

Reviews

Dating Techniques for the Archaeologist. Henry N. Michael and Elizabeth K. Ralph, eds. Cambridge, Mass.: The MIT Press, 1971. 221 pp., figures, index. \$12.50 (cloth).

Reviewed by MAURY MORGENSTEIN, *Hawaii Institute of Geophysics*

Here is the first book to take up the more successful techniques of archaeological dating. I must confess to a certain amount of delight in looking through the table of contents, which lists carbon-14, potassium-argon, dendrochronology, thermoluminescence, fission track, and obsidian hydration dating. The text is very well organized; each chapter holds a wealth of information about a particular dating technique in a practical and easy-to-read format. From the standpoint of aesthetics and ease of locating a desired subject, the book is well designed.

The chapter by V. Bucha on archaeomagnetic dating is perhaps the best example of the book's comprehensive treatment. It contains numbered sections, excellent figures, and meaningful tables. The chapter by E. K. Ralph on carbon-14 discusses the historical development of the dating technique, the mode of formation of C^{14} , types of samples that can be dated, and methods of sample collection. There also are sections on the interpretation of C^{14} data and laboratory methods. An up-to-date reference list is given at the end of each chapter.

J. Winter treats the subject of thermoluminescence (TL), perhaps one of the more exciting new dating methods to come about in recent years. He examines in detail the theory, sensitivity, techniques of dating, methods of sample collection, and problems encountered with the technique. I found especially enjoyable the section on phenomena related to TL, wherein he discusses the thermally stimulated current

(TSC) technique as a future dating tool. I would be remiss if I failed to compliment J. W. Michaels and C. A. Bebrich on their excellent chapter on obsidian hydration dating, possibly the most exciting dating tool for today's archaeologist. Given along with a historical treatment of obsidian hydration dating are petrographic and analytical chemical data on obsidian. The authors deal with rhyolitic obsidian dating almost exclusively, as opposed to trachyte or sideromelane dating. All of the factors which affect the rate of hydration are fully treated along with problems of artifact reuse, methods of sample preparation, and rind measurement.

The chapters on dendrochronology, potassium-argon, and fission-track dating are a little disappointing because in comparison to the others they are rather brief. But they do contain valuable information, and in most cases the limitations of the methods are delineated. I hope to see them treated more fully in the next handbook of the series. This handbook, I hope, will include new methods of dating, such as basaltic hydration rind dating and Be^{10} dating, and possibly comparisons between the different dating methods on the same and similar samples. I would like to stress that this book will not become obsolete with the publication of new and updated methods. Rather, it will remain as both an excellent handbook for the field anthropologist and an excellent textbook for classes dealing with the practical approach to modern anthropological technology.

Explanation in Archeology: An Explicitly Scientific Approach. Patty Jo Watson, Steven A. LeBlanc, and Charles Redman. New York: Columbia University Press, 1971. 191 pp., figures, preface, references, index. \$7.00 (cloth).

Reviewed by ALEX TOWNSEND, *University of Hawaii*

As a discussion of explanation in archaeology, the work reviewed here falls sadly short of what one might expect from the title, even for a single approach to the problem. Rather than providing the reader with a logically integrated discussion of the process of achieving an explanation of archaeological phenomena, the authors have put together a compendium of interests, methods, and goals central to processual archaeology, loosely bound under the heading "explanation."

Most of us would agree that our task as archaeologists is to make some sense of the past; that is, to produce explanations of past human behavior through the study of material remains and their context. Watson, LeBlanc, and Redman, as well as their processual colleagues, may be credited with bringing much needed attention to the problem of explanation in archaeology.

Unfortunately, the authors have limited their attention to the writings of but a single philosopher of science, Carl Hempel, and decided that his deductive-nomological model is that of "science," and, for archaeology to be "scientific," this model must be adopted by archaeologists (p. xiii). Thus, archaeological phenomena, to be explained, must be capable of deductive prediction (or "postdiction") from appropriate laws and observed empirical conditions. Advocates of the model thus assign themselves the task of formulating general laws, for it follows from the model that "explanation cannot be achieved in the absence of confirmed general laws" (p. 168).

Deductive-nomological explanation is not *the* explanatory model of science, however, if indeed there is or ever will be such universal agreement. Rather, a number of models compete for the loyalty of those who would call themselves scientists. If we in fact turn to the examples provided by the authors, it would seem that it is the hypothetico-deductive model which is illustrated—explanation beginning with a major premise rather than with a law.

Whether order is conceptually created and imposed upon empirical phenomena or whether it be inherent and discoverable within our data would appear to be a factor in the choice of explanatory model. That the authors assume the latter position (p. 4) perhaps explains why they

have adopted a model which fails to draw a separation between idea and empirical phenomena. For if nature is indeed ordered, that order must be subject to discovery and thus possess an existence beyond that of mere idea. For those of us who believe that order is conceptual, however, Hempel's deductive-nomological model is unacceptable.

Although the authors state that "the logic of empirical science is a combination of inductive and deductive forms and procedures" (p. 12), one is left with the impression that the archaeologist is scientific only to the extent that he is deductive. In this the authors share what Sir Peter Medawar, on page 55 of his *Induction and Intuition in Scientific Thought*, has termed the major defect of the hypothetico-deductive scheme in "not being able to speak of the generative act in scientific activity." It must be stated to the authors' credit, however, that they correctly realize the value of ethnographic analogy in suggesting hypotheses and that the results of hypothesis testing should serve as a useful guide in hypothesis modification.

In chapters three and four of the book, the authors present what amounts to an introduction to systems theory (contrasted with the "normative" approach) and ecology. While the ecological perspective is an extremely productive tool, this reviewer would like to see more attention given to the evolutionary view of culture, which might have been combined with ecology as time and space applications of the systems perspective. The authors might also have spent some effort in an attempt to integrate the systems perspective with their deductive-nomological model. For it is difficult to see just how archaeological phenomena, viewed systematically, can be explained employing a model which focuses not upon systemic interrelationships, but upon relationships between independent law statements and empirical observations. It must be stressed that by no means is the system perspective the exclusive domain of those who employ the deductive-nomological model.

It is, however, as a statement of the processual archaeological perspective that the book achieves at least some measure of success. Of particular value is the insistence upon the production of explicit testable hypotheses relating to "material

remains viewed as a reflection of past behavioral patterns" (p. 63), thus incorporating fieldwork within an overall research design involving explanation. The book is to be applauded as well

for the sense of excitement which it conveys through its emphasis upon archaeological possibilities rather than the usual monologue on limitations inherent in our data.

Frozen Tombs of Siberia: The Pazyryk Burials of Iron Age Horsemen. Sergei I. Rudenko (translation and preface by M. W. Thompson). Berkeley and Los Angeles: University of California Press, 1970. xxxvi + 340 pp., 33 color plates, 147 black and white plates, 146 figures, appendix, index. \$30.00 (cloth).

Reviewed by KARL JETTMAR, *University of Heidelberg*

Of S. I. Rudenko's important contributions to the archaeology of the steppes, two have been translated into German ("Die Sibirische Sammlung Peters I," übersetzung von H. Pollems, O.J., *Archäologie der USSR, Sammlung archäologischer Quellen*; and "Die Kultur der Hsiung-nu und die Hügelgräber von Noin Ula," *Antiquitas Reihe 3, Band 7, Bonn, 1969*), but not so his books on his own fascinating excavations of the "frozen tombs" in the High Altai. For the reader not acquainted with the Russian language, this material was formerly only available through extensive references in works of general orientation, or in a preliminary report of the campaign of 1947, published in East Germany.

Now finally an English edition is available, but this once more does not close the gap. It presents only the kurgans excavated in 1929, 1947, 1948, and 1949, that is, the famous Pazyryk group. A similar volume which appeared in 1960 and included the barrows of Bash Adar and Tuekta, excavated in 1950 and 1954, remains unpublished in a Western language. Hence we still have to go back to one of the original texts.

In this case, however, there is another problem to face. Not only does the English volume have different illustrations (and not the best ones available, which have since appeared in Gryaznov's book on Southern Siberia in "Archeologia Mundi"), but the text too has been changed by Rudenko himself. He gave the book its finishing touches shortly before his death at the age of 84, in 1969. There are not only the three new sections mentioned by the translator, but also omissions of interesting passages, for instance, the polemics against Gryaznov. This is a pity because precisely by these arguments we become aware of Gryaznov's explications, which as far as I can see were well founded. So the scholar has to face the embarrassing situation

that he must quote in some cases two slightly differing books instead of one.

Moreover, Rudenko did not always recognize the critical points of his theories, which were pointed out in the meantime by other authors, including myself. He compared too much to the Altaian tribes which he saw during his early expeditions. It is an open question whether the ruling families of the Scythian period who buried their dead deep in the mountains ever had "a more or less settled way of life" in a "mountain forest landscape." It is more probable that they were nomads in the lowlands, and that they came up to the high meadows only in the summertime just for grazing their cattle and for the burials of the members of the princely families. Such a "final return" into the mountains was by no means uncommon for later nomads. In this case we may suppose that the impressive timberwork of the graves was done by subjugated tribes, hunting and working in the gold mines. This participation of serfs during the construction of the burials would explain the almost immediate pillage of the Tuekta I kurgan clearly observed by Rudenko himself. The nomads returning the next year heaped the mound over an already empty chamber. Accordingly, we may ask what part of the animal style art was produced by such clients, perhaps descendants of the Afanasiev population. This would fit in with Členova's view that South Siberian cultures of Scythian and pre-Scythian character are in fact contemporary.

As for dating, Rudenko was right. This is confirmed by excavations in Tuva. There, carved coffins similar to Figure 136 (pp. 268, 269) were found in the same assemblage as weapons datable to the 4th century B.C. This might have been mentioned in the translator's otherwise excellent preface.

It is something of a tragedy that Rudenko,

who lost years in the purges of the Stalinist period and almost lost his life (he was sent to the camps on the shores of the White Sea), got his chance when he was already 62 years old. As a result his books, which appeared years later, are

full of important information and stimulating ideas, but they are not very clear. On the other hand, he holds to his former views. This refers also to his "finishing touches" here, which in fact were among his last work.

The Early History of Korea: The Historical Development of the Peninsula up to the Introduction of Buddhism in the Fourth Century A.D. K. J. H. Gardiner. (Also published as Monograph no. 8 of the Centre of Oriental Studies, Australian National University.) Honolulu: University of Hawaii Press, 1969. 78 pp., frontispiece, 5 illustrations, 3 appendices, index. \$3.75 (paper).

Reviewed by WON-YONG KIM, *Seoul National University*

As the subtitle shows, this is a survey of Korean history from the prehistoric period to the fourth century A.D., when the three kingdoms were formally established in Korea in a substantial sense. As a whole, the survey is founded on serious, extensive research, and the historical situation in the Korean peninsula up to the protohistoric period is fairly well grasped and presented. This is a major contribution to and benefit for the advancement and dissemination of Korean studies abroad, and on this point I am very grateful for the author's interest and courage in taking up the subject.

The survey, however, is more or less an expanded form of Gardiner's doctoral dissertation, "The Origin and Rise of the Korean Kingdom of Koguryo, from the First Century B.C. to 313 A.D." (London 1964). As he points out in his preface, "The idea of writing this book grew out of work which I originally undertook in connection with my thesis . . . I felt that, in addition to academic articles with their elaborate apparatus of footnotes and tables, there was a place for an outline of early Korean history which should aim at presenting Sinologists and Japanologists with essential information, and the bibliography necessary to pursue further studies" (p. v). Thus, it was inevitable that the survey should become an early history of Korea seen from Koguryo's side. Paekche was given little space for her own, but Silla, the most important nation for the development of Korean history, was totally dismissed. Later the author mentions in the Introduction, "On the other hand I have said little about the beginnings of the important kingdom of Silla, since to have done so would have involved a choice between relying upon the late and unsupported testimony of texts such as the *Samguk-sagi* and the

Samguk-yusa . . . or utilising the so far rather tenuous attempts to link up archaeological discoveries with the late literary evidence" (p. 1). But without a proper treatment of Silla's beginning, the term "early history of Korea" may not be quite appropriate, since however shaky and legendary the records are, the early situation of the kingdom of Silla reveals and demonstrates a wealth of identities and cultural traits indigenous to native Korea, which are related to the north. It is a pity that this well-written survey should have this serious omission.

Dr. Gardiner's distrust of the two Korean records, *Samguk-sagi* and *Samguk-yusa*, is no doubt due to his full acceptance of the traditional Japanese view of the two works. But, as some Korean students have lately started to do, the two works should be reconsidered from a new point of view without undue prejudice from the Japanese days. The little story about Prince Yonu of Koguryo having a Korean and a Chinese wife, as quoted on page 66, is to me a reflection of the real situation at that time when Koguryo warriors frequently crossed the border into China and took captives. At the start of Chapter 3, Early Koguryo, Gardiner puts the beginning date of Koguryo as A.D. 12, instead of the traditional date of 37 B.C. The year A.D. 12 is merely the year when Koguryo revolted against Wang Mang's order to take part as auxiliaries in his campaign against the Hsiung-nu. It is apparent that Koguryo had existed before the year A.D. 12, and A.D. 12 is not as absolute as 37 B.C. for the date of the founding of Koguryo.

As for Gardiner's view on the Lolang situation during the first half of the fourth century A.D., he demonstrates very sensitive and deep insights. However, one may not fully agree with him on the point that Tung-shou was the real controller

of the former colony, quite independent from Koguryo. To me, he was a kind of governor who held the various titles under the tacit approval of Koguryo, who had placed him there when he took refuge in Koguryo after fleeing from the Liaotung region. After Tung-shou's death in A.D. 357, Koguryo may have been unable to find a proper substitute to replace him, and at the same time, the advent of the strong Yen state to her west drove Koguryo to switch her direction to the south to maintain a tight grip on the former Chinese colony. My detailed argument on this point may be seen in my article, "A study on the origins of mural paintings of Koguryo" (*Chintan Hakpo* no. 21, June 1960, pp. 46-106).

I am a student of prehistory and am not qualified to criticize Gardiner's views on the early history. His publication is by far the most scholarly attempt on the subject by a Western scholar. His bibliographies are comprehensive and his survey on the prehistory is quite a neat one except for one small correction to be made on page 6 about the finding of charred cereals. The place name Pusan should be changed to Chit'apni in northwest Korea.

As a whole, this is a very scholarly work, and the argument is for the most part very convincing. I only hope that more articles by South Koreans may be added to the reading list should the second edition be printed in the near future.

Zur Chronologie der frühsillazeitlichen Gräber in Südkorea. Akio Ito. Philosophische-Historische Klasse, Neue Folge, Heft 71. München: Bayerische Akademie der Wissenschaften, 1971. Volume 1, 160 pp., summary in English, references, index. Volume 2, 14 pp., 144 plates. Price not listed (paper).

Reviewed by PETER H. LEE, *University of Hawaii*

Based mainly on a Japanese survey of grave excavations in southern Korea dating from early Silla to the unification of the peninsula in 676, the present study surveys 119 grave mounds with 140 grave chambers and 15 urn burials. The topics discussed include the choice of burial sites (spurs, eastern and southern slopes, high ridges, and valley basins), the possible significance of hill forts near the graves, the classification of burial chambers (wooden, stone, clay urn), the manner in which the dead were buried, and typological groupings of burial objects (weapons, horse harnesses, utensils, clay and metal containers, earrings, clay vessels, crowns, and the like). These considerations, particularly the last, enable the author to divide early Silla into four archaeological phases: (A) ca. 350-470;

(B) ca. 470-550; (C) ca. 550-?; and (D) ?-700. Phase C (mid sixth century), according to Ito, reflects the change of burial customs resulting from the acceptance of Buddhism as the state religion in 527 (not 528). Thus, instead of such vague classifications as Early Silla and the Three Kingdoms period, or the Early Iron Age, Ito proposes what he considers to be a more accurate periodization based on archaeological finds.

