The Archaeology of Ancient China

Fourth Edition
Revised and Enlarged

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Preface

1985

When I was a graduate student in archaeology in the 1950s, one of my most treasured worldly possessions was V. Gordon Childe's *The Dawn of European Civilization*, one of the more progressive archaeological writings of the time. The trouble was that revised editions kept coming out, and it was always painful to have to dip into the meager income of a graduate student to purchase the same book over and over again. Finally, in 1957, I bought the last edition revised before Childe's death in the same year, and I thought to myself that at least I didn't have to buy another new edition. But I was wrong. No, I didn't have to buy another edition by Gordon Childe, but I still had to acquire new editions of books on the same subject by other archaeologists. Textbooks simply have to keep up with the progress in the field.

This is many times more true in Chinese archaeology. While European archaeology has at least a century of history behind it, modern archaeology began in China only sixty years ago, and since then archaeologists have had to contend with various wars and upheavals. Only during the last thirty-five years, and especially the last thirteen, has the archaeological energy of this old civilization been released, and the outcome is a plethora of new data needing digestion. The third edition of this book, published in 1977, was written in 1975, ten years ago from this writing. During these ten years there has been an information explosion in Chinese archaeology. New data and the new problems they have brought to the fore have rendered the previous edition obsolete.

This edition of *The Archaeology of Ancient China* bears very little resemblance to its previous reincarnations, since it has been rewritten from the ground up. The first major change is that in this edition I no longer intend to cover the whole field and cite every last available reference. The framework is flexible enough—I hope—to accommodate new data from the next decade without fundamental change. Another major change is that the volume now ends with the rise of civilization and no longer includes the very rich and complex period of ancient history after about 1000 B.C. The reasons for this are three independent books, all published by Yale University Press under its Early Chinese Civilizations series, for which I serve as general editor, that deal with the Shang, Western Chou, and Eastern Chou civilizations respectively.

The Introduction is essentially a reprint of an article entitled "Archaeology and Chinese Historiography," published in *World Archaeology* 13 (1981), 156–69. I thank the editors of *World Archaeology* for their permission to use it here. The Epilogue is reprinted with permission from *Symbols* (Peabody Museum and Department of Anthropology, Harvard University), Spring/Fall 1984, 1–4, 20–22.

I have many people to thank for helping me to bring this edition out. First of all, I thank the John Simon Guggenheim Memorial Foundation and the National Endowment for the Humanities for financial assistance that enabled me to undertake the research and writing of the book. The Committee for Scholarly Communication with the People's Republic of China, the National Science Foundation, and the National Endowment for the Humanities have during the last decade sponsored my research in China, which lies at the base of every line written in this volume. None of the above, however, is to be blamed for my views, which are my own responsibility totally.

For my views I have benefited from many archaeologists and historians in China, too many to be named and thanked individually here. During the last thirty-six years they have toiled selflessly in a profession that brings them neither profit nor glory, only intellectual satisfaction for themselves and genuine admiration and gratitude from the rest of us. This book is dedicated to them.

In the preparation of the manuscript I have been assisted by many friends and colleagues. Jeannette Kyoko Miyamoto, my research assistant, helped in numerous ways and typed the final manuscript. Nancy Lambert-Brown was responsible for all the new maps and figures. Nicole Rousmaniere did most of the photographic work. Hillel Burger took the color photographs of the Pan-shan pot used on the dust jacket. Stephanie Jones at the Yale University Press copyedited the manuscript with care and wisdom. The index was compiled by David Goodrich. They all have my sincere thanks.

A Note on Radiocarbon Dates

To the end of 1985 a huge number of Chinese radiocarbon determinations have been reported, the overwhelming majority in various issues of *K'ao-ku* and *Wen-wu* since 1972.* They have been used to construct the radiocarbon profiles of the various regional cultures, which appear in the sections of this book dealing with those regions. All of the reported determinations (5570 half-life) have been calibrated according to the system described in "Calibrations of Radiocarbon Dates: Tables Based on the Consensus Data of the Workshop on Calibrating the Radiocarbon Time Scale," by Jeffrey Klein, J. C. Lerman, P. E. Damon, and E. K. Ralph, in *Radiocarbon* 24 (1982), 103–50.

* *K'ao-ku* 1972 (1), 1972 (5), 1974 (5), 1977 (3), 1978 (4), 1979 (1), 1980 (4), 1981 (4), 1982 (6), 1983 (7), 1984 (7), 1985 (7).
Wen-wu 1976 (12), 1978 (5), 1979 (12), 1980 (2), 1980 (7), 1982 (4), 1982 (6), 1984 (4).

Abbreviations

The primary sources consulted for the writing of this book are referenced only in the footnotes. When the sources are journal articles, only the name of the author (when given), the name of the periodical (abbreviations are used for those consulted frequently), and the page numbers of the relevant portions of the article will be given—not the title of the article. Titles will be given for articles that discuss more general issues. The bibliography lists the major journals, the significant textbooks, and general studies.

The abbreviations used in the footnotes follow:

AAS	*Acta Anthropologica Sinica (Jen-lei-hsüeh Hsüeh-pao)*
ABS	*Acta Botanica Sinica (Chih-wu Hsüeh-pao)*
AGS	*Acta Geologica Sinica (Ti-chih Hsüeh-pao)*
BMFEA	*Bulletin, Museum of Far Eastern Antiquities, Stockholm*
CHKK	*Chiang Han K'ao-ku (Chiang Han archaeology)*
CKHNL	*Chung-kuo K'ao-ku Hsüeh-huei Nien-huei Lun-wen-chi (Proceedings of the annual meetings of the Archaeological Society of China)*
CYWW	*Chung-yuan Wen-wu (Cultural Objects in Chung-yuan)*
GSoC	*Geological Society of China*
GSuC	*Geological Survey of China*
KHTP	*K'o-hsüeh T'ung-pao (Scientia Sinica)*
KK	*K'ao-ku (Archaeology)*
KKHCK	*K'ao-ku-hsüeh Chi-k'an (Bulletin of archaeology)*
KKHP	*K'ao-ku Hsüeh-pao (Acta Archaeologica Sinica)*
KKTH	*K'ao-ku T'ung-hsün (Archaeological correspondence)*
KKYWW	*K'ao-ku yü Wen-wu (Archaeology and cultural objects)*
QS	*Quaternaria Sinica (Chung-kuo Ti-ssu-chi Yen-chiu)*
SCYC	*Shih-ch'ien Yen-chiu (Prehistory)*
SGS	*Scientia Geologica Sinica (Ti-chih K'o-hsüeh)*
VP	*Vertebrata Palasiatica (Ku-chi-chui-tung-wu yü Ku-jen-lei)*
WW	*Wen-wu (Cultural objects)*
WWCK	*Wen-wu Chi-k'an (Cultural Objects bulletin)*
WWTKTL	*Wen-wu Ts'an-k'ao Tzu-liao (Reference materials of cultural objects)*
WWTLTK	*Wen-wu Tzu-liao Ts'ung-k'an (Collections of cultural objects materials)*

Introduction

Geographic Overview

In discussing early human history in China, we must bear in mind that the area known today as China is continental in dimensions (about 3,705,400 square miles, in comparison with 4,100,000 square miles in Europe and 3,615,000 in the United States). It contains a great variety of topography, climate, and vegetation, ranging from tropical jungles in the southwest to subarctic taiga in Manchuria; from the vast plateaus of Tibet to the river-dissected hills of the southeast; and from the deserts and steppes of Chinese Turkestan to the temperate alluvial plains of the lower Huang Ho (Yellow River) valley. In most of these widely differing geographical regions man's progress has been traced in some detail, indicating invariably that human life in each area adapted to its peculiar ecological circumstances.

The subdivision of China into northern and southern parts has been a significant demarcation throughout the period of human occupation.[1] Further, in view of the special importance of the Huang Ho valley in China's early cultural history, North China can itself be divided in two. Thus, for the purposes of this book, three ecological zones of the first magnitude are distinguished: the Huang Ho valley, the southern deciduous zone, and the northern forests and steppes.

The landscape of China is dominated by mountains and hills which, in prehistoric times, were presumably mostly covered with thick woods and jungles. The activities of the prehistoric inhabitants were therefore primarily restricted to the large and small river valleys. Furthermore, most of the great rivers lie horizontally, on a west-east axis, and flow into the Pacific Ocean. The great river valleys of concern to us seldom run through different climatic and vegetational zones and hence can serve as a basis for a cultural as well as a geographical subdivision of China (fig. 1).

The Huang Ho Valley. This region includes the drainage of the Huang Ho and its tributaries, together with the upper courses of a few tributaries of the Yangtze River and several small independent drainage systems in the Hopei plain. The topography of the Huang Ho valley is further divisible into three more or less distinct regions: the loess highlands in the west, the alluvial plains in the east, and the Shantung Peninsula along the seacoast. These are largely in the temperate climatic zone, with warm summers, cold winters, and moderate (400–800 mm) rainfall per year. The vegetational cover of the entire area can be characterized as

1. See, e.g., Hung Fu, "Chung-kuo chih ti-li ch'ü-yü" (Geographic regions of China), *Ta-lu Tsa-chih* (Taipei, Taiwan), 4 (1952), 180–87.

1. The geographic regions and landforms of China, divisible into three broad ecological zones. (1) The Huang Ho valley: L(loessland), YP (Yellow plain), and SP (Shantung Peninsula). (2) The northern forests and steppes: MP (Manchurian plain), KM (Khingan Mountains), JM (Jehol Mountains), EMU (eastern Manchurian uplands), M (Mongolia), and S (Sinkiang). (3) The southern deciduous zone: YP (Yangtze plain), SB (Szechwan basin), CMB (central mountain belt), SYH (southern Yangtze hills), SC (southeast coast), CH (Canton hinterland), and SU (southwest uplands). (Base map by Erwin Raisz, courtesy Harvard-Yenching Institute. Adapted by Rowland Illick in G. B. Cressey's *Asia's Lands and Peoples,* 1951).

mixed deciduous-coniferous forest, though parts of the area are now entirely deforested and some of it has become semiarid.

The Southern Deciduous Zone. The boundary between the Huang Ho valley and the southern deciduous zone lies midway between the Yangtze and the Huang Ho, near the thirty-third parallel. In the west, the line corresponds with the crest of the Ch'in Ling Mountains; farther east it follows the Huai River.[2] This divi-

2. G. B. Cressey, *Asia's Lands and Peoples,* 2d ed., New York: McGraw-Hill, 1951, p. 99.

Table 1: Geographic Contrasts between North and South China

North	*South*
Limited, uncertain rainfall, 400–800 mm	Abundant rainfall, 800–1,600 mm
Cold winters, hot summers, a little snow	Cold winters, hot, moist summers; snow and ice uncommon
Semiarid climate	Subtropical climate, summer monsoon rains, and typhoons
Unleached calcareous soils	Leached noncalcareous soils
Kaoliang, millet, wheat, beans	Rice
Four to six months' growing season, one or two crops	Nine to twelve months' growing season; two or three crops
Mixed deciduous forests and grasslands	Subtropical and tropical forests
Brown and dustblown in the winter	Green landscape in all seasons

sion between the north and the south is clearly marked by climate, natural vegetation, soil, and crops, as shown in table 1.[3]

South China has a network of large and small river systems. These include the Yangtze, the Huai, the Pearl, and several smaller but independent drainages in the southwest and along the southeastern coast. Topographically, South China is divisible into three major regions: the hills, which cover most of the area and are drained by all the river systems mentioned above except the Huai; the Red Basin of Szechwan, drained by the upper Yangtze and its several tributaries; and the Yangtze-Huai plain, drained by the lower Yangtze and the Huai. There are two principal lacustrine areas in South China—one among the hills in the middle Yangtze consisting of the remnants of the ancient lakes Yün-meng and P'eng-li and including such major lakes as Tung-t'ing (Hupei) and Po-yang (Kiangsi), and another situated on the lower Yangtze-Huai plain and including such major lakes as Hung-tse and T'ai.

The Northern Forests and Steppes. The area immediately north of the Huang Ho valley consists of the modern regions of Inner Mongolia and the Northeast (known in the West as Manchuria). Topographically this area resembles a horseshoe opening to the south. The space at the center is the erosion plain of Manchuria, drained by the lower courses of the Liao River and by the Sungari and originally covered with mixed deciduous-coniferous forests. The eastern section of the horseshoe is formed by the eastern Manchurian uplands and is drained by

3. Simplified from G. B. Cressey, *China's Geographic Foundations,* 2d ed., New York: McGraw-Hill, 1934, p. 15.

the T'umen and Yalu rivers and the lower Amur. The western branch is formed by the Khingan and Jehol mountains and is drained by the upper courses of the Amur, the tributaries of the Sungari, and the upper Liao. These mountainous areas are covered with coniferous forests or parklands in the east and north and steppes in the west. The latter extend westward into Mongolia and Sinkiang. Climatically, the entire area is extremely seasonal and continental, with long, severe winters and short, warm summers.

Traditional Historiography and Antiquarianism

The area now known as China has had the longest continuous civilization of the world and the longest recorded history. Historical studies had an early start in China, and the study of bygone cultures and civilizations by means of their artifactual remains has also been a part of the historical method. Even in the Eastern Chou (ca. 770–221 B.C.) and Han (206 B.C.–A.D. 220) dynasties, when what to us is ancient history was contemporary event, and what to us are archaeological specimens of bronze, iron, and stone were still objects of daily use—and when prehistoric cultures remained faintly in the people's memory as legendary traditions, and their ruins and remains were still exposed on the ground or buried shallowly under the earth—there was already an archaeology of sorts. Han Fei Tzu (third century B.C.) says in *Shih kuo:*

When Yao governed the world, people ate in clay vessels and drank in clay mugs;
Yü made ritual vessels, painting the interior in black and the exterior in red;
The Yin people . . . engraved their utensils for meals and incised their utensils for drinking wine.

Wei Chü-hsien thinks that Han Fei Tzu, a philosopher of the Warring States period (ca. 450–221 B.C.), must have seen some excavated prehistoric ceramic remains and Yin bronzes and identified them with the traditional ancient heroes, in order to have given such vivid descriptions of ancient artifacts.[4] Ssu-ma Ch'ien of Western Han visited many ancient ruins and relics attributed to various preceding periods before he put the information that he considered verified and reliable into his great *Shih chi* (Historical Memoirs, ca. 100 B.C.). An even more interesting "archaeological" approach to history is seen in Yüan K'ang's *Yüeh chüeh shu.* In the chapter on swords, Feng Hu Tzu, an Eastern Chou philosopher, is quoted by Yüan K'ang as saying to a king of Yüeh:

4. *Chung-kuo k'ao-ku-hsüeh shih* (History of archaeology in China), Shanghai: Commercial Press, 1937, pp. 50–51.

In the Age of Hsüan Yüan, Shen Nung, and Ho Hsü, weapons were made of stones, for cutting trees and building houses, and were buried with the dead . . . ;
In the Age of Huang Ti, weapons were made of jade, for cutting trees, building houses, and digging the ground, . . . and were buried with the dead;
In the Age of Yü, weapons were made of bronze, for building canals . . . and houses . . . ;
At the present time, weapons are made of iron.

In its Three Age system, Yüan K'ang's account anticipated C. J. Thomsen of Denmark by more than a thousand years, and Yüan K'ang may thus rightfully rank with Lucretius as one of the first archaeologists to propose such a classification.[5]

These examples show that Chinese historiography is almost as old as Chinese civilization itself,[6] and that archaeology, as a systematic investigation of the past through material remains, has always been a tool of Chinese historiography. In recent years, the science of field archaeology has been introduced from the West. In very recent years, new excavations have brought to light an enormous amount of data, which are quickly transforming Chinese history. But, in spite of its new scientific backing and newfound fame, archaeology in China remains a tool—albeit a much more powerful tool than ever before—of Chinese historiography.

It may be said that in China historiography is an entity separate from Chinese history itself: it has a life of its own almost independent of dynastic upheavals and institutional change. As Yü Ying-shih has put it, "Chinese historiography has two major characteristics: the first is that it has had a long history, and the second is that the historiographic tradition has its own continuous strain, not interrupted by political and social changes."[7] This historiographic life, however, has been continuously enriched by new techniques, methods, and theories. Some of these have been introduced by way of archaeology, and two markers are of particular importance in the archaeological study of Chinese history: the compilation of *K'ao-ku-t'u* (by Lü Ta-lin) in 1092, which signaled the beginning of traditional Chinese antiquarianism, and the identification of the first Stone Age sites in 1920, which ushered into China the age of scientific archaeological discoveries. But it is

5. Ibid., p. 58. George G. MacCurdy, *Human Origins,* New York: Appleton-Century, 1933, vol. 1, p. 9: "In his poem *De Rerum Natura* Lucretius (about 98–55 B.C.) says: 'The earliest weapons were the hands, nails, and teeth; then came stone and clubs. These were followed by iron and bronze, but bronze came first, the use of iron not being known until later.'"
6. For the role of historiography in ancient Chinese society, see my *Art, Myth, and Ritual: The Path to Political Authority in Ancient China,* Cambridge: Harvard University Press, 1983, chap. 5.
7. Yü Ying-shih, *Li-shih yü ssu-hsiang* (History and thought), Taipei: Lien-ching, 1976, p. 172.

useful to review some of the major objectives and characteristics of traditional Chinese historiography.

