

BOOK REVIEWS



The Prehistoric Exploration and Colonization of the Pacific. Geoffrey Irwin. Cambridge: Cambridge University Press, 1992. vii + 240 pp., 83 figures, 22 tables, bibliography, index, cloth.

Reviewed by WILLIAM F. KEEGAN, *Florida Museum of Natural History, University of Florida, Gainesville*

The arrival of this book on the desk of a Caribbeanist can only be described as a "lucky voyage." Given my interest in island biogeography it is likely that I would have eventually perused a copy; however, receiving this book for review has saved years of waiting. This is a book that needs to be read by anyone interested in islands and island colonization, even if those islands happen to be on land (i.e., "habitat islands").

Many previous studies of Pacific Island colonization either relied on common sense, seat-of-the-pants, ad hoc explanations for the observed distributions of peoples, languages, and artifacts, or adopted perspectives developed in the ecological study of island biogeography. Where the former tends to see culture and human motivations as preeminent, the latter has emphasized constraints imposed by the environment. One reading of such motivations and constraints saw the Pacific colonized by people randomly drifting between islands. "The pioneering computer simulation by Levison, Ward and Webb (1973) proved that the remote Pacific was settled with *intention*. This study builds on their conclusion by approximating navigational *method* within the context of a continuing and rational tradition of ocean exploration and colonisation" (p. 173, emphasis in original). In other words, navigational method shows how Pacific peoples likely acted on their intentions.

To address questions of Pacific Island exploration and colonization the author develops a "theory of navigation." He ex-

plores the assumptions that underlie, and expectations derived from, the theory, and tests these using data from archaeology, linguistics, and computer simulation. These procedures are used to tackle some of the most difficult and long-standing questions in Pacific Island prehistory.

Irwin begins by distinguishing between exploration and colonization. The latter is defined as efforts to discover new land and return home (two-way voyaging), whereas the former is an orchestrated effort to establish a permanent settlement (one-way, albeit the possibility of returning to the parent community remains an option). He proposes that most Pacific Islands were discovered during voyages of exploration. Therefore, it is not surprising that the direction of colonization in the Pacific was west to east—directly into the prevailing wind. Sailing into the wind greatly increased the chances of a safe return. Or, as Irwin puts it, "The ease of sailing west is what made sailing east possible!" (p. 8). The pattern of island colonization in the Pacific matches that expected from such "safe sailing."

By practicing safe sailing the "long pause" between the colonization of West and East Polynesia seems even more likely to be an artifact of available data. This conclusion is further supported by the relative inaccessibility of the Marquesas in Irwin's computer simulations. Although the Marquesas currently have the oldest known archaeological sites, it is likely that earlier sites await discovery in the Cook, Society,

Austral, or Tuamotu archipelagos. In a comparable situation, radiocarbon dates obtained during the past decade from archaeological sites in the Lesser Antilles have added 500 years (25 percent) to the Ceramic Age chronology of the Caribbean.

Irwin also demonstrates through simulation that navigational skills likely improved through time. As targets within the optimal return-voyaging angle declined to zero and explorers sought targets outside this range, they encountered winds that encouraged the development of new navigational procedures. It was procedures such as latitude and cross-wind sailing that made safe return voyages to Hawai'i and New Zealand possible. The theory, in agreement with autocatalysis, suggests that exploration stopped after most habitable, and even some uninhabitable, islands had been colonized, because no new targets were encountered. In addition, Irwin's theory provides a measure of accessibility that correctly identifies which islands were abandoned or had their populations driven to extinction and which islands were likely never colonized.

The theory of navigation not only allows the Pacific to be treated as a region, it demands such treatment. Although my comments have thus far dealt almost exclusively with Polynesia, the theory is also applied to the colonization of Micronesia, and, to a lesser extent, Island Melanesia. Furthermore,

the theory is of general consequence because it derives from the self-conscious application of a hypothetico-deductive methodology—a methodology that subjects its assumptions and deductions to explicit tests and generates far-reaching implications for the Pacific and other Island archipelagos. *The Prehistoric Exploration and Colonization of the Pacific* is a beautiful example of scientific procedures in action.

It is safe to say that Geoffrey Irwin, aboard his computer, has made more voyages into the Pacific than anyone else. Although it is impossible to know the human dimension during the initial period of exploration, the computer simulations in this book provide significant insights into the capabilities of Pacific mariners at different times in the past. It is shown, for example, that not only were voyages purposeful, they also required improvements in navigation, such as latitude sailing and the sharing of geographical knowledge regarding distant Islands. Irwin concludes that "Oceanic society was wider than the islands" (p. 213), a conclusion that has important implications for the way research in the Pacific is organized, and one that challenges the perception of "islands as laboratories in which the inhabitants worked out their human inheritance alone, in a range of different circumstances" (p. 206).

Lapita, Design, Form & Composition—Proceedings of the Lapita Design Workshop, Canberra, Australia, December 1988. Ed. Matthew Spriggs. Occasional Papers in Prehistory, No. 19, 1990. Canberra, Australia: Department of Prehistory, Research School of Pacific Studies, The Australian National University. 142 pp., figures, tables.

Reviewed by RICHARD SHUTLER, JR., *Simon Fraser University*

Spriggs, in his *Introduction*, clearly states the objectives and outlines the accomplishments of the Lapita Design Workshop. "It [this book] concentrates on detailed aspects of Lapita pottery, but also with some consideration of Lapita vessel form and the com-

position of the clay and filler which makes up the pots." Although previous attempts have been made to establish a consistent and comprehensive system for the recording of Lapita graphic designs, which would make possible chronological and geographic cor-

relations of Lapita pottery motifs, Spriggs deemed these as insufficient for the task, and therefore the Lapita Design Workshop was organized. I will further discuss the content and results of the Workshop.

The first paper, by Spriggs, is titled "Dating Lapita, Another View." Leaving out radiocarbon dates on bone, land snails, or "concrete" because of technical problems, in Table 1, Spriggs has amassed all the then (1988) currently available culturally associated Lapita dates in the study region (from the Bismarck Archipelago east to Samoa). Spriggs makes two points: (1) That a comparison of radiocarbon dates from Pacific and Southeast Asian Prehistoric sites run before the 1970s with the more recent dates indicates some problems; some are too early, others are suspect because of various anomalies. (2) Using what he considers to be the reliable radiocarbon dates for all reported Lapita sites, Spriggs suggests an earlier than previously accepted start for Lapita in the Bismarck/Far Western Area (i.e., if I read him correctly, 3850–3450 B.P., and Eastern Lapita starting at 3050–2950 B.P.). This chronology implies that it could have taken several hundred years longer to reach Samoa than the 300 years prevalent in the current literature.

Anthony Forge contributed a short but important paper on "The Analysis of Graphic Design." No mention of Lapita is made, but his analysis of the graphic designs in two contemporary New Guinea societies, the Abelam and the Munn, show that each has a graphic system in their paintings, but the meaning is different for each. Korn, his student, demonstrated that the design elements were used systematically and combined according to definite rules. My reading of this is that it is possible with a sufficiently large sample to determine the rules of Lapita pottery element combination (Mead and Poulsen were striving for this). This makes possible a chronological and geographical comparison of Lapita design elements. But Forge makes the important point that without reference to a contemporary culture, it is not possible to determine the cultural meaning of a Prehistoric graphic system.