Originally a doctoral dissertation presented to the Faculty of Philosophy at the University of Munich in 1969, the second volume of the two-volume study comprises plates (archaeological finds illustrating Phases A to D) and illustrations (maps, grave sites, detailed studies of archaeological finds, and tables).

Japanese Mythology. Juliet Piggott. Middlesex: Paul Hamlyn, 1970. 141 pp., figures, map, £1.25 (paper).

Reviewed by L. M. YOUNG, *Hove, Sussex*

Most mythologies have two sharply defined types of myth, those concerning the deities and other manifestations of a supernatural kind, and the remainder, which are generally classified as saga and folktale. As Juliet Piggott clearly shows in this volume, these divisions are blurred in

Japanese mythology. The Shinto religion, from which the greater part originates, accepts all nature as Kami (generally translated as "beings placed higher") and includes all supernatural manifestations, either deities, spirits, or entities described as souls, whether these were regarded

as malevolent or beneficent. All natural phenomena possessed their own particular deity or spirit, as did high mountains, rivers, waterfalls, trees, and topographical features of all kinds—beliefs that have analogies to the Peruvian huacas. Juliet Piggott alludes to the belief that certain portions of the vegetable and animal kingdom emanated or descended from various deities.

To these myriad spiritual forms belonged the heroic figures renowned for their prowess in the mundane rather than the celestial world. These deified figures were confined neither to the legendary period nor solely to the historical times depicted in Japanese paintings (many examples of which illustrate in this volume), but persisted until the modern era. The stories concerning the foregoing, of which Juliet Piggott gives several entertaining episodes, are indicative of the veneration with which the Japanese regarded their land, expressed in its name *Dai Nippon*, inspiring an intense patriotism sufficiently compelling when the occasion demanded it.

Shintoism was not, however, without its rival. Buddhism, introduced from Korea at the end of the sixth century, exercised considerable influence and at times even predominated at the Japanese court. As Juliet Piggott's account of the Emperor and the golden image of Buddha shows, Buddhism was not without its myths. Collections of literature such as the *Uji monogatari* also exhibit similar features and the Indian provenance of some of these stories is still discernible. To this religion the Japanese imparted their particular interpretation of its philosophy. Sects such as zen or zen Buddhism (with its codes like bushido, the samurai spirit, stressing mental and bodily discipline) developed nationalistic trends and acquired the same patriotic mystique that is observable in Shinto. Deities belonging to the latter were also incorporated, for although the Shinto pantheon comprised innumerable local cults and spirit entities, it did have the semblance of a hierarchy.

Knowledge concerning the latter is dependent upon the narratives contained in the earliest works of Japanese literature, which appear to have been historical treatises. The two principal texts were the *Kojiki* (Record of Ancient Matters) and the *Nihongi* (Chronicles of Japan), reputed to have been completed in A.D. 712 and 720 respectively, which Juliet Piggott indicates are alleged to have been derived from memorized earlier records. For the foregoing assertion there is the authority of the *Konin Shiki* (a commentary on the *Nihongi*), which affirms that these

were orally obtained from the legendary personage concerned during the reign of Empress Gemmio. Both are written in Chinese characters which apparently were brought to Japan with Buddhism, there being several allusions to the faith in the *Nihongi*. The earlier of these two compilations, the *Kojiki*, is generally considered to exhibit a purely Japanese syntax and is regarded, as far as Shintoism is concerned, as the more authoritative of the two works. These comprise the sources of the mythological system whose salient portions Juliet Piggott subsequently relates and which constitutes the beliefs of the people of Yamato.

Yamato, which the author in her geographical preface indicates was situated in the central region of Honshu, seems to have originally been the appellation of Japan or Nippon. Yamato perpetuates the legendary Emperor *Kam-Yamato*, better known as *Jemmu-Tenno*, who is reputed to have founded the imperial institutions at this place.

The imperial institutions, the dignity of the imperial office, the trappings of regalia, and the system of the court all strongly suggest Chinese affinities. As in the former mythology, it is difficult to distinguish whether these early monarchs are wholly human or deities who have been reduced to a more mundane plane but are still endowed with a quasi-divinity. The establishment by the Emperor *Jemmu* in Yamato marks the termination of the strictly mythological period, though it may be stated, as Juliet Piggott frequently affirms throughout her volume, that myth never ceased to be a part of Japanese historical anecdote. The gods, however, still have their genealogies and ancestry, and though the majority of deities are clearly personifications of natural phenomena, they are endowed with a very humanlike image and depicted with human qualities and weaknesses. This is clearly shown in the myth of the orb, to whom Japanese mythology attributes a feminine gender and who is personified as the Sun Goddess *Amaterasu* and ancestress of the imperial line. The myth tells of the deity retiring in her cave in a fit of pique and thus darkening the whole world. Japanese mythology is not clear concerning a Paradise or the Underworld, though both are implied in the myth of creation. This myth concerns the deities *Izanagi* and *Izanami*, who were reputed to have brought forth from the turbid liquid mass of the primeval ocean their celestial land. Other stories relate that islands were fished up from the sea, a type of myth that seems to have Polynesian affinities.

Of course the Ainu, whom the migrants of Japanese ancestry drove to the island of Hokkaido, must have exercised considerable influence. This may be exemplified in the multitude of spirits, demons and ghosts that are rife in the myths and stories of even a historical character. The mythological figures of the Ainu, who apparently practiced a kind of shamanism, could have had prototypes in the *tengu* and the

oni, the former being associated with Shinto and the latter with Buddhism.

Juliet Piggott's account of Japanese mythology extending practically to modern times is narrated with a charm that would be difficult to emulate. This volume is a valuable contribution in a sparsely populated field. Finally, the illustrations are superb.

Cultural Frontiers in Ancient East Asia. William Watson. Edinburgh: Edinburgh University Press; Chicago: Aldine, 1971. xv + 187 pp., notes, references, 72 figures, 103 plates, index. \$14.50 (cloth).

Reviewed by GEORGE W. LOVELACE, *University of Hawaii*

The basic text of this book was originally presented in November of 1965 as the Rhind Lectures for 1965/1966 under the title "Structure and movement in the neolithic and bronze-age culture of East Asia." The "neolithic and bronze-age culture" the author is principally concerned with is that series of cultural developments in North China more commonly referred to as Yangshao, Lungshan, Shang, and Chou. Under the new title, which recalls Owen Lattimore's classic work, references and annotations have been added to "increase the documentary value of the book irrespective of the theses which motivate the various chapters" (p.v).

"Cultural frontiers," as Watson employs the term, "mark the limits to which one can trace the existence and influence of the individual components of material and artistic culture which are united in any society. These limits may lie beyond the sphere of the society itself and may differ markedly in their respective geographic extensions" (p. v). Following this reasoning, the spatial distributions of artifacts and trait complexes are considered the keys to establishing cultural frontiers. Using such data, Watson attempts to show that North China was not as isolated as people might be led to believe and that cultural interaction of various kinds and degrees on different frontiers was the case in late prehistoric and early historic times. While occasionally looking to the north and south, the principal frontier which Watson examines is the corridor of steppe and wooded steppe to the northwest which extends through inner Asia from Baikal to the Black Sea. Uniformity of cultural materials found along the corridor suggests to the author that it was the scene of considerable and continued cultural movement.

While significant numbers of people probably did not move the length of the corridor, material and ideas did. Watson argues that much of the particular quality of East Asian culture history is the result of this sort of cultural interaction. Many of Watson's interpretations, as well as the usefulness of the strategy he employs, are highly subject to debate. Nevertheless, a certain amount of valuable information is presented.

Chapter one, "Neolithic frontiers in East Asia," deals with Holocene developments before Shang. The hypothesis of an "early cord-marked" pottery stage in East Asia is presented. Watson then discusses the Yangshao-Lungshan relationship, suggesting that there are problems with the interpretation of direct-line evolution from Yangshao to Lungshan. He further suggests that input from the Amur area may have contributed to the Lungshan configuration. He states that the southern limits of Yangshao and Lungshan influence are Anhui and Kiangsu. This conflicts with the southern extensions of "Lungshanoid" for which Kwang-chih Chang (1968) has argued.

The second chapter, "Isolation and contact in the high bronze age," concentrates on the development of Shang. While basic continuities between Lungshan and Shang are seen, bronze metallurgy, Watson argues, must be related to external input, primarily because an early level of bronze technology is lacking. He sees a western origin for the technology and he reasons that the corridor of wooded steppe was the path along which the knowledge traveled. The Shang chariot is also discussed and deemed to be a Chinese treatment of a western idea.

Chapter three is devoted to technology. Bronze and iron metallurgy and architecture are

discussed. The "sinitic" character of metallurgy in East Asia is emphasized. The architecture of much of East Asia is held to be the product of North Chinese influence. This influence is seen spreading northward, but not to the south or southeast.

Chapter four, "China and the nomad heritage," explores the relationship between North China and the nomadic groups of the first millennium B.C. which moved along the corridor through inner Asia.

The final chapter, five, looks at areas to the north, northeast, and south during the same period. Slab grave complexes to the north and northeast are given attention. The southern manifestations of Ch'u, Tien, and Dong-son are very briefly considered.

The study of early cultural relationships between North China and other areas of the Old World has been ongoing since the 19th century. Like most intellectual inquiries, it has through the years undergone the process of "paradigm" replacement (Kuhn 1962). The 19th and early 20th centuries found most scholars attributing all that seemed advanced about ancient China to western influence or more blatantly to migration from the West. As research intensified and historians and prehistorians became more cognizant of Chinese culture history, these earlier beliefs were replaced by ones which emphasized the "independence" of East Asian cultural achievements and placed considerable importance on the role of North China within that larger theater. Within the confines of that second paradigm less serious attention was paid to evidence for cultural input from the West or to cultural interaction between the East and more western areas. We are, I think, now beginning to realize that while many aspects of the second paradigm more closely approximate "reality," there are still problems with that paradigm which must eventually be dealt with. One such problem directly related to Watson's study is that evidence suggesting degrees of cultural interaction within Asia and between the East and West continues to accumulate. North China was probably not isolated. Inroads into its cultural system were made; it made inroads into the systems of others. Watson's emphasis on "frontiers" is well directed. Surely these zones of interaction and the movement within them are highly important to our eventual understanding of the transmission of ideas to and from China, the beginning processes of "sinification" on some of these external inputs, and therefore many aspects of

culture history and evolution in ancient East Asia. Watson seems to have this in mind. Unfortunately, Watson fails to deal with the dynamics of those cultural interactions. These are questions many of us today would like answered, or even asked. The failure to adequately address these questions is one of the most unsatisfactory aspects of Watson's inquiry. The blame does not lie entirely with Watson. The nature of the study of East Asian prehistory presents certain problems of strategy. As outside observers, we either work in peripheral areas or do "armchair archaeology" or both. As we have little to do with the collection, analysis, and reporting of archaeological phenomena in East Asia, limitations often seem to be placed on problems we might like to consider. Such is not so much a complaint as a statement of reality. In addition, it is perhaps unfortunate that this book was published six years after the lectures were presented, and reviewed here even later. The approach utilized and questions phrased by Watson in 1965 seem dated today. I suspect that Watson's considerations would have had a different tone had they been formulated in 1974. In fact, even the "culture history" would probably have been different. In the last eight or nine years, a substantial amount of new data on the prehistoric and early historic periods of China and her Asian neighbors has become known, and more will surely follow. Of particular importance are the radiocarbon dates we are now getting from the East Asian mainland and the startling information being gathered on cultural development in Southeast Asia during the late Pleistocene and Holocene. Though the few radiocarbon dates available (*K'ao-ku* 1972) do not seem to substantiate Watson's ideas about Lungshan, they do not fully support a Yangshao derivation either. It is even possible to argue on the basis of one date (ZK-55) from a so-called Lungshanoid assemblage that more southern areas played an important role in the formation of "Lungshanoid" and Lungshan systems. New data from Southeast Asia, particularly Thailand, suggest that plant domestication, rice agriculture, and bronze metallurgy were accomplished quite early (Solheim 1972). In 1965, Watson chose to play down the southern frontier. I think he would be more hesitant to do so today. These sorts of new data pose intriguing questions of cultural interaction between North China and South China/Southeast Asia, questions which would have pertained directly to Watson's inquiry, had we all been fully aware of them.

REFERENCES

- CHANG, KWANG-CHIH
1968 *The Archaeology of Ancient China*.
Revised and enlarged edition. New
Haven: Yale University Press.
- CHUNG-KUO K'O-HSÜEH YUAN K'AO-KU YEN-
CHIU SUO SHIH-YEN-SHIH
1972a Fang-she-hsing t'an su ts'e-ting nien-
tai pao-kao (1). *K'ao-ku* 1972(1):52-56.
- 1972b Fang-she-hsing t'an su ts'e-ting nien-
tai pao-kao (2). *K'ao-ku* 1972(5):56-58.
- KUHN, THOMAS S.
1962 *The Structure of Scientific Revolutions*.
Chicago: University of Chicago Press.
- SOLHEIM, WILHELM G. II
1972 An earlier agricultural revolution. *SA*
226(4): 34-41.

Arts of China: Buddhist Cave Temples, New Research. Terukazu Akiyama and Saburo Matsubara (translated by Alexander C. Soper). Tokyo and Palo Alto, Calif.: Kodansha International Ltd., 1969. 248 pp., 218 plates, 16 figures, chapter notes, notes to the plates, bibliography, chronology, index. \$27.50 (cloth).

Reviewed by CHENG-RUEY MA

The book under review is the second volume of Kodansha's three-volume *Arts of China*. This work, offering an authoritative account of the new surveys of Buddhist arts recently conducted in China, particularly those of cave temples, was originally written in Japanese by two foremost scholars in the field and was also published by Kodansha. Now the same publisher has to be congratulated on bringing this important study to Western readers through the able English translation of Professor Soper, also a well-known specialist in the same field.

The main portion of the volume is the plates (172 pages). There are only about twenty pages of text divided into two short chapters. The first chapter, "The Tun-huang Caves and Their Wall-paintings" (pp. 9-18), was written by Terukazu Akiyama, professor of art history at the Tokyo University. He offers a broad but clear outline of the history of Buddhist arts in the Tun-huang cave temples by chronologically discussing the contents and techniques of some of the representative wall-paintings. His account is based on inscriptions of reliable dates and artistic styles. He convincingly emphasizes that there are Western influences as well as Chinese tradition in the Tun-huang cave-temple arts. This reviewer feels, however, that the discussion of the styles of the cave temples themselves and of clay sculptures as arts are too sketchy.

Saburo Matsubara, professor of art history at Chiba University, wrote the second chapter, "Buddhist Sculpture" (pp. 19-30). In this ten-page essay, he divides Chinese Buddhist sculptures from the cave temples into two groups

and makes stylistic comparisons: (1) Tun-huang, Ping-ling-ssu, and Mai-chi-shan; (2) Yun-kang, Lung-men, and Kung-hsien. He also describes Buddhist sculptures other than cave figures; in this concern, Shensi, Shansi, Szechuan, and Hopei all receive balanced attention. It is to his credit that he also introduces the little-known arts of Kizil, Bezeklik (Toyuk Ravine), and Tibet.

In 1966, Matsubara published his monumental *Chinese Buddhist Sculpture: A Study Based on Bronze and Stone Statues other than Works from Cave Temples* (in Japanese). This work and the volume under review form an indispensable set for the study of Chinese Buddhist arts. But to include newly discovered Buddhist sculptures other than those from cave temples may make the title of the present volume unfit. In addition, the location where an art specimen was found is very important in assessing its value; some specimens included in this volume, such as those shown in plates 150-153 and 155, carry no location data.