First, traditional Chinese historiography has an explicitly moral purpose. The late Arthur F. Wright asked, "Why was the study of the past so esteemed and what sorts of value were ascribed to it?" His answer was:

One is that the successes and failures of the past provide sure guidance for one's own time. . . . The Confucian tradition, as it developed, perpetuated the injunction to study the past as a repository of relevant experience. A second justification for history . . . was that, whereas the Classics—the corpus of traditional wisdom—provided the guiding principles, history provided the instances and the proofs of those principles in the affairs of men. To add to the historical record was to participate in the great work the sages had begun, and to study history was to understand in clusters of concrete instances how men had fared when they lived in accord with or in defiance of the moral injunctions of the Classics.[8]

Since history records the rights and wrongs of the past, it provides guidance for future behavior. As put by Ssu-ma Ch'ien, the great Chinese historian of the late second century B.C., "Events of the past, if not forgotten, are teachings about the future." The historian achieves this by appealing to people's (especially the rulers') vanity and concern for their own posterity. When Confucius was compiling the *Ch'un Ch'iu* (Spring-and-Autumn Annals), "the usurping officials and the seditionists" are said to have become highly apprehensive, for they were sure their misdeeds and moral turpitude were being inscribed for posterity.

Because Chinese historiography has a moral purpose, in its best form it does not arbitrarily follow any vicissitudinous tide of politics or ideological fashion. Since the time when Confucianism evolved into an unchanging orthodoxy, historiography has developed into a parallel institution and has become an independent entity. In fact, the independence of historiography from transient interference considerably predates the establishment of official Confucianism. The following well-known story appears in *Tso Chuan* under the entry for 546 B.C.: Minister Ts'ui Chu killed his lord, Duke Chuang of Ch'i. The chief historiographer thereupon recorded on his official slip: "Ts'ui Chu committed regicide." Angry, Ts'ui executed him. The brother of the historiographer, succeeding him, made the same entry and Ts'ui killed him also. Then he killed a third brother. Finally, a fourth brother took over and persisted in making the same record, and Ts'ui had to give up and let the record stand. The story becomes even

8. "On the Uses of Generalization in the Study of Chinese History," in *Generalizations in the Writing of History*, Louis Gottschalk, ed., Chicago: University of Chicago Press, 1963.

more interesting when another historiographer in a different part of the country, on hearing that the chief historiographers had been killed, arrived on the scene with his bamboo tablets in hand, ready to record the facts. Only when he found that the event had finally been recorded did he return home.

One of the characteristics of Chinese historiography that may have much to do with its independence is its preference for case histories rather than abstract generalizations. In the "official" histories, which were usually compiled by the court of each dynasty for the preceding one, the major components are the biographies of important persons from emperors and ministers down to merchants and scholars. Moral teachings, it was apparently believed, are self-evident as long as historical facts are faithfully recorded. The personal opinions of historians are clearly separated from the facts. Ssu-ma Ch'ien said that his objectives in compiling *Shih chi* were "T'ung t'ien jen chih chi, chiu ku chin chih pien, ch'eng yi chia chih yen," or "to make clear the relationship between Heaven and Man and to investigate the change from past to present, and these to establish the view of a single scholar."

Traditional Chinese historiography has contributed its own sets of generalizations. Arthur Wright enumerated the following two categories: (1) *regularity generalizations*—the dynastic cycle and its corollaries, such as the notions that the phase of prosperity was correlated with the length of individual reigns, that the influence of women at court was both a symptom and a cause of dynastic decline, and that the people rebel when officials become oppressive, a syndrome of decline: and (2) *labeling generalizations*—examples are Chung Kuo, the name of China, which implies centrality and superiority; *feng chien*, which identifies an institutional complex or its fragments as conforming to a known pattern; paired opposites or paired complements; and terse, apodictic statements that imply a regularity and a fixed linkage between two orders of events.[9] Undoubtedly, these have by no means exhausted the generalizations that traditional Chinese historians have made, but they point to the kinds of historical patterns that traditionally trained Chinese scholars are used to thinking about and discussing.

Traditional scholars also tend to discuss their history within the Chinese geographic world. Arthur Wright referred to the Chinese preoccupation with their country primarily in the light of a Sinocentric self-image.[10] Yet to go a step further we should point out, as Ch'ien Mu does, that Chinese history was laid out on a geographic stage that is at once massive and isolated.[11] The geographic range

9. Ibid., pp. 41–45.
10. Ibid.
11. *Shih-hsüeh tao-yien* (Introductory remarks on historiography), Taipei: Central Daily, 1970, p. 24.

of the twenty-five standard histories coincides with the territorial scope of the political dynasties they record, but the center of attention was always the spatial center of Chinese civilization, so-called China proper. It would be untrue to say that traditional Chinese historians had no interest whatever in what lay beyond their borders, for accounts of far-away lands were an important part of traditional texts from *Shan Hai Ching* (Classics of Mountains and Seas, first millennium B.C.) to *Chenla feng-t'u chi* (The Records of Customs and Manners of Chenla, ca. 1300). But, apparently because China itself was so large and diverse and its history so long, its own historical record must have seemed to contain all the lessons that could possibly be learned from the past.

As an adjunct of traditional historiography, traditional antiquarianism came into its own during the Sung Dynasty (960–1279). According to Li Yü-Sun's (1824) account,[12] sixty-one scholars of the Sung Dynasty may be considered antiquarians, and Yang Tien-hsün counted eighty-nine titles of scholarly works from that period that no longer survive.[13] Of the thirty Sung titles that have survived,[14] the earliest is *K'ao-ku-t'u,* by Lü Ta-lin, said to have been compiled in 1092. This book describes, in both words and line drawings, 210 bronze artifacts and 13 jades, dating from the Yin to the Han dynasties, in the imperial collection and in thirty private collections. A little later, first compiled in 1107–10 and revised and expanded in 1119–25, was *Po-ku-t'u,* edited by Wang Fu under an imperial order, in which 839 artifacts are described. These Sung catalogues established the antiquarian tradition of recording bronze artifacts in imperial and private collections by means of a combination of profile line drawings of the artifact, facsimiles of any inscriptions, and written descriptions of the physical appearance and dimensions. These catalogues also initiated the tradition of using terms derived from classic texts to designate both artifact types and decorative designs. Some of the terms were used correctly, others questionably. We will take up this point presently.

The principal objective of these catalogues was not to create a new branch of learning based on the study of ancient artifacts as an independent body of historical data. Yet the Sung archaeologists sought to do more than merely assist textual historiographers. Lü Ta-lin in his preface to *K'ao-ku-t'u* lists three objectives: "to search for the origins of [ritual] institutions, to fill the lacunae in the classics and their commentaries, and to correct the errors of the [classical] scholars

12. Li Yü-sun, *Chin-shih-hsüeh lu* (Notes on the study of bronzes and stones), 1824.
13. Yang Tien-hsün, "San-tai chin-shih yi-shu mu" (List of lost titles on Three Dynasties bronzes and stones), *K'ao-ku* 4 (1926), 204–28.
14. Jung Yuan, *Chin-shih shu lu-mu* (Bibliography of books on bronzes and stones), Shanghai: Commercial Press, 1936.

of the past." In the preface to an earlier work, *Hsien Ch'in ku ch'i chi,* long since lost, but quoted in another context, Liu Ch'ang had also stated that "the study of early bronzes must be attacked from three angles; specialists in ritual must determine how the vessels were used: specialists in genealogy must determine the proper sequence of historical names; and specialists in etymology must decipher the inscriptions."[15] Inscriptions on the bronzes were studied attentively, to be sure, but Lü and Liu both saw important roles for the students of ancient bronzes in determining the origin and early forms of rituals and of other aspects of ancient culture that were not dealt with in the classics and their commentaries.[16] Unfortunately, after the Sung Dynasty, traditional antiquarianism suffered a severe decline. Post-Sung catalogues and antiquarian writings concentrated on the inscriptional role bronzes played in relation to the known texts, whereas information pertaining to both the provenance of the artifacts and their physical appearance and dimensions, so meticulously recorded in the Sung catalogues, received very little emphasis and even on occasion disappeared altogether.[17]

Nevertheless, in addition to initiating the format of the bronze catalogues that is still in use today—descriptive words, picture (now a photograph), and inscription (now a photograph or rubbing)—the Sung antiquarians left us a nomenclature of ancient artifacts. As Rudolph said, "one of the fundamental contributions to Chinese archaeology was the classification and naming of ritual and other bronzes by the Sung scholars. Despite some mistakes, the classification and terminology established by the scholars of that period is basically that which is in use today."[18] Actually, the terminology pertains to both formal types and decoration. Let us take two examples from *Po-ku-t'u:*

Item: Shang Ch'ü Fu Ting *(vol. 1, p. 9)*
Line drawing of vessel (fig. 2)
(Facsimile of rubbing of inscriptions, followed by transcription in modern characters)
[The object] at right is 5 ts'un *2* fen *tall; handles are 1* ts'un *high and 1* ts'un *2* fen *wide; [body is] 3* ts'un *2* fen *deep; diameter at mouth is 5* ts'un; *diameter at belly is 5* ts'un *2* fen; *capacity is 2* sheng *2* ho; *weight is 2* chin *14* liang. *Three legs. Inscription consists of two characters,* Ch'ü *and* fu *[father]. Many Shang artifacts have* fu *in their inscriptions, but the identity of* Ch'ü *is unknown. But* Ch'ü *has two compounds in the shape of*

2. A Shang period *ting,* inscribed *"Ch'ü Fu"* and illustrated in *Po-ku-t'u.* Reproduced from a Ming edition of the book, dated 1528, with the permission of the Percival David Foundation of Chinese Art, London.

15. Trans. in Richard C. Rudolph, "Preliminary Notes on Sung Archaeology," *Journal of Asian Studies* 22 (1963), 175.
16. For antiquarianism in the Sung dynasty, see ibid.; Hsia Ch'ao-hsiung, *Peking University Journal (Philosophy and Social Sciences),* 1982 (1), 66–76; Ch'en Chung-yü, *Shih-huo Yüeh-k'an* (Taipei), n.s. 2, no. 2 (1972), 1–13.
17. Li Chi, *Bull. College of Arts, National Taiwan University* 1 (1950), 63–79.
18. Rudolph, "Preliminary Notes on Sung Archaeology," p. 176.

3. A Shang period *ting* inscribed *Ho Fu Chi* and illustrated in *Po-ku-t'u*. Reproduced from a 1528 edition of the book, with the permission of the Percival David Foundation of Chinese Art, London.

eyes, similar to the two eyes (in the inscription) of the Ch'ü Tsu Ting Yu *of Shang. Presumably there is no change there, and it could be considered a name or lineage name. This vessel's handles and legs are plain and without decoration. Under the rim it has a* t'ao-t'ieh *design composed of thunder patterns. It has seen a number of years and has the color of green jade. It must be a Shang vessel.*

Item: Shang Fu Chi Ting *(vol. 1, p. 21)*

Line drawing of vessel (fig. 3)

(Facsimile of rubbing of inscription, followed by transcription in modern characters) [The object] at right is 5 ts'un *7* fen *tall; its handles are 1* ts'un *1* fen *tall and 1* ts'un *3* fen *wide; its body is 3* ts'un *deep; its diameter is 5* ts'un *at mouth and 5* ts'un *2* fen *at belly. Its capacity is 2* sheng *2* ho; *its weight is 3* chin *1* liang. *Three legs. Inscription consists of three characters; one character is in the shape of* ho *[or cereal plant], and the other two characters are* Fu Chi *[or Father Chi]. In later times, due to errors in the transmission [of knowledge], cereal plants were painted on [such ritual vessels as]* Chia-yi. *To be sure, this has merely resulted from faddish vulgarity, but it does have roots [in this inscription]. Father Chi was Chi of Shang. In this same collection is a Father Chi Yi, but the first character depicts the holding of a halberd. Presumably in Shang artifacts various objects were taken by kind to approximate the form, because calligraphy was as yet immature and the small and large seal characters had not yet been distinguished. This vessel's handles and legs are plain. On three sides [it is covered] by* t'ao-t'ieh, *separated by thunder patterns. The decorative designs are similar to Father Chi Yi; these two were probably objects of the same period.*

Several points are worth noting here: The objects are referred to as *ting,* which term was used to label the bronze vessel with three solid legs. *T'ao-t'ieh* was used to designate the animal mask design in the decoration, and square spirals were referred to as the thunder pattern or *lei-wen*. Decorative designs were used as a criterion of dating. The ancestral names in the inscription are also used as a dating criterion, namely, as a criterion of Shang dynasty date. Another dating criterion was the oldish look of an object.

Dating a vessel by physical appearance, inscriptional content, and decorative design is, of course, entirely practical and reasonable in antiquarianism and it is still done today, although our use of these criteria is much more sophisticated as a result of the accumulation and expansion of knowledge since the Sung dynasty. The use of the terms *ting* and *t'ao-t'ieh,* however, represents a fundamental scholarly approach in Sung antiquarianism whose direction is still followed by Chinese archaeologists today.

This direction may be called the *emic* or *ethnosemantic approach*. Perhaps because of the easy availability of textual material, it is peculiar to Chinese archaeology. The ritual vessels in ancient China were extremely complex and were assigned diverse terms. Some of these terms occur in the inscriptions cast on the objects themselves, but many more are found in ancient texts. The term *ting,* for example, occurs in a number of inscriptions cast on *ting*-type vessels. Yet the term also occurs in many ancient texts as designating the most prominent ritual vessel of ancient times. The character itself is, in fact, a pictograph of a tripod of the *ting* type. Therefore, the use of this term to designate that specific type of vessel as illustrated in the Sung catalogues is consistent with its use by the ancient Chinese themselves. But some terms were incorrectly used by the Sung cataloguers. For example, the term *tuei,* an Eastern Chou expression for a globular vessel, was wrongly employed by Sung cataloguers to designate a Shang and Western Chou type of food container that should be called *kuei*. The character for *kuei* occurs on some inscriptions cast on *kuei*-type vessels, but the Sung cataloguers transcribed it into the modern equivalent of the character for *tuei*. Furthermore, some ancient terms included more than one vessel type, designating vessel classes at a higher level of contrast. The word *yi,* for example, was used by Sung scholars to designate a specific type of vessel (*kuei*), but the word actually meant simply "ritual vessels."

In spite of the existence of valuable data such as these, the native terms for ancient artifacts do not occur in a systematic manner. The Sung antiquarians initiated the trend of using native terms for archaeological purposes, but traditional antiquarians since then have left us a terminological legacy characterized by much subjectivity and confusion. Contemporary archaeologists have made numerous attempts to classify ancient bronzes using a combination of native nomenclature and objective typology.[19] Although a definitive system has not yet been devised, such a combined typology appears to be potentially meaningful and realistic. A decade ago, I compiled a catalogue of more than four thousand inscribed Shang and Chou bronzes and had the essential information analyzed and fed into a retrieval system.[20] From this, a number of extremely interesting pieces of information can be gleaned. *Ch'iang, ting, hsien, kuei,* and *hu* appear to be the only terms that are applicable to specific types; of these *ch'iang, ting, hsien,* and *kuei* are food vessels and *hu* was a wine vessel. *Tsun* and *yi,* on the other hand, are generic terms that tended to be used for wine vessels. This demonstrates that there are potentially interesting and significant data in the ancient nomenclature of objects and that any research on this topic will have to incorporate data from

19. One example is Li Chi, *KKHP* 3 (1948), 1–100.
20. K. C. Chang, *Shang Chou ch'ing-t'ung-ch'i yü ming-wen ti tsung-ho yen-chiu* (A comprehensive study of Shang and Chou bronzes and their inscriptions), Monographs, Inst. Hist. Philol., Academia Sinica, no. 62, 1973.

the historical texts. Although the Sung scholars lacked sophistication in their handling of these terms, they did show us the way.

The use of the word *t'ao-t'ieh* by Sung scholars to describe decorative designs, on the other hand, caused mostly confusion. In *Lü-shih Ch'un-ch'iu,* a philosophical treatise dated to the latest period of the Chou Dynasty, there is a passage (in the chapter "Hsien-shih lan") that reads: "Chou [or Hsia, in a different version] dynasty *ting* tripods are decorated with *t'ao-t'ieh.* It has a head but no body. It is in the act of devouring a man but has not yet swallowed it, but this act has done harm to its body." In other texts the name *t'ao-t'ieh* also designates a greedy and insatiable glutton. Sung scholars applied the name to the animal masks seen on ancient bronzes and speculated that the ancient artisans put *t'ao-t'ieh* images on food and drink vessels to warn against greed and overindulgence. *T'ao-t'ieh* remains a common term for such animal masks but its iconographic meaning, if any, is still cloudy.

After the Sung dynasty, traditional antiquarianism suffered a gradual decline.[21] Although *Chin Shih Hsüeh,* the traditional "Study of bronzes and stone stelae," continued to occupy a significant space in Chinese historiography,[22] the Sung scholarship became lax, and ancient objects were often collected more for their fetish or decorative values than for their scholarly significance (fig. 4).