Roger Green in his paper, "Lapita Design Analysis: The Mead System and Its Use; A Potted History," discusses and critiques the historical development of attempts to design an adequate system to study Lapita pottery graphic designs, such as those of Poulsen and Mead. Although offering no answers to this problem, his view is that "the linguistically influenced analytical approach of Mead and Donovan, as modified by Sharp . . . seems to exhibit the most potential."

Dimitri Anson's paper, "Aspiring to Paradise," explains his approach to the study of Lapita design elements and suggests that such diagnostic programs as Stepwise Discriminant Function Analysis and Principal Component Analysis may answer questions concerning time and space relationships between Lapita sites.

Siorat, in his innovative paper on "A Technological Analysis of Lapita Pottery Decoration," has experimentally reproduced the tools used to make the varied Lapita design elements on wet clay. He stresses that, in studying 4000 Lapita sherds, except for one example, they never found identical impressions on sherds that did not belong to the same pot. Siorat was able to reduce the basic tool types to three: straight, curved, or round (circular), with variations of all three for different sizes.

In his paper titled, "The Changing Face of Lapita: Transformation of a Design," Spriggs shows his infinite patience in unraveling the puzzle of faces on Lapita pots. Through written descriptions and ample illustrations, Spriggs, using two face motifs, Type 1, Double Face, and Type 2, Single face, surveying the Lapita sites where face motifs are reliably dated, shows that face designs do form a chronological sequence from the double to single face.

Christophe Sand, writing on "The Ceramic Chronology of Futuna and Alofi: An Overview," gives a general description of the Lapita, Incised, and Impressed pottery from the Futuna and Alofi sites with illustrations of vessel and rim forms. Two Pottery phases, the early *Asi Pani*, and later *Tavai*, are recognized for the two Islands. It is unclear just which reported dates apply to these two phases.

Galipaud, using thin-section and heavy mineral analyses on New Caledonia pottery, was able to show that Lapita and Paddle Impressed pottery have the same clay mineral and temper at some sites, indicating that both types of pottery were made by the same people. Frimigacci, on one hand, suggests that Paddle Impressed pottery was introduced to New Caledonia by Lapita potters, while Galipaud sees Lapita dentate stamped pottery being introduced to New Caledonia by the makers of Paddle Impressed pottery. Galipaud views Paddle Impressed pottery as the common pottery used for everyday life, with Lapita pottery linked to ritual performances. He sees Lapita as having been spread over Melanesia by trade, which implies (for Melanesia) that Lapita did not represent a "colonization" but only the diffusion of a new pottery type. I take strong exception to Galipaud's statement, on p. 135, that thin-section analysis of sherd temper "is not very useful in sourcing the raw material." Over the past 30 years Dickinson and Shutler have

through thin-section analysis demonstrated the movement of Prehistoric pottery from Fiji to Tonga and the Marquesas, using just two examples of exotic cases, as well as defining local manufacture of pottery, very satisfactorily.

This volume contains a massive amount of information vital to the study of Lapita pottery. There are hypotheses put forth that require rethinking of many long-accepted ideas about Lapita pottery, about the spread of Lapita pottery in Melanesia, and the initial occupation of Remote Oceania. All the papers are well illustrated. Methods and techniques discussed in these papers permit more meaningful approaches to the study of Lapita pottery. However, Forge's statement on p. 30, ". . . meaning that the system is conveying can only be found by investigating the contemporary culture," implies that we may never know the true meanings of the Lapita pottery graphic designs.

Spriggs and his colleagues have produced a *must* volume for Lapita pottery specialists.

An Archaeological Survey of Aguiguan (Aguijan), Northern Mariana Islands. Brian M. Butler. Micronesian Archaeological Survey Report No. 29, 1992. Saipan, MP 96950. Division of Community and Cultural Affairs. 260 pp., 35 plates, 49 illustrations, references.

Reviewed by DARLENE R. MOORE, Micronesian Archaeological Research Services, Guam

This technical report presents the results of an archaeological survey of the historic and prehistoric cultural resources on the island of Aguiguan in the Marianas, Micronesia. The research was funded by the Division of Historic Preservation of the Commonwealth of the Northern Mariana Islands (CNMI). Brian Butler and two assistants from the Center for Archaeological Investigations, Southern Illinois University at Carbondale, performed the survey in 1990.

The report is an important contribution to the field of history and prehistory of the Mariana Islands. It should be required reading for others doing research in the

Marianas. Prehistoric site types, settlement patterns, population density, carrying capacity, and site chronology are all discussed. In addition, information about the Japanese prewar sugarcane plantation operation on Aguiguan is presented. These plantation ruins are the most complete and intact remains of the Japanese Colonial Period left in the Mariana Islands and their descriptions substantially increase the known range of site and feature types.

Aguiguan is a small island (7.2 km²) in the Marianas Archipelago. Uninhabited since 1945, when American military repatriated the island's Japanese, Korean, and

Okinawan occupants and relocated its Chamorro residents to nearby Tinian and Saipan, its lack of modern development provided the archaeologists with a unique opportunity to record the physical remains of the Japanese Colonial Period as well as those Prehistoric Period sites that survived the Japanese occupation.

The survey team investigated as much of the Island as was possible given the time constraints and difficult field conditions. Although the entire Island was not surveyed, in Butler's opinion no major sites remain to be found. He suggests that additional investigations of the escarpments would likely document more small caves and rockshelters.

The report has 11 chapters. The first four chapters introduce the project area. The next four chapters describe the results of the survey. Chapters 9 and 10 summarize and synthesize the Island's prehistoric and historic occupations. The final chapter, chapter 11, offers recommendations for future research and develops five historical contexts for the archaeological remains identified during the survey.

Aguiguan's terrain, lack of freshwater resources, soils, flora, fauna, and climate are described in chapter 2. The Island is composed of a series of elevated limestone terraces that rise to 166 m above sea level. It has a steep, rocky shoreline. The physical description helps the reader appreciate the many difficulties faced by the archaeological survey team. Just reaching the Island by boat can be hazardous, and it has no suitable camping facilities, no power, and no fresh water. The heat, the terrain, the insects, and the vegetation placed additional constraints on the researchers, who are commended for their perseverance.

A comprehensive discussion of the Spanish and Japanese periods is contained in chapter 3. Abandoned in 1695 after a battle between Chamorros and Spanish soldiers, Aguiguan remained uninhabited until the 1930s when the Japanese colonized it to expand their sugarcane production. Of special interest is the information gathered from a local resident of Tinian who had lived on the island during the Japanese occupation.

Frequently researchers in the Marianas neglect to gather local oral history, concentrating instead on material written from a Western perspective. The oral historical details and the war-time aerial photos of Aguiguan enhance the report.

The site descriptions contained in chapters 5 and 6 include site type, location, dimensions, soil type, vegetation, narrative descriptions, and artifact collections made. The survey identified 38 prehistoric sites and 33 Japanese-era and modern sites for a grand total of 71 sites or features. Two of the sites have prehistoric and historic components, thereby explaining why there are more site descriptions in the report than site numbers assigned.