Most readers should welcome the large number of sharply reproduced illustrations. Although it is not the first time that color photographs of cave-temple arts have been reproduced, the plates here surely represent a spectacular advance in quality over their predecessors. But the distribution of the color plates is not at all balanced. For example, of the 41 color plates (out of a total of 218 plates), 40 are all from the Mo-kao caves at Tun-huang, and one is from Mai-chi-shan. The selection of color plates probably depends more on availability than on significance.

The text is brief, but is amply supplemented by the detailed notes to the plates, which furnish us valuable information like the structure of cave temples and the contents of the wall-paintings and sculptures. However, the less-known cave arts from Kizil, Bezeklik, and Tibet (pls. 197-218) are left without notes. The list of dated materials from Tun-huang, Ping-ling-ssu, Mai-chi-shan, Yun-kang, Kung-hsien, and

Lung-men (pp. 242-244) is very handy indeed. The map of important Buddhist sites (pp. 246-247) is also very useful.

Despite its few shortcomings, this volume is undoubtedly a great contribution to the understanding of Chinese Buddhist arts. It is surely the readers' hope that the third volume of the set can be available in the very near future and will maintain the same high standard.

Agricultural Development in China 1368-1968. Dwight H. Perkins, with the assistance of Yeh-chien Wang, Kuo-ying Wang Hsiao, and Yung-ming Su. A Monograph of the Committee on the Economy of China of the Social Science Research Council. Chicago: Aldine Publishing Company, 1969. xvii + 381 pages, 161 tables, 15 maps, 4 charts. \$12.50 (cloth).

Reviewed by ULRICH MAMMITZSCH, *University of Hawaii*

The author attempts to answer one of the most intriguing questions of China's history of the last six hundred years—the question how Chinese agriculture was able to feed a population which increased from a level of 65-80 million people around 1400 to 400 million in the nineteenth century and to over 700 million in the 1960s. In doing so, Perkins has produced a very impressive study on the development of Chinese agriculture since 1368.

The obstacles along the way to such an achievement are only too well known to the student of Chinese society, most prominent among them being the lack of detailed data (a lack which is only occasionally remedied even in most recent times), the quality and reliability of those data available, and the multitude of widely scattered sources which have to be consulted by the conscientious researcher. Perkins and his assistants compiled an impressive array of factual evidence for a study that represents frustration and challenge alike. Challenge, because the author has been able to cull from these facts what I consider to be important insights; frustration, because the very same facts are so tantalizingly incomplete and represent in most cases only reasonable approximations, so that this study is most likely to be constantly revised in its factual details.

The author makes his case convincingly. His thesis is that the Chinese were able to double the yields of their fields within the period under review and that they were able to accomplish this feat under conditions of a traditional and virtually stagnant technology. This thesis is based on careful perusal of a variety of sources containing

evidence relevant to the question at hand. For the pre-1911 period the author had to rely on tax registers of the Ming and Ch'ing dynasties, local histories and gazetteers, and a number of agricultural handbooks published during the two dynasties. These handbooks proved to be particularly useful for monitoring changes in farming technology. For the first part of this century John L. Buck's classic study, as well as surveys undertaken by the South Manchurian Railway Company and by the Joint Commission on Rural Reconstruction, to name a few, provided necessary data. For the period after 1949 the author primarily used official governmental publications which, in his opinion, show tolerable margins of error, particularly for the period 1955-57.

The first part of the book (pp. 1-191) presents the basic thesis of the book and survey discussions of the various factors responsible for the yield increases. The rest of the book is given to voluminous appendices which provide technical data and additional statistics on such subjects as population figures, cultivated acreage, crop yield, and grain consumption. These data were apparently considered too unwieldy to be included in the survey discussions.

Perkins shows that, under the pressure of an ever-growing population, Chinese agriculture responded with an increase in agricultural output—an increase which was the result of expanded cultivated acreage as well as higher yields per acre. He holds that the Chinese case proves the incorrectness of Malthus' assumption that the pace of agricultural development is the determining factor for the level of population.

Perkins demonstrates that changes in the level of population were caused by political-military factors and occurred independently of the level of agricultural development.

The author finds that increases in agricultural output took place at a steady pace during the Ming and Ch'ing dynasties, and discusses the factors accountable for these increases. While this review of these factors does not bring major new discoveries, the carefully documented discussion provides the reader with a very handy survey of traditional Chinese techniques of expanding agricultural lands and intensifying work on already existing fields. The author maintains that China's agriculture had reached the limits of its expansive capacity by the nineteenth century, but that the day of reckoning brought about by the pressure of an increasing population on a stagnant agriculture was only postponed by the events of the Taiping rebellion. Postponed but not averted, because the long-range annual growth potential of Chinese agriculture under the conditions of its traditional technology amounted to only 1%. Given the annual population growth of 2%–2.5%, the annual growth rate would have to be about 3% just to keep pace with the growing population. Since possibilities for expanding cultivated acreage are negligible, higher outputs have to come from increased yields per acre. The direction of investments to achieve this increase is an important decision facing each Chinese government. Attempts on the part of the Communist leadership to rely on traditional methods have met with very moderate success.

Perkins sees the intensive application of scientific technology as being China's only way

out of this dilemma. He is aware that this application is tied intimately to questions of economic realities, political and ideological preferences. Perkins does not venture into these areas in great detail, but his chapters on related topics, such as the distribution of land and the effects of tenancy, and questions of rural marketing, urbanization, and centralized government, abound in highly interesting comments. Students of modern China will find these chapters particularly useful since they offer valuable insights into economic processes which constitute a frequently neglected part of China's modern fate.

Perkins has produced a very stimulating book. This is not to say that it will be safe from criticism over details. For example, the term *grain*, which is used as the basis for calculating increases in output, seems to be too broad because it includes not only rice, wheat, millet, kaoliang, and all other cereals, but also potatoes and other tubers. More detailed references to the differences in the caloric value of the individual crops might also have contributed to a better understanding of the Chinese success in raising agricultural output. It might also be suggested that the impact of politics and ideology on agricultural development would have deserved a closer look. All these remarks are not meant to belittle the efforts of the author. They only point to the immensity and complexity of analyzing China and her fate in more recent times.

There has been an abundance of vast generalizations and lively assumptions about China made on very shaky factual foundations. Mr. Perkins has written a book that combines fact and interpretation in a most auspicious manner.

Trade and Expansion in Han China: A Study in the Structure of Sino-Barbarian Economic Relations. Ying-shih Yü. Berkeley and Los Angeles: University of California Press, 1967. xiv, 251 pp., 2 maps.

Reviewed by GUNG-WU WANG, *Australian National University*

This is a deceptively simple book on what may appear to be an obvious subject. So much has been written on the glories of the Han dynasties and so often has this glory been linked to questions of trade and expansion that one may wonder if there is room for yet another study. When one then notes that Professor Yü has attempted to analyze the manifold aspects of expansion—"military, political, economic as well as cultural"—and finds that he has incorporated

all the key facts and major interpretations into 219 pages of text, one is astonished at his bold synthesis and his compact and excellent scholarship. We can only conclude that the work has been well worth doing and that the author has convincingly shown us how much progress has been made in the field since the work of Chang Hsing-lang, Shiratori Kurakichi, Kuwabara Jitsuzō, Fumita Toyohachi, F. Hirsh, E. Chavannes, H. Maspero, Aurel Stein, and B.

Laufer. In particular, the author should be complimented for the effortless way he has woven together archaeological data and documentary materials, and further illuminated and explained areas of Han policy and economic structure which have been either taken for granted or left neglected.

Professor Yü confirms the importance of overland frontier trade and that with the Western Region (chapters five and six) as compared with overseas trade (the slim chapter seven), and shows the greater variety of the commodities which came to and went from China overland. This fits in with his explanation of Chinese expansion as being closely linked with defense and with trading with the threatening barbarians from the north and the west. Since this remains more or less the picture of the history of Chinese trade and expansion for nearly two thousand years, his analysis of Chinese imperial thinking concerning the tributary system at this early stage is of great value to all future studies of later Sino-barbarian economic and political relations.

Two questions are not fully examined, possibly because materials touching on foreign trade and on the men who carried on that trade are scarce. The first question is mentioned on page 2: "Sometimes it was trade that paved the way for expansion." This is intriguing, especially because it is an observation related to the later expansion of Europe throughout the world. But despite Professor Yü's thorough account, foreign trade in Han China still appears to have been very limited indeed, and much of it seems to have been due to foreigners coming to China to buy rather than to Chinese merchants seeking markets outside China. Chinese demand for a limited variety of foreign luxury goods can be easily traced, but it is a demand that foreign traders seeking Chinese goods were able to satisfy. It does seem that we are still unable to escape from the picture of a more or less self-sufficient China with little incentive to expand foreign trade and certainly giving little encouragement to its merchants to try and build up foreign trade. In this context, the question of trade paving the way for expansion does appear

to need closer inquiry.

The second question may be related to the first. We have encountered many fascinating discussions about traders and missionaries, especially of Buddhism, Christianity, and Islam. Did trade help to spread the faith? Or was faith a driving force behind the extensions of foreign trade? Professor Yü points out that many barbarians took to wearing Chinese silks and using Chinese tools, and even adopted Chinese styles in their industrial and military arts. Again, the impression is that the initiative was with the barbarians except where there were Chinese conquests and the introduction of Chinese imperial administration. Nowhere do we find any relationship between trade and the export of Chinese ideas and institutions. Nor do we get the feeling that Chinese traders abroad were conscious of any duty to represent Chinese values and culture to the barbarians. After the Han, there were examples of strong Chinese cultural influences on Korea, Vietnam, and Japan, and again there is the impression that the Koreans and Japanese themselves took the initiative and that the Vietnamese were Sinicized only after conquest. There is also the possibility that a Sinicized Buddhism played the key role in the cultural impact on Korea and Japan. But there has been no suggestion that the Chinese merchant played any direct part in this. Professor Yü's examination of the Han period rather confirms that there was little in China to drive men to trade abroad, and that it was the material aspects of Chinese culture rather than the quality of the Chinese mind and spirit which appealed to the barbarians. It would have been most enlightening if Professor Yü could have devoted some time to considering the apparent defensiveness of Chinese civilization itself, its lack of outgoing universal features, and relate it wherever relevant to the theme of defense in Han China's trade and expansion. It may sound like an unreasonable request when Professor Yü has already given us such a lucid and scholarly work, but there are really very few who are as qualified as he is to do the job and round off this excellent study.

The Transformation of the Chinese Earth: Aspects of the Evaluation of the Chinese Earth from Earliest Times to Mao Tse-tung. Keith Buchanan. New York and Washington: Praeger, 1970. 336 pp., 84 maps, 63 plates, 20 tables, 1 appendix, bibliography, index. \$12.50 (cloth).

Reviewed by JAMES L. WATSON, *University of Hawaii*

The author of this study attempts to present a comprehensive geography of China, but the results are of little value to serious scholars. The book is a survey of randomly selected topics with no discernible central theme. It includes discussions of prehistory, population pressure, language differences, agricultural development, industry, and many other focal issues. The research is very limited and whole sections are based on a single source. For instance, the prehistory discussion is taken almost entirely from William Watson's *China before the Han Dynasty* (1961). Most of the volume is composed of brief summaries of other scholars' writings, which makes it read like a collection of book reports. Furthermore, it is based entirely on English and French sources; no Chinese references are cited.

Chapter seven, "Contrasts in the Micro-Geography of Selected Communes," contains the author's original contribution. Buchanan discusses his 1964 and 1966 visits to a number of communes scattered throughout China: one in the Peking suburbs, two in Shensi, two in Kiangsu, one near Shanghai, and three in Kwangtung. This chapter contains data on production and collective ownership that may

be useful for future studies of communes. The author himself does not attempt to analyze these data in a systematic manner. Other original contributions are brief reports of his visit to two part-work, part-study schools (pp. 304-305) and descriptions of four industrial enterprises (pp. 247-250).

Readers will find many of the book's 84 maps interesting, but they are difficult to use because the author does not always give the source. The book also contains a number of good photographs depicting the various communes referred to in chapter seven.

It is difficult to evaluate this book because specialists will find the scholarship too lax to be of much value. (For instance, items are missing from the bibliography and important primary sources are ignored.) Similarly, it does not appear to have been written for the general reader. *The Transformation of the Chinese Earth* is another unfortunate product of the recent China vogue among commercial publishers. There is a real need for an up-to-date geography of China, but this book does not fill the gap. It is also doubtful that hastily contrived studies like this will contribute to the general public's understanding of contemporary China.

Asia, East by South: A Cultural Geography. J. E. Spencer and William L. Thomas. New York: John Wiley and Sons, 1971. Second edition. 669 pp., figures, maps and charts, photographs, bibliography, index. \$16.50 (cloth).

Reviewed by HENRY T. LEWIS, *The University of Alberta*

This is a revision of an earlier (1954) edition—the original was written by the senior author only—which involves a reorganization of chapters, improvement in the quality of cartography, the addition of photographs, and the updating of general information on the areas involved. Aside from this the text is basically the same and the interpretations of regional cultures and their development remain essentially unchanged. This is unfortunate.

Underlying the authors' interpretations are a hodgepodge of outdated assumptions about race,

migrations, linguistics, evolution, diffusion, and acculturation that are now largely relegated to a part of the history of anthropology, most of it best forgotten. Unchanged from the original edition are statements such as, "It seems reasonable that the *Negroid* and *Caucasoid* incubators were the earliest to start spreading their broods, and that the *Mongoloid* races diffused somewhat later" (p. 15, emphasis mine). Such a statement does both injury to and grossly oversimplifies the prehistory of Asia; as information about racial distributions it is totally

unacceptable in terms of what is known about human genetics and serology.

Related to this are statements about the origins of and changes in languages for which there is absolutely no evidence. For instance: "Negrito remnants of southeastern Asia, except the Andamanese, have lost their own mother tongue and borrow the language of their neighbors" (p. 21). This is explained because Negrito languages were "recessive" and were faced with "dominant" languages, a rather strange genetic analogy, and one certainly unknown in the field of linguistics.

The book's discussion of social and cultural change reflects a variety of untested and/or outdated assumptions, all heavily laden with what can only be called ethnocentrism. Evolution: "Since the Orient started late it well may skip many of the early stages of industrialization which occidental countries went through" (p. 40). Diffusion: "One cannot predict that peoples quite unfamiliar with modern mechanics will industrialize overnight. Nor can one predict that Chinese or Malays never will become mechanically adept" (p. 40). Acculturation: "Too many orientals have taken up the notion that when a small fraction of a population has learned to use an occidental language, give a political harangue, use a cigarette holder or a telephone, and wear occidental clothing styles their society can readily take its full position in the modern world" (p. 42).

Aside from what the above statements say and don't say about anthropological theory or our understanding of how people change, many of the things said are not even very well disguised Western prejudices. Besides presenting layman ethnocentrism as acceptable geography to college undergraduates, it is a direct affront to the people it purports to explain, and all of it couched in an almost paternalistic and patronizing tone. With regard to the country in Southeast Asia that I am most familiar with, I find the following statement particularly offensive: "There are many indications that Philippine political maturity was declared overly soon for some elements in the population, far ahead of

the country's general economic and social maturity" (p. 44). The complex of internal and external factors affecting social and political developments in the Philippines can hardly be dismissed with the statement that elements of the population lack maturity, the implication being that they need only "grow up."

There is also much information, passed off as broad generalizations, which is patently wrong or meaningless. "It is a commonplace to say that the West, particularly the Anglo-American West, rushes at life with a speed that is nowhere matched in the Orient" (p. 3). Surely not the slothful Tokyo businessman nor the indolent Taiwanese merchant! Or, in an area as culturally and socially diverse as the whole of Asia, what is meant by the following? "There is a common search for that combination which will permit retention of the *oriental spirit*" (p. 43, emphasis mine). And the Filipino farmer, whose adjustments to society and environment involve a complicated set of adaptations, gets reduced to a kind of rural nincompoop with the statement that "farming practices are a curious blend of science, easy-going tropical habits, and folk lore" (p. 484).

