant contributions.

In the final chapter, Kirch and Conte return to the major themes outlined in chapter 1 and review the results achieved to date. They end with some quite personal observations on their Mangarevan experiences, sentiments that will undoubtedly resonate with many Polynesian archaeologists.

Te Rangi Hiroa and Kenneth Emory believed that much of Mangareva's cultural heritage had been lost; Hiroa was "shattered" by the "barren" cultural landscape (p. 25), Emory discouraged by the plundered structures (p. 11). But perceptions of loss relate in part to the questions being asked; the current research program illustrates how the questions have changed, offering potential insights from novel technologies and the likelihood of continued discoveries below the ground. The new Mangarevan results are also important from a regional perspective, with only one of many relevant issues raised here. Specifically, they add to a growing body of evidence that human populations were widely distributed throughout East Polynesia, extending into this southeastern corner and even higher latitude regions by A.D. 900–1200. The contemporaneous establishment of new settlements in such widely separated parts of the region is remarkable. If these tenth-to-thirteenth-century occupations represent the region's founding populations, then a very rapid colonization process is intimated, one involving a large number of colonists who dispersed in several directions and, given the numbers required, possibly from multiple island sources. The alternative is the long-standing idea that earlier settlements were first established in the central East Polynesian core, occupations that remain undetected. In this regard, it is ironic that the early settlement histories of several of the most centrally located islands with the largest land masses are among the most poorly investigated. Importantly, the question of when East Polynesia was settled is

more than a cultural historical one; there are implications for the rates of anthropogenic impact, cultural adaptation, and cultural differentiation, as well as for definition of the patterning and causes of human dispersals. In 2000, Mangareva represented "a significant lacuna in our knowledge of East Polynesian archaeology" (p. xii), one that is now ably being filled. But the work there highlights another: the early settlement histories of the larger islands of the central East Polynesian core.

The ongoing Mangarevan field study is a significant one, and the authors are to be commended for the detailed and timely reporting of their work. Contributions like this, in addition to sharing significant results, insure that contextual information, from radiocarbon dates to stratigraphic details, is available for integration with future research and possible re-evaluation. Further, communication with the Franco-phone community has been facilitated by the extended abstract in French (16 pages). The volume will be an important addition to the libraries of Pacific scholars.

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