Although the number of identified prehistoric and historic sites is nearly the same, the report emphasizes the presentation of the historic sites and features. For example, chapter 5 contains plan views of only five prehistoric sites or site features, but chapter 6 contains 29 plans of historic sites or site features.

The 38 prehistoric sites include 28 habitation sites, four habitation areas, and six minor scatters. Eight of the 28 habitation sites contain intact latte sets or ruins thereof. The other 30 sites include pottery scatters, rockshelters, and caves with pottery scatters. Thirty-one intact or partial latte sets, ranging in size from three to seven pairs of shafts, were recorded on the eight habitation sites. The number of stones composing each set; its length, width, and orientation; and whether or not a mortar stone was present are tabulated for three sites (3, 5, and 35). Except for one latte set (Feature 1 at 24), information about the height of the shafts and the presence or absence of capstones is not provided. These omissions will hamper other researchers who would compare the sizes of various latte sets (computations that can involve shaft height as well as the spatial area of the set).

Plan views showing the distribution of site features are included for four prehistoric sites (3, 5, 11, and 35). The information provided on the plans is somewhat inconsistent and the legends incomplete, although this does not significantly detract from their

value. For example, not all the plans show the location of stone mortars, and the various shadings used are not always explained. There is no explanation why plan views were not included for the other five sites where latte sets, or their ruins, were identified.

Human skeletal remains were found at Site 20, characterized as a small, upland prehistoric habitation site with no latte stones or stone mortars (p. 62). This occurrence expands the known range of prehistoric burial locations in the Marianas, until recently thought to occur only in close association with latte sets.

The 33 Japanese-era and modern sites can be roughly divided into two classes. Approximately half of the sites relate to the Japanese Era from 1937 to 1944. The other half relate to World War II. The Japanese-era sites include the main Japanese village on the plateau, the boat landing site, a well, refuse dumps, a rock quarry, and charcoal ovens. The largest site is the Japanese village consisting of 40 primary structures and a number of small outbuildings. Considering the lack of fresh water, it is not surprising that more than 29 cisterns were recorded.

The World War II sites consist of objects, such as the remains of a Japanese plane, and small shelters where people sought refuge during the sporadic U.S. military air and sea attacks against Aguiguan from 1944 to 1945. Descriptions of the collected and uncollected Japanese-era artifacts appear in chapter 8.

The pottery discussion, chapter 7, is excellent and essential for anyone working on the ceramics of the Marianas. For one thing, the methods used to collect the pottery data are very clearly described.

Because of a lack of good clay resources on the Island and the presence of volcanic inclusions in the pottery, Butler suggests that either raw materials or complete vessels were brought to Aguiguan. Because there is evidence of some geographic variation in the pottery across the Marianas during the Latte Period (Graves et al. 1990), the Aguiguan pottery was compared with pottery from the other Islands to determine its origin. Butler indicates that the Aguiguan pottery has a mixed character (p. 189); its body thickness

and surface treatment are similar to pottery from Tinian and Saipan, but its high percentage of thickened rims is more typical of pottery from Rota and Guam. Apparently Aguiguan received pottery from all of these Islands.

Butler also relies on the pottery study to determine the chronology of the Aguiguan sites (p. 191). Most of the pottery is typical of the Latte Period (A.D. 800 to the late 1600s), and it suggests a more intensive and permanent settlement then. A few sherds from Site 48 (a cave located on the lower terrace) have characteristics indicating that they could predate the Latte occupation, suggesting that some limited use of the Island occurred before A.D. 800. Early historic pottery sherds (sixteenth or seventeenth century) were collected from Site 5, providing archaeological verification of historic accounts that people were on the Island during the Spanish Period.

The summary and synthesis of the Prehistoric Occupation discuss site size and distribution with respect to accessibility, exposure to the elements, and proximity to suitable farm lands. This discussion, employing a number of approaches, also estimates population size and density. Estimates range from 301 to 798 people with a possible density of about 72 persons per km² (p. 235).

With respect to the ongoing argument regarding the function of latte, Butler takes the position, based on the surface material associated with Aguiguan latte sets, that although not all residences were raised on latte, all latte supported residential structures. He argues (p. 224) that the elevated house added the necessary weight needed to keep the capstones in place on the shaft and thus stabilized the latte foundations. It is unclear how this argument applies to sets without capstone. Furthermore, capstones need not have been placed on the shafts until the house was built.

The report contains a small number of typographical errors and misspellings, such as the names of two other researchers working in the Marianas. A major oversight is that the report contains no map of the Pacific showing the location of the Marianas Islands. These production details do not

detract from the fact that Butler's report is the most up-to-date, comprehensive monograph yet published on Marianas archaeology. It can serve as a standard for similar projects of wide temporal scope and confined geographic area.

REFERENCE

- GRAVES, M. W., T. L. HUNT, AND D. MOORE
1990 Ceramic production in the Mariana Islands: Explaining change and diversity in prehistoric interaction and exchange. *Asian Perspectives* 29(2):211-233.

Southeast Asian Archaeology 1990: Proceedings of the Third Conference of the European Association of Southeast Asian Archaeologists. Ed. Ian Glover. Centre for Southeast Asian Studies, University of Hull, 1992.

Reviewed by LAURA LEE JUNKER, *Vanderbilt University*

This book is the latest in a series of edited volumes containing publishable versions of papers presented at the quadrennial European Association of Southeast Asian Archaeologists meetings. Composed of 20 papers and an introductory editorial by Ian Glover, the volume presents the eclectic contributions of primarily Europe-based specialists in epigraphy, art history, archaeological materials analysis, and field archaeology to recent issues concerning the prehistory and history of Southeast Asia over the last 10,000 years. Specifically, the articles can be divided into: (1) epigraphic and/or historical analyses focused on reconstructing political histories of the later kingdoms and states of Southeast Asia (papers by Jacques, Pou, Klokke, Di Crocco), (2) art historical analysis, materials analysis, and/or contextual analysis of specific classes of artifactual remains from Southeast Asian sites (papers by Tranet, Thierry, Pirazzoli-t'Serstevens, Basa, Johnson, Bennett and Glover, Glover, de Silva, Jeremie and Wilen), and (3) reports on recent and ongoing archaeological excavations and regional settlement survey projects in Southeast Asia (papers by Manguin, Ciarla, Rispoli, Cucarzi, Cremaschi, Piggott, and Santoni). There is a heavy emphasis on Khmer iconography and history in the epigraphic contributions, and the bulk of the field archaeology projects reported are based in Thailand and focus on proto-historic and

historic periods; this uneven areal and temporal coverage at least partially reflects traditional research orientations of European researchers working in Southeast Asia.