Modern and Contemporary Archaeology

The traditional Chinese preoccupation with the Chinese world came to an abrupt end with the Opium War of 1840–42, when Western influence on all fronts began to intrude into Chinese life and consciousness in earnest. Western historiography had a profound impact on Chinese historians in the early decades of the twentieth century, when the Chinese scholars began to demand empirical proof for the historicity of the legendary portions of Chinese history, which include most, if not all, of the history of the ancient period.[23] Geology, archaeology, and the other sciences that were capable of recovering such empirical data found a receptive audience in China. In Li Chi's words:

From the beginnings of this century, field workers in geology, palaeontology, and archaeology spread across the world and field data gained importance by leaps and bounds. Old China, for centuries a hunting spot for European imperialism, was forced to open her door widely for whatever the "superior white power" liked to do, including field work in science. Geologists, geographers, and palaeontologists as well as fortune hunters rushed to the Far East, particularly China. . . . It was only after the revolution of 1911 that educated Chinese began to wake up. As it had in Europe, the "field method" as a way of learning established its influence on the Chinese mentality.[24]

Li Chi went on to describe the principal early instrument of the Western science of field work—the Geological Survey of China, established in Peking in

21. Li Chi, *Bull. College of Arts,* 1 (1950).
22. Chu Chien-hsin, *Chin Shih Hsüeh* (Study of bronzes and stones), Shanghai: Commercial Press, 1948; Ma Heng, *Fan-chiang-chai chin-shih ts'ung-kao* (Collected papers on bronzes and stones from the Fan-chiang studio), Peking: Chung-hua, 1977.
23. Ku Chieh-kang, *The Autobiography of a Chinese Historian,* A. W. Hummel, trans., Sinica Leidensia series, Leiden: E. J. Brill, 1931.

4. The bronze wine vessels set from Pao-chi, at center, with a group of Manchu Dynasty officials, presumably headed by Tuan Fang (1861–1911), former owner of the set, which is now in the collection of the Metropolitan Museum of Art in New York. The photograph was acquired in 1932 or 1933 in Peking by Lawrence Sickman. His kind permission to reproduce it here is gratefully acknowledged.

24. *Anyang,* Seattle: University of Washington Press, 1977, p. 34.

5. From left to right: J. G. Andersson, Li Chi, and Kuo Mo-jo.

1916—and the Western scientists working under it who exerted the strongest influence on China: A. W. Grabau (American), J. G. Andersson (Swedish), Davidson Black (Canadian), J. F. Weidenreich (German), and Pierre Teilhard de Chardin (French).

Of these people, Andersson (fig. 5) undoubtedly exerted the strongest influence on Chinese archaeology. As he himself stated:

By a series of fortunate circumstances I was on several occasions the pioneer. In 1914 I was the first to stumble upon the organic origin of Stromatolite ore. In 1918 I discovered the Collenia modules and recognized their connection with similar "fossils" in the pre-Cambrian area of North America. 1921 was a red-letter year: the Neolithic dwelling site at Yang Shao Ts'un, the Eocene mammals on the Yellow River, the Sha Kuo T'un cave deposit in Fengtien and the still more remarkable cave discovery at Chou K'ou Tien, which became world famous by the work of those who followed after us.[25]

Of these, the 1921 work at Yang-shao Ts'un and Sha-kuo-t'un was particularly important, because at these sites the first prehistoric culture in China, characterized by polished stone celts and red pottery bowls and jars covered with black or brown decorative patterns, was discovered.[26] These finds were soon followed by Andersson's work in Kansu, where a large series of painted pottery culture sites was brought to light.[27] Collectively known as the Yang-shao Culture, these painted pottery sites, which extended over a large part of North China, provided

25. *Children of the Yellow Earth*, London: Kegan Paul, Trench, Trübner, 1934, p. xviii.
26. J. G. Andersson, "An Early Chinese Culture," *Bull. GSuC* 5 (1923), 1–68; *The Cave-deposit at Sha Kuo T'un in Fengtien*, Palaeontologia Sinica, ser. D., 1 (1923).
27. J. G. Andersson, *Preliminary Report on Archaeological Research in Kansu*, Memoirs, GSuC, ser. A, 5 (1925).

the first concrete evidence of prehistoric occupation of this area. Andersson's methods of acquiring and analyzing the archaeological data were naturally emulated by Chinese scholars, who adopted the same field archaeology approach.

It is not my purpose here to provide a thorough analysis of Andersson's archaeological methods. It is important to note, however, a few of the principal methods he and his Western colleagues at the Geological Survey employed in their archaeological as well as geological work, for these methods had a profound and continuing influence upon Chinese archaeology. It is important, also, to bear in mind that Andersson and his colleagues were geologists and palaeontologists and that their principal methods were more suited to those fields than to archaeology. These methods included techniques for collecting data in the field, close collaboration with natural scientists, stratigraphy, and the use of index fossils. In this regard, the Chinese situation was not so radically different from that in the West, for there too much early archaeology outside Europe was done by explorers and natural historians. What makes it particularly significant in the case of China is the fact that these early methods have continued to be used.

These methods were not "bad," however. Stratigraphy is a basic chronological method under any circumstances. Likewise, the Chinese archaeologists' habit of associating with geologists and palaeontologists, a practice acquired within the context of the Geological Survey of China and especially within the Cenozoic Research Laboratory set up to accomplish the excavation and research of Peking Man remains at Chou-k'ou-tien, is responsible for the early and continuing strong interest in human-land interrelationships in Chinese archaeology.[28] On the other hand, Andersson's use of collectors for archaeological remains as well as geological and palaeontological specimens did not result in a clear knowledge of either the sites or the stratigraphy, although this was a common enough practice at the time and could be easily changed. Andersson's frequent use of index fossils for dating and making historical comparisons, however, had a more enduring negative effect on archaeology. This method was also common in the West, but its shortcomings were spotted early on. As Childe noted in his presidential address to the Prehistoric Society for 1935:

Geology not only taught archaeologists the necessity of a chronological classification, it also indicated how such can be scientifically established. The rule of stratigraphy has been taken over from geology. . . . But archaeology went on to borrow from geology methods and concepts that can not appropriately be applied to a human science. In geology the sequence of sedimentary rocks is indeed established by stratigraphy. But, once that has

28. K. C. Chang, "Chinese Palaeoanthropology," *Annual Review of Anthropology* 6 (1977), 137–59.

been done, the place of a given deposit in the sequence can be diagnosed by the type fossils—Leitfossilen—*comprised in it. The archaeological counterpart of this procedure is the establishment of a typological chronology. The relative position of an assemblage of relics should be diagnosed by a few typical artifacts included in it.*[29]

He went on to point out that culture is much more diverse and complex than the information contained in geological and palaeontological index fossils, and that the discovery of a single ax or potsherd may not have much significance for the whole period in which it occurs. *Leitfossilen,* unfortunately, were almost central to Andersson's methodology. On the basis of a comparison of a handful of painted potsherds bearing similar lines, curves, or dots that were found in China, on the one hand, and in Western and Central Asia, on the other, he would profess to see close similarity and even relationships between the prehistoric cultures of these geographically remote regions.[30] Andersson began his work well before Gordon Childe's 1935 address, but he continued his *Leitfossilen* method well into the 1940s, and many archaeologists working on Chinese materials continue it to this day.

If Andersson represents the introduction into China of modern archaeology, based on fieldwork and excavated material, Li Chi (fig. 5) epitomizes the taking hold of that new discipline by the native scholarly community. If Andersson and his Western colleagues were—perhaps unwittingly—the cultural cohorts of Western imperialists, who by and large had no commitment to China and Chinese science and whose scientific activities took place in the international community but directly touched Chinese lives little if at all, Li Chi and his Chinese colleagues and disciples were patriots who were determined to modernize Chinese archaeology and turn it into an effective instrument of Chinese historiography in the modern world. In many ways Li Chi was the father of modern Chinese archaeology, and he is said to be so honored.

Li Chi (1895–1979) was born in Chung-hsiang, Hupei province, into a well-to-do family. He was tutored in traditional scholarship before going into modern schools, first in his native county and then in Peking. In 1909, he was admitted into the Tsinghua Academy, the nation's first modern preparatory school and junior college modeled after the West. In 1918 he went to the United States to study and earned his B.A. in psychology and an M.A. in sociology at Clark University in Worcester, Massachusetts, and then a Ph.D. in anthropology in 1923 at Harvard. His Harvard professors were mainly Roland Dixon and Earnest Hooton, from whom he received training in ethnology and physical anthropology, the twin disciplines under which his doctoral thesis, "The Formation of the Chinese People" (1928), was written. The only archaeology he learned at Harvard was from Tozzer, but it became his main vocation after he returned to China. His fifty-six-year career in China, from 1923 through his death in 1979, was marked by a number of firsts in the annals of Chinese archaeology. In 1923, he was the first native Chinese scholar to excavate an archaeological site, the Yang-shao Culture site at Hsi-yin-ts'un, in Hsia-hsien, Shansi. In 1928 he became the first head of the Department of Archaeology in the National Research Institute of History and Philology, Academia Sinica, the department that was established that year to direct the excavation of Yin-hsü, the late Shang capital near An-yang. In 1945 he was appointed the first director of the Central Historical Museum, the first national museum of Chinese history. In 1949 he established and became the chairman of the first department of archaeology in a Chinese university, the Department of Archaeology and Anthropology at the National Taiwan University in Taipei. Finally, in the 1960s, he began the editing of an interdisciplinary, multiauthored volume on the ancient history of China, the first such volume to be based on archaeological as well as inscriptional data.

Because he was truly "several times the pioneer," Li Chi's impact on Chinese archaeology has been wide-ranging and long-lasting. While this is no place for an attempt to assess his professional life, I must indicate the several areas in which contemporary Chinese archaeology still bears his imprint. First, his direction of the Yin-hsü excavations from 1928 to 1937 shaped modern archaeology in China in important ways. Yin-hsü became a training ground for young archaeologists. Most of China's archaeological leaders from the fifties through the present were trained there: Hsia Nai, the late director of the Institute of Archaeology, of the Chinese Academy of Social Sciences; Yin Ta (also known as Liu Yao), the late deputy director of the Institute of History, Chinese Academy of Social Sciences; Kao Ch'ü-hsun, former director of the Institute of History and Philology, Academia Sinica (Taipei); Shih Chang-ju, former head of the Department of Archaeology of the above institute; and the late Yin Huan-chang and Chao Ch'ing-fang, chief archaeologists of the Nanking Museum. Each of these archaeologists made his own contribution to Chinese archaeology, but they all received their first training in the techniques and methods of field archaeology at Yin-hsü from Li Chi and his junior colleague, Liang Ssu-yung. The latter was another alumnus from Harvard's Anthropology Department, who had participated in excavations in the American Southwest under Alfred V. Kidder.

The Yin-hsü excavations are of particular importance for the role they played in welding the new archaeological science together with traditional historiography

29. "Changing Methods and Aims in Prehistory," *Proceedings of the Prehistoric Society for 1935,* p. 1.
30. "Researches into the Prehistory of the Chinese," *BMFEA* 15 (1943).

and its antiquarian branch. Had these first large-scale, national, and continuous excavations been directed at a prehistoric site, a separate branch of the archaeological discipline, oriented primarily as a social science, might have arisen in China. But Yin-hsü is a historic site and has yielded abundant inscriptional data: oracle bone inscriptions and bronze inscriptions. Furthermore, many bronzes in antiquarian collections are known to have come from this site as a result of plundering throughout the ages. Therefore, any study of the Yin-hsü data, described archaeologically, must be undertaken in the context of traditional ancient historiography and antiquarianism. This has served a double purpose: it has established archaeology as one of the humanistic disciplines and as a branch of a renewed traditional Chinese historiography, and it has also given traditional antiquarianism a new lease on life, so to speak. For these reasons, in China archaeology has remained in the company of the historical sciences in national research institutes, in the museum system, and in the universities.

In my opinion, the following characteristics of Li Chi's research orientation and results have had especially profound influence: his life-long insistence on the use of primary and scientifically authenticated empirical data (rather than past written doctrines) as the basis of his beliefs and conclusions, his advocacy of classifying archaeological objects on the basis of quantifiable physical properties, his occasional approach to archaeological interpretation from the viewpoint of cultural anthropological knowledge, and his refusal to confine his research on Chinese problems to within China itself. Space does not permit a detailed discussion of Li Chi's career, but perhaps a mere listing suffices to show that we are still living in Li Chi's era insofar as Chinese archaeology is concerned.

All major aspects of traditional antiquarianism and new archaeology as represented by Andersson and Li Chi lived on after 1949, when Chinese revolutionaries led by the Chinese Communist Party overthrew the Nationalist (Chiang Kai-shek) regime and established the People's Republic of China. But under the new regime archaeology took on two significantly new dimensions, with varying consequences. First, Marxist historical materialism became the leading theoretical light guiding archaeological interpretation. Second, archaeology became, bureaucratically, financially, and ideologically, a state-directed enterprise. The second new dimension of Chinese archaeology has wrought epochal consequences, while the first has had indifferent success.

Even a brief look at the recent dominance of Marxism in Chinese archaeology must take us back to the 1930s and Kuo Mo-jo (fig. 5), president of the Chinese Academy of Sciences from 1950 until his death in 1978. A famous writer, poet, and cofounder of the Creation Society, an association of some really creative literary people, in the 1920s Kuo Mo-jo was a radical writer and a revolutionary with

Communist leanings. In 1927, when Chiang Kai-shek turned against the Communists and began to hunt them down on a massive scale, Kuo had to escape to Japan, where he lived in exile for a decade. During those ten years, he devoted much of his time to the study of Chinese antiquity and produced several monumental works of scholarship: *Chung-kuo Ku-tai She-hui Yen-chiu* (A study of ancient Chinese society, 1930), *Liang Chou Chin-wen-tz'u Ta-hsi* (A general outline of bronze inscriptions of the Western and Eastern Chou dynasties, 1932), *P'u Tz'u T'ung Ts'uan* (A general study of oracle inscriptions, 1933), and *Liang Chou Chin-wen-tz'u Ta-hsi T'u-lu* (An illustrated catalogue of bronze inscriptions of the Western and Eastern Chou dynasties, 1934). These and other books on ancient China written during his decade of exile unquestionably established Kuo Mo-jo as a giant in the study of ancient China. His pioneer works on oracle bone and bronze inscriptions and on the evolution of bronze styles are still indispensable readings.[31] Even his political adversaries in the Academia Sinica, above all Li Chi, so admired his work in this field that they elected Kuo to the academy's first slate of members in 1948 (an honor which Kuo, ironically, declined to accept). Kuo, however, was not a field archaeologist, and his main contribution to that branch of science was in his first book, *A Study of Ancient Chinese Society* (1930), the first serious attempt to interpret ancient Chinese history in terms of a Marxist model of social evolution. Since the Marxist scheme calls for both a primitive society and a slave society to precede feudal society, Kuo applied the scheme to ancient China by labeling Shang the latest primitive society and Chou a slave society. As a result of archaeological discoveries concerning the Shang Dynasty at Yin-hsü in the 1930s, Kuo revised his scheme in his 1945 book, *Nu-li-chih Shih-tai* (The slavery period), and reclassified the Shang as a slave society. In faithful Marxist fashion, Kuo placed his emphasis on the forces and relationships of production, thereby offering a constructive contrast to the traditional emphasis on art, religion, and other aspects of ideology.

Both of the theoretical emphases of Kuo's work—the periodization of ancient Chinese history and production as the basis of society—became national preoccupations of ancient historians and archaeologists after 1949, when Marxism became national as well as party doctrine. Archaeologists have attempted to write ancient history and to interpret new archaeological data accordingly. In addition, archaeology is politicized in other ways. Since "the people are the motive force of history," as proclaimed by Chairman Mao, archaeology has begun to pay more attention to the remains of the poor and the downtrodden (for example, convict-prisoners) as well as those of the rich and powerful. Chairman Mao admonished

31. Hsia Nai, *KK* 1978 (4), 217–22.

that we should "let the past serve the present"; therefore archaeologists attempt to justify their work in terms of its current applicability. During the Cultural Revolution, there was a brief period of "historiography by innuendo" (Ying-she shih-hsüeh)—that is, use of specific (often contrived) interpretations of historical events to serve contemporary political purposes; and archaeology was also marginally involved in the so-called "Confucian *v.* legalist struggles" view of Chinese history.

In looking through archaeological publications of the last thirty years, one sees persistent reflections of political trends. Yet, largely true to its traditional historiographic independence, Chinese archaeology has not, in my opinion, been substantially affected by them. Data and analyses of data and ideological jargon coexist in most archaeological reports and essays, but in most cases the two are clearly distinguishable and have not influenced each other in ways that are significant or long-lasting. This is both good and bad. Good, because data are not inseparably intertwined with shifting ideological emphases and, therefore, are useful and usable in the long run for objective analysis. Bad, because some of the ideological requisites touch on areas of archaeological research for which sophisticated methodology has been lacking in China, and in which, had archaeologists been able to pay greater heed to empirical solutions, methodological advances could have been made. For example, even though activities related to production should have been emphasized, very little archaeological research has been directed toward such topics as subsistence systems, settlement patterns, or trade. Ancient social organization and kinship are of necessity focuses of attention in Marxist theories of societal evolution, but Chinese archaeologists have been content to let the dicta of Lewis Henry Morgan and Frederick Engels stand and be quoted without critical comment. Thus, they have missed some good opportunities to help construct better social science theories in areas where Chinese evidence is strong or possibly unique. For example, although historians have engaged in substantial discussion of the Asiatic mode of production,[32] archaeologists, who control massive bodies of highly pertinent data, have so far failed to join in these discussions. In short, even though archaeologists in the New China are theoretically aware and alert, by and large methodologically they have been content to continue handling archaeological data in ways they had learned from Li Chi and from Chinese and Western archaeologists of his generation.