Whereas the more recently added information to this book is a quantitative improvement, qualitatively there is little to recommend it to college students, absolutely nothing to scholars. In making my criticisms—and space is much, much too short to make them all—I am not arguing that we should extol the virtues of Asians. (The authors do, in fact, employ friendly prejudices as well, though they often are no less demeaning: "The process of the modernization of China will take a long period still, but once completed it will be among the most successful of any oriental country" [p. 44].) Prejudices, pro or con, are no substitute for genuine attempts to understand the environmental, social, cultural, economic, and political factors which have influenced the lives of particular peoples. Whereas introductory texts in any field commonly demonstrate the lag between research and teaching, this book nonetheless speaks very badly for the discipline it represents.

Stone Adzes of Southeast Asia. Roger Duff. Canterbury Museum Bulletin no. 3. Christchurch: Caxton Press (for the Museum), 1970. 144 pages, maps, illustrations, adze terminology diagram, bibliography. N.Z. \$3.00 (cloth).

Reviewed by DANIEL J. SCHEANS, *Portland State University*

The aims of this volume are set out clearly in the preface: to devise a typological scheme for Southeast Asian stone adzes and to attempt to determine the origin and subsequent history of Heine-Geldern's theoretical Austronesian Neolithic or "Quadrangular Adze Culture" (pp. 7-16).

Working with what can be described as a haphazard sample of poorly documented specimens from the region (p. 9), Duff presents a basically formal scheme comprising nine "Types" and over fifty "varieties" of adzes, chisels, scrapers, and "Patu" type hoes. By and large the typology is a reasonable one and should serve as a starting point for discussions of the ground stone inventories from Southeast Asian "Neolithic" sites.

His success with his second aim, the reconstruction of the development and spread of the "Austronesian Culture," is another matter. At best it is, in his own words, no more than "... an interesting exercise" (p. 11). At worst it is conjectural prehistory of the kind that conjures up visions of prehistoric men marching and sailing hither and yon under a banner that proclaims, "Ein Volk, Eine Kultur, Ein Beil!" In any case, the tortuous paths that these men took could not have been any harder to follow than Duff's reasoning in explaining the distribution of what they left behind. Take, for example, his view of the role of water barriers. One broad distribution is said to show that "An intensive maritime exploration is also implied in the widespread distribution of the quadrangular adze in particular in such truly oceanic archipelagoes as Indonesia and the Philippines" (p. 18). Yet when faced with a restricted distribution he writes, "The significance of even narrow water barriers is shown by the distinctiveness of the forms developed in the Malay Peninsula from those of nearby Sumatra

and Java" (p. 26).

Perhaps there was a time when artifact-based distributional studies of this kind were needed in order to further the study of Southeast Asian prehistory. That time has passed, since "a spate of relatively large scale excavations has brought to light an already considerable body of new evidence..." much of which can be arranged "... in a meaningful sequence that is reliably dated" (Parker 1968: 307; Solheim 1969: 40). Duff, however, seems to be either unaware of this fact or willing to ignore it, as suits his pleasure. How else can one account for his discussion of "the so-called Roundaxe" in Indonesia, based solely on what little he saw in "Southeast Asian collections," which neither mentions nor illustrates any of the round axes or adzes from Niah Cave reported by Harrison as early as 1957 (Harrison 1957: 163)? Similarly, how can he discuss, in a book dated 1970, the adze sequence on Formosa without mentioning the Corded Ware Horizon with its rectangular and stepped adzes (Chang 1966: 141)? Such an omission is a particularly crucial one in that it obviously affects his coverage of Thailand, where a similar manifestation has been reported as occurring ca. 6600 B.C. (Gorman 1969: 672-673). Indeed, his section on Thailand best exemplifies the kinds of omissions and commissions we have been talking about. There he accepted, without question, Sørensen's view that the Ban Kao materials are Neolithic in age and Lungshan in affiliation (p. 60). I cannot understand why, in a book published in New Zealand in 1970, there is no even a citation of Parker's controversial article on the Ban Kao work that was published in that same country in 1968 (Parker 1968: 307-313). Fair is fair, I suppose, except when one is engaged in "... an interesting exercise..." in conjectural archaeology.

REFERENCES

- CHANG, K. C.
1966 Preliminary notes on the excavations in Formosa, 1964-65. *AP* 9: 140-149.
- HARRISON, T.
1957 The Great Cave at Niah. *M* 57, art. 211: 163.
- PARKER, R. H.
1968 Review article (Sørensen and Hatting: Archaeological excavations in Thailand, II, Ban Kao, Part 1. The archaeological materials from the burials. 1967). *JPS* 77(3): 307-313.
- SOLHEIM II, W. G.
1969 New directions in Southeast Asian prehistory. *Anthropologica* n.s. 11(1): 31-44.

Archaeological Excavations in Thailand. Volume III, part two: *The Prehistoric Thai Skeletons*. Sood Sangvichien, Patai Sirigaroon, J. Balslev Jørgensen, and Teuku Jacob. Copenhagen: Munksgaard, 1969. 52 pp., references, 24 plates. 80.00 Dan. Kr. (cloth).

Reviewed by MICHAEL PIETRUSEWSKY, *University of Hawaii*

In this handsomely produced volume, the third to appear as a result of the Thai-Danish Prehistoric Expedition to Thailand 1960-62, are the reports dealing with the study of the human skeletal remains excavated from three sites in western Thailand.

Remains representative of 37 individuals from Ban Kao (35 adult, 2 juvenile), 2 from the Lue Site (1 adult, 1 child), and one fragmentary skeleton of an adult from Sai Yok comprise the sample. All the remains are prehistoric, the majority presumed to be of the Neolithic period. They are among the earliest documented remains from Thailand and are a much needed and welcomed addition to the record. Completeness of the individual remains ranges from almost whole skeletons to only a few fragments of skull. Quite often the bones were fragmentary, needing considerable reconstruction on the part of the researchers—a procedure made difficult by frequent encrustations of limestone deposits caused by termite nesting in the area, variable fragility, and bone deformation (especially of skulls) which was heightened by the precarious placement of grave furniture. The remains will eventually be preserved in Bangkok, Thailand.

Chapter I contains burial descriptions of 37 individuals from Ban Kao, noting, where possible, age, sex, positioning in grave, completeness, state of preservation, stature, and any special morphology and pathology of the remains. In the second chapter a description of the two skeletons from the Lue Site is given. A summarization of age and sex, cranial and infracranial measurements, stature estimates, a few nonmetrical features of the skull including several discrete characters, and a description of the pathological changes found are presented in Chapter III, mostly in the form of collective tables.

Of particular interest is the frequent mention of extreme thickness of the cranial bones, which the authors suggest may be attributable to thalassemia diseases which are widespread in modern populations of this part of the world. Although no separate study of the teeth is presented, tooth evulsion, abrasion facets, extensive tooth wear, and weak shoveling of the incisors are noted. Other than these findings,

very little palaeopathology was observed for both skeletal and odontological remains.

Some very limited comparisons with other Southeast Asian Neolithic skulls are drawn from a published study which quotes several series (Yen Yin, Liu Chang-Zhi and Gu Yu-Min. Report on the skeletal remains from Neolithic site at Bao Ji, Shensi. *Vertebrata Palasiatica* IV, 2 [1960]: 103). These involve single comparisons of a few cranial measurements only. The authors' conclusions (Ban Kao skulls are said to be broader than other Neolithic skulls) are safely minimal in view of this precarious method and of the small sample with which they were dealing. Conclusions are without statistical substantiation.

The very fragmentary remains of an adult female from Sai Yok are described separately in an appendix. Owing to the extreme fragility of the bones, dental observations are the most numerous. As is so common in the Ban Kao material, excessive thickening of the diploe was also observed in the cranial fragments of these remains. A comparison of some measurements of teeth with Australasian samples is made, but conclusions of affinities are largely superficial and statistically unsupported. No statistics, descriptive or otherwise, are given anywhere in the report, an omission perhaps justified by the small sample sizes. However, the authors appear to be less cautious in noting frequencies of some traits or conditions (e.g., in the notes on pathological changes) without giving any indication of the sample from which they are drawn. The disproportionate age ratio (3 sub-adults/39 adults) strikes the reviewer as worthy of at least some comment, but this is lacking. Perhaps these otherwise excellent descriptive reports would have been better left without attempts to draw conclusions, which are bound to be superficial because of the small sample and also the scarcity of comparable material.

With excavations continuing in Thailand and elsewhere in Southeast Asia, we can expect more samples of human skeletal remains such as these from western Thailand to be forthcoming. Only with larger sample sizes and remains from different temporal and spatial distributions can the physical anthropologist attempt to speculate

on the intragroup and intergroup biological relationships of the people of an area that is beginning to be of great interest to prehistorians. It is most appropriate that the Ban Kao material,

the first notable data to be made available from this part of the world, has been so meticulously studied and that a separate and elegant volume is chosen to report the findings.

Religiöses Leben der Sherpa. Friedrich W. Funke. Beiträge zur Sherpa Forschung, Teil II, Khumbu Himal, Bd. 9. Innsbruck and München: Universitätsverlag Wagner Ges.m.b.H., 1969. 369 pp., 185 plates, 2 maps. \$47.50 (cloth).

Reviewed by KARL HUTTERER, *Bryn Mawr College*

This impressive book is part of a series of monographs presenting the scientific results of a German expedition into the Nepal part of the Himalayas. Of the whole series, which will eventually comprise fourteen volumes, six volumes are devoted to anthropological studies of the Sherpa. F. W. Funke, the author of the volume on religion, is also the editor of the anthropological subseries. The whole research project in Nepal was financed by the German Fritz Thyssen Stiftung.

Funke's aim in the present monograph is not only to describe the religion of the Nepalese Sherpa but also to isolate the various elements of their syncretistic religious system and, eventually, to arrive at the fabric of the "original" shamanistic Bon religion.

After three short introductory chapters, the whole book is devoted to the phenomenology of Sherpa religion. Consecutive chapters deal with the *lu* spirits and other spirits and deities influencing states of life; nature and function of the *minung*, a shaman who mainly performs rituals relating to the just-mentioned supernatural powers; mountain demons and deities; nature and function of the *lama*, a lay priest who performs magical rituals in the *gomba*, the village temple; a description and analysis of the *dumje* festival and one of its most important rituals, the *gebchi*; concepts of the soul and rites of death; description and interpretation of *thang-kas* and *tsaglis*, Sherpa religious imagery; and, finally, annotated translations of ten religious texts.

Funke's goal of culture-historical reconstruction is ambitious. About 500 years ago, the Nepalese Sherpa emigrated from the eastern Tibetan region of Kham to their present home. Their culture and social structure may well have been deeply affected by this change in environment. Furthermore, over the centuries they have been exposed to influences from Hinduism (Funke thinks he can even identify some pre-Aryan Indian influences) and the continuous

missionary efforts of various Buddhist sects from Tibet, which themselves have adapted in differing degrees pre-Buddhist religious elements.

I can hardly consider myself competent to judge the accuracy of Funke's description of Sherpa religion or the results of his culture-historical reconstruction. I should like, however, to offer a thought on theory and methodology. Although culture-historical studies might be worlds apart from today's mainstream of Anglo-American anthropology, they certainly represent legitimate and interesting endeavors within the field of anthropology. What most non-European (and English) anthropologists object to is what they consider a weakness in theory and method. The culture-historical anthropology of continental Europe has evolved only two schools of theoretical thought: Graebner's and Schmidt's *Kulturkreislehre*, and Frobenius' less well known and less influential *Kulturmorphologie*. Both theories are now out of circulation, and there is no longer any body of thought which lends coherent explanatory principles to culture-historical research. It is largely this situation that leads also to methodological shortcomings.

It is in this area where Funke suffers. Too many of his culture-historical evaluations seem to be based on subjective considerations rather than on exacting scientific analysis. Certain phenomena he declares as reflecting the original Bon religion because they look "more primitive" than others, while other traits are explained as outside influences because they look "too sophisticated" or "too abstract" to represent true Sherpa thinking.

The culture-historical analysis itself is interwoven with the description, which makes for rather cumbersome reading. It might have been better to keep description and interpretation apart. For the rest, the book is an example of the proverbial German thoroughness. It contains a

six-page English summary (which, incidentally, is littered with errata) and an enormous index of 73 pages. It is luxuriously printed on gloss paper, and of the 185 plates, 99 are in color.

However, in spite of all the luxury, the price is outrageous and hardly justifiable for a scientific monograph published under the auspices of a big foundation.

Pre- and Proto-History of the Berach Basin, South Rajasthan. V. N. Misra. Building Centenary and Silver Jubilee Series, 41. Poona: Deccan College Post-graduate and Research Institute, 1967. 216 pp., 67 figures, 10 plates, 42 tables, index. No price listed (paper).

Reviewed by ROBERT L. SCHUYLER, *City College, CUNY*

Rajasthan is a sparsely populated and somewhat marginal area of the Indian subcontinent, but its pivotal geographical position makes its archaeological exploration vital to a full understanding of South Asian prehistory and history.

Since 1958 Virendra Nath Misra has carried out archaeological research in Rajasthan, and the monograph under review is the most recent result of his work. In 1963 and 1964 Misra conducted site surveys and limited excavations in the Berach Valley in southeastern Rajasthan, locating remains and sites from the Early (Lower Palaeolithic), Middle (Middle Palaeolithic), and Late (Mesolithic) Stone Ages, as well as the Proto-Historic period.

Besides the Berach River valley itself, three of its tributaries, the Gambhiri, the Wagan, and the Kadmali, were surveyed, resulting in a rough geological stratigraphy and related industries. Because much of the earlier lithic material was redeposited and not associated with faunal remains, both the chronology and the integrity of the assemblages are vague and tentative.

Early Stone Age, or Acheulian, artifacts were located in all four valleys, and four industries were thus designated. The Berach, Gambhiri, and Wagan industries are well defined and quite similar on the basis of proportions of tool types and by techniques of manufacture, while the Kadmali is somewhat differentiated from them. Middle Stone Age finds, with the diagnostic artifact being the scraper, are more limited in distribution, probably because of a dearth of certain siliceous rocks in the Berach and Gambhiri valleys. The Wagan and Kadmali materials from the Middle Stone Age are quite similar and do display some continuity with the earlier industries.

Only with the Late Stone Age, or microlithic, industries is Misra able to infer site function and settlement patterns. Twenty-six sites of this period were located on either solid rock or the

highest terraces of their respective streams. On the basis of the proportion of cores to blades and débitage, all of the sites except one, Nimbahera, seem to have been temporary workshops. This leads the author to propose a picture of major camps located along the rivers with scattered workshops farther inland near raw materials and food (possibly birds) resources.

Following the Late Stone Age, and again displaying a lack of continuity, the Ahar culture appears in the Berach Basin in the form of a number of mound sites representing former villages. A neolithic-chalcolithic culture (ca. 1800–1200 B.C.) centered in South Rajasthan, the Ahar seems eventually to be related to Harappan developments to the west and the simpler Nagda and Navdatoli cultures to the south.

Nine sites, most of which are presently occupied by modern villages, produced Ahar ceramics. Surface, or near surface, collections were made and then classified into a typology and seriation of four "wares" (Red Ware, Gray Ware, Black-and-Red Ware, and a poorly defined Cream-Slipped Ware) that are subdivided in turn into a number of "subwares" and types.

Cross dating to the stratified type site of Ahar enables Misra to proffer a tentative seriation for these surface collections and to delineate a southwest-to-northeast movement of Ahar culture in the Berach Basin. This pattern indicates a connection with Harappan sites in Gujarat rather than to the Ghaggar sites to the north, although distribution patterns are not as yet conclusive.

Misra's monograph is a typical well-executed example of the Poona series in archaeology. He presents a substantial amount of data on a little-known area of India and describes this data in detail with a plethora of good illustrations and distribution maps. However, on the methodological level this work is unique.