One of the high points of this collection is that it offers the reader up-to-date data and new interpretations concerning a number of issues long debated by epigraphers and archaeologists working in Southeast Asia. In the field of epigraphic and iconographic studies, Claude Jacques presents a coherent summary of the latest epigraphic reconstructions of the chronology and historical development of the Khmer state (including some significant revisions of earlier thinking), and Marijke Klokke offers path-breaking work on Javanese iconographic conventions and how they reflect highly standardized, culturally proscribed forms of narrative (paralleling the recent approaches to Mesoamerican iconographic traditions). In the realm of archaeology, students of Srivijayan history and scholars interested in insular Southeast Asian state development in general will be intrigued by the eagerly awaited preliminary results of new archaeological research by Pierre-Yves Manguin in the Palembang Region of Sumatra. In addition to the astonishing discovery of fifth to seventh-century wooden boats at waterlogged sites, Manguin's investigations suggest that the question of Srivijaya's location and settlement organization may at long last be resolved through archaeological data. A

series of papers also present the preliminary results of the large-scale regional settlement survey project being carried out in the Lopburi Region of Central Thailand by Thai, Italian, and American archaeologists, providing details of ongoing geological, metallurgical, and ceramic studies.

Several papers in this volume contribute significantly to the discussion of archaeological field methods and materials analysis, demonstrating the utility of techniques (e.g., remote sensing, micromorphological analyses in palaeoenvironmental reconstruction, field petrographic analysis of ceramics) that have been widely used elsewhere in the world but have been slow in being applied to Southeast Asian archaeology. Particularly notable is Mauro Cucarzi's contribution, in which he tests the ability of several noninvasive "remote sensing" or "geophysical" methods (geomagnetic, electrical resistivity, archaeomagnetic) to detect subsurface archaeological features such as brick structures, ditches or moats, burial pits, pottery kilns, and metallurgical furnaces at both excavated and unexcavated sites in the Lopburi Region of Central Thailand. Similarly, the paper by Pierre-Yves Manguin on the search for Srivijaya sites in the Palembang Region of Sumatra makes an effective case for combining noninvasive geophysical methods and computer-aided plotting with traditional surface survey and selective excavation, because modern disturbances and geological processes can render any single method of site discovery problematical. A third paper, authored by Mauro Cremaschi, Roberto Ciarla, and Vincent Piggott, uses the Lopburi Region settlement data to demonstrate how detailed palaeoenvironmental studies and microgeomorphological analyses can illuminate locational preferences for differing prehistoric activities (e.g., large-scale moated settlement, smelting sites), allowing archaeologists to channel their limited resources to predicted site locations. All of these applications should be of great interest to archaeologists whose projects aim to map large-scale sites or reconstruct regional-scale settlement patterns, but whose research objectives are methodologically hampered by poor surface visibility

and/or limited time, funding, and manpower for labor-intensive excavation.

Another paper with broad methodological import is Mark Johnson's analysis of Ban Don Ta Phet (Central Thailand) ceramics, in which he effectively demonstrates that "visual" and petrographically defined pottery "types" are frequently inconsistent, that petrographic analyses should be a "standard" fabric classification aid, and that it is possible to carry out these analyses "in the field" at minimal cost. In addition, researchers who specialize in the analysis of glass beads, prehistoric metallurgy, or lithic technology (or nonspecialist archaeologists who simply need good comparative material) will appreciate several technologically detailed papers on manufacturing techniques, functional analysis and classification of these artifact classes. These include Kishor Basa's well-illustrated summary of the geographic and temporal parameters of early historic glass bead forms, Anna Bennett and Ian Glover's investigations into the production origins of rare "high-tin" bronzes in Iron Age Southeast Asia and South Asia, and Sylvie Jeremie's use of "experimental archaeology" to determine Hoabinhian lithic tool functions.

Some scholars may be disappointed by the primarily descriptive and methodological, rather than theoretical, focus of most of the conference papers, particularly those dealing with artifact analysis and reports on ongoing archaeological field investigations. There is a heavy emphasis on issues of classification and chronology, with scant attention to the social or cultural context of archaeological remains and almost no attempt to address specific theoretical issues of culture process (although a number of the reported projects explicitly claim an interest in such questions). Notable exceptions are papers by Michelle Pirazzolli-t'Serstevens and Richard Wilen. Pirazzolli-t'Serstevens's contribution uses archaeological evidence for Chinese copper coinage and cowrie shells in Dian (Yunnan) kingdom burials as a baseline for discussing the operation of a "prestige goods economy" in this highly stratified society, and Wilen's article uses late prehistoric burials from the Khorat

Plateau in Thailand to examine whether burial "styles" can serve to identify prehistoric cultural "identities."

Another major shortcoming of the conference proceedings, and one that plagues Southeast Asian archaeology in general, is the lack of integration between historical, ethnohistorical, epigraphic, and archaeological approaches to the later periods of Southeast Asian complex society development. Epigraphers, historians, anthropologists, and archaeologists working in Southeast Asia may sometimes attend the same conferences, politely listen to each other's papers, and even publish in the same journals and edited volumes. However, approaches to such important issues as the sociopolitical structure, economy, and ideological underpinnings of Southeast Asian states invariably reflect the specialists' unique and narrow perspectives, with few attempts to cross disciplinary or even sub-disciplinary lines. This volume has the same "schizophrenic" feel as an earlier compendium of research on early Southeast Asia by Smith and Watson (1979) in which the contributed articles could almost all be neatly divided into "historical/epigraphic" or "archaeological," with no shared theoretical frame of reference or shared problem orientations. The Srivijaya Project (as reported by Manguin), however, shows remarkable promise in this regard and may effectively demonstrate that only combined textual and archaeological approaches can provide a comprehensive picture of how Southeast Asian states developed and functioned.

A few comments should also be made concerning the physical quality of the pub-

lication and my view of what this says about the state of publication opportunities for Southeast Asian archaeologists. Unfortunately, the reader is frequently hampered in appreciating the content of the papers by the differing (and sometimes difficult to read) typefaces for the articles, poor reproduction of some of the photographs and illustrations, and maps with illegible labels (or in the case of the map on p. 105, printed in reverse-image!). In an editorial at the beginning of the book, Glover describes some of the daunting problems faced by the association in getting the conference proceedings published in a timely manner, in an acceptable format, and at a reasonable cost, given the international composition of the participants and the frequently meager support given Southeast Asian archaeology publications by various presses. This candid discussion of the publication problems may explain a lot of the editorial inconsistencies, but, even more important, highlights the relatively poor "visibility" of Southeast Asian archaeology in the academic publishing industry and the pressing need to create new and improved venues for showcasing our research. Despite the few shortcomings noted here, this volume is an essential addition to the bookshelf of every archaeologist working in Southeast Asia as a current overview of the broad range of research being carried out in Southeast Asia by Europe-based specialists.

REFERENCE

- SMITH, R. B., AND W. WATSON, EDS.
1979 *Early South East Asia*. New York: Oxford University Press.

Studies of Shang Archaeology. Ed. by K. C. Chang. Yale University Press.

Reviewed by CHEUNG KWONG-YUE, *Department of Chinese Language and Literature, The Chinese University of Hong Kong*

Studies of Shang Archaeology, edited by Kwang-Chih Chang, is the outcome of a conference held in Honolulu, Hawai'i, in

1982. K. C. Chang also contributed the paper on "Yin-hsu Tomb Number Five and the Question of the P'an Keng/Hsiao Hsin/

Hsiao Yi Period in Yin-hsü Archaeology” and wrote the concluding remarks, thus playing an important role in planning the conference.