Nonetheless, after the end of the Cultural Revolution (1966–76), and especially

32. E.g., Hou Wai-lu, *Chung-kuo ku-tai she-hui-shih lun* (Treatise on the history of ancient Chinese society), Shanghai: San-lien, 1954.

since 1979, Chinese archaeology has undergone a series of profound changes. Paramount among these are the decentralization of publications and innovations in archaeological technologies, especially in chronometric dating. In both theory and methodology, we are also in a period of diversity and innovation. The future looks very bright.

1
Palaeolithic Foundations

Evidence for human existence is so far confined to the Pleistocene period, the latest and shortest of the geological periods, which began some two or three million years ago. Toward the end of the period, at about twelve thousand years before the present humans began to produce their food by cultivating plants and domesticating animals, initiating a new stage of cultural development with evolutionary consequences. The whole sequence of cultural development before that is often referred to as the Palaeolithic or the Old Stone Age. A "Chinese" cultural tradition as we now know it did not become recognizable in the archaeological record until after the emergence of farming villages, but its foundation was laid, and the stage set for its occurrence, during the Pleistocene; and the populations and cultures during that period in China were part of significant worldwide events.

The concept of the so-called Palaeolithic culture of the Pleistocene in the area of China is a new one that did not emerge until this century. According to the legends upon which traditional Chinese history was based, the primordial world was ruled by a long series of sage kings, grouped into San Huang, the Three Sovereigns, and Wu Ti, the Five Emperors. These were followed by initial historical periods, the last two millennia B.C., which comprised the reign of the Three Dynasties—the Hsia, Shang, and Chou. A cumulative chronology of the reigns of the ancient sages would indeed place the legendary beginning of Chinese ancient history well within the Pleistocene period. In scientific Palaeolithic archaeology, however, human and cultural *remains* must be recovered from Pleistocene deposits to be counted, and ancient artifacts themselves were not known in China from demonstrably Pleistocene contexts until 1920. In that year, the first Palaeolithic remains were brought to light in situ from Pleistocene deposits in Ch'ing-yang in eastern Kansu by Emile Licent and P. Teilhard de Chardin, a pair of French Jesuit missionaries.[1] This was soon followed by the world-famous explorations of fossil man remains at Chou-k'ou-tien in Peking by the Geological Survey of China. The continued investigations during the last sixty-five years (especially the last thirty-six, by the staff of the Institute of Vertebrate Palaeontology and Palaeoanthropology, Academia Sinica) have now resulted in over a hundred reported Palaeolithic sites in China,[2] ranging in date throughout the later portions of the Pleistocene period. To characterize and understand the changes in human fossils and in archaeological sites as represented by the remains at these sites—changes that span a prolonged period—we must first describe the main features of the geology and biology of China during the Pleistocene and the sequence of their profound changes so that the humans and their cultures may be placed into the proper chronological and ecological contexts.

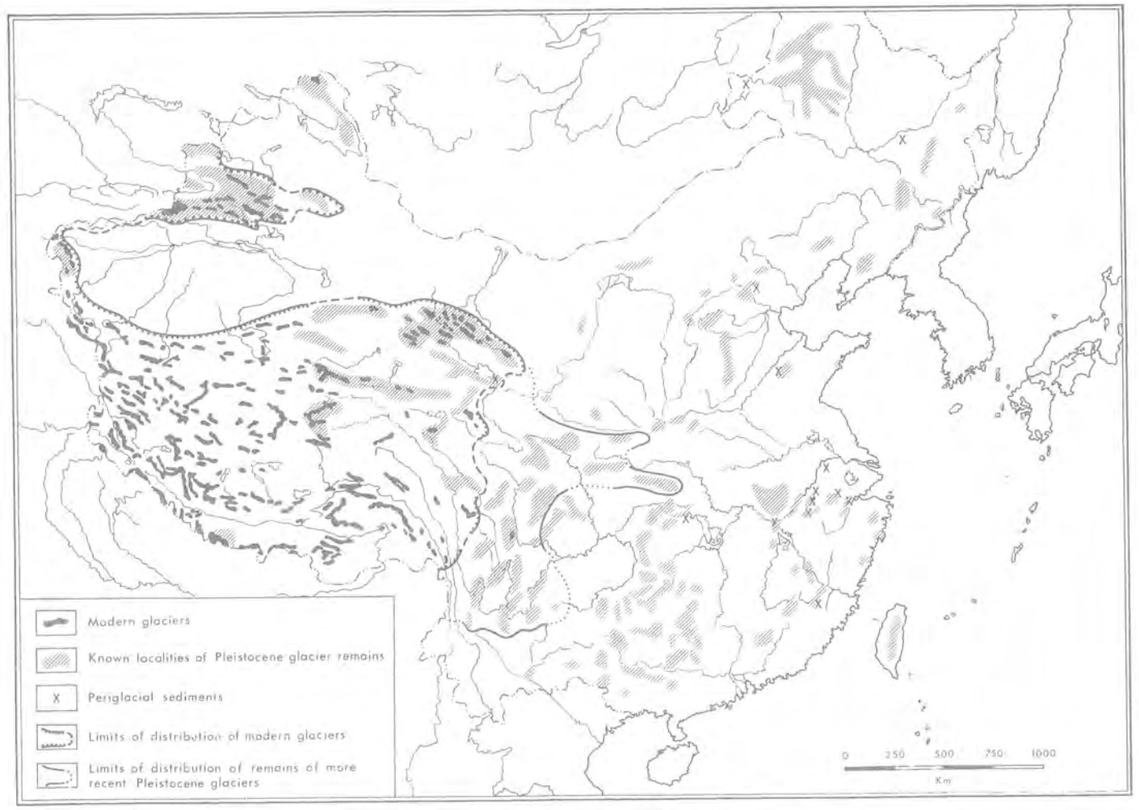
1. P. Teilhard de Chardin, *Anthropologie* 33 (1924), 630–31; P. Teilhard and E. Licent, *Bull. GSoC* 3 (1924), 45–50.
2. *The Palaeoanthropology and Palaeolithic Archaeology in the People's Republic of China*, Wu Rukang and John W. Olsen, eds., New York: Academic Press, 1985, lists in the maps on its endpapers forty-five sites where remains of fossil primates and humans have been reported, and seventy-seven sites with Palaeolithic archaeological remains. Nineteen of the latter sites have also yielded fossils and are listed under the former category.

China of the Pleistocene Period

The Pleistocene period, the last and shortest of the geological epochs since the formation of our planet, and the interval characterized by the emergence and development of modern humans and their nearest ancestors, is known to be a period in which a large series of interrelated upheavals in nature took place—tectonic movements, cyclical alternations of vastly contrasting climatic conditions, changes in the state and amount of water on land with resultant erosion and sedimentation cycles, and the movement and evolution of animal and plant groups adapting to shifting climatic settings, to mention only the most prominent. Evidence for such changes and movements makes it possible to characterize the Pleistocene events of various regions and to tie them together. The resulting sequence can then serve as a time scale for generalizing the history of the period and dating assemblages of remains found at various localities.

In China such evidence is extensive. The most direct consists of glacial and periglacial sediments and deposits. J. S. Lee was the first to recognize such remains at Lu-shan, in Kiangsi, and to distinguish three glaciations: Poyang, Taku, and Lushan.[3] Another later glaciation, Tali, was recognized by H. von Wissmann in Yunnan.[4] During the last thirty or so years similar remains have been identified throughout the country (fig. 6), and the four glacial and three interglacial periods are widely accepted,[5] although there are many indications

3. *Bull. GSoC* 13 (1933), 2–15; *Lu Shan during the Ice Age*, Monographs, Inst. Geol., Academia Sinica, ser. B, 2 (1937); *Chung-kuo Ti-ssu-chi ping-ch'uan* (Quaternary glaciations in China), Peking: Science Press, 1975.
4. "The Pleistocene Glaciation in China," *Bull. GSoC* 17 (1937), 145–68; "Die quartäre Vergletscherung in China," *Ztschr. Gesell. Erd Berlin* (1937), 241–62.
5. For the latest research, see Li Ping-chao et al., *AGS* 1973 (1), 94–101; Dept. Geog., Nanking University, *Chung-kuo Ti-ssu-chi ping-ch'uan yü ping-ch'i wen-t'i* (Problems of glaciers and glaciations in the Chinese Quaternary), Peking: Science Press, 1974; Sun Tien-ch'ing et al., *AGS* 1977 (2), 101–07; Sun Tien-ch'ing et al., *KHTP* 1979 (7), 307–09; The Geological Society of China, *Ti-ssu-chi ping-ch'uang yü Ti-ssu-chi ti-chih lun-wen-chi* (Papers on Quaternary glaciations and geology), no. 1, Peking: Geology Press, 1984.



6. Glacial and periglacial remains in China. (Based on *Ti-ssu-chi ti-chih wen-t'i*, 1964, fig. 10.)

that one or two additional major glacial periods may be recognized at the earlier end of the sequence (table 2).[6]

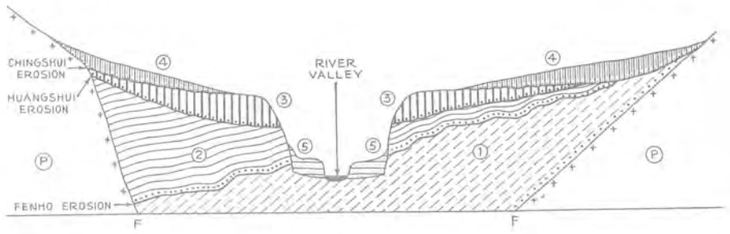
Closely related to the glacial and interglacial intervals are the sedimentary and erosional cycles recognizable in the Pleistocene formations throughout China in river terraces and cave-fissure deposits. The general structure of the late Cenozoic river basins in North China has been well recognized since the 1930s: at the

6. T. C. Sun et al., *KHTP* 1979 (7), 307: "The early glacial of the Chinese Quaternary began about 3.5 million years ago, and its termination cannot have been later than 2.6 million years ago. It may be named the Hung-yai Glacial."

Region / *Glacial/ interglacial names*	*Jolmo Lungma*		T'ien-shan	*Peking Area*	*West Shore of Bay of Po-hai (Ts'ang-chou district)*	*Northeast*	*North China*	*Yuan-mou, Yunnan*	*Eastern Yunnan, Western Kweichow*	*Western Hunan*	*Lu-shan, Kiangsi*
Minor Glacial	Ronbude		Piyazlik								
Glacial	Jolmo Lungma	Ronbus	Taklak	Pai-hua-shan	Fourth Glacial	Pai-t'ou-shan	Ta-li	Ta-li	Ta-hai-tzu	Hsüeh-feng	
Interglacial			Noshka	Ma-lan	Third Interglacial	Chen-hsi/ Pai-t'ou-shan	Ting-ts'un	Ssu-chia-ts'un	Ta-lung-t'an/Ta-hai-tzu	T'ie-shan/ Hsüeh-feng	
Glacial		Chilongs	Tailan	Pi-yun-ssu	Third Glacial	Chen-hsi	Lu-shan	Tung-shan	Ta-lung-t'an	T'ie-shan	Lu-shan
Interglacial	Chiabula		Tailan/ Koktaibu-shuang	Chou-k'ou-tien	Second Interglacial	T'ao-er-ho/ Chen-hsi	Chou-k'ou-tien	Yueh-lung	Hai-tzu-t'ou/Ta-lung-t'an	Ch'ang-chi/T'ie-shan	Ta-ku/Lu-shan
Glacial	Nienieshongla		Koktaibu-shuang	Lung-ku-shan	Second Glacial	T'ao-er-ho	Ta-ku	Chung-shan	Hai-tzu-t'ou	Ch'ang-chi	Ta-ku
Interglacial	Poli		?		First Interglacial	Pai-t'u-shan/T'ao-er-ho	Kung-wang-ling	Niu-wang-shan	Li-yuan-ts'un/Hai-tzu-t'ou	T'ung-mu/ Ch'ang-chi	Po-yang/ Ta-ku
Glacial	Shishiabangma		?	Ni-ho-wan	First Glacial	Pai-t'u-shan	Po-yang	Ma-t'ou-shan	Li-yuan-ts'un	T'ung-mu	Po-yang
Interglacial							Hsi-hou-tu	Yuan-mou / Lung-ch'uan/ Yuan-mou / Lung-ch'uan	Lung-chin-ts'un/Li-yuan-ts'un / Lung-chin-ts'un		
Glacial				Ch'ao-yang			Lung-ch'uan				

Source: Sun et al., 1977

Table 2: Preliminary Correlation of Quaternary Glaciations



7. The structure of a late Cenozoic basin in North China. F = fault; P = Palaeozoic rocks. (1) Pliocene deposits; (2) lower Sanmenian beds, lower Pleistocene; (3) Choukoutienian red loam and basal gravel, middle Pleistocene; (4) Malan loess and associated deposits, upper Pleistocene; (5) Panchiao alluvium. (From H. L. Movius, Jr., *Transactions, Am. Phil. Soc.*, n.s. 38, 1949, p. 344.)

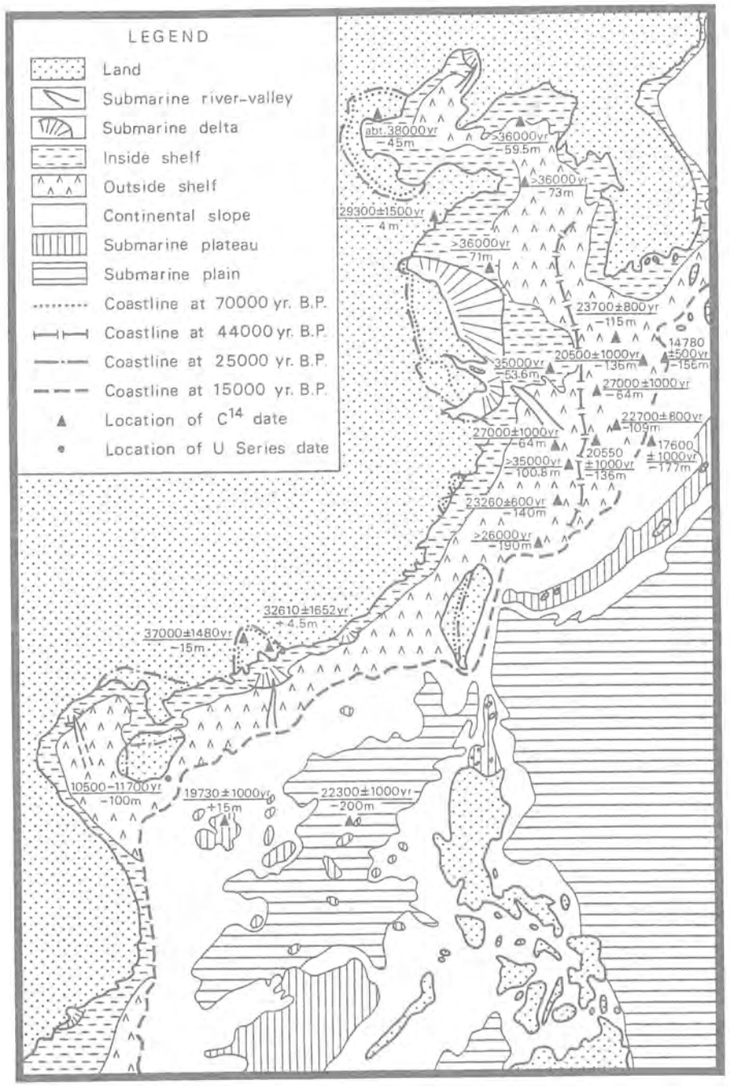
bottom, covering Pliocene beds, are the Red Clay (Wu-ch'eng loess) deposits of the lower Sanmenian beds of Lower Pleistocene, and this is overlain successively by the Upper Sanmenian Reddish Clay (Li-shih loess) beds of Middle Pleistocene and the Malan Loess of Upper Pleistocene (fig. 7).[7] Recent studies of very thick profiles of loess have yielded abundant data on Pleistocene climatic conditions. At Hei-mu-kou, for example, near Lo-ch'uan in central Shensi, a 130-meter-deep profile, containing Wu-ch'eng, Li-shih, and Malan loesses and dated by magnetostratigraphy to 2.4 million years ago, has been studied with regard to the genetic types of loess and palaeosol, their pollen and micromammalian fossils, differences in grain size distribution, magnetic susceptibility, $CaCO_3$ content, and other geochemical indicators (such as the Fe_2O_3/FeO ratio), resulting in climatic fluctuation curves[8] similar to the curves worked out of deep-sea cores of the Pacific.[9] For cave-fissure deposits the most detailed studies are those of locality 1 at Chou-k'ou-tien and related localities. Table 3 shows the result of recent researches linking the cave stratigraphy with chronometric dates and climatic phases.[10] Also related are studies of sea-level changes through corings on the continental shelf along the length of the east coast. By analyzing the faunal and pollen changes throughout the cores and dating them by radiocarbon, scientists are able to determine the sequence of marine transgressions, their dates, and their

7. Liu Tung-sheng et al., "Kuan-yü Chung-kuo Ti-ssu-chi ti-ts'eng hua-fen wen-t'i" (On the question of subdividing Chinese Quaternary stratigraphy), in *Ti-ssu-chi ti-chih wen-ti* (Quaternary geology problems), Peking: Science Press, 1964, pp. 45–64; Chang Yü-p'ing et al., *Shensi Lan-t'ien ti-ch'ü Hsin-sheng-chieh* (The Cenozoic in the Lan-t'ien area of Shensi), Peking: Science Press, 1978.
8. T. S. Liu et al., "The Loess-Paleosol Sequence in China and Climatic History," *Episodes* 8 (1985), 21–28; F. Heller and Liu Tung-sheng, "Magnetostratigraphical Dating of Loess Deposits in China," *Nature* 300 (1982), 431–33.
9. N. J. Shackleton and N. D. Opdyke, "Oxygen Isotope and Palaeomagnetic Evidence for Early Northern Hemisphere Glaciation," *Nature* 270 (1977), 216–19.
10. T. K. Yang and Y. C. Mou, *KHTP* 1981 (13), 807–10.