If the author had given the reader a descriptive site report it would indeed have been weak. Most of the collections he recovered, especially in the case of the Early and Middle Stone Ages, are debatable as true assemblages because of the possibility of redeposition and a poorly defined stratigraphic situation. His later materials, while certainly from definite sites, are only surface collections.

By applying quantitative and statistical techniques, including the chi-square and "t" test, Misra is able to objectively compare variability within and between his collections. Comparing the proportions of various tool types, of core and flake tools, of shaped and unshaped tools, and of retouched and unretouched tools, as well as more specific items such as flake angles, the author is able to show (1) an internal consistency and close affinity between three of the Early Stone Age industries (Berach, Gambhiri, and Wagan), while the fourth, the Kadmali, seems separate, although this may be the product of a very small sample for the latter; (2) a strong homogeneity between the Wagan and Kadmali Middle Stone Age industries, which in turn are differentiated from their Early Stone Age counterparts; and (3) a clear

separation of the Late Stone Age industries from both antecedent periods in the Berach Basin.

Such statistical patterning carries no built-in explanation, and it is here that the work has its weakest point. The author is fully aware of this factor (p. 72) but his conclusions are basically historical, involving the spatial and temporal relationships of various "cultures." With the exception of statements on the cultural ecology of Late Stone Age sites, he primarily concerns himself with specific historical problems such as the continuity or discontinuity between the diverse stone-age industries or the routes of diffusion and possible influences of Harappan civilization on Ahar culture.

In part, obviously, the nature and situation of the artifacts recovered preclude major results on the processual level.

Pre- and Proto-History of the Berach Basin, South Rajasthan is a major substantive contribution to the archaeology of South Asia, but of equal if not greater importance are its methodological innovations. Hopefully it represents in India an initial example of what is already a methodological revolution well under way in Europe and the United States.

Archéologie des Hautes-Terres et de l'Afrique-Orientale; Anthropologie. Taloha 3—Revue du Musée d'Art et Archéologie. Tananarive: Université de Madagascar, 1970. 212 pp., 55 figs., 2 plates. Malgache Francs 500.

Reviewed by WILHELM G. SOLHEIM II, *University of Hawaii*

This is the third number of Taloha to appear. The first, on the origins of the Malgaches, I reviewed in *AP IX* (p. 174). The second was on the *Islamisés*. This number has three general subjects: the archaeology of the mountainous interior of Madagascar, the archaeology of eastern Africa (two brief papers), and physical and cultural anthropology in Madagascar.

All of the archaeological sites covered from interior Madagascar are relatively recent fortified sites, a number of them in use well into the last century. Much of the information presented comes from historical records, and no excavation is reported. Pottery and potsherds from several of the sites are briefly described, and line drawings of many are included. The decoration and forms continually remind me of the Sa-huynh-Kalanay pottery of Southeast Asia. It will be most interesting when sites occupied

during the first millennium A.D. are found and excavated.

The paper by Neville Chittick (one page) on "Récentes recherches sur la côte orientale de l'Afrique" is the only one in English. He reports that a few pieces of 9th and 10th century Chinese porcelain have been found at Manda, north of Kilwa and Lamu, the earliest yet found in eastern Africa. This site had close relations with the Persian Gulf. The second paper on eastern Africa presents archaeological remnants on Cap Delgado and the island of Quisiva in Mozambique (pp. 155-164). These are primarily architectural remains of relatively late date.

The first physical anthropology paper is on the history of research in this subject in Madagascar, while the second is a brief report on blood-group research. A paper in Malagasy is on the funeral customs of the Kajemby. This

is followed by papers on Nosy-be canoes, Malgache beads of the 19th and 20th centuries, and the final paper, a comparison of the use of symbolized anthropomorphic design by the Malgache and Oceanians.

The approach being taken in Malagasy archaeology in working on historic sites or sites of known inhabitants is a wise policy to follow as long as development is not endangering any of

the earlier sites. This will help to untangle recent relationships and movements of peoples within Madagascar. It will tell us little more than we already know about the first arrivals and when and whence they came. As a Southeast Asian specialist, I am very curious about the circumstances of the first settlement from Southeast Asia and look forward with great anticipation to the location and excavation of early sites.

Oriental Ceramics Discovered in the Philippines. Leandro and Cecilia Locsin. Rutland, Vt., and Tokyo: Tuttle, 1967. 249 pp., 221 illustrations, 4 figures, 3 appendices, glossary, bibliography, index. \$22.50 (cloth).

Reviewed by KARL HUTTERER, *Bryn Mawr College*

As an archaeologist one looks at this book with mixed feelings. On the one hand, we have long been waiting for an extensive treatment of the hundreds of thousands of Chinese, Siamese, and Annamese ceramics excavated in the Philippines. The Locsin book is, therefore, a most welcome, and also very handsome, contribution to Philippine archaeology. On the other hand, the Locsins themselves have played a major role in awakening interest in collecting trade pottery in the Philippines, an interest which quickly grew into a veritable fever among wealthy families in Manila and eventually led to large-scale looting and the destruction of virtually all major protohistoric sites. Indeed, the Locsins themselves admit that they have aided and abetted this sad development (p. 24).

There are now several large and magnificent collections of Chinese porcelain in Manila, but only the Locsins have nurtured and maintained a scientific interest in their acquisitions. They (especially Mrs. Locsin) eventually delved into active archaeology. Their first two ventures, briefly described in the book, were still quite immature and not much better than potholing expeditions. The major portion of the book is devoted to a third stint of excavations in the district of Santa Ana, Manila. (Since the publication of the book, the Locsins have been involved in three more excavations, joining the ranks of experienced and qualified archaeologists.) Although this third excavation did still not quite measure up to the rigorous standards of modern archaeological techniques, the book attests to a serious effort toward controlled digging.

After a brief narration of the organizational aspects of the excavation, the body of the book

is devoted to the description of the various trade wares unearthed at Santa Ana (over 1500 pieces were recovered from 202 graves!). The descriptive part is divided into sections on "lead glazed," "brown," "ochre glazed," "gray glazed," "celadon," "creamish white," "*ch'ing pai*," "spotted white," and "early blue-and-white" wares as well as a section on 14th to 15th century wares. Each section contains a brief treatment of the general characteristics of the class, its provenance, its date, and the rough archaeological context in which it was found. Moreover, there are detailed descriptions of every type of vessel grouped under one class, most of the types being illustrated in over 200 good black-and-white and color plates.

The last section of the book describes wares from other areas in the Philippines, mostly from commercially exploited sites. Appendices contain comparative tabulations of certain classes of trade ceramics in the Santa Ana excavations, illustrations of footrims, and a map of Chinese kiln sites. A short glossary and an index enhance the usability of the book.

The virtue of this volume lies in the fact that it offers the first detailed and competent description of a large variety of trade ceramics excavated in the Philippines. This is of importance, because many types of Asiatic trade ceramics found in insular Southeast Asia have, so far, been ignored by art historians and specialists of Chinese porcelain. These types were either unknown to them, as they are rarely found in China, or they were ignored in favor of the far superior imperial wares. For the archaeologist who is not a specialist in Chinese art history but encounters these wares in the Philippines, the present book will be of great help.

Ironically, a major argument over the dating of certain wares has been developing between art historians and archaeologists. The late H. Otley Beyer considered certain wares to be of T'ang origin and he saw relatively continuous stylistic sequence down to pieces safely attributable to the Ching period. Archaeological evidence brought forward in recent years by R. Fox, A. Evangelista, R. Tenazas, T. Harrison, and others seems by and large to support Beyer's dating scheme. The art historians, on the contrary, are much more conservative in their dating for reasons based solely on stylistic considerations. A major bone of contention in this dispute is the date for the appearance of the "early blue-and-white" wares. Archaeological evidence indicates a Late Sung date, while most art historians insist that blue-and-white decoration did not start before the Early Ming dynasty. The Locsins follow, on the whole, the archaeological dating scheme.

It is questionable whether the traditional way of dating Chinese porcelain by dynasties is still useful. The relationship between the production of provincial kilns and the varying fashions at the imperial court was certainly very complex and does not allow a simple equation between style and dynasty. This is important, because most of the trade wares seem to originate from provincial kilns in South China. Also, the traditional formal classifications are not quite

satisfactory. Time-honored traditions notwithstanding, it might be useful to apply modern statistical techniques of classification to Asiatic porcelains. The confusion of names for overlapping modes of form, colors, qualities of glaze, decorative motifs, quality of paste and firing, etc., might thereby be avoided.

Some very important questions centering around Asiatic trade ceramics have not, so far, been touched by any archaeologist. For example, what were the socioeconomic implications of this trade for certain prehistoric societies in the Philippines? The tremendous volume of the trade attests to the probability that there were very strong economic incentives for both trading parties. It is likely that, in the Philippines, the trade caused an economic boom that had great impact on various areas of the social structure. There are clues that the oriental trade was instrumental in a sudden growth of coastal settlements which acted as entrepôts. The establishment of large population aggregates probably necessitated major social and political adjustments. Therefore, it seems likely that the porcelain trade played an important role in the evolution of Philippine lowland societies. Even though much of the necessary evidence has been destroyed in the past fifteen years, these questions present exciting possibilities for applying the principles of "processual archaeology."

The Tabon Caves; Archaeological Explorations and Excavations on Palawan Island, Philippines. Robert B. Fox. Monograph of the National Museum no. 1. Manila: National Museum, 1970. xiii + 197 pp., 55 figures, 13 tables, 17 plates. Price not listed (paper).

Reviewed by H. DAVID TUGGLE, *University of Hawaii*

This is the most important publication in Philippine archaeology in recent years. It summarizes the work that Robert Fox and the National Museum of the Philippines carried out on the island of Palawan from 1962 through 1966. It consists of a cultural chronology developed for the Quezon area, a number of cave site reports—principally Tabon Cave—from the Quezon area, a discussion of Palawan jar burials, and a description of work done on Palawan outside of the Tabon Caves area. Also included is an appendix by F. Landa Jocano on modern jar burial practices and associated religious concepts among the Sulod of Panay.

Fox's presentation of the Palawan cultural chronology at one point includes a discussion of

four ages (Paleolithic, Neolithic, Metal, and Age of Contacts and Trade with the East) and at another point details three "traditions" (Lithic, Metal and Proto-Historic). The significance of these categorizations is not dealt with, and in fact the definition in the Philippine context of such crucial terms as "Neolithic" is never presented. Nonetheless most archaeologists will probably welcome the chronological ordering for comparative purposes, although they may have some difficulty distinguishing "Small Flake-and-Blade Assemblages" from "Flake-and-Blade Industries" or "Upper Paleolithic" Tabonian flake assemblages.

The primary site summary is on Tabon Cave itself. This site contains deposits excavated to at

least a depth of 250 cm (with an unspecified number of strata) with five flake assemblages distinguished by Fox. Flake Assemblage IV is the earliest dated by C-14 ($30,500 \pm 1100$ B.P.), with Assemblage V stratigraphically earlier and evidence that there may be even earlier occupations portending exciting possibilities of extensive Late Pleistocene occupation of Palawan. There are, however, problems with the stratification of Tabon. The location of the profiles in Figure 9 is difficult to determine and the profile in Figure 10, while labeled "schematic," is poorly executed, with lines ending in mid-balk. The major stratigraphic problems, however, revolve around the nature of the assemblages relative to the cave strata. Assemblages III and IV occur in the same stratigraphic zone and each cuts across two or three natural levels. The verbal description of these assemblages (pp. 27-29) indicates floors and workshops, but the stratigraphic representation is confused. There is no adequate explanation of (1) changes in natural levels relative to the cultural deposit, (2) the vertical extent of the assemblage distribution (e.g., Assemblages II and III) compared to overall depth in terms of the great time span for the total deposit, or (3) the relationship between assemblages which are different clusters in the same stratum. A clarification of these problems is important for the quite significant kinds of analyses that Fox is in the process of making.

The material has been recorded with what sounds like good provenience control for both vertical and horizontal analysis, and Fox is analyzing flakes à la Shawcross. Each of these represents a major step forward in Philippine lithic analysis. But while Fox is admirably rejecting the "type" approach to individual flake analysis, "type" thinking continues to characterize his approach to larger provenience units. The flake analysis itself shows a great deal of promise, but this must be related to adequate provenience control as well as to interpretation of provenience and the kinds of activities that produced the provenience differentiation.

The remainder of the site descriptions and discussion is generally oriented toward chronology, but there are a number of important insights into areal relationships, subsistence patterns, problems of cave geology, and cultural patterns made along the way. Perhaps the most important of these is the discussion of jar burial patterns (pp. 70-75).

But the explicit purpose of the Palawan research and of this report is chronology-building (p. 19). Fox has been successful in compiling

and bringing order to a large volume of data for an area that is poorly known archaeologically. But thereby hangs a tale. In an era in world archaeology when there is a multitude of absolute dating techniques available, and when the problems confronting world archaeology go far beyond the utility of trait- and style-oriented chronologies, is it necessary to develop a period-phase chronology? While such systems have been necessary in earlier times, they have often become albatrosses hanging on the neck of research. The unfortunate effect of this kind of "type" thinking may be found in Fox: "... detailed site reports of the caves which have diagnostic assemblages of cultural materials will be published..." (p. 1); and "The principal aim of this study is a brief chronological presentation of the key archaeological assemblages excavated..." (p. 4). What about sites without "diagnostic" assemblages? What is their significance and how are they to be described? Considering materials as undiagnostic (aberrant?) produces a clear mental set regarding their importance and interpretation. What is a "key assemblage" even for a time-lock? Will thinking in terms of key and diagnostic assemblages not obscure the analysis of *relationships* and the examination of cultural systems? It is argued here that it will, and that this is just as true for archaeologists concerned with culture history as with any other approach to the past. The period-phase scheme is no longer an adequate model for handling archaeological data. Philippine ethnography demonstrates that such a model is particularly inadequate for the interpretation and ordering of Philippine prehistory. Fox's work on lithics, the work of Peterson and Hutterer in the Philippines, and that of Gorman, Treistman, and others elsewhere in Southeast Asia are indications of research directions away from type thinking in the analysis of archaeological phenomena.

Fox's research and this volume are outstanding in many ways and the critical statements are not intended to be supercilious. Rather, it is argued that as the pace of research picks up in Asia and the Pacific, we should be critically examining our goals, the means we employ in achieving them, and our assumptions. We should profit by the history of archaeology in other areas.

The Tabon Caves is, overall, a good summary of the Palawan research. But it is only a summary and there are many tantalizing references to more extensive analyses being carried out and to final site reports. It is hoped that these projects will come to fruition in the near future.

The data in the current report clearly indicate the potential of Philippine archaeology for dealing with problems of widespread archaeological interest which might best be subsumed under the heading of cultural evolution in the

tropics. The tyranny of the European model of prehistoric cultural evolution should be felled. Fox and the National Museum have the material and the zeal to accomplish these goals.

Dog and Man in the Ancient Pacific with Special Attention to Hawaii. Margaret Titcomb (with the collaboration of Mary Kawena Pukui). Bishop Museum Special Publication 59. Honolulu, Hawaii: Bernice P. Bishop Museum, 1969. viii + 91 pp., 31 figures, appendix, references cited. \$2.75 (paper).

Reviewed by KATHARINE LUOMALA, *University of Hawaii*

With an attractive and colorful cover design by Joseph Feher, an entertaining writing style by Margaret Titcomb, and numerous illustrations, this compilation of information about the native Pacific dog should interest the amateur as well as the professional anthropologist and zoologist. In addition to reproductions of drawings relating to the dog which early artists to the Pacific made, there are many photographs of artifacts shaped from canine parts or utilizing canine themes, petroglyphs of dogs, and archaeological sites with canine bones.