A number of papers by participating authors have been collected in this valuable volume, these being outstanding scholars in their own field. They display a remarkably wide variety of insight and achievement. For example, in the study of archaic Chinese bronzes, Professor Chang Cheng-lang uses the name “Fu Tsu,” which appears in both oracle bone inscriptions and inscribed bronzes, showing the phenomenon of the same name borne by different people in separate generations during the course of ancient Chinese history. For those studying this field, we can see that this is an invaluable concept and must be taken into account. Cheng Chen-hsiang pointed out that “S’su T’u Mu,” appearing on inscribed bronzes unearthed from Fu Hao tomb, can be Fu Hao’s alternate name or somebody with the same social class on par with Fu Hao, but it is probably advisable to find more information to support her theory.

Dr. Noel Barnard’s paper on “A New Approach to the Study of Clansign Inscriptions of Shang” proposes connections between the contents of clan signs found in the same or different tombs and even in different areas. If such a tree of relationships were to be pieced together successfully, it would contribute significantly to this field.

Concerning the study of Northern Bronzes, Professor Lin-yun has produced a new idea. He surmises that they appear earlier than the Shang culture. On the other hand, “Bronze of the Northern Complex” and Shang bronzes can be seen to affect each other afterward. As a result of this, he surmises that the relationship between the Karasuk culture and Yin Hsü culture may have to be reconsidered.

The study of Southern Bronzes in recent years has become more popular. Professor Kao Chi-hsi, in his study of “The Shang and Chou Bronze *Nao* (bell) in Southern China,” has come up with his own view. Previous scholars have judged that the *Nao* evolved from the north to the south, but in his analysis of the special features of the

Southern Bronze *Nao*, Professor Kao considers that they originated in the locale of the south. Furthermore, he has indicated that the Middle Western Chou bronze *Yung Chung*, appearing in Northern China, were affected by the *Nao* or *Yung Chung* of the south.

There are three papers concerning Shang period archaeology. These are “The Shang City at Cheng-chou and Related Problems” by An Chin-huai, “The Shang Dynasty Cemetery System” by Yang Hsi-chang, and “A Re-examination of Erh-li-t’ou Culture” by Yin Wei-chang. Of these, Mr. Yang combines much archaeological material and his own experience of excavation. He draws a picture wherein the King of Shang, because of his high position in society, had a style of tomb and burial ritual completely different from that of everyone else. His wife and concubines had their own burial ground as did all those under the King’s rule. Those in his family circle, having passed away, were buried in specific units in hierarchical fashion (i.e., nobles in one and servants in another). The paper reveals intriguing insight into Shang society.

Mr. An’s paper mentions Shang city sites in Cheng Chou, excavated in the early 1950s, China’s earliest discovered city wall site, although we cannot be sure that it is “Ao Tu” or “Po Tu” in ancient history. Inside and outside the site very rich relics have been excavated, and thus our understanding of early Shang Dynasty politics, economy, culture, and military can be provided with invaluable material.

Mr. Ying uses relics of early Er-li-t’ou to analyze, debate, and develop his ideas. He sees that between the Second and Third Period, there are different and changing relics, showing that the society at that time experienced a revolution, and he thinks that Second and Fourth Period relics probably belong to the Shang Dynasty. Such a working hypothesis encourages us to research pre-Shang culture or Hsia culture in greater depth and with greater accuracy.

The above three authors are excavators in their own right, giving us a significant view of such findings; thus they have increased the value of this volume profoundly.

We can find in this volume an assembly of experts from different field with different views using different angles to research the roots of Shang culture and its influence. Therefore it is imperative that we should

appreciate and value their opinions and achievements. It is evident that it was a very successful conference and, in the future, such conferences should continue to develop academically the correct direction of studies.

Ancient Sichuan and the Unification of China. Steven F. Sage. SUNY Series in Chinese Local Studies, Ed. Harry Lamley, 1992. Albany, N. Y.: State University of New York Press. 311 pp., hard cover, maps, figures.

Reviewed by SARI MILLER-ANTONIO, *Department of Anthropology, University of Arizona, Tucson, Arizona*

Chinese scholars have recently made great progress in the formulation of interpretive models to explain the genesis of Chinese civilization. The traditional unilineal model has become obsolete because it views the evolution of Bronze Age civilization as derivative of an all too narrowly defined northern Chinese Yellow River Valley Neolithic sequence. It is clear that the human occupation and cultures of the western hinterlands as well as other "frontier" regions have long contributed to the development of Chinese civilization from Palaeolithic to imperial times. Sage's book offers a successful blend of archaeological and historiographic evidence to document the contributions of the Sichuan Basin region to China's Bronze Age, the coalescence and emergence of the unified Qin State, and the florescence of Han Sichuan.

Ancient reference to this geographic region used the names of two subregions within the basin, Ba and Shu (Ba-Shu), encompassing the eastern and western territories respectively. As the author notes, these terms have both geographic and ethnic connotations, making this useful reading material for those who debate the idea of ethnic differences between the Shang and the Zhou. Most of the information of early Shu derives from the archaeological investigations of the Sanxingdui culture, spanning the pre-Shang, Shang, and early Western Zhou periods (calibrated radiocarbon dates: 4170–2875 B.P.). The material cultural

remains recovered from these strata are presented in summary fashion as part of chapter 2. Ceramics and polished stone implements from the lower levels are described, and a brief account of the structures and physical layout of the settlement at Sanxingdui is included. A welcome addition to the figures would have been a plan sketch of these excavated features instead of the two rather blurry site photos presented. Two extraordinary caches of gold, bronze, jade, and ivory artifacts (numbering in the hundreds) from the late stage are a singular discovery recounted by the author, leaving the reader to imagine the fascinating museum exhibits these would create. Some of these objects have been interpreted as religious sacrifices in the form of images substituted for human victims. Shu-Shang interactions and subsequent isolation during the Western Zhou are reflected in Shu bronze styles and inscriptions. A picture of the Shu as a distinct entity emerges, players in the critical events leading to the Zhou transition to power.

The Ba peoples occupied eastern Sichuan along the Han, Jialing, and Yangtze rivers. Chapter 3 opens with the prehistory of this region and a discussion of the Daxi and Qujialing cultures as possible antecedents to the Ba. Missing from this discussion is some mention of the Qijia culture of eastern Gansu, also a reasonable candidate for a Ba predecessor. Qijia sites, like Dahezhuang, contain early metallurgy, evidence of oracle bone divination, and a diversified agricul-

tural base including animal domestication (sheep, pig, cattle, dog, horse).

The Ba of the Warring States period are known archaeologically from burial complexes. No habitation sites have yet been excavated. The stylistic descriptions of the bronze war drums (*chun yu*) and weaponry that predominate in these tombs will be of particular interest to those who study comparative materials from farther south in Yunnan, Guangxi, and Guizhou. The rest of chapter 3 is concerned with the history and consequences of interaction between Ba and the powerful state of Chu to the south. Contact between Ba and Chu in the seventh century B.C. revolved around armed conflict. As Chu advanced into Sichuan, the Ba retreated westward, ending the isolation of the Shu and forming a cultural fusion known as Ba-Shu. The burial complex of this mixed culture is of particular interest archaeologically. Excavations of "boat burials" dating to the mid-fourth century B.C. have recovered wooden boat-shaped coffins and a rich suite of grave goods including bronze vessels and weaponry, jade items, masks, statuettes, and indications of incipient iron metallurgy. Economic advances of the Ba-Shu period were made in sericulture, paddy rice agriculture, irrigation, and hydraulic engineering. Clearly, these are important contributions to later Chinese civilization.