Dates (10^4 yrs BP)	*Period*		*Cave strata*			*Climatic conditions*
	Holocene					Cool → warm and wet → cool and arid
1.2 (C^{14}) 1.83 (C^{14}) 4.9 (thermo-luminescence)	Upper Pleistocene		Upper cave			Semiarid temperate climate; average temperature during cold interval may be 5–6°C below present
23 (U-series)					Locality 4	
25.6 (U-series)			Locality 1 Chou-k'ou-tien	Strata 1–3		Semiarid temperate
29–31 (thermo-luminescence)		Chou-k'ou-tien formation		Stratum 4		Transition to arid
46.2 (fission-track)	Middle Pleistocene			Strata 5–6		Semimoist temperate
				Strata 7–11		Semiarid temperate tending to be arid and cool, with brief warm-moist interval
				Strata 12–13		Semimoist temperate
70 (palaeo-magnetic)		Dragon Bone Hill formation	Locality 1 core: strata 14–15			Temperate, tending to arid; transition to warm-moist and semimoist in the upper part
80 ± (p-m)						
>100 (p-m)	Lower Pleistocene		Locality 1 core: strata 16–17?		Locality 12	Semimoist warm temperate
	Pliocene		The funnel, Locality 1			Northern subtropical, semimoist forest-steppe
?			Locality 14			Subtropical warm-moist

Source: based on Yang and Mou, 1981

Table 3: Late Cenozoic Stratigraphy in Chou-k'ou-tien



8. Changes in the coastline of the China Sea since the late Pleistocene from 70,000 to 15,000 BP. (From Huang Jinsen 1984; see n. 11.)

corresponding climatic conditions, especially in the later periods of the Pleistocene (fig. 8).[11]

Particularly useful in determining both chronological positions and climatic conditions during the periods of all such geological formations are animal and plant (especially pollen) fossils from these formations. The major divisions of both North China and South China into Lower, Middle, and Upper Pleistocene faunas are supported by numerous mammalian fossils, but new studies of Southern Chinese faunas have shown a more overlapping picture in the south than in the north. In North China, the Lower Pleistocene fauna is represented by assemblages from Ni-ho-wan on the Sang-kan River in northern Hopei and from the lower Sanmenian formations along the middle Yellow River valley, including such genera that now appeared for the first time as *Elephas, Equus, Canis, Ursus, Gazella, Ovis,* and *Bison;* such surviving Pliocene forms as *Machairodus, Chalicotherium,* and *Proboscidipparion;* and genera modified from older forms such as *Hyaena, Rhinoceros, Ochotonoides,* and *Stegodon.* Many characteristic Pliocene forms had disappeared in this fauna, which compares well with the Villafranchian of Europe and the Upper Siwaliks of Pakistan and India. The Middle Pleistocene fauna, best represented by the Chou-k'ou-tien assemblage, saw further decrease of older Pliocene forms except for *Machairodus* and the first appearance of many recent genera or even species, including *Homo, Sinomegaceros pachyosteus, Canis lupus, Felis pardus, F. microtis, Scaptochirus, Neomys, Erinaceous, Nyctereutes, Cricetulus, Meles leucurus, Microtus, Mus rattus, Moschus,* and *Macacus.* A number of forms had also survived from the Lower Sanmenian: *Hyaena sinensis, Spirocerus, Rhinoceros (Coelodonta), Paracamelus gigas, Elephas (Palaeoloxodon) namadicus,* and *Equus sanmenensis.* Finally, in the Upper Pleistocene fauna, found in the loess and the related riverine-lacustrine deposits, are such surviving Middle Pleistocene forms (some with new species) as *Hyaena ultima, Sinomegaceros, Elephas namadicus, Rhinoceros,* and *Spirocerus;* such modern mammals as *Homo sapiens, Canis (Nyctereutes) procyonoides, Siphneus fontanieri, Equus przewalskyi, Equus hemionus, Cervus elaphus, Pseudaxis hortulorum, Gazella przewalskyi* and *Camelus knoblochi;* and such characteristic Late Pleistocene forms as *Sinomegaceros ordosianus, Bubalus wansjocki,* and *Bos primigenius.*[12]

11. K. O. Emery et al., "Post-Pleistocene Levels of the East China Sea," in *The Late Cenozoic Glacial Ages,* Karl K. Turekian, ed., New Haven: Yale University Press, 1971, pp. 381–90; Wang P'in-hsien et al., *AGS* 1981 (1), 1–12; Huang Jinsen, "Changes of Sea-Level since the late Pleistocene in China," in *The Evolution of the East Asian Environment,* 2 vols., Robert O. Whyte, ed., University of Hong Kong, 1984, vol. 1, pp. 309–19.

12. W. C. P'ei, *VP* 1 (1957), 9–24; Han Defun and Xu Chunhua, in Wu and Olsen, eds., *Palaeoanthropology and Palaeolithic Archaeology in China,* pp. 267–89.

The Pleistocene fauna of South China is quite different from that of the north. From quite early mammalian fossils came to light (often as a traditional medicinal item called "dragon bones") in the limestone caves that abound in South China, including those of the stegodon and giant panda, which gave rise to the name Stegodon-Ailuropoda Fauna.[13] Similar faunal forms were found extending southward into Southeast Asia, and the term Sino-Malayan had been used to refer to this fauna.[14] Palaeontological research in the last thirty-six years has expanded the list of major finds of mammalian fossils in South China to 118[15] and has refined the Pleistocene faunal history into lower, middle, and upper stages,[16] although, compared with the north, in the south the older forms survived longer, the modern forms emerged earlier, and the overall change was less conspicuous.

The palaeobotanical work on the Chinese Quaternary has largely been based on palynology: the best-studied sequences are those in the Lan-t'ien area of Shensi,[17] at Chou-k'ou-tien,[18] in the Shanghai area,[19] and in the Himalayas.[20] A series of climatic fluctuations is indicated, although their all-China correlation and their correspondence with climatic fluctuations indicated by other data are not all clear. Some of these works will be referred to later.

On the basis of the geological and palaeontological and palaeobotanical data described above, scholars of the Chinese Pleistocene have during the past half century attempted various schemes to correlate the subdivisions of the Pleistocene into an all-China master stratigraphy. Some outstanding examples are those of Wen-chung P'ei,[21] P. Teilhard de Chardin,[22] Hallam L. Movius, Jr.,[23] Tung-sheng Liu,[24] Jean Aigner,[25] and Lan-po Chia.[26] A simplified, contemporary version of such an all-China stratigraphy is presented in the proceedings of a 1983 Hong Kong conference, The Evolution of the East Asian Environment.[27] Serious students of Chinese prehistory must consult such studies in order to place the early human sites and finds into the proper chronological and environmental contexts.

However, in view of the pace and variety of ongoing research on Chinese Pleistocene in many interrelated disciplines, it would be premature for this book to adopt any all-China scheme before many of the regional stratigraphies have been satisfactorily constructed. A very general chronological outline of Chinese Pleistocene, subdividing the period into lower, middle, and upper segments, each associated with a distinctive megafauna and geological subdivision and with possible glaciations, is certainly permissible. Into this general outline a number of major sites may be fitted on the basis of chronometric data that are also fast becoming abundantly available (table 4).[28] Palaeoenvironmental data are presented where available in the description and discussion of some of the major archaeological sites.

13. W. D. Matthew and W. Granger, "New Fossil Mammals from the Pliocene of Szechwan," *Bull. Am. Museum Nat. Hist.* 48 (1932), 563–98; E. H. Colbert, "Pleistocene Mammals from the Limestone Fissures of Szechwan, China," *Bull. Am. Museum Nat. Hist.* 102 (1953), 1–134.
14. G. H. R. von Koenigswald, "Eine fossile Saügetierfauna mit Simia aus Südchina," *Proc. Kon. Akad. Wetensch. Amsterdam* 38 (1935), 872–79.
15. W. P. Huang, *VP* 17 (1979), 339.
16. Minchen Chow, "Mammalian Faunas and Correlation of Tertiary and Early Pleistocene of South China," *J. Palaeontol. Soc. India* 3 (1958), 123–30; W. C. P'ei, *VP* 1 (1957), 9–24; Li Yen-hsien, *VP* 19 (1981), 67–75.
17. "Shensi Lan-t'ien ti-ch'ü Hsin-sheng-tai ku-chih-wu-hsueh ti yen-chiu" (Palaeobotanical studies of the Cenozoic in the Lan-t'ien area of Shensi), in *Shensi Lan-t'ien Hsin-sheng-chieh hsien-ch'ang huei-yi lun-wen-chi* (Papers at the field conference on the Cenozoic in Lan-t'ien, Shensi), Peking: Science Press, 1966, pp. 157–82.
18. C. C. Kung et al., *KHTP* 1981 (17), 1065–67.
19. C. L. Liu and P. Y. Yeh, *Acta Palaeontologica Sinica* 16 (1977), 1–9; S. C. Chu et al., *KHTP* 1980 (5), 220–23.
20. Hsu Jen et al., *KHTP* 1973 (6), 274–77; K. S. Chou et al., *SGS* 1973 (2), 133–51.
21. *An Attempted Correlation of Quaternary Geology, Palaeontology, and Prehistory in Europe and China*, Inst. Archaeol., University of London, Occasional Papers, no. 2, Geochronological table no. 1, 1939, pp. 3–16.
22. *Early Man in China*, Peking: Inst. Géo-Biologie, 1941.
23. "Early Man and Pleistocene Stratigraphy in Southern and Eastern Asia," *Papers, Peabody Museum, Harvard University* 19 (1944), 1–125.
24. Liu Tung-sheng et al., in *Ti-ssu-chi ti-chih wen-ti;* see also K. C. Chang, "Chinese Palaeoanthropology," *Annual Review of Anthropology* 6 (1977), 137–59.
25. "Relative Dating of North Chinese Faunal and Cultural Complexes," *Arctic Anthropology* 9 (1972), 36–79; *Archaeological Remains in Pleistocene China*, Bonn: Deutsches Archäologisches Institut, 1981.
26. *Early Man in China*, Peking: Foreign Languages Press, 1980. (Table at end entitled "Tentative Chronology of Some Human Fossils and Cultures in China.")
27. Whyte, ed. *Evolution of the East Asian Environment*, p. 3.
28. A master scale of Pleistocene loess deposits is provided by magneto-stratigraphical dating; see F. Heller and T. S. Liu, *Nature* 300 (1982), 431–33; *Geophys. J. R. Astr. Soc.* 77 (1984), 125–41; T. S. Liu and C. S. An, *Geochimica* 1984 (2), 134–37. For palaeomagnetic studies of specific sites, see below in the text under individual sites. Chronometric data have also resulted from a comparison of Pleistocene climatic cycles and variation of $CaCO_3$ contents in Chinese loess profiles with the palaeomagnetic stratigraphy of deep-sea cores in the Pacific; see Y. C. Lu, *SGS* 1981 (2), 122–30; T. S. Liu and M. L. Ting, *AAS* 3 (1984), 93–101; C. C. Hsu and Y. C. Yu, *AAS* 3 (1984), 62–67. Other chronometric techniques that have been utilized for our purposes here include the uranium-series, amino acid, thermoluminescence, fission-track, and radiocarbon datings; see Ch'en T'ieh-mei et al., *AAS* 3 (1984), 259–68; J. W. Li and T. H. Lin, *SGS* 1971 (1), 56–61; C. H. P'ei, *SGS* 1980 (4), 403–05; S. L. Kuo et al., *KHTP* 25 (1980), 384. The relative chronological formula of Brainerd and Robinson to sequence mammalian fossil assemblages has also been used fruitfully; see T. M. Ch'en, *AAS* 2 (1983), 196–201. For general discussions of recent chronometric data and studies, see Wu Xinzhi and Wang Linghong, in Wu and Olsen, eds., *Palaeoanthropology and Palaeolithic Archaeology in China*, pp. 29–51; G. C. Pope, *Proc. Nat. Acad. Sci.* 80 (1983), 4968–92.

Table 4: Chronological Outline of Chinese Pleistocene and Placement of Major Palaeoanthropological and Palaeolithic Sites

YBP (10^3)	*Techniques*	*Sites*	*Sources**	*Fauna*	*Deposits*	*Glacial*	*Subdivision*
10–18	4 C-14	Upper Cave, CKT	—				
18–23	Uranium Series	Upper Cave, CKT Hsiao-nan-hai	Ch'en et al. 1984				
10–24	6 C-14	Hsiao-nan-hai	—				
11	1 C-14	Hu-t'ou-liang	—				
11.2–11.7	3 C-14	Djalai-Nor	—				Upper
15.9–36.2	12 C-14	Hsia-ch'uan	—	Loessic	Malan Loess	Tali	
28.1–28.9	2 C-14	Shih-yü	—				Pleistocene
32–40	U-S	Shui-tung-kou	Ch'en et al. 1984				
37–50	U-S	Sjara-osso-gol	Ch'en et al. 1984				
44–52.8	2 C-14	Sjara-osso-gol	—				
88–114	6 C-14	Hsü-chia-yao	—				
100–125	U-S	Hsü-chia-yao	Ch'en et al.				
135–175	U-S	Loc. 4, CKT	Ch'en et al. 1984				
160–210	U-S	Ting-ts'un	Ch'en et al. 1984				
180–230	U-S	Ta-li	Ch'en et al. 1984				
220–256	U-S	Loc. 1, CKT (1–3)	Ch'en et al. & Hsia 1982				
300	T-L	Loc. 1, CKT (4)	Pei & Sun 1979				
355	U-S	Loc. 1, CKT (6–7)	Hsia 1982				
370	Amino Acid	Loc. 1, CKT (3)	Li & Lin 1979				
390	Amino Acid	Loc. 1, CKT (8–9)	Li & Lin 1979				
>400	U-S	Loc. 1, CKT (8–9)	Hsia 1982			Taku	
420	U-S	Loc. 1, CKT (8–9)	Chao et al. 1980	CKT	Li-shih Loess		Middle Pleistocene
417–507	Fission-track	Loc. 1, CKT (10)	Kuo et al. 1980				
460	Amino Acid	Loc. 1, CKT (11)	Li & Lin 1979			Lushan	
>500	U-S	Loc. 1, CKT (12)	Hsia 1982				
520–610	T-L	Loc. 1, CKT (10)	Pei 1980				
500–600	Palaeomag.	Yuan-mou	Liu & Ting 1983				
530	Palaeomag.	Ch'en-chia-wo	Ch'eng et al. 1978				
650	Palaeomag.	Ch'en-chia-wo	Ma et al. 1978				
>510	Amino Acid	Kung-wang-ling	Li & Lin 1979				
>500–800	Palaeomag.	Kung-wang-ling	Ma et al. 1978				
1,000	Palaeomag.	Kung-wang-ling	Ch'eng et al. 1978				
				Nihowan	Wu-ch'eng Loess	Po-yang Lung-ch'uan? Hung-yai?	Lower Pleistocene
							Pliocene

Sources

Ch'en et al. 1984: (See chap. 1, n. 28.)
P'ei & Sun 1979: P'ei Ching-hsien and Sun Chien-chung, *KHTP* 24 (1979), 849.
Hsia 1982: Hsia Ming, *AAS* 1 (1982), 191–96.
Li & Lin 1979: (See chap. 1, n. 28.)
Chao et al. 1980: Chao Shu-shen et al. *KHTP* 25 (1980), 192.
Kuo et al. 1980: (See chap. 1, n. 28.)
P'ei 1980: (See chap. 1, n. 28.)
Liu & Ting 1983: Liu Tung-sheng and Ting Meng-lin *AAS* 2 (1983), 40–47.
Ch'eng et al. 1978: Ch'eng Kuo-liang et al., in *Ku-jen-lei Lun-wen-chi* (Papers in palaeoanthropology), Peking: Science Press, 1978, pp. 151–57.
Ma et al. 1978: Ma Hsing-hua et al., *VP* 16 (1978), 238–43.