Over half of the volume is devoted to the dog in Polynesia, with particular focus on Hawaii, for which information from published records is expanded with informants' reminiscences and descriptions. Topics included are the canine varieties and their value as food, pets, offerings, and subjects of legends. The dog in other Polynesian archipelagoes is similarly discussed, but not as extensively. Sections about the dog in Micronesia, Melanesia, New Guinea, and Australia follow. The concluding chapter deals with the possible source of the Pacific dog and its diffusion from Asia into the Pacific. An appendix by Yosihiko Sinoto provides a one-page tabulation of the uses of dog teeth in Hawaii and the Marquesas, and a list of canine archaeological remains from Tahiti.

The author concludes that the domesticated pariah dog rather than the Australian dingo was ancestral to the native dog in the Pacific island

area, and that its route of diffusion from Asia through the Pacific would have been the same as that of man. With him on his migrations man had also the domesticated pig and the jungle fowl, the two other domesticated animals known in the Pacific, but not on every island. The Melanesian dog, which is regarded as having spread eastward from New Guinea rather than westward from Polynesia, is interpreted as ancient in Melanesia. In Micronesia, the author states, the absence of the dog on many islands and the scarcity of its remains make its origin in that area most difficult to determine. In Polynesia the earliest dog remains thus far, which are from the Marquesas, are over 1100 years old. In Australia the earliest fossil dingo found has been dated as going back three thousand years.

A section listing the sites and nature of canine skeletal remains found by archaeologists thus far would have been useful. Sinoto's appendix lists only the Moorea finds. One must now look through each section on a particular archipelago and region to learn what, if anything, archaeologists have found of remains and what dates, if any, have been estimated for them. One looks forward now to a monograph jointly prepared by archaeologists and zoologists that brings together a description and analysis of even the incomplete canine skeletons found thus far. This would seem to be our only important new source of information on the native dog in the Pacific.

Studies in Oceanic Culture History Volume 1. R. C. Green and M. Kelly, eds. Pacific Anthropological Records, number 11. Honolulu: Bernice P. Bishop Museum, 1970. 206 pp., figures, bibliography. \$6.00 (paper).

Reviewed by THOMAS J. RILEY, *New York University*

The most recent number of the B. P. Bishop Museum's Pacific Anthropological Records series is entirely devoted to papers presented at the Oceanic Culture History Symposium held at Sigatoka, Fiji, during the summer of 1969. The symposium was organized, we are told in the preface, to provide an "environment in which widely scattered Oceanic prehistory researchers throughout the world could gather together for extended and uninterrupted discussions," a situation that has become increasingly difficult to maintain in the context of the ever-growing Pacific Science congresses. The papers contained in this first volume relate more or less specifically to problems of Polynesian prehistory. Two subsequent volumes are planned to include articles of more varied geographical interest and the two linguistic papers presented at the conference.

A cursory reading of the table of contents shows a mixed bag of interests. The articles themselves serve to emphasize the statement in the preface concerning "widely scattered Oceanic prehistory researchers," not only in terms of geographical location and interest, but in the more important context of theoretical background and orientation. While it may have been possible for the Bishop Museum to bring these researchers together on a common piece of ground (courtesy of the Wenner Gren Foundation), it does not appear to have been able to bring them together on common grounds of research orientation and strategy.

If one is to look for unity in the volume, he must either cite the covering title of the symposium, or resort to a dialectical approach in his reading of the articles. The emphasis over a large part of the book must be on the contrasting orientations and approaches to the data, on pairing hypotheses with anti-hypotheses, if you like. Thus Green in his "Settlement Pattern Archaeology in Polynesia" offers the view that settlement-pattern studies provide a productive alternative to technological or economic prehistory. In contrast, Higham states that economic prehistory must be increasingly emphasized over other alternatives if any understanding of the processes that spurred Polynesian expansion is to be reached.

A second opposed pair can be constructed

from Sinoto's and Bellwood's contributions. Sinoto simply postulates the Marquesas Islands as a dispersal center for East Polynesian migrations and presents the available evidence supporting his hypothesis. Bellwood, in his article "Dispersal Centers in East Polynesia with Special Reference to the Society and Marquesas Islands," denies that there is enough evidence to support Sinoto's hypothesis, attempts to poke holes in his argument, and succeeds in convincing this reviewer that the Marquesan dispersal hypothesis still remains to be tested in the data.

Kenneth Emory's article is a reappraisal of East Polynesian *marae*. He attempts to relate the derivation of the Necker and Nihoa Islands *marae* in the Hawaiian chain to Sinoto's dispersal hypothesis, using what appears to be a somewhat circular argument. Again Bellwood denies that there is enough evidence to warrant such a speculation.

But it is unfair to characterize the entire volume in terms of dialectical oppositions. There are two articles by Pietrusewsky and Groube that are not eclipsed by the surrounding controversy. Groube constructs a plausible population expansion and movement model for New Zealand from the evidence provided by the archaeological remains of fortifications. His reconstruction is a classic example of the uses to which the limited evidence available from Polynesia can be put. Pietrusewsky's article is the only one in the volume that does not deal specifically with material culture. Using cranio-metric data he attempts to demonstrate the biological distance between Polynesian populations. His conclusions show a marked correspondence both with known lexicostatistical relationships and with the emerging archaeological picture. Despite these correlations with other lines of evidence, Pietrusewsky is careful to point out the weaknesses in the application of his method. He cautions against premature dependence on his results until adequate samples of known provenance can be recovered and analyzed.

Four other articles are included in the volume. Both Reinman and Poulsen examine the distributions of items of material culture in Oceania. Poulsen's contribution is a generalized discussion of the distribution of shell artifacts.

Reinman's article is a discussion of fishhook variability from an ecological perspective, and appears to be the more productive approach to specific articles of material culture. He suggests that fishhook adaptation to specific marine environments, as well as at least two different fishing traditions, may be responsible for a good deal of the variability in fishhook design and manufacture in Polynesia. The paper is well researched and presented within a reasonable and well-designed framework.

The problem of cultural replacement on Polynesian outliers is discussed by Janet Davidson. Using her Nukuoro excavations as an empirical baseline, she discusses the different hypotheses regarding the relationships of outliers. Her conclusions are pessimistic, to say the least, and suggest that traditional culture-historical research strategy emphasizing comparative trait lists may not be the most profitable approach to atoll archaeology.

Edward Lanning's closing paper is concerned with the possibility of Polynesian-South American contact. Much of the evidence presented has been discussed before, and Lanning's speculations are guarded, but the

inclusion of his paper in this volume might be regarded as the promotion of new interest in a problem that has pervaded Polynesian prehistoric studies since the 19th century.

The diversity of approaches and conclusions that appear in this book will doubtless be confusing to some of the audience that it was intended for. It is this very feature, however, that makes the book an honest reflection of the state of Oceanic culture history research today. The divergence of research design, the postulation and attempted negation of hypotheses that characterizes a large part of the volume, and the scattered geographical interests that are represented serve to emphasize an era of new vitality in Oceanic studies.

The contents of this number of Pacific Anthropological Records deserve a favorable review. The price of the book and its durability as a physical object do not. For \$6.00 U.S., one expects to be able to use the book for reference for awhile. Within two weeks of receiving my copy several pages had dislodged themselves from the binding. By way of warning then, I would urge the Oceanic scholar to read this book, but not too hard.

Bernice P. Bishop Museum, Department of Anthropology Report Series. Irregular series, variable price (paper).

Reviewed by H. DAVID TUGGLE, University of Hawaii

This series was begun by the Bishop Museum some three years ago to serve the publication needs of an active program of salvage and contract archaeology. To date some twenty-seven reports have been issued, nineteen of which cover salvage-related research on the Island of Hawaii, reflecting the rate of resort and housing development on that island. Four of the reports are concerned with Maui and one with Kauai. This salvage research is adding appreciably to our knowledge of variation of Hawaiian sites and the utilization of Hawaiian environmental zones. While these reports are too numerous to list individually, several should be singled out for comment.

Scholars who have followed the work at South Point should be aware of *Archaeological and Historical Survey of Pakini-Nui and Pakini-Iki Coastal Sites, Waiahukini, Kailikii, and Hawea, Ka'u, Hawaii* (Report 70-11), by Yoshiko H. Sinoto and Marion Kelly, which is

a preliminary statement on the recent continuation of research in the South Point area.

The recent concern in Hawaiian archaeology with the study of a region, particularly from a settlement pattern standpoint, is reflected in two reports, *Archaeological Survey of Kahana Valley, Koolauloa District, Island of Oahu* (Report 71-3), by Robert J. Hommon and William M. Barrera, and *Excavations in Kahana Valley, Oahu, 1972* (Report 73-2), by Robert J. Hommon and Robert F. Bevacqua.

Several of the reports are able to go beyond the limitations of salvage projects to develop formulations regarding aboriginal Hawaiian adaptation. Two studies which are particularly good examples of the potential of salvage archaeology to be more than raw data reporting are *Archaeological Salvage of the Hapuna-Anaehoomalu Section of the Kailua-Kawaihae Road* (Report 72-5), by Paul Rosendahl, and *Archaeological Excavations at Kahaulu'u, North*

Kona, Island of Hawaii (Report 73-1), by Patrick Vinton Kirch.

These papers are generally printed in small quantities and many are now out of print. However, they are of prime importance to anyone

concerned with Polynesian archaeology and several are of interest beyond regional considerations, particularly in regard to settlement pattern studies.

Pacific Anthropological Records, numbers 6, 7, 8, 9. Honolulu: Bernice P. Bishop Museum, 1969. iii + 126 pp., tables, figures, maps, plates, bibliographies. \$5.00 (paper).

Reviewed by RICHARD SHUTLER, JR., *University of Iowa*

These four reports make available in print the archaeological and historical information known for the Ka'u area of the Big Island. Each report will be considered separately.

Historical Background of the South Point Area, Ka'u, Hawaii

By Marion Kelly

A review of the history of the South Point area, which began about 1778 with Captain Cook's visit and ended ca. 1868, is the theme of this report. The most important development during this period was the introduction of a Western market economy, replacing the aboriginal Hawaiian subsistence economy system.

Scholars researching this area will find the broad depth of coverage invaluable. The chapter headings will suffice to inform the reader of the nature of the material therein: Some Early Visitors to Ka'u; Hawaiian Historians on Ka'u; Ka'u after 1840: Visitors and Residents; Volcanic Disturbances of 1868; Population Changes, 1778-1872; and The People and the Land.

The Introduction to South Point, of particular interest to readers of *Asian Perspectives*, consists of a history of the archaeological fieldwork carried out in the area and a list of archaeological sources. Archaeological interest in the South Point area began in 1953 when fishhooks were found at a Sand Dune site (H1) which were typologically distinct from those excavated in Oahu sites. In 1954, a five-year Hawaiian archaeological program was initiated which included the completion of a series of excavations at South Point sites.

Waiahukini Shelter, Site 8, Ka'u, Hawaii

By K. P. Emory, W. J. Bonk,
and Y. H. Sinoto

Site 8 is a small fishermen's shelter, a natural

chamber within a lava tube located at the foot of Pali-o-Kulani. The site was excavated at various times between 1954 and 1958. Site H8 was rich in artifacts: for example, 1211 fishhooks were found. A detailed description of the artifacts from the South Point sites is to be published later by Sinoto.

Three cultural levels, associated with two floor levels, were identified at the site. Food refuse indicates a fairly constant and heavy level of activity throughout the occupation of the site, with perhaps the maximum use of the site occurring around the time that a slab-rock pavement was laid down.

Mollusks from the three cultural levels indicate there was no significant shift in diet. There was a steady decrease in the number of bird bones found. The authors attribute this to the birds becoming wary and therefore more difficult to catch. This same trend has also been found with bird bones in some Oahu and Marquesan sites. Site H8 proved to be the key to the establishment of a chronological sequence for the South Point area.

Age of the Sites in the South Point Area, Ka'u, Hawaii

By K. P. Emory and Y. H. Sinoto

Seventy radiocarbon dates have been obtained from sites H1, H2, and H8, which provide the South Point area with the longest cultural sequence so far established in the Hawaiian Islands.

A relative chronology was established between these three sites based on the features of the heads and bases of fishhooks (Fig. 2). Using these criteria, it appears that H8 overlaps the occupation of H1 and H2. Sand Dune site H1 was a fishermen's camp, and from the fishhook types the authors conclude it was abandoned in prehistoric times. On the other hand, sites H2 and H8, because of the presence of a very few

metal fishhooks, were occupied into the European contact period, being abandoned sometime between A.D. 1800 and 1850.

Emory and Sinoto feel that the relative chronology for these three sites is firmly established. However, there are serious difficulties with the radiocarbon dates. These problems revolve around the dating of such material as charcoal, shell, bone, fish scales, and sea-urchin spines, and the disagreement of some of the radiocarbon-dated material and the stratigraphic evidence. In an attempt to resolve this situation, Dr. Roy M. Chatters, of the Washington State University Radiocarbon Laboratory, visited the South Point to study the sites first hand and to supervise the collection of various types of check samples. In addition to the material listed above, samples of driftwood, vegetation near volcanoes, and modern sea-urchin spines were obtained. Of the various sample material dated, fish scales, fish bones, and sea-urchin spines were found to be unreliable (Table 1). Added to the problem of sample reliability is the discrepancy between different radiocarbon laboratories of dates on portions of the same sample.

Considering all the evidence available, and the known problems with the radiocarbon dates, Emory and Sinoto estimate that the occupation of the Makalei Shelter (H2) began before A.D. 1600 and ended before A.D. 1850; and that the Waiahukini Shelter (H8) was first occupied by ca. A.D. 750, and abandoned not later than A.D. 1850. The more than 25 radiocarbon dates from the Sand Dune site (H1), which range from 300 B.C. to "into the future," present obvious problems of interpretation (Table 5). Sifting through all the evidence, cultural and chronological, the authors suggest a beginning date for this site of ca. A.D. 1000, ending by ca. A.D. 1350.

It is not possible to consider in detail here the South Point radiocarbon dates and related problems, or the arguments used in establishing the occupation dates for these three sites. While progress has been made toward isolating the unreliable dating material, it is my considered opinion, having been closely associated with this project from the beginning, that we are not yet in a position to establish with any degree of certainty exactly what the chronological position of the South Point sites is, based on the radiocar-

bon dates. Emory and Sinoto have had to rely mainly on their relative chronology based on the fishhook typology established for the Hawaiian Islands.

*Human Skeletal Remains from
Sand Dune Site (H1). South Point (Ka Lae),
Hawaii: A Preliminary Examination*

By Jane Hainline Underwood

Underwood reports on her statistical analyses of some 97 individuals, of which only about 20 are complete, the rest being in varying degrees of fragmentation. Due to the fragmentary nature of the sample, the author explains in detail the techniques used for age and sexual determination. The rugosity of the post-cranial remains is described, while the crania range from Dolichocephalic to hyperbrachycephalic. Without adequate comparative material, it is impossible to evaluate with any degree of reliability the variability found in the series. But the evidence does suggest that the South Point material does not represent the product of a long breeding with a genetic isolate. However, it may represent the members of an extended family.

These burials, recovered from the sand above the cultural level at H1, possibly date between ca. A.D. 1600 and 1800. They could have accumulated during a period of 20 years or less.

The representativeness of the sample and the genetic composition and relationships of the sample are discussed in detail. An appendix contains the anthropometric data for this series.

The overall genetic evidence points to a group with Polynesian affinities, whose composition and structure indicate the South Point people were oriented toward a marine economy. This interpretation is consistent with their geographical setting.

The four reports in this volume are a welcome addition to the ever-growing corpus of knowledge available of Hawaiiana. The volume is well illustrated, and few typographical errors were noted. More fieldwork needs to be carried out in the South Point area on the radiocarbon-dating problems. Such fieldwork should help to resolve some of the chronological problems noted in *Pacific Anthropological Records*, number 8.

Makaha Valley Historical Project; Interim Report No. 2. Roger C. Green, ed. Pacific Anthropological Records, number 10. Honolulu, Hawaii: Department of Anthropology, Bernice P. Bishop Museum, 1970. xi + 139 pp., 3 tables, 46 figures, bibliography. \$6.50 (paper).