Urbanization, growth of industry and commerce, and changes in military tactics

marked the mid-fourth century B.C. Ba-Shu regional cultural development. The Sichuan Basin was therefore judged economically worthy of Qin attention. The author's presentation of newly translated historical texts document this period of early Qin rule in Sichuan and make this a valuable resource for scholars with an interest in the evolution of states.

The final two chapters of the book detail the separate trajectories that Ba and Shu take during the century of Qin rule and the succeeding Han bureaucracy. Qin officials sponsored the carefully planned mass immigration of settlers from the Central Plains into Shu and redistributed the agricultural lands. By contrast, Ba's indigenous population remained relatively constant. Out of separate threads the author creates an interwoven design of the dynamics involved in the maturation of the Qin Legalist state, its expansion into Sichuan, the economics of state societies, and the capacity of Qin to incorporate ethnically diverse peoples into a unified empire. The Han superimposed a bureaucratic structure upon the strong foundation the Qin had constructed. In a climate receptive to Confucian philosophy, the sinification process of Sichuan was completed.

This is a clearly written, well-organized book with multidisciplinary appeal to the archaeologist, sinologist, historian, and linguist.

The Chinese Spirit Road: The Classical Tradition of Stone Tomb Statuary. Ann Paludan. New Haven and London: Yale University Press, 1991. 290 pp., chronological table, map, 298 black and white photographs, 22 color plates, 3 appendices, tables and charts, bibliography.

Reviewed by KATHERYN M. LINDUFF, *University of Pittsburgh*

This is a unique book, the first to systematically treat the familiar above-ground sculpture that lines paths leading to Chinese aristocratic graves. The study is the result of over 10 years of searching for, traveling to,

photographing, and researching monumental statuary spanning two millennia. Paludan explains that this native-style "statuary represents a strong and ancient branch of monumental sculpture, which

predated and then coexisted with the better known Buddhist sculptural tradition. It was based on ancient beliefs connected with ancestor worship and the importance of the tomb which were common to all [levels] of society. The right to erect [this type of] tomb statuary was limited to the upper ranks and became an instrument of state power . . ." (p. 1).

For several reasons, this material has been largely ignored among the Chinese scholarly community. Paludan claims that they were little studied because, "the spirit road reflected a curious mixture of a belief in the supernatural and an affirmation of worldly powers" (p. 3), and no single belief system could be found to explain their meaning. Perhaps more important, they were not thought to be worthy of study by the Chinese intelligentsia because they had no place in Confucian philosophy and were never regarded as a high art. Paludan proposes that their survival into the modern period is due not to chance, but to their place in the hearts of the people (p. 2). This point was made rather emphatically at the outset of the study but was, unfortunately, not returned to at any point for serious consideration.

Beginning with Eduoard Chavannes and Victor Segalen in the 1890s, a pattern was set by Westerners for locating, recording, cataloguing, and photographing these monuments. Although the civil disturbances in China during the first half of the twentieth century prevented close historical analysis of the monuments, Chavannes and Segalen provided an initial record of many monuments and pointed out their potential for further study. Paludan's is the first attempt to take up that challenge seriously. She has not only expanded the documented inventory of objects, but also has suggested that throughout their history these monuments were used to reflect state ideology upheld by their official patrons.

The text of this book begins with an orientation to the historical "Role of Sculpture and Sculptors in China" in chapter 1. Formal principles governing sculpture were closely linked to those that guided architecture. "The question of spatial relation-

ships was paramount" (p. 5), especially with regard to spirit road statues. Both the form and position of each piece was correlated to its neighbor, the plan as a whole, and its use. Paludan also claims that their expression and iconography were influenced by ancient beliefs in the inherent power of an image to bring about that which it represented. For example, a stone relief of an ordered society would, by its very existence, strengthen that society. In the case of spirit road statuary, their spatial arrangement as well as subject matter were part of the official message. Paludan makes clear that this sculpture was fully dependent on official patronage and that its powers were harnessed by the establishment for their own purposes: moral, practical, political, and magical (p. 8).

The rest of the book is organized chronologically by dynasty. For each period Paludan sketches what she believes to be the most salient issue governing sculptural expression. In the Western Han (chapter 2), for instance, the growth in popularity of monumental sculpture is associated with the growing preoccupation with immortality. Figures of animals, human beings, monsters, and immortals dominate the extant examples and reflect a "sense of the supernatural and a belief in the close connection between this and the spirit world" (p. 16). In the first century A.D., discussed in chapter 3, a change in ritual transferred rites and sacrifices previously held outside the grave area to the tomb itself. The tomb became the focal point for both secular power and the all-important practice of ancestor worship. The enhanced role provoked two changes in tomb building: the construction of a sacrificial hall in which to hold ceremonies, and the erection of a spirit road of statuary including *que* (towers) and animal and human statues, above ground. This pattern was continued until the modern period.

Taken as a whole, the spirit road of the following period (Three Kingdoms/Six Dynasties) conveyed a very different message from that of its Han predecessors. The Han road provided an orderly dialogue between two parallel systems: the earthly and the spirit world. In the southern dynasties,

the spirit road primarily addressed the other world. Great winged animals (*qilin*) promised protection and help in reaching the land of the immortals. This type had no descendants (chapter 4, p. 78).

With the reestablishment of the empire and strong centralized government in the Tang, the aristocratic, Confucian patrons revived the Han use of ancestor worship at the tomb as an instrument of state power. Like the Han they built mausoleums to impress as visible proof of a powerful imperial society and a cohesive empire (chapter 5, p. 84). The scale was vast: 125 animals and human beings, some measuring over 4 m high lined the road at the tomb of Tang Ruizong (d. A.D. 712), for example. Sensitivity to the practice of *fengshui* (geomancy or mystical ecology), favored during the Southern Dynasties, determined tomb plan (pp. 86–87). In statuary, the Han distinction between untamed nature and civilized human beings was replaced by a visual affirmation of human dominion over the natural world—animals were typically portrayed in harness and/or standing (p. 101). Thus, the Tang spirit road primarily addressed this world as an entrance to the next world (p. 99). It was, according to Paludan, a turning point in the history of tomb statuary because it dwelt on the known world rather than the unknown (p. 120).

During the Song Dynasty the approach to the spirit road continued that of the Tang: the statuary commemorated an imperial occasion and addressed this world. There was, though, an increased use of animals for purely symbolic reasons (chapter 6, p. 126). The intellectual approach of the Song, with its modest, repeatable plan imposed on the ground, did not satisfy the needs of the new Ming empire. The Ming revived the Southern Dynasties and Tang use of natural features (*fengshui*) to enhance the grandeur of

the tomb (chapter 7, p. 164). This inward-looking arrangement is interpreted by Paludan as reflecting their wish for peace and security (p. 165).