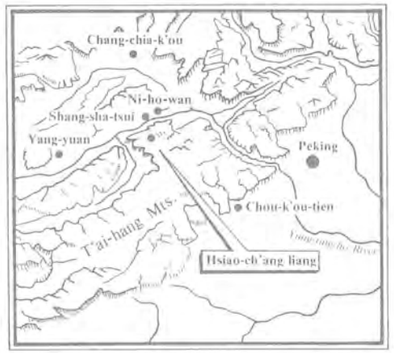
The C-14 dates are reported in various issues of *K'ao-ku* and *Wen-wu*. See Wu Rukang and John W. Olsen, ed. (chap. 1, n. 28), pp. 31–33 for a compilation.

Lower Pleistocene Humans

A number of hominoid fossils have been found in China in recent years from Miocene deposits that have been classified as *Dryopithecus, Ramapithecus,* and *Sivapithecus,* although the taxonomic and phylogenetic implications of these terms are still being debated.[29] Fossil teeth of *Dryopithecus* have been brought to light in Yunnan,[30] Kansu,[31] and Kiangsu,[32] but fossils of the others (including five crania, skull and mandibular fragments, and many hundreds of teeth) are confined to the site of Shih-hui-pa in Lu-feng, Yunnan.[33] Most palaeoanthropologists regard these Miocene primates as ancestral apes,[34] although some do not rule out the possibility that *Ramapithecus* may be related to the common ancestor of both apes and hominids.[35]

No hominoid remains have come to light from the Chinese Pliocene. Pliocene and Lower Pleistocene deposits will be keys to the early history of human evolution in China, but so far only fossils of a giant ape, *Gigantopithecus blacki,* can be dated to Lower (as well as Middle) Pleistocene deposits.[36] Scholars are of the opinion that the earliest true humans, *Homo erectus,* were probably their coinhabitants in South China during the earlier parts of Pleistocene,[37] although the earliest known *Homo erectus* fossils in China can be firmly dated only to the threshold of Middle Pleistocene (see below).

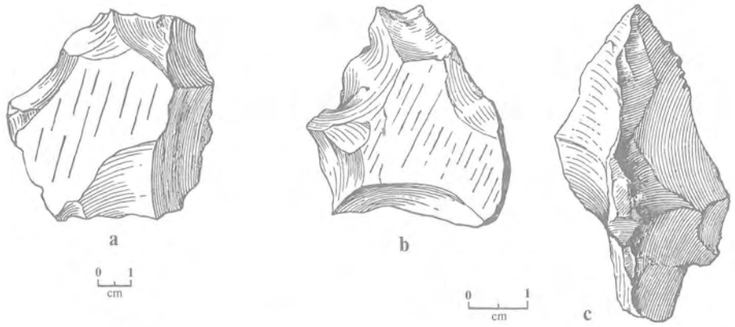
There are, however, two or three cultural assemblages from deposits which are probably Lower Pleistocene which may claim human status. Some fifty years ago in Ni-ho-wan beds of the Sang-kan River valley of Hopei, Emile Licent and Teilhard de Chardin discovered a so-called faceted stone and some bone fragments.[38] The Abbé Breuil believed that this stone and some of the bone fragments had been modified by humans,[39] but his view was not generally accepted.[40] New investigations at Shang-sha-tsui, a village only about one kilometer west of Ni-ho-wan (fig. 9), unearthed a quartzite chopper from a layer of coarse sands, associated with a skull of *Palaeoloxodon namadicus,* which the investigators regard as Lower Pleistocene.[41] In 1978, extensive studies were undertaken in the Yang-yuan (Shansi) and Wei-hsien (Hopei) section of the Sang-kan, resulting in the discovery of the Hsiao-ch'ang-liang site (fig. 9), where more than eight hundred lithic pieces (cores, flakes, recognized artifacts, and debitage) and bone fragments possibly modified by humans were unearthed, together with fossils of *Hyaena, Hipparion, Equus sanmenensis, Coelodonta, Palaeoloxodon, Gazella,* and others of a typical Ni-ho-wan (Lower Pleistocene) assemblage.[42] Palaeomagnetic studies of the exposed section of the same geological stratum in which the Hsiao-ch'ang-liang finds lie show that the top of the section is dated 1.52 million years ago and the bottom of the (exposed) section is about 3 million years ago. The lithic assemblage may, thus, be dated between these two foci, perhaps closer to the top than the bottom.[43] The dating of the assemblage appears to be reliable, and the lithic material (mostly quartzite) includes twelve pieces that are considered as having been secondarily retouched: a chopper and eleven scrapers (fig. 10).



9. Archaeological sites near Ni-ho-wan. (Based on *KKTP* 1979, no. 8, p. 365.)

The other site of comparable date is Hsi-hou-tu, in Jui-ch'eng, in southwestern Shansi, discovered in 1959 and excavated in 1961–62. From a layer of cross-beddings of sandy gravels in a loessic gully about 170 meters above the bed of the Yellow River to the west, a lithic assemblage was found associated with mammalian fossils of the Ni-ho-wan fauna, including several extinct species of elaphure (*Elaphurus bifurcatus, E. chinnanensis*), and deer *(Euctenoceros houlei, Axis rugosus, A. shansius), Leptobos crassus, Stegodon, Archidiskodon planifrons, Palaeoloxodon namadicus, Proboscidipparion sinensis, Equus sanmenensis, Coelodonta antiquitatis,* and *Elasmotherium inexpectum.* These animals suggest a steppe-like environment with bodies of water and a cool, seasonal climate. The lithic assemblage, again mostly of quartzite, consists of six pieces regarded as cores, seven flakes, six pieces that are called scrapers, and ten pieces called choppers. A large prismatic point collected nearby is placed in the same assemblage, and so are

29. Wu Rukang and Xu Qinghua, in Wu and Olsen, eds., *Palaeoanthropology and Palaeolithic Archaeology in China,* pp. 53–68.
30. J. K. Wu, *VP* 1 (1957), 25–32.
31. Wu and Xu, in Wu and Olsen, eds., *Palaeoanthropology and Palaeolithic Archaeology in China,* p. 67.
32. Y. M. Ku and Y. P. Lin, *AAS* 2 (1983), 305–13.
33. C. H. Hsu et al., *KHTP* 23 (1978), 554–56; C. H. Hsu and C. W. Lu, *VP* 17 (1979), 1–11; J. K. Wu et al., *KHTP* 26 (1981), 1125–27; C. W. Lu and C. H. Hsu, *VP* 19 (1981), 101–05; J. K. Wu et al., *AAS* 1 (1982), 101–05; *AAS* 2 (1983), 1–8.
34. See Wu and Xu, in Wu and Olsen, eds., *Palaeoanthropology and Palaeolithic Archaeology in China,* p. 66.
35. Ibid.; Wu Rukang and Charles E. Oxnard, *Nature* 306 (1983), 258–60; Wu and Oxnard, *Am. J. Primatology* 5 (1983), 303–44.
36. G. H. R. von Koenigswald, *Anth. Papers, Am. Mus. Nat. Hist.* 43 (1952), 301–09; Franz Weidenreich, *Anth. Papers, Am. Mus. Nat. Hist.* 40 (1945), pt. 1; W. C. P'ei, *VP* 1, no. 2 (1957), 65–70; W. C. P'ei, *Am. Anthropol.* 59 (1957), 834–38; W. C. P'ei and J. K. Wu, *Acta Palaeontol. Sinica* 4 (1956), 477–89; W. C. P'ei and Y. H. Li, *VP* 2 (1958), 193–97; J. K. Woo, *VP* 6 (1962), 375–83; C. H. Hsü et al., *VP* 12 (1974), 293–304; Wu Ju-kang, *Chü-yüan hsia-ho-ku ho ya-ch'ih hua-shih* (Fossil mandibles and teeth of *Gigantopithecus*), *Palaeontologia Sinica,* n. s. D, 11 (1962).
37. Zhang Yinyun, in Wu and Olsen, eds., *Palaeoanthropology and Palaeolithic Archaeology in China,* pp. 69–78.
38. P. Teilhard, *Anthropologie* 45 (1935), 736.
39. H. Breuil, *Anthropologie* 45 (1935), 746.
40. H. L. Movius, Jr., *Transactions, Am. Phil. Soc.,* n.s. 38 (1948), 345.
41. Kai P'ei and Wei Ch'i, *VP* 12 (1974), 69–72.
42. Y. C. Yu et al., *KHTP* 1979 (8), 365–67; *Quaternaria Sinica* 5 (1980), 1–13.
43. Y. C. T'ang et al., *VP* 19 (1981), 263.



10. Hsiao-ch'ang-liang stones (a, chopper; b, c, scrapers). (From *QS* 5, 1980.)

two antlers with "cutting marks," and burned bones, antlers and horse teeth.[44]

Both Ni-ho-wan and Hsi-hou-tu (fig. 11) are noteworthy and significant. Their Lower Pleistocene dating is strongly indicated by their fauna, and the artificiality of the lithic pieces is highly suggestive. They both warrant more intensive explorations.

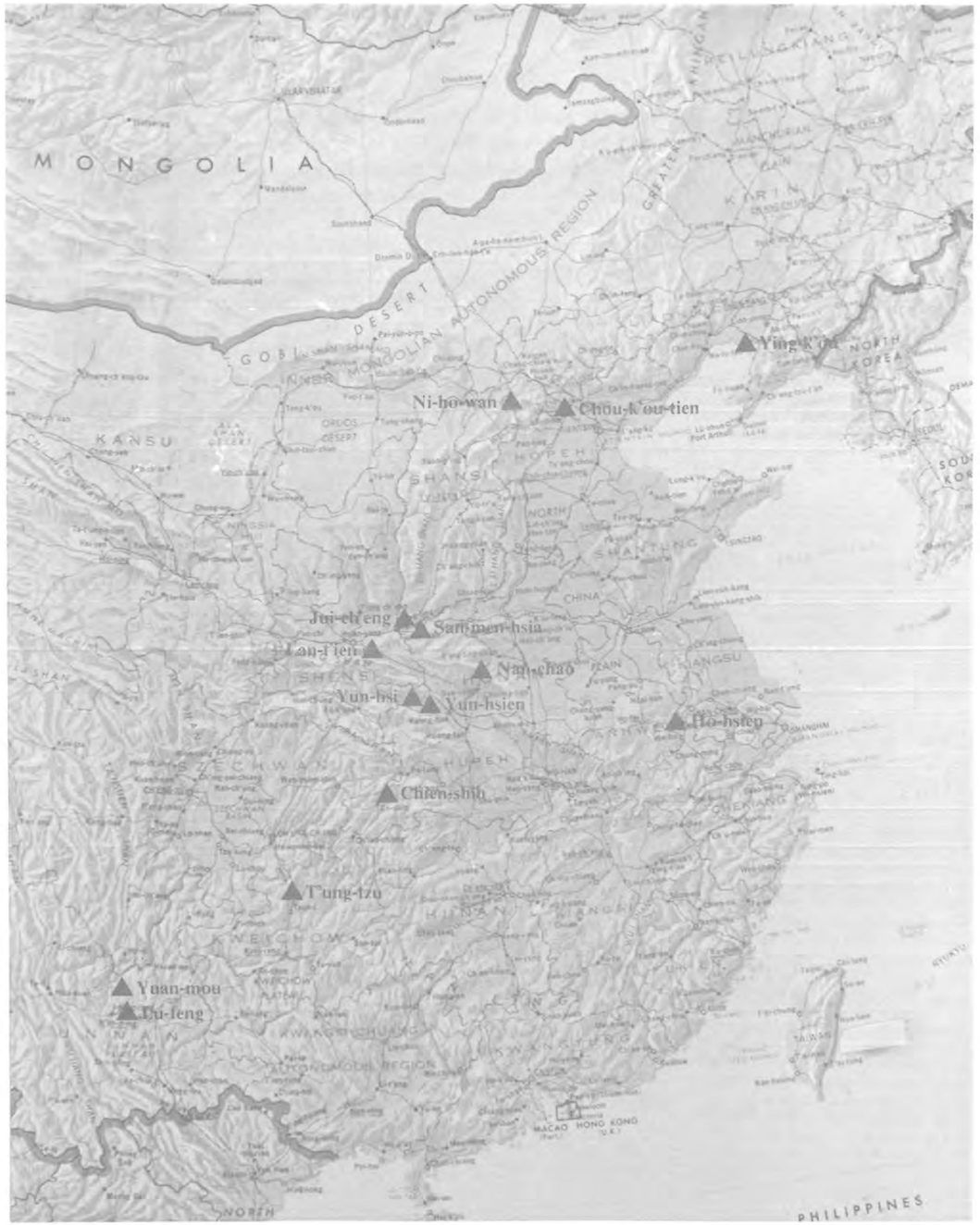
Middle Pleistocene: *Homo erectus* and the Lower Palaeolithic

The principal Middle Pleistocene site in China is Chou-k'ou-tien, but recent archaeological work has brought to light a large number of contemporary finds (fig. 11).

Kung-wang-ling and Ch'en-chia-wo, Lan-t'ien

In 1963, scientists of the Cenozoic laboratory of the Institute of Vertebrate Palaeontology and Palaeoanthropology (IVPP), Academia Sinica (Peking), discovered a pithecanthropoid mandible near the village of Ch'en-chia-wo, some ten kilometers northwest of Lan-t'ien, in eastern-central Shensi, almost a thousand kilometers southwest of Chou-k'ou-tien.[45] In 1964 a human skull of similar age was found at Kung-wang-ling, in the northern foothills of the Ch'in Ling Mountains, more than ten kilometers east of Lan-t'ien.[46] Both the mandible and the skull were probably from females. Their morphological features indicate close affinity with Peking Man, but they exhibit characteristics more "primitive" than their Peking counterparts—for example, a more pronounced supraorbital torus,

44. Chia Lan-p'o and Wang Chien, *Hsi-hou-tu*, Peking: Wen-wu Press, 1978.
45. J. K. Wu, *VP* 8 (1964), 1–12.
46. J. K. Wu, *VP* 10 (1966), 1–16.



11. Palaeoanthropological and Palaeolithic sites in Lower and Middle Pleistocene China.

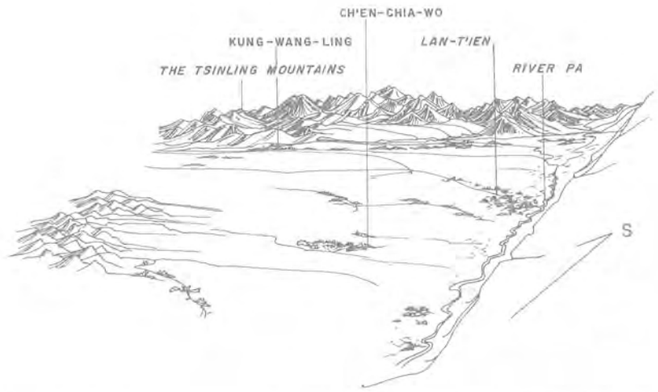
12. Reconstruction of the Kung-wang-ling cranium from Lan-t'ien, Shensi (cast). (Photo courtesy of the Institute of Vertebrate Palaeontology and Palaeoanthropology, Chinese Academy of Sciences.)

a thicker skull wall, a smaller cranial capacity (ca. 780 cc, as against *Australopithecine*'s 435–700 cc, Java Man's 775–900 cc, Peking Man's 850–1,300 cc, and modern man's 1,350 cc), and several other significant attributes (fig. 12). Woo Ju-k'ang believes that Lan-t'ien Man was more primitive than either Peking Man or Java's *Pithecanthropus erectus* and considers him most comparable with Java's *Pithecanthropus robustus*.[47] It may be interesting to note that the Lan-t'ien mandible lacked the third molar, a rare occurrence of agenesis in fossil man specimens. According to Garn, the highest occurrence of agenesis in modern populations is among some American Indians, the Eskimos, and many Asians.[48]

Geologically the Lan-t'ien fossils occurred in strata broadly comparable with the Chou-k'ou-tien sedimentation. Both the mandible and the skull were found in sediments on the banks of the river Pa, a tributary flowing out of the Ch'in Ling Mountains into the Wei River near Sian (fig. 13). At Ch'en-chia-wo the mandible occurred in a reddish clay stratum, separated by a line of disconformity from Lower Pleistocene deposits, in association with fossil remains of *Cuon alpinus, Felis tigris,* elephant, *Pseudaxis grayi, Sus* cf. *lydekkeri,* and *Mospalax fontanieri,* elements that recall the Chou-k'ou-tien fauna.[49] Palynological data from these sediments indicate prevalence of grassy species and broadleaf trees of an interglacial environment.[50] The Kung-wang-ling skull was found from Li-shih loess deposits—again above a line of disconformity that separates it from Lower Pleistocene deposits below—in association with mixed Chou-k'ou-tien/Wan Hsien fauna, including *Ursus thibetanus kokeni, Hyaena sinensis, Equus sanmenensis, Ailuropoda melanoleuca* cf. *fovealis, Cynailurus pleistocaenicus, Nestoritherium* cf. *sinensis, Leptobos, Macacus, Megantereon, Stegodon, Tapirus,* and *Sinomegaceros*.[51] This fauna is apparently more archaic than that of Ch'en-chia-wo,[52] which led some scholars to place the Kung-wang-ling cranium into a much earlier time period than the Ch'en-chia-wo mandible,[53] a placement later confirmed by palaeomagnetic dating.[54] The Kung-wang-ling fossil is the oldest hominid fossil yet found in China.