Reviewed by JESSE D. JENNINGS, *University of Utah*

Reference must be made here to the first of the reports on the Makaha project, *Interim Report No. 1*, if the contents of the present volume are to be appreciated fully. In the first report the Makaha project was described by Green as follows: "The Makaha Valley Historical Project is a program in contract archaeology, undertaken by Bernice P. Bishop Museum for the Makaha Historical Society in connection with the commercial development of the Makaha Valley as the site for a major planned community on the leeward coast of the Island of Oahu," with a research design, never before applied to Hawaiian archaeological research, aimed at "the intensive survey of the entire valley. . . . When completed, these data should permit an initial interpretation of the prehistory of the valley as well as provide the necessary information on which to base recommendations for selecting the sites to be preserved or restored."

With the present volume Green and his associates have reported and *published* their findings within two years of inception of the research! They, as well as the Bishop Museum (which has no reputation for prompt reporting of its research), deserve praise for placing these new data on record with such dispatch. Without detracting from the credit due the authors, it must also be remarked that phase I of the Makaha project was largely intended as a survey and the reporting is largely descriptive, which makes for more rapid release. The chapters by Green, however, tend toward synthesis and interpretation. The titles of the chapters are: An Historical Sketch of Makaha Valley, by Dorothy B. Barrere; Results of Field Operations—Final Report for the First Year, by Edmund J. Ladd; Subzone 1C of Archaeological Zone 1 in the Lower Makaha Valley, by Robert J. Hommon; Excavations of Three Additional Field Shelters in Archaeological Zone 1, by Jun Takayama and Roger C. Green; Excavations of Three Stone Mounds and a Clearing in Archaeological Zone 1, by Jean Raser; Excavation of Site C4-168, A Possible Religious Shrine, by Peter S. Chapman; Test Excavations of Three Stepped Platforms, by Edmund J. Ladd; Radiocarbon Dating in the Makaha Valley, by R. C. Green; Final Report

on the Upper Valley Survey, by Robert J. Hommon; Summary, by Roger C. Green.

The project itself is unique in being "a new departure in contract archaeology in which the private sector has made possible the inclusion of the past in the planned development of the future. The precedent it has set in this at-present rapidly growing field in Hawaii should not be underestimated."

It is also unique in being a study of an entire valley (except the seacoast, where a fishing village or camp might have been located), a complete agricultural / governmental / kinship district. These districts, called *ahupua'a*, are wedge-shaped, extending from the sea to the mountain-top or to high ridges. In this case the district enclosed the drainage of Makaha creek.

As far as Hawaiian research is concerned, the project is an epoch-making study of the non-portable artifacts of an entire valley, or subsistence unit, where the settlement pattern and the hydrology and land-use data support reasonable inferences about subsistence, religion, and habitation preferences.

In the valley were found 300 sites involving over 2000 individual structures. One archaeological subzone in the lower valley, where remains were numerous, contained 40 mounds, 35 short terraces, 10 terraced platforms, 9 walls, and a few miscellaneous features in an area only 60 × 100 meters in size. In the upper valley over 500 terraced fields, believed to have been irrigated, have been plotted. Some interesting hypotheses about seasonal land and water use are developed, but not always convincingly, because there are not yet enough data. There is also, in the middle valley, three of the ubiquitous *heiau* or "temple" sites (in addition to the famed Kaneaki Heiau) showing the evidently frequent construction phases as the monstrous stone platforms were periodically enlarged.

The earliest remains are older than was anticipated, according to estimates derived from the sixteen radiocarbon assays. Corrected, two radiocarbon dates fall between A.D. 1120 and 1335, two between A.D. 1330 and 1550, with the latest five being A.D. 1655 to 1855.

Although there is a glossary, a prime defect in the volume, as in all other Polynesian

archaeological writings, is that it can only be read by native speakers of Polynesian languages because of the constant use of native terms for construction features, structures, and even exotic floral species that have well-established English names. For example, *mauka*, *makai*, *Waianae*, and *Keaau* are used to indicate the cardinal points, even though north, south, east, and west can be determined. Perhaps even this practice of indicating horizontal relationships after the custom of the islands is really not as annoying as references to earth ovens or roasting pits as *imu* or the basic land divisions as *ahupua'a*. The glossary helps, but the constant flipping back to it—sometimes five or six times per page—does delay the reader beyond any reasonable limit of patience. Unless the Polynesian prehistorians wish to keep their data exclusively to the limited audience provided by other Polynesian scholars, English equivalents (at least in parentheses) are

strongly recommended. Other figures show cross-sections *before* excavation, a neat and useful trick if one can do it. The format is $8\frac{1}{2} \times 11$, the pages are typewritten and reproduced by offset; the binding—glue—is worthless.

My picayune adverse comments point more to reader annoyance than to defects in the reporting. They detract little from what is an excellent, highly informative finale to the first stage of an important breakthrough in Hawaiian archaeology, a project which should have tremendous significance in shaping future research in the chain, as well as providing more new substantive material than its modest size would suggest. Green should receive much credit for the design, and his younger colleagues are equally to be commended for implementing the design to schedule. All students of Hawaiian prehistory await a final monographic summary of this venture.

Australian Aboriginal Anthropology. Ronald M. Berndt, ed. Perth: University of Western Australia Press, 1970. 341 pp., tables, diagrams, bibliography, index.

Reviewed by RICHARD A. GOULD, *University of Hawaii*

This volume contains papers presented at a symposium on social anthropology in Canberra, Australia, in 1968. In part, at least, this symposium was a kind of follow-up on a somewhat similar conference held in Canberra in 1961 which resulted in the publication of *Australian Aboriginal Studies* in 1963. This earlier volume served as a stock-taking of the possibilities for useful anthropological research in Australia at that time, and it offered certain predictions about changes and possible decline in the traditional life of Australian aborigines. While the focus of this new volume is narrower and centers entirely on social anthropology, it, too, will serve as an important landmark in the field of aboriginal studies.

Although the editor of the volume stresses the two themes of social relations and religious values and practices as the unifying themes of the book, this reviewer thinks that the themes of tradition and change are actually more pervasive. For scholars interested in the traditional life of Australian aborigines, the studies of T. G. H. Strehlow ("Geography and the Totemic Landscape in Central Australia: A Functional Study"), Kenneth Maddock ("Myths of the Acquisition of Fire in Northern and Eastern Australia"), and Ronald M. Berndt ("Tradi-

tional Morality as Expressed Through the Medium of an Australian Aboriginal Religion"—which is in fact an analysis of the Dingari cult system of the Western Desert) will be of special interest, while others like "Aboriginal Dream-Spirit Beliefs in a Contact Situation: Jigalong, Western Australia," by Robert Tonkinson, "Stability and Change: Present-Day Historic Aspects among Australian Aborigines," by Helmut Petri and Gisela Petri-Odermann, "Demographic Factors in Pitjandjara Social Organization," by Aram Yengoyan, and "Polygyny, Acculturation and Contact: Aspects of Aboriginal Marriage in Central Australia," by Jeremy Long, focus on processes of culture-change among present-day aborigines.

If there is one general statement that can be made about this volume, it is that the Australian aborigines have maintained their traditional life better than was predicted in 1961, and they have also shown considerable adaptive flexibility in modifying traditional beliefs and behavior to suit new circumstances. This perhaps is best demonstrated in the paper by Tonkinson, in which traditionally oriented desert aborigines now residing at the Jigalong Mission were observed to modify their concept of affiliation to a Dreaming spirit so as to make such affiliation possible

even when it is no longer possible for the people themselves to travel physically back to their Dreaming-sites in the desert. Thus the Jigalong people have maintained a strong traditionally based belief system in spite of potentially

destructive influences arising from European contact. For anthropologists generally, this volume testifies to the unexpected resilience of traditional aborigine social organization, values, and religious beliefs.

Man, Land and Myth in North Australia: The Gunwinggu People. Ronald M. and Catherine H. Berndt. East Lansing: Michigan State University Press, 1970. 262 pp., photographs, diagrams, maps, bibliog., index.

Reviewed by RICHARD A. GOULD, *University of Hawaii*

This volume documents the social anthropology and recent culture-change of a large and important group of aborigines who live in the vicinity of the northern coast of Arnhem Land, Northern Territory, Australia. As the title suggests, the authors present their data in terms of three basic relationships: 1. the relation of man to myth; 2. the relation of man to land; and 3. the relation of man to man. Although useful information is presented in all three of these categories, the general treatment follows the pattern of anthropological research which has been traditional in Australia since the 1930s after the manner set by Radcliffe-Brown, Elkin, the Berndts, and others. This means that the relations of man to man (social relationships, and of man to myth (religious and ritual relationships) are handled with great subtlety and detail, while ecology, technology, and economy are dealt with more briefly.

Thus what we see is a volume with much to offer social anthropologists interested in Aus-

tralian aborigine culture but with relatively little to offer archaeologists who are searching for data to apply to interpretations of prehistoric hunter-gatherer life. To be sure, it is of interest to archaeologists to learn that the Gunwinggu roast a kangaroo by filling the body cavity with pieces of fire-heated termite mound (which they say holds the heat longer than stones). But this kind of information, useful as it is, appears as an afterthought and is not typical of the contents of the book. In all fairness, it is not easy to obtain useful data on subjects of this kind among "reservationized" aborigines today. Despite the Berndts' outstanding abilities as social anthropologists, the living and historic aborigines of Arnhem Land still need to be viewed in terms of archaeological problems (as has recently been done in a preliminary way by C. White and N. Peterson) before a true integration between the disciplines of prehistory and ethnology will be achieved in this region of Australia.

Burrill Lake and Currarong. R. J. Lampert. Terra Australis, vol. 1. Canberra: Australian National University Press, 1971. 86 pp., 3 plates.

Reviewed by RICHARD A. GOULD, *University of Hawaii*

Here is an important new report on archaeological excavations at the Burrill Lake and Currarong rockshelter sites on the south coast of New South Wales. The principal site, Burrill Lake, was excavated in 1967-68, and the speedy analysis and publication of this material is both a credit to the excavator and a reflection of the generally heightened pace of Australian archaeology during the last ten years. Included with it are appendices on sediments of the lake embayment at the Burrill Lake site by J. N. Jennings and on human skeletal remains from Currarong by P. W. Thompson.

This review will focus first on the nature of the archaeological evidence obtained from these sites and second on the interpretations of that evidence suggested by Lampert. The Burrill Lake rockshelter contained deposits extending back around 20,000 years, making it by far the earliest site yet excavated on the east coast of Australia. Other archaeologists will need to consider this site in relation to other recently excavated sites of Pleistocene age in Australia, like Lake Mungo, Koonalda Cave, a series of sites near Oenpelli, and Kenniff Cave. Dating at Burrill Lake was accomplished by a series of five

radiocarbon dates ranging from $20,830 \pm 810$ B.P. in the lowest unit to 1660 ± 70 B.P. in the uppermost unit, with intermediate levels dated at around 12,500 and 5300 years ago. Lampert distinguished five major stratigraphic soil units within the excavated fill, with the lower two units being formed around 20,000 years ago. However, faunal remains at this site were recovered only from Level I (the topmost 25 cm of the deposit) in contexts dating to within the last 1600 years. There was insufficient fossil pollen for analysis, and no structures were found. Thus the report on the Burrill Lake site, of necessity, consists primarily of an analysis of lithic materials in conjunction with their stratigraphic contexts.

Lampert consciously avoids setting up a formal typology in his analysis of the lithic artifacts. Instead he groups them into broad categories (scrapers, core-scrapers, pebble-tools, saws, fabricators, backed blades, eloueras, and extensively retouched scrapers—this latter category resembles the “thumbnail” scrapers described by other archaeologists). In looking for patterns of change in the sequence, Lampert analyzes stone scrapers (the predominant category in the stone tool assemblage) in terms of a series of different attributes, applying the standard t-test to determine the significance of measured differences between attributes between levels. Most attributes were found to remain more or less constant between levels, but a couple, most notably the angle of retouch and the percentage of scrapers with concave working edges, were found to differ significantly, pointing to at least some change. He concludes from these analyses that “The overall picture for scrapers at Burrill is one of conservatism, little influenced either by the passing of nearly 20,000 years or by a major technological change.” I find Lampert’s evidence for this conclusion clear and convincing. Reasonably good line-drawings of the artifacts accompany the analysis.

The deposits in Currarong rockshelter no. 1 relate to the uppermost phase of occupation at Burrill Lake and are dated by a radiocarbon sample near the bottom to 1970 ± 80 B.P. In addition to a rich lithic assemblage, Lampert found fish bones in association with small bone points, fishhooks, fishhook files, and fishhook blanks at the Currarong rockshelters. However, as the author himself notes, most of the artifacts from Burrill Lake and Currarong are unspecialized tools which cannot be linked to specific economic activities. In describing the artifacts from Currarong, Lampert makes special note of

the presence of small cores with striking platforms at opposing ends (“scalar cores”) and interprets these as an important source of small stone flakes along the lines suggested by White on the basis of his New Guinea material (White 1968: 658–666). Lampert further suggests that these small stone flakes would most likely have been hafted and used as barbs for tools like the “death spear” which was made and used by Aborigines into historic times in New South Wales. He proposes that in late prehistoric times backed blades were gradually replaced by small untrimmed flakes, and use as death spear barbs is one suggested function for these flakes. Although these views may change as new evidence accumulates from this region, Lampert’s interpretations seem to be the most economical hypothesis so far put forward for the evidence of changes in stone technology in coastal New South Wales in late prehistoric times.

Lampert views the evidence from Burrill Lake and Currarong in terms of a three-phase regional sequence. Burrill shows the first and middle phases, while Currarong shows the middle and late phases. The first phase is seen as characterized mainly by the long persistence of “crude and amorphous” scrapers along with a few denticulated saws and a few finely retouched scrapers. Lampert then goes on to observe:

Around 5000–5500 years ago at Burrill the scrapers were joined by a range of stone implement types appearing to have more specific functions. The incoming stone tools include backed blades (i.e., bondi points and geometric microliths), thumbnail scrapers, eloueras and fabricators (scalar cores). In the main these are implements characteristic of the Bondaian phase of eastern NSW prehistory as defined by McCarthy (1948) and they herald phase II at the Burrill site. (p. 65)

Yet, according to Table 3, showing the stratigraphic distribution of stone implements at Burrill Lake, no less than four out of a grand total of 11 thumbnail scrapers appear to be derived from phase I contexts, dating before 5500 years ago. Lampert acknowledges this difficulty by pointing out that “. . . the typological credentials distinguishing them from other scrapers are not above suspicion.” To this reviewer, however, it seems that this disclaimer of typological unity must appear suspect when 36% of the sample in question consists of dubious examples.

What the evidence really seems to suggest is that small thumbnail scrapers made an early appearance at Burrill Lake, perhaps even as

early as 12,500 years ago, as Table 3 indicates, and certainly long before the other small stone tools which characterize phase II. Lampert tries to explain away the unexpectedly early appearance of thumbnail scrapers at Burrill even when his careful presentation of the evidence leads to the recognition of this fact. This evidence for an early appearance of small thumbnail scrapers agrees closely with results I obtained in 1969-70 during excavations at the Puntutjarpa rock-shelter in Western Australia, where large numbers of thumbnail scrapers (termed "micro-adzes" at Puntutjarpa) were discovered in association with levels dating back to 10,000 years ago. At Puntutjarpa backed blades did not appear until around 4000 years ago, so there is a general basis for making a parallel interpretation. Moreover, at Puntutjarpa there is compelling evidence to show that these thumbnail scrapers were hafted and used for woodworking in a manner analogous to the chipped stone adze-flakes used by ethnographic Western Desert Aborigines. The same criteria, based on studies of use-wear, size, and, in the case of Puntutjarpa, the presence of tiny slugs similar in appearance to the larger adze-slugs of the modern Aborigines, may also apply to the Burrill Lake specimens. Lampert has not attempted any analysis of this kind. Yet judging by the illustrations of thumbnail scrapers from Level III at Burrill Lake (Fig. 5, nos. 24, 27, 28), these same characteristics may also occur with Lampert's material. If they do, it would mean that Burrill Lake contains the earliest examples of hafted chipped stone tools so far found in Australia, a point of special interest to Australian archaeologists in light of the emphasis given to the appearance of hafted stone industries there by Mulvaney (1969: 110).