This book brings a group of well-known monuments to the fore by cataloguing and documenting their existence and by commenting on their official significance. Based on her observations and analyses of change in spatial orientation, iconography, and sculptural treatment, Paludan has taken an important step toward understanding the function of this body of material as official symbols. The way is now open for investigation of these sculptures in relation to funerary ritual as a whole.

The spirit way marked the beginning of the journey to immortality and is only part of a much larger physical complex that extended vertically from their location to the ramp, or passageway, which sloped diagonally into the earth itself and finally into the interior of the tomb chamber. A fuller understanding of the role of these monuments will only come with analysis of the entire unit as well as the ritual that enlivened these roads. In addition, the extended life of these sculptures, beyond that of guiding the funeral procession at the moment of burial, provided an indelible emblem of the importance of ancestral spirits. But were they built with a perpetual audience in mind? An effort to contextualize these monuments and to investigate the implications of Paludan's observations about their function in Chinese society throughout its imperial history is ready for attention. And even though Paludan claims that these monuments are a native sculptural tradition, they have no known Chinese precedent. Perhaps the most intriguing question of all with which to begin is—What initiated this practice and defined its physical form in the first place?

Hoabinhian, Jomon, Yayoi, Early Korean States, Bibliographic Reviews of Far Eastern Archaeology. Ed. Gina L. Barnes. Oxford, England: Oxbow Books, 1990. 162 pp., tables, figures.

Reviewed by SARAH M. NELSON, *University of Denver*

This is a useful collection of papers and especially valuable bibliographies, bringing together works published in Western languages on bodies of data regarding four East Asian archaeological traditions. The papers are not a set in the sense of having parallel goals or similar content for each area, and they are also not comparable in terms of either time period or place. Hoabinhian is earliest, perhaps going back into the Pleistocene, and with a wide putative geographic spread, although centered on Viet Nam and Thailand. Jomon, the designation for early pottery-producing cultures in Japan, partly overlaps the Hoabinhian in time, but it is spatially separated from it by the length of the Pacific. Yayoi follows Jomon in Japan, providing a time sequence, but the early Korean states discussed cover a wider span of time than Yayoi, including both earlier and later time periods. Barnes and Reynolds each express a point of view, and Kaner and Hudson report the literature. Barnes introduces the papers as review articles on their respective topics, rather than as bibliographic essays.

The Hoabinhian chapter, by T. E. G. Reynolds, includes sections on the history of Hoabinhian research, chronology, and geographic spread. Reynolds then discusses various problems with the term Hoabinhian, as it is applied to both tools and assemblages. The term originally described shell middens containing pebble tools, but has been widely extended to similar tools in areas as far apart as Australia and Japan. The discussion of this phenomenon and the reasons for rejecting these claims is particularly revealing of the amorphousness of the concept of Hoabinhian. Reynolds concludes that the term should be restricted to mainland Southeast Asia in the early Holocene and adds that even with these boundaries, the term is of questionable utility. Archaeologists needing a quick lesson in or update on the early Holocene in South-

east Asia will find this chapter extremely useful.

Simon Kaner's review of the Jomon as presented in Western languages is organized on the same lines as the previous paper, with discussions of history, chronology, and cultural relationships to lay the groundwork. Physical anthropology and ethnic affinities, ecology, settlements, population density, material culture (including pottery and lithics separately), social organization, and ritual are themes he investigates. This paper differs necessarily from the previous one because Hoabinhian was first defined by Western researchers in Western languages (French and English, largely), but the primary work on Jomon has been done by Japanese researchers and published in Japanese. Western-language literature on the Jomon is thus frequently secondary and interpretive, and works by Japanese archaeologists in English tend to be of a summary nature. Kaner's review is thus more descriptive than critical.

Mark Hudson approaches the Yayoi period more as a review of the archaeology than a review of the literature in Western languages. He gives only a paragraph to chronology and then moves to the Jomon-Yayoi transition, the physical anthropology, the spread of Yayoi, settlements, subsistence, pottery, metals, perishable materials, burials, and social change and complexity. The illustrations and maps accompanying the article are well chosen and helpful. One of the chief problems in the Yayoi is its apparent intrusive nature, because it begins in southwestern Japan and contains a number of new elements, including rice agriculture, new types of pottery, and metals. Hudson follows the former Japanese practice of referring to the likely immigration in Yayoi as coming from the "Asian mainland" (p. 66) rather than the obviously nearby Korean peninsula, but he does discuss this problem later (p. 69). It is my observation

that in museum exhibits and publications, the Yayoi debt to the peoples of the Korean peninsula is now being widely acknowledged. Hudson's review is quite thorough and can itself stand as an excellent summary of Yayoi in a Western language.

The final paper, by Gina Barnes, concerns early Korean states. Subtitled "A Review of Historical Interpretation," the review emphasizes historical sources over archaeological discoveries. It succeeds in bringing together a diverse group of writings. Barnes begins by listing the ancient sources and follows with recent histories. She reviews the issues of developmental states, state origins and ethnogenesis, and organizational stimuli before taking up each possible state in turn. These are Choson, Chin, the Chinese commanderies of the Han dynasty, Koguryo, Samhan, Paekche, Kaya, and Shilla (more commonly written "Silla").

For a number of reasons, it is more complicated to reflect on the historiography of early Korea than the archaeology of the same time period, even when the histories are limited to those in Western languages. It is also harder to do it impartially, because there are a number of sensitivities in Korea and Japan that bear on the histories as written. This paper is a critique of histories from an anthropological perspective, without much reference to historiography. Although noting that the processes in the Korean peninsula are those of secondary states, Barnes presupposes a rigidly evolutionary view of state formation, insisting upon their formation from chiefdoms and continuing development along a prescribed path to qualify as states. However, the archaeological data (as well as the histories) seem to

suggest a pattern of rise and fall, of false starts and interference from China, and do not fit comfortably into this model.

To consider some specifics, it seems inappropriate to refer to Wiman Choson as a "myth" when to do so calls into question the historicity of all early China! The Chinese historians provide rich detail about the conquest of Wiman Choson, which can be critiqued but not dismissed. Barnes mistakenly names the Kwanggaeto stele of A.D. 414 as the earliest extant writing in Korea (it is the Chinampo monument dated A.D. 85) and fails to note that writing brushes have been discovered in a Kaya grave dated to the first century. She also overlooks some English translations of Chinese sites in the Jian region (e.g., *Chinese Archaeological Abstracts*, Vol. I, ed. R. C. Rudolph, 1978), which leads to an incomplete view of the agricultural underpinnings of Koguryo, as noted by Rhee (1989, in her bibliography). She asserts that there is no evidence of social stratification in Korea before the mounded tombs, but the earlier discoveries from Choyadong arguably reflect complex society as well as the mounded tombs, and those arguments are not raised. The attempt to consider historical material without a thorough review of the archaeology is problematical, because any interpretation of states in Korea must rely heavily on archaeology for verification or refutation. More attention to the archaeology is necessary for a balanced consideration of early Korean states.

This is a worthwhile collection of essays, and the bibliographies can be strongly recommended for an entry into difficult areas of research.