Habitation sites of Lan-t'ien man have yet to be located. More than two hundred quartz and quartzite artifacts have been collected from the Lan-t'ien area

47. *WW* 1976 (6), 41–44. For another opinion, see J. S. Aigner and W. S. Laughlin, *Am. J. Phys. Anth.* 39 (1973), 97–110.
48. S. M. Garn, *Human Races,* 2d ed., Springfield, Ill.: Thomas, 1962, p. 29.
49. *Shensi Lan-t'ien Hsin-sheng-chieh,* p. 17.
50. Ibid., p. 172.
51. Ibid., pp. 17, 287.
52. H. H. Chi, *VP* 18 (1980), 220–27.
53. J. S. Aigner and W. S. Laughlin, *Am. J. Phys. Anth.* 39 (1973).
54. K. L. Ch'eng et al., in *Ku-jen-lei lun-wen-chi* (Papers in palaeoanthropology), Peking: Science Press, 1978, pp. 151–57.



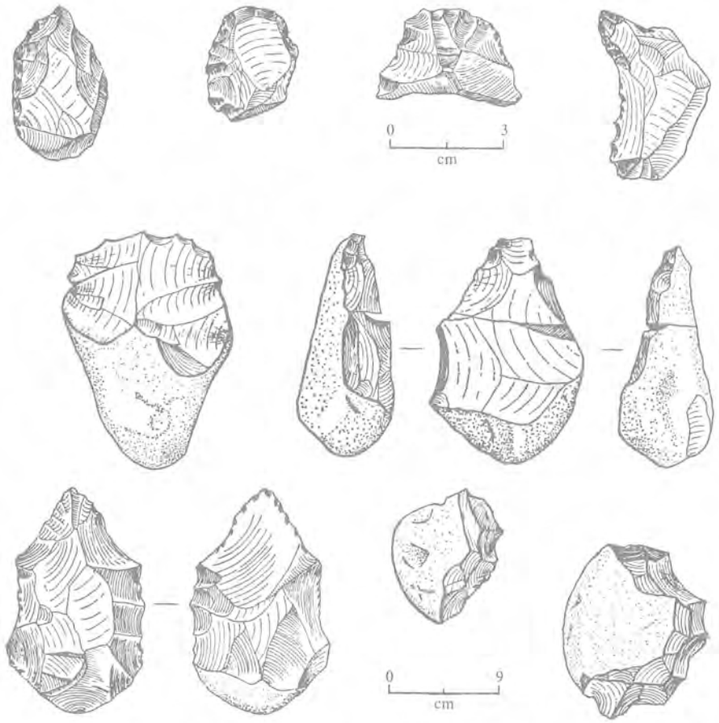
13. The Lan-t'ien Palaeolithic sites. (Based on *Shensi Lan-t'ien Hsin-sheng-chieh,* 1966, p. 122.)

from geological strata correlatable with the horizon of human fossils: these include cores, flakes, choppers, chopping tools, and hand-axes (fig. 14). Some of the choppers and chopping tools are relatively large and roughly prismatic in cross section and are described as "heavy, pointed implements."[55] A small blade with a horizontal truncation appears to be much more advanced than the rest of the Lan-t'ien finds and the Choukoutienian ones, but it was found considerably above the human fossil horizon and its age is uncertain.[56] The use of quartz and the prevalence of flake and pebble implements recall Choukoutienian characteristics, but the Lan-t'ien finds are distinguished by their large, pointed tools; large, discoidal choppers; alternately flaked choppers; scrapers; and stone balls. The "bipolar" technique, common at Chou-k'ou-tien, is not seen here.

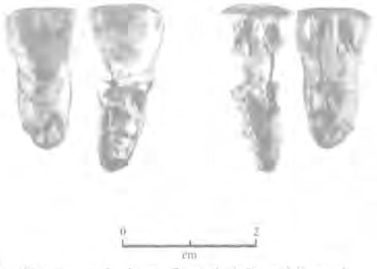
Yuan-mou

The Yuan-mou basin of Yunnan has long been known to be rich in Pleistocene mammalian fossils,[57] but it was not until 1965 when two human incisors (a left and a right upper central incisor of the same individual, probably a young adult male) were found at Shang-na-pang (fig. 15) that the basin became a center of palaeoanthropological attention.[58] Details of the teeth led to their identification as

55. E. C. Tai and H. H. Chi, *VP* 8 (1964), 155; E. C. Tai, *VP* 10 (1966), 30–32; *Shensi Lan-t'ien Hsin-sheng-chieh,* pp. 151–52; E. C. Tai and C. H. Hsü, *KKHP* 1973 (2), 1–11; C. W. Wei, *VP* 15 (1977), 223–24; P. Kai and Y. C. Yu, *VP* 14 (1976), 198–203.
56. E. C. Tai, *VP* 10 (1966), 30.
57. E. H. Colbert, *Am. Mus. Novitates* 1099 (1940), 1–10; W. C. P'ei, *VP* 1961 (1), 16–26.
58. Hu Ch'eng-chih, *AGS* 1973 (1), 65–69.



14. Lan-t'ien stone implements. (From *VP* 14, 1976, pp. 200, 202, 203.)



15. Yüan-mou incisors, frontal (*left*) and lingual (*right*) views. (From Hu Ch'eng-chih, *AGS* 1973, no. 1, p. 70.)

Homo erectus,[59] but the dominant fauna of the Yuan-mou stratum from which the teeth came has led to a Lower Pleistocene identification.[60] The early dating was dramatically strengthened by palaeomagnetic studies placing the fossiliferous stratum to 1.6 or 1.7 million years ago.[61] Reexamination of the palaeomagnetic evidence, however, has modified the dating of the Yuan-mou find to 0.50–0.60 million years ago, and, thus, to within Middle Pleistocene.[62]

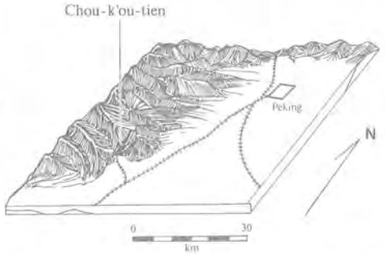
59. Ibid.; K. H. Chou and C. C. Hu, *VP* 17 (1979), 149–60.
60. Y. C. Yu and K. C. Ch'i, *VP* 11 (1973), 66–80; Lin Yi-p'u et al., in *Ku-jen-lei lun-wen-chi*, op. cit. (n. 54), 101–25; H. S. Chi and Y. H. Li, *VP* 17 (1979), 318–24; K. H. Chou and H. Y. Chang, *Memoirs, Beijing Nat. Hist. Museum* 4 (1980).
61. Ch'eng Kuo-liang et al., *SGS* 1977 (1), 34–42; Li Pu et al., *Scientia Sinica* 20 (1977), 645–64.
62. Liu Tung-sheng and Ting Meng-lin, *AAS* 2 (1983), 40–47; Geoffrey G. Pope, *Proc. Nat. Acad. Sci.* 80 (1983), 4988–92.

Archaeological investigations in the Yuan-mou Basin in 1973 and 1975 brought to light seventeen stone implements (ten of them from the surface), bone fragments, charcoal, and burned bones in the general area where the teeth had been found. Most of the stones are of quartzite, and the recognized types are the scraper and point.[63] More excavations are needed to clarify the nature of the Yuan-mou stone assemblage.

Chou-k'ou-tien

The earliest found and still the largest and most important palaeoanthropological site in China, Chou-k'ou-tien was first identified as a potential location for human fossils by J. G. Andersson in 1920. As a palaeoanthropological locality Chou-k'ou-tien (taking its name from the village at its foot) actually refers to a cluster of limestone hills forty-two kilometers west of the old city of Peking (fig. 16), in which are many caves and fissures, at least twenty-six of them fossiliferous. At five of these—localities 1, 4, 13, 15, and upper cave—Palaeolithic implements were excavated from 1921 to 1937 and again from 1959 to the present. Locality 1 at Lung-ku-shan (Dragon Bone Hill) is the most important, for from it have come not only the largest number and the longest series of stone implements but also a large number of human fossils (fig. 17).[64]

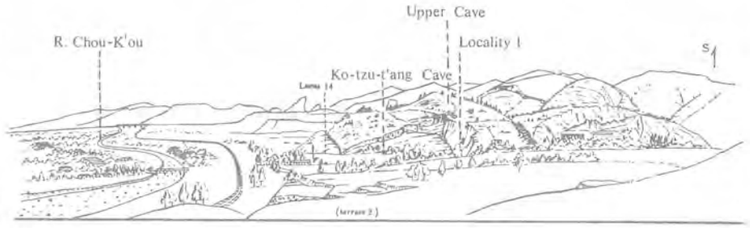
The cave opened to the northeast at the time of its occupation and was about 175 meters long and 50 meters wide, filled with occupational debris and éboulis more than 40 meters deep, accumulated over a very long time (fig. 18). About one-third of the cave was excavated before the war, and the western end has been excavated since 1978, and altogether thirteen natural strata are distinguished, numbered 1 to 13 from top to bottom. Three cycles of deposition are manifest: (1) basal gravel, consisting of strata 11–13, a zone of red clay in which sands and gravels are embedded; (2) lower and middle breccia, strata 8–10, containing the fossil remains of *Hyaena sinensis;* and (3) upper breccia, strata 1–7, with remains of *H.*



16. The caves of Chou-k'ou-tien in relation to the old city of Peking and the West Hills. (Based on J. G. Andersson, *BMFEA* 15, 1943, p. 21.)

63. H. Y. Chang and K. H. Chou, *WW* 1978 (10), 26–29; Wen Pen-heng, in *Ku-jen-lei lun-wen-chi*, pp. 126–33.
64. For a bibliography of the Chou-k'ou-tien excavations, see K. C. Chang, *Arctic Anthropology* 1, no. 2 (1963), p. 31. Classic accounts of the prewar results are in D. Black et al., *Fossil Man in China*, Peking, 1933, and H. L. Movius, Jr., *Transactions, Am. Phil. Soc.* 38 (1948). Excavations in the 1950s and 1960s are reported in *VP* 3 (1959), 41–45; *VP* 5 (1961), 374–78, and *VP* 11 (1973), 109–24. From 1978 to 1982 major excavations of an interdisciplinary scale took place and are reported in Wu Rukang, et al., *Pei-ching Yuan-jen Yi-chih Tsung-ho Yen-chiu* (*Multidisciplinary study of the Peking Man site at Zhoukoudian*), Peking: Science Press, 1985. See also a preliminary sketch of the new work given in Wu Rukang and Lin Shenglong, *Scientific American* 248, no. 6 (1983), 86–94. Two popular accounts of the history of the research as well as the major results are Chia (Jia) Lan-p'o's *The Cave Home of Peking Man*, Peking: Foreign Languages Press, 1975, and *Chou-k'ou-tien fa-chüeh-chi* (An account of the Chou-k'ou-tien excavations), Tientsin: K'o-hsüeh-chi-shu Press, 1984.

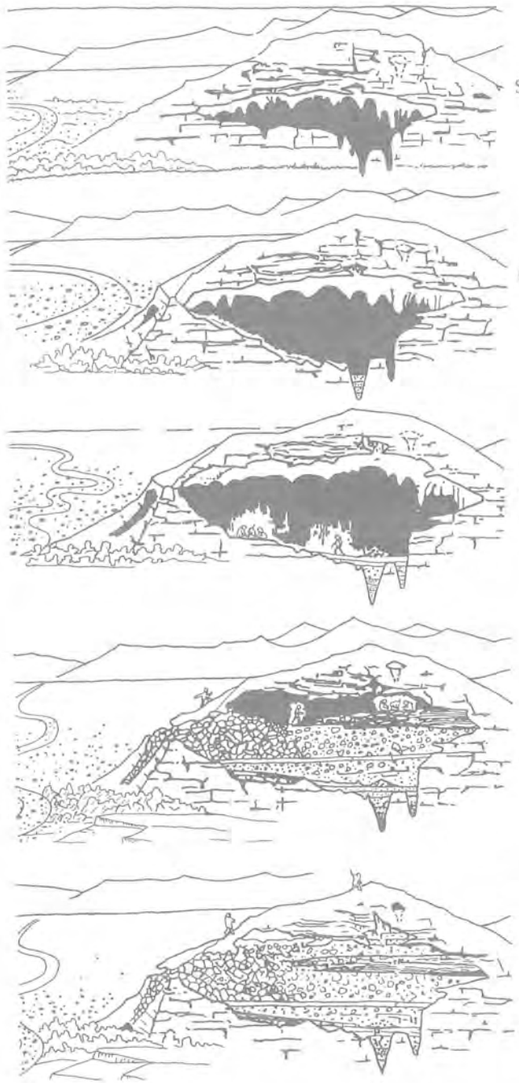
17. Dragon Bone Hill, Chou-k'ou-tien. (From Liu Tse-ch'un, *AAS* 2, 1983, no. 2.)



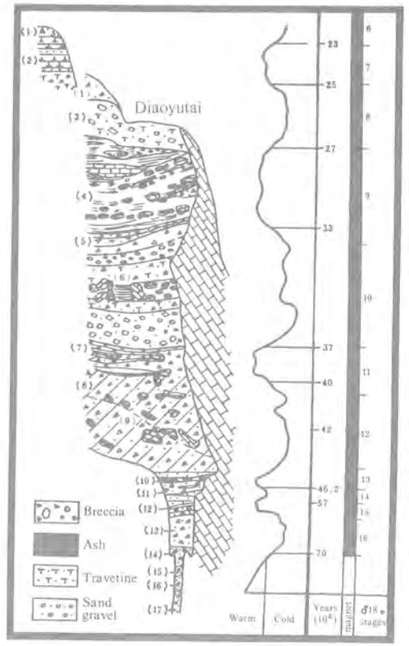
ultima. Human remains and cultural relics have been found only in strata 1–11, and additional strata (14–17) were recognized through a deep well dug under layer 13. Altogether 40 meters of debris filled the cave from the known bottom to the ceiling. According to a variety of dating techniques (table 4), and counting up from layer 11, the earliest dated layer with human remains, the cave was inhabited more or less continuously for over two hundred thousand years.

The lengthy occupation record provides valuable data for the changes in the natural environment and climate—data that could help place the site into its larger Pleistocene context—and in the evolution of both human morphology and cultural manifestations, and many new investigations along all three avenues have been and are being undertaken. On environmental changes, scientists have used various data, including pollens and spores,[65] mammalian fossils,[66] and the mineral composition of the clastic cave deposits,[67] to work out a consistent pattern of climatic fluctuations that suggests three major cold glacial or stadial peaks since the known beginning of human occupation (fig. 19),[68] although on the whole the climate in the Chou-k'ou-tien area throughout the period is considered as having been more or less similar to the present, though slightly warmer and more moist.[69] Locality 13 of Chou-k'ou-tien[70] can be synchronized with the basal gravel of locality 1 on zoological grounds, and localities 4[71] and 15[72] with the latest upper breccia or later. The bulk of Palaeolithic stone materials was excavated from the breccia strata of locality 1 and from locality 15; the entire collection of human

65. B. Kurtén, *VP* 3 (1959), 173–75; J. Hsu, *Quaternaria Sinica* 4 (1965), 77–83; M. J. Sun, *Quaternaria Sinica* 4 (1965), 84–96; J. Hsu, *Scientia Sinica* 15 (1966), 412; C. C. Kung et al., *KHTP* 17 (1971), 1065–67.
66. Y. H. Li and H. H. Chi, *KHTP* 25 (1980), 1087–88; Y. H. Li and H. H. Chi, *VP* 19 (1981), 337–46; C. C. Hsu and L. Ou-yang, *AAS* 1 (1982), 80–88.
67. L. C. Shen et al., *SGS* 1981 (1), 60–65.
68. Liu Tse-ch'un, *AAS* 2 (1983), 172–82.
69. C. C. Hsu and L. Ou-yang, *AAS* 1 (1982), 86: Y. H. Li and H. H. Chi, *KHTP* 25 (1980), 1088; L. P. Chia, *Acta Stratigraphica Sinica* 2 (1978), 53–56.
70. W. C. P'ei, *Bull. GSoC* 13 (1934), 359–67.
71. W. C. P'ei, *Bull. GSoC* 19 (1939), 207–34: Ku Yü-min, in *Ku-jen-lei lun-wen-chi*, pp. 158–71.
72. W. C. P'ei, *Bull. GSoC* 19 (1939), 147–87.



18. History of locality 1, the Peking Man cave, at Chou-k'ou-tien. (From Jen Mei-eh et al., *Chung-kuo K'o-hsueh*, 1981, no. 3.)



19. Palaeoclimatic curve reflected by Peking Man cave deposits. (From Liu Tse-ch'un, *AAS* 2, 1983, no. 2.)

20. Chopping tool from locality 13, Chou-k'ou-tien. (From H. L. Movius, Jr., *Transactions, Am. Phil. Soc.*, n.s. 38, 1949, p. 391.)

fossils came from the breccia zones of locality 1. One piece of stone implement was known from locality 13 (fig. 20), and two pieces of stone of debatable artificiality were collected from the basal-gravel strata of locality 1.[73]

Human fossils found at locality 1 consist of bone fragments—including fourteen skulls, over a hundred teeth, and isolated postcranial bones—that belonged to over forty individuals.[74] Commonly known as Peking Man, they have been variously latinized as *Sinanthropus pekinensis, Pithecanthropus pekinensis,* and *Homo erectus pekinensis.* Whatever the appellation, they were possessed of hominid features: erect posture, considerable cranial capacity (average 1,075 cc), and the capability of making and using tools and implements (fig. 21). On the other hand, other physical features distinguish them from *Homo sapiens:* the low skull vault, the great thickness of the skull wall, the bony crests around the skull's horizontal circumference, the receding chin, and other minute but important characteristics of dentition and tooth eruption. These place Peking Man in the same league as *Homo erectus* of Java, to whom all physical anthropologists agree he is related. From the length of a femur, Weidenreich speculated that the stature of an adult male was only about 156 centimeters, and that the female was probably 144 centimeters tall. The life-span of the Peking Man population was brief by modern standards: 40 percent died before the age of fourteen, and less than 3 percent lived more than fifty years.[75] Weidenreich believed that many of these people were cut down early in life by injuries.

For the most part, only the skulls of Sinanthropus seem to have been brought into the caves at Choukoutien and, with the exception of the few fragmentary postcranial parts . . . there are simply no long bones, vertebrae, etc., in the deposits. It appears that these skulls were trophies of head hunters, and, furthermore, that said hunters usually bashed in the bases of the skull when fresh, presumably to eat the brains therein contained. Many crania also show that their owners met their deaths as a result of skull fractures induced by heavy blows.[76]

Apparently some portion of Peking Man's diet consisted of the flesh, brain, and marrow of their own kind. Their principal food, however, was meat of wild animals—70 percent being deer with very heavy horns (*Sinomegaceros pachyosteus*), to judge from the bony fossils found in the cave; the rest included

73. L. P. Chia, *VP* 3 (1959), 41–45; T. K. Chao and Y. H. Li, *VP* 5 (1961), 374–78. But see S. S. Chang, *VP* 6 (1962), 278–79.
74. D. Black, *Palaeontologia Sinica (PS)*, ser. D, 7 (1927), 1–28; F. Weidenreich, *PS*, ser. D, 12 (1936), 4; *PS*, ser. D, 7 (1936), 3; *PS*, n.s. D, 1 (1937); *PS*, n.s. D, 10 (1943); J. K. Woo and T. K. Chao, *VP* 3 (1959), 169–72; C. L. Ch'iu et al., *VP* 11 (1973), 109–24.
75. F. Weidenreich, *Chinese Med. J.* 55 (1939), Peking.
76. E. A. Hooten, *Up from the Ape,* New York: Macmillan, 1949, p. 304.

leopard, cave bear, saber-toothed tiger, hyena, elephant, rhinoceros, camel, water buffalo, boar, and horse.[77] The many bits of charcoal in the cave, burned bone fragments, and hearths suggest that Peking Man was capable of making fire and cooked his meat.[78] Trees in the hills were cut for fuel, and timber was used. Some nuts found in the cave, such as those from *Celtis,* probably came from branches and twigs cut for fuel, but Peking Man quite likely also collected wild fruits and nuts to supplement his diet.[79]

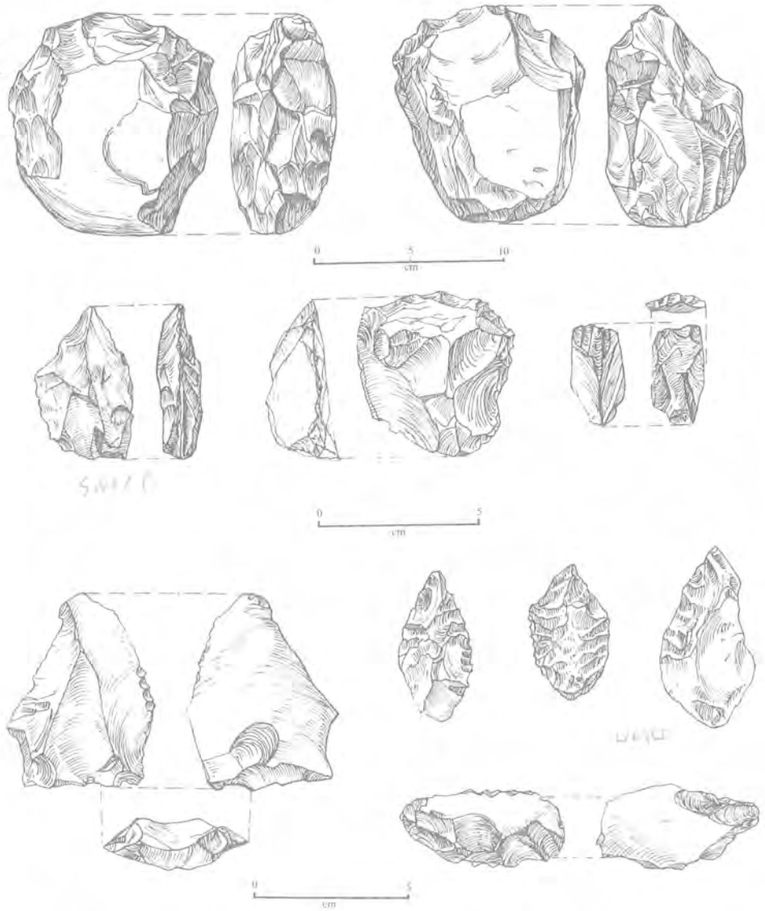
Other than pieces of bone that bear possible signs of incisions for use,[80] the artifacts of Peking Man consisted mainly of some hundred thousand stone implements, which provide the essential body of data for any study of their culture.[81] According to a recent analysis of 5,897 specimens by Chang Shen-shui, of the IVPP, the Peking Man stone industry has the following characteristics (fig. 22):[82]

1. The stone implements were mainly made of flakes.
2. They were made principally by means of unilateral percussion and retouched by the hammer technique. The principal raw material was vein quartz.
3. Many flakes were unretouched but had signs of use.
4. The implements and flakes do not have conventional forms.
5. There is great flexibility of technique and variation in the levels of skill throughout the layers of deposition.
6. The retouched edges are in most cases curved, showing marked scars left by retouching blows, indicating a very primitive level of stone technology.
7. Types of artifacts are not sharply demarcated. The principal categories are scrapers, choppers, points, and awls; there are some end scrapers, engravers, balls, hammers, and chipped pebbles. Many artifacts, however, can be classified in more than one category, and there are many multiple-purpose implements.

The conclusion of S. S. Chang is that such a stone industry is characteristic of the Lower Palaeolithic level and is more like the Lower Palaeolithic assemblages

21. Reconstruction of the head of a Peking Woman and the skull on which the reconstruction was based. (From Franz Weidenreich, *Palaeontologia Sinica,* n.s. D, 10, 1943, pl. 48).

77. W. C. P'ei, *Palaeontologia Sinica,* ser. C, 8 (1934), pts. 1, 3; H. Y. Liu, *VP* 11 (1973), 86–97.
78. D. Black, *Bull GSoC* 11 (1931), 107–08; H. Breuil, *Bull. GSoC* 11 (1931), 147–54; *Anthropologie* 42 (1932), 1–17; *Anthropos* 27 (1932), 1–10.
79. R. W. Chaney, *Carnegie Inst. Wash. Bull.*, n.s. 3 (1935), 25, 199–202; *Bull. GSoC* 14 (1935), 99–113; R. W. Chaney and L. H. Daugherty, *Bull. GSoC* 12 (1933), 323–28.
80. H. Breuil, *Bull. GSoC* 11 (1931), 147–54; *Anthropologie* 42 (1932), 1–17; *Palaeontologia Sinica,* ser. D, 6 (1939), 7–41; W. C. P'ei, *Bull. GSoC* 12 (1932), 105–08; *KKHP* 1960 (2), 1–9; L. P. Chia, *KKHP* 1959 (3), 1–4.
81. W. C. P'ei, *Bull. GSoC* 11 (1931), 109–39; P. Teilhard and W. C. P'ei, *Bull. GSoC* 11 (1932), 315–58; D. Black et al., *Fossil Man in China,* H. L. Movius, Jr., *Papers, Peabody Museum, Harvard University,* 19 (1944); *Transactions Am. Phil. Soc.* 38 (1948).
82. *VP* 6 (1962), 271–79. For a full report of the stone implements from loc. 1, see W. C. P'ei and S. S. Chang, *Chung-kuo Yuan-jen shih-ch'i yen-chiu,* Palaeontologia Sinica, n.s. D, 12 (1985).



22. Palaeolithic implements from Chou-k'ou-tien, locality 1 (*upper group*) and locality 15 (*lower group*). (Based on H. L. Movius, Jr., *Transactions Am. Phil. Soc.*, n.s. 38, 1949, figs. 35, 37–39.)

of southern and eastern Asia than those of Europe and Africa. As early as 1944, Movius pointed out that Lower Palaeolithic industries of southern and eastern Asia, that is, the Soan of Pakistan, the Anyathian of Upper Burma, the Patjitanian of Java, and the Choukoutienian of Peking, formed a so-called chopper–chopping tool complex and that—in contrast to the European and African Abbevillian and Acheulian industries with hand-axes and flakes struck from pre-

worked cores with prepared striking platforms—the Asian industries were distinguished by implements struck from pebbles, with only a few scars and generally simple forms.[83] There is little question that the East Asian Lower Palaeolithic cultures have their distinctive features, but one now wonders if their differences from contemporary cultures to the west were not exaggerated. A recent analysis of newer data has shown the above generalizations to be somewhat simplistic. Several Chinese archaeologists—including Chang himself—now see the Choukoutienian industry as containing clearly defined artifact types of considerable sophistication, especially toward the upper parts of the deposits.[84] On the basis of twelve morphological features of Peking Man—primarily the shovel-shaped incisors, the sagittal crest, and the mandibular torus—Weidenreich believed that some of the genes of the Peking Man were transmitted into the modern Mongoloid populations who inhabit the same area of the world, but this view is far from being generally accepted.[85]

The Peking Man fossils—bony remains of a small population including five nearly complete crania, excavated under close scientific supervision from well-documented depositional contexts in association with Middle Pleistocene fauna and a Lower Palaeolithic stone industry—were China's contribution to world scholarship and palaeoanthropology's greatest catch. But, although they had been safely buried underground, untouched by the great physical upheavals of the subsequent half-million years, these fossils were lost barely a decade and a half after their discovery. Although Peking fell to Japanese invaders in 1937, scientists at the Cenozoic Laboratory of the Geological Survey of China were able to continue study at Chou-k'ou-tien until 1939. Then, in 1941, a decision was made by the Chungking and American authorities to transport the fossils to the United States for safekeeping, and they were crated and moved to a warehouse in Ch'in-huang-tao, a small port city northeast of Peking, into the custody of the U.S. Marines. Just at this time Pearl Harbor was attacked. In the resultant confusion the fossils disappeared either from the warehouse or together with a sunken ship and have never been heard of since.[86] A few teeth, a skullcap, a mandible, and a few long bones of Peking Man have been found since 1950 at locality 1, but these are small recompense for the loss.

83. Movius, *Papers, Peabody Museum, Harvard University* 19 (1944).
84. C. L. Ch'iu et al., *VP* 11 (1973), 109–31.
85. F. Weidenreich, *Palaeontologia Sinica*, n.s. D, 10 (1943), 253–54. But see J. K. Woo and N. N. Cheboksarov, *Sovietskaia Etnografia*, 1959 (4), 3–24.
86. For an account of the circumstances of the disappearance of Peking man fossils and some recent efforts to recover them, so far without success, see Harry Shapiro, *Peking Man*, New York: Simon and Shuster, 1975.

Other Sites

Many other Middle Pleistocene palaeoanthropological and archaeological sites have been discovered in recent years. Some of them are firmly dated geologically, but others are placed into this period in part on the basis of morphology or typology. But it is clear that the period saw extensive population of *Homo erectus* throughout our area. Here I enumerate the major finds from north to south.

A very important site to watch is the cave-fissure site at Chin-niu-shan near the city of Ying-k'ou in southern Liaoning province. Mammalian fossils were collected here before the war, and the staff of the Liaoning Museum excavated the site in 1974–76, disclosing an upper layer and a lower layer dated to Upper and Middle Pleistocene respectively on the basis of fauna.[87] Stone implements are reported from both strata, those from the lower layer including scrapers and a small point, mostly of vein quartz. In the fall of 1984, further excavations brought to light a partial human skeleton, reportedly of *Homo erectus* or early *Homo sapiens* status, that includes the cranium, vertebrae, ribs, the pelvis, and some limb, hand, and foot bones.[88]

Comparable in time and in cultural content is the Miao-hou-shan site in Penhsi, also in Southern Manchuria, in Liaoning province.[89]

Stone assemblages of large numbers of implements of comparable age are known from no fewer than eleven localities near the village of K'o-ho, in Juich'eng Hsien, southwestern Shansi, approximately 150 kilometers east of Lant'ien. Palaeolithic implements were excavated in 1960 by scientists from the IVPP at all these localities from a layer of slightly consolidated gravels lying below a thick bed of reddish clay and above an erosion surface of a layer of marly clay. The associated fauna were *Coelodonta* sp., *Equus* sp., *Sus* sp., *Sinomegaceros pachyosteus, S. flabellatus, Pseudaxis* sp., *Bubalus* sp., *Bison* sp., *Stegodon zdansky, S.* cf. *orientalis,* and *Palaeoloxodon* cf. *namadicus*. The fauna more than the stratigraphy places the K'o-ho assemblage within the Middle Pleistocene, but the assemblage was probably deposited earlier than the main phases of Chou-k'ou-tien locality 1 and was perhaps broadly contemporaneous with locality 13.[90]

Except for rare vein-quartz pieces, the K'o-ho stone industry was based on quartzite pebbles. Many of them retain the pebble cortex. Cores (53) and flakes (66) were collected from all localities, a few of them exhibiting signs of use and

87. C. H. Chang, *VP* 19 (1981), 185–86; *VP* 16 (1978), 129–36.
88. *Renmin Ribao* (People's daily), November 29, 1984.
89. C. H. Chang, *VP* 19 (1981), 186; Y. K'uang, *KKTYWW* 1982 (2), 32.
90. Chia Lan-po et al., *K'o-ho,* Peking: Science Press, 1962. For chronological controversies of the K'o-ho site, see ibid., C. L. Ch'iu, *VP* 6 (1962), 291–94; L. P. Chia, *VP* 6 (1962), 295–98.

retouching. In addition, there are nineteen definitely retouched artifacts, divided into five types: chopping tools and choppers of cores and flakes (7); scrapers (7); a heavy triangular point; a small, pointed implement; and stone balls (3). Like the Choukoutienian, the stone-making technique was extremely primitive, characterized by flaking, large scars, and the lack of core preparation. Typologically, both the Choukoutienian and the K'o-ho industry contained mostly pebble and flake implements—characteristic of Movius's chopper–chopping tool complex—and both are at a Lower Palaeolithic level of development. The Choukoutienian, however, appears to be slightly more sophisticated technologically: a flaking edge, rather than the pebble cortex surface, was used for a striking platform, and there was greater refinement in retouching and in type control. On the other hand, the prismatic, pointed implements, found both at Lan-t'ien and K'o-ho, were absent in Peking. It is possible that even in the Lower Palaeolithic there were already regional stone-making traditions in North China, with recognizable and significant differences.

Palaeolithic implements very similar to the K'o-ho industry (including flakes, choppers, chopping tools, heavy prismatic points, and stone balls) have been unearthed at several sites in Shansi[91] and at the sites of Shui-mo-kou and Hueihsing-kou in San-men-hsia, northwestern Honan,[92] and at Hsiao-k'ung-shan in Nan-chao, southwestern Honan,[93] from geological strata comparable with the K'o-ho beds. From Nan-chao, at another locality, Hsing-hua-shan, a human premolar was collected in association with Middle Pleistocene fauna.[94]

For Central and South China, the major recent find is the *Homo erectus* cranium and other fossils excavated in 1980 and 1981 from the Lung-t'an-tung cave in Ho-hsien, central Anhwei.[95] The fossils include a cranium, a frontal bone fragment, a parietal bone fragment, a mandible fragment, and nine teeth. The cranium was of a young adult male. It is low, and it has a reclining forehead, pronounced supraorbital ridge, and a cranial capacity of about 1,025 cc. In general, the fossils resemble Peking Man but appear somewhat more advanced.[96] The associated fauna includes the saber-toothed tiger, *Hyaena sinensis, Megaloceros (Sinomegaceros) pachyosteus,* and other species of the Chou-k'ou-tien fauna, but it also has such southern forms as the giant panda, stegodon, and tapir. The small mammals

91. Y. C. T'ang et al., *AAS* 1 (1982), 156–58; P. H. Wen et al., *AAS* 2 (1983), 231–35; C. J. Li et al., *AAS* 2 (1983), 236–45; H. C. Wang, *AAS* 3 (1984), 82.
92. W. W. Huang, *VP* 8 (1964), 162–77.
93. W. H. Chang, *CYWW* 1982 (1), 31–36.
94. C. L. Ch'iu et al., *AAS* 1 (1982), 109–16.
95. W. P. Huang et al., *KHTP* 1981, 1508–10; W. P. Huang et al., *VP* 20 (1982), 248–55; M. L. Wu, *AAS* 2 (1983), 109–15.
96. J. K. Wu and H. J. Tung, *AAS* 1 (1982), 2–11.

found here appear to tie the site more closely to layer 5 of locality 1 at Chou-k'ou-tien in one estimation[97] but to layers 3 and 4 in another.[98]

Outside of Ho-