If there is any validity to the suggestion that thumbnail scrapers appeared in both eastern and western Australia in contexts 10,000 or more years old, then a further suggestion is possible. Lampert echoes observations made earlier by Jones (1968: 200) when he states: "It is significant that both phase II stone implements and composite hafted tools are absent from Tasmania which was isolated by sea level rises before the arrival of phase II on the mainland" (pp. 66-67). While this statement is certainly true for backed blades and most other phase II artifacts, it may not be true for thumbnail scrapers. I believe there is a strong likelihood that thumbnail scrapers did reach Tasmania before its isolation from the mainland, and, if the reader will forgive this piling of one possibility upon another, there is the further likelihood that these tools were

hafted. Before the idea that hafting *never* reached Tasmania becomes firmly accepted in Australian prehistory, I urge that a careful and systematic check of excavated materials from Tasmania be made to test this possibility.

In discussing the phase II/III transition, Lampert criticizes the concept of an "Adaptive Phase" proposed by Mulvaney to interpret the late prehistoric sequences in this region of Australia. Mulvaney's idea that this phase was characterized by a decreased use of lithic materials in favor of bone, shell, and wood—all materials available locally—is questioned by Lampert, although more in terms of inconsistencies in Mulvaney's evidence than on the basis of the Burrill Lake and Currarong data. Lampert argues that the phase I/II transition reflects a greater rate of culture change in the eastern New South Wales sequence than does the later phase II/III (or so-called Adaptive shift of Mulvaney's) change. I agree with Lampert's description of the phase I/II transition as a "retooling" in which new tool types (backed blades, fabricators, etc.) were added to the already existing core and scraper technology. Since none of the stone tools found at Burrill Lake and Currarong can be convincingly linked to specific economic activities, it is probably wise for archaeologists at this time to avoid terms like "Adaptive" to describe what are, in fact, only technological changes.

Although this volume is concerned mainly with the analysis of prehistoric technology in eastern New South Wales, Lampert does offer some ideas concerning the aboriginal economy of this region, at least in terms of the upper deposits at Burrill Lake and Currarong. He observes that although the materials at both sites reflect the exploitation of a wide range of economic resources, the inhabitants' principal dependence was upon coastal resources. This economic specialization on marine resources was present, however, to a lesser degree at these sites than it was at Durras North, a site excavated earlier by Lampert and reported on in 1966. At least one Australian anthropologist has criticized Lampert's economic interpretation of Durras North and urged that his evidence be considered in terms of a seasonal model (Peterson 1971: 246), and that same criticism could conceivably apply to the evidence from Burrill Lake and Currarong as well. In his introduction (pp. 1-2), Lampert effectively anticipates such criticism by pointing out that:

Alternating *seasonal* use of shore and more inland resources by a group of people is not suggested either by the ethnographic obser-

vations of local Aboriginal life or the lack of marked seasonality in the mid-latitude marine climate, while there is no local fauna whose archaeological presence can be unequivocally accepted as evidence for seasonal occupation.

In other words, in the absence of conclusive evidence to the contrary, Lampert prefers to interpret Burrill Lake and Currarong as examples of a mixed economy with no strongly defined seasonal components. Of course, Lampert's argument here embodies an element of negative evidence and thus lies open to modification in the

light of new finds, but it is heartening to note that the work reported on in this monograph is only one part of an ongoing archaeological survey in eastern New South Wales which will afford an opportunity for further testing of this hypothesis.

To sum up, *Burrill Lake and Currarong* is a valuable new addition to the published literature on Australian archaeology. It sets a high standard of fieldwork and reporting, and presents evidence which will be essential to future archaeological interpretations in the field of Aborigine prehistory.

REFERENCES

JONES, RHYS

1968 The geographical background to the arrival of man in Australia and Tasmania. *APAO* 3: 186-215.

MULVANEY, D. J.

1969 *The Prehistory of Australia*. London: Thames and Hudson.

PETERSON, N.

1971 Open sites and the ethnographic

approach to the archaeology of hunter-gatherers. In *Aboriginal Man and Environment in Australia*, edited by D. J. Mulvaney and J. Golson, pp. 239-248. Canberra: Australian National University Press.

WHITE, J. P.

1968 Fabricators, outils écaillés or scalar cores? *Mankind* 6: 658-666.

Diprotodon to Detribalization: Studies of Change among the Australian Aborigines. Arnold R. Pilling and Richard A. Waterman, eds. East Lansing: Michigan State University Press, 1970. xii + 418 pp., 23 illustrations, chapter notes and bibliography, index. \$10.00 (cloth).

Reviewed by D. J. MULVANEY, *Australian National University*

In 1959 many workers whose research interests impinged upon Aboriginal Australia were invited to contribute papers at a symposium on Change among Australian Aborigines. The topic was broadly slanted, so as to include studies of past and present, from physical anthropology to beliefs. The meeting took place at Wayne State University early in 1960, when the statements under review were first presented. Over a decade later they are published in a pleasing though lavish typographic format, with a full index and comprehensive bibliographies.

Had this book appeared soon after the symposium, it would have made the reviewer's task easier and more complimentary. The standard formula about "serving a definite need" would have been appropriate. But that need was met already in 1963, when *Australian Aboriginal Studies* was published, being the proceedings of the 1961 Australian Institute of Aboriginal

Studies conference; and this meeting was pitched at a more comprehensive level.

Unfortunately, by the time it was published there is much in this book which is as fossilized as the *Diprotodon* of its title. Although some surveys remain useful, it is unfortunate that the editors did not pursue a uniform policy concerning revision. Alterations and additions have been made in some papers, while others are unaltered. The latest changes seem to range from 1963 to 1967. Consequently, these have destroyed the book's value as a compendium of information immediately before the decade of the 1960s, which saw so much new research attempted in Australia. In several chapters, the additions were not integrated into the text. Indeed, it is confusing to see passing reference to later workers whose research should have forced the author into writing a drastic reappraisal. Ignorance about after-events is the nature of

things; failure to take known factors into account is inexcusable. The editors did a disservice by allowing contributors to tinker with their texts.

Pilling has written a long introduction, and there are seventeen other chapters. These consist of four chapters on prehistory, three on recent culture contact situations, and two contributions each on physical anthropology, linguistics, economics, social organization, and religion. However, some chapters are rather marginal, while there is frequently no chapter central to a particular theme. In his introduction, Pilling makes no attempt to assess developments in the decade between the symposium and its publication, which might have been helpful.

Recent research has so outmoded several chapters that it seems pointless to belabor the issue. I found those essays dealing with culture contact and social problems to be of continuing interest (Ronald and Catherine Berndt, John and Katrin Wilson, the Watermans, J. P. M. Long). Bauer's summary of the problems of Kangaroo Island prehistory is succinct, and the

problem remains to be solved by fieldwork. He and Edmund D. Gill were almost alone in their emphasis on environmental and ecological aspects—another factor which dates this book. For this symposium Gill presented his fullest summary of the evidence at the early man site at Keilor, and it is useful to have it in print. Unfortunately, it has later additions which blur the 1960 image.

I found F. J. Micha's chapter on aspects of trade the most original piece. It is based upon his own fieldwork and that of other German ethnographers in the Kimberley region. It is useful to have a summary of this evidence, even though in places the bibliographical references seem overwhelming. The vagaries of diffusion of ideas and culture contact are fascinating problems.

The editors deserve credit for their original idea and initiative. It is regrettable that such a well-produced volume should have such little relevance to the present world of Aboriginal research.

The Prehistory of Australia. D. J. Mulvaney. Ancient Peoples and Places Series, vol. 65. New York: Frederick A. Praeger, 1969. 276 pp., select bibliography, 27 line drawings, index, 11 maps, 81 photographs. \$7.50 (cloth).

Reviewed by THOMAS J. RILEY, *New York University*

The publication in 1968 of *Australian Archaeology: A Guide to Field Techniques* under D. J. Mulvaney's editorship, followed soon after by *The Prehistory of Australia* in 1969, represents something more than a coincidence of publishing interests. The complementarity of these two publications can only be interpreted as a conscious attempt to formulate an integrative approach to the problems of Australian prehistory. The need for such an approach to Aboriginal culture history has long been recognized. Whether this generation of Australian archaeologists can synthesize one from the various methodologies available to them is still a matter for speculation. *The Prehistory of Australia* can be viewed as a favorable beginning.

The fact that this book represents the first formative steps to such an approach helps to excuse its overall disconnectedness. The organization of the book, progressing as it does from protohistory to landscape and people, ethnohistory, prehistory, Aboriginal origins, and field archaeology, is confusing to the casual reader. The continuity of treatment is not immediately

apparent, and transitions from one chapter to another are virtually nonexistent. This is not to contend that the author has failed in his presentation of Australian prehistory. On the contrary, it might be argued that he has succeeded all too well in presenting a faithful picture of the state of the discipline, and that the discontinuities in the book are merely reflections of the discontinuities in the data.

The title of Mulvaney's book is technically a misnomer, for his approach emphasizes historical considerations to the extent that nearly one-half the volume is dedicated to a survey of Asian and European contacts and ethnohistoric studies. His bias is that of the prehistorian, however, as his treatment of Macassan influence on Aboriginal culture points out. While his suggestion that Malay contacts with the Australian continent exhibit considerable time depth has yet to be demonstrated, the thesis that these contacts had a profound effect on Aboriginal culture on the north coast has considerable support in the data. Mulvaney feels that in light of these effects the determination of the duration

of scattered Macassan trepanning contacts with Australia will be helpful in evaluating the rate at which material and nonmaterial traits were assimilated into "conservative" Aboriginal culture.

Mulvaney's second chapter is an excellent survey of the available data relating to changing ecological relationships in Australia from the Pleistocene to the present. He is careful to refrain from generalizations about changing environments for the continent as a whole until detailed regional studies have been completed. As a result this chapter is more of a critical appraisal of published sources than a synthesis of recent findings. The merit of the chapter rests primarily with its emphasis on conflicts in the evidence for both Pleistocene and post-glacial climatic change. Indeed Mulvaney argues that the existing evidence can be used to support conflicting theories and blames this impasse on restricted field research and lack of any overall framework for the interpretation of Australian evidence.

Ethnohistory, prehistory, and origins have been treated in separate chapters. In the third chapter Mulvaney gives an account of the available resources for the reconstruction of the later stages of Aboriginal prehistory. The bulk of this section is devoted to the description and comparison of archaeological assemblages with ethnographic collections. The chapter on prehistory is given over to a discussion of the development of taxonomy and the problems that have surrounded the classification of Australian assemblages. Mulvaney favors a Culture-Phase-Aspect approach to taxonomic classification. Unfortunately he nowhere defines the limits of flexibility of his aspect or the exact nature of his Inventive and Adaptive phases. The reader is left with the rather limp explanation that the aspect is a regional response of a phase of Aboriginal culture, and that no firm life-span can be set up for any phase across the continent.

Tasmanian and mainland early man sites are treated in the chapter on origins. The supposed dichotomy between hafting and pre-hafting is made but not stressed. No attempt is made to explain the apparent incongruities in the Oenpelli region, where edge-ground axes have been found in contexts dating to 20,000 years ago. Mulvaney ends this chapter with a treatment of Asian orientations of Australian origins that will certainly form the basis for the development of testable hypotheses for future work.

The last chapter of the book, a description of field monuments and Aboriginal art, seems to have been tagged onto the body of the text. Mulvaney makes the statement that "it is difficult for a prehistorian to assess Aboriginal art" and proceeds to demonstrate his point. He does emphasize recent findings from Kenniff and Koonalda caves and from Ingaladdi bearing on the antiquity of Aboriginal art. The chapter could, however, have been included as an appendix.

As is true of most of the Praeger series, the format of *The Prehistory of Australia* includes a number of excellent photographs and illustrations, and Mulvaney has attached to the back of the book a chronological table of 81 radiocarbon dates. The table should be cross-referenced with the addenda that were attached to the introduction of the book (p. 16). Nevertheless, it is a most helpful guideline.

In conclusion, I think it is fair to say that a prehistory of Australia was not expected at this early date in the development of systematic archaeological research in the area. The fact that Mulvaney has been able to produce a coherent synthesis of the present state of Australian prehistoric research reflects not only an increased tempo of fieldwork in the region over the last few years, but also a growing awareness of the need for the communication of preliminary hypotheses.

The Aborigines of Tasmania. H. Ling Roth. Second edition. New York: Humanities Press, 1969. 228 pp., vocabularies appended, illustrations, bibliography (146 entries), maps. \$19.50.

Reviewed by P. BION GRIFFIN, *University of Hawaii*

My acquisition of H. Ling Roth's book, originally published in 1889, was very satisfying. As an anthropologist with a major interest in hunter-gatherers, I had utilized the book only

after a long wait in locating a library copy. Roth's book remains the basic synthetic work describing the now extinct Tasmanians. As the one source that pulls together the scanty (compared to, say,

New Zealand or Australia) data acquired before the onslaught of Europeans exterminated the population, the book deserves the wider circulation its reprinting will insure.

The Aborigines of Tasmania is an ethnohistorical work; it is a compilation and sifting of the known information on the then (1889) extinct Tasmanians. The sifting and forming of the material was guided by no overarching anthropological theory. Instead, Roth devised a series of chapters and subheadings. What we have is a description of the aborigines and their way of life as seen by the early voyagers, missionaries, and settlers.

After an introduction to the island and an overview of the history of aborigine-white relations, Roth details a physical study of the living people. In addition to the expected ethnocentric observations reported, we have a fair discussion of body and hair characteristics, pathologies, senses, and fertility.

The third chapter reports "Psychology." Evidence is marshaled that native intellectual powers were not below those of whites. Much of the information relates to natives' emotions—love, hate, fear, joy, and so on. Morals are found, by the early observers, to be a bit wanting.

Chapters on war, nomadic life, and use of fire are lengthy and are among the more useful. The large war parties often fielded, their tactics and organization, and the attitudes about violence are relevant to current concerns about the nature of warfare. Ecological anthropologists will find subsistence base data disorganized but surprisingly abundant. For example, seasonality of movement, resource availability, and nature and size of social units is inferable. Variation in types

of structures is suggested. Certain beehive thatched huts were to have housed, easily, thirty persons. Roth, quoting West, notes villages numbering from seventeen to forty crude huts. Seventy persons supposedly lived in the former village. Information concerning band organization, territoriality, and authority allocation are extractable. The technology of the Tasmanians remains poorly described, but what is available is about the amount and sort of information in a descriptive archaeological site report. The perishable materials—cordage, basketry, and wooden artifacts—are described. Most interesting is the lithic technology. The use of very crude stone tools had long drawn anthropologists' attention: Roth adequately sums up knowledge of manufacture and use.

An extensive chapter on language and one on osteology conclude the book. Both these suffer from a now antiquated approach and an unfortunate paucity of data. However, for taxonomic description and simple comparison with Australian languages and populations, Roth is worth examining.

The major values of Roth's book are its utility as an ethnographic description and, foremost, as a data book from which the researcher can dig bits of information relevant to his questions. Vast gaps will be found: no systematic study of the Tasmanian by a sensitive observer was ever made. Roth has evaluated the reliability of his sources, but many comments must be distorted by European eyes. With an upsurge in the investigation of hunter-gatherers still living, we will be increasingly turning to Roth for comparative data and for insight into one possible extreme in the range of variation in culture.