Harappa Excavations 1986-1990, A Multidisciplinary Approach to Third Millennium Urbanism. Ed. Richard Meadow. Monographs in World Archaeology No. 3, 1991. Madison: Prehistory Press. 272 pp. 37 tables, 137 figures, \$US33.00.

Reviewed by KATHLEEN D. MORRISON, *University of Hawai'i*

As a locus of primary state formation, the third millennium B.C. Indus Valley or Harappan civilization rightly occupies a

prominent place in the archaeological literature, although this place is most often at the level of introductory text. Outside of South

Asian circles, syntheses of the Indus Valley archaeological record have often relied on older studies such as those by Mortimer Wheeler and others and have propagated certain stereotypes of Indus culture history, such as its monotonous uniformity or its destruction by Aryan invaders. Although a great deal of important research has been carried out in both Pakistan and India since the days of Wheeler, perhaps the frontal assault on the site of Harappa itself, the "type site" of the Indus Tradition, reported on in this volume will finally force textbook authors to consider revisions and bring Harappa to a more central place in discussions of emergent urbanism.

Billed as the preliminary report of the Harappa excavation project, this volume is a significant contribution to the literature on this very important site. The outgrowth of a 1991 symposium at the meetings of the Society for American Archaeology, the volume contains a series of papers by members of the University of California, Berkeley, expedition to Harappa for the years 1986 to 1990. Jointly directed by George Dales and J. Mark Kenoyer, this large, multidisciplinary research project has carried out large-scale excavations and an impressive array of artifact analyses from this large urban settlement. Although the project has generated a series of papers in the South Asian literature, this volume represents the first combined report to have broad international circulation.

Although the volume contains contributions from many different authors, it does a credible job as an integrated report. Chronological periods are consistently named, using the terminology of Shaffer (1991). Thus, the term "Indus Tradition" is adopted in preference to the "Harappan" or "Indus Civilization," and the usual plethora of competing terms for the same time period (Early Harappan, Kot Dijian, Pre-Harappan, Pre-Indus, etc.) is reduced to a manageable level. At the same time, several of the papers were apparently written to stand alone and thus there is a harmless but rather excessive duplication of locational information and of the overall site plan.

Chapter 1, the project director's introduction by Dales, provides a brief introduc-

tion to the goals of the project. The Indus Tradition is conventionally divided into three periods: Early Harappan, Mature Harappan (or simply Harappan), and the Late Harappan periods. Because of extensive brick robbing for the construction of the Lahore and Multan railroad in the nineteenth century, almost all architectural remains of the Late Harappan and much of the Harappan period have been dismantled. This modification of the upper strata at Harappa, together with the low water table, have created a situation in which the researchers were able to reach remains of the poorly understood Early Harappan period. Possehl's summary of archaeological research at Harappa, in chapter 2, provides a useful synopsis of this history, an understanding of which is essential for deciphering the complex record of Harappa.

Chapter 3, by Amundson and Pendall, reports on pedology and late quaternary environments surrounding Harappa. Their soil studies of stable isotope ratios provide interesting, although inconclusive fuel to the debate over climatic conditions during the Indus periods.

Kenoyer's synthesis in chapter 4 of previous and present excavation results from Harappa is a substantive contribution to Harappan chronology and provides a clear and compelling perspective on the growth and operation of the city. One hardly needs to add that the 33 radiocarbon dates and careful stratigraphic control of the Berkeley project represent a significant improvement over earlier excavations. Early Harappan (Periods 1 and 2) building levels and a ceramic kiln were uncovered, including evidence of large-scale construction. No hiatus between the Early and Mature periods was noted; a second kiln of the Mature (Period 3) period was located not far from the Early period kiln, and overall continuities in the location of streets were noted. In addition, the presence of certain raw materials and ceramic vessel forms in the Early period showed continuity with the Mature period. Although organizational and structural changes did take place, the evidence of spatial and structural continuity at Harappa should lay to rest any remaining notions of disjunction between the two periods and,

even more, promises to contribute to more general considerations of urban process in South Asia.

Chapters 5 and 6, by Dales and Wright, focus on technical aspects of the more than one million ceramic artifacts unearthed by the project. Dales describes the production of figurines, stoneware bangles, and faience. Indus stoneware appears to be the oldest example of this highly specialized ceramic technology. Wright's paper is an ambitious attempt to analyze the organization of ceramic craft production at Harappa based on a careful study of ceramic production steps and technology. Wright discusses the level of specialization, standardization, and control over ceramic production, with particular focus on specialization. However, her contention that record-keeping devices (seals, sealings, weights) necessarily imply administrative control (extra-producer) of some sort is certainly open to argument; a discussion of the expected depositional contexts of such "administrative artifacts" would have been welcome.

In chapter 7, Meadow presents a comparative study of sheep and cattle breeds at Mehrgarh, Nausharo, and Harappa and discusses patterns of bone disposal and street maintenance at Harappa based on faunal analyses. This paper complements that of Kenoyer, providing a much-needed perspective on the dynamics of Harappan sites as living settlements. Belcher's analysis of fish remains from Harappa is presented in chapter 8. He identified a predominance of local, freshwater fish, but did identify one marine species.

Chapters 9 and 10 concentrate on plant remains. Unfortunately, Miller was unable to examine any plant material from Harappa before this volume went to press and thus her paper concentrates on future research directions. Reddy's contribution in chapter 10 is somewhat anomalous in that it reports on archaeobotanical studies at the Late Harappan site of Oriyo Timbo and on ethnoarchaeological studies of millet processing rather than on material from Harappa itself. Nevertheless, these studies represent an important contribution toward understanding Late Harappan subsistence and archaeobotanical methods.

The Harappa project may be one of the few to boast a team of biological anthropologists. In chapter 11, Hemphill, Lukacs, and Kennedy consider a range of analyses on Harappan skeletal remains, based on 67 well-preserved individuals from Cemetery "R37," the Harappan period cemetery. This sample was combined with previously excavated assemblages from other South Asian sites in and around the Indus Valley to identify long-term health trends and to assess the degree of biological continuity. Hemphill, Lukacs, and Kennedy identified a progressive increase in most dental pathologies through time, and a corresponding differentiation between male and female dental health. In the Harappan period, females had a greater incidence of dental caries and hypoplasia, which the authors attribute to both food preparation techniques and the presumed role of women in food preparation, and to differential access to basic resources. Hemphill, Lukacs, and Kennedy also employed a range of metric and non-metric attributes of biological affinity, which led them to posit two periods of biological discontinuity, one between 6000 and 4500 B.C. and one between 800 and 200 B.C., both before and after the Indus Tradition.

The final chapter of the volume consists of summaries of five seasons of interim reports submitted to the Department of Archaeology and Museums, Government of Pakistan. This is a most welcome innovation and a true resource for scholars interested in details of the excavations.

In general, this volume moves easily between data and interpretation, giving a coherent general perspective on Harappa. A few areas of data and analysis are conspicuous by their absence. Where, for example, is an overall discussion of the cemetery excavations or an analysis of lithic artifacts? Certainly a project of this scope cannot be contained within a single volume, and additional reports will surely fill out the analytical picture. This volume is a welcome addition to the literature on Harappa and constitutes required reading for all who are interested in early urban processes, complexity, or specialization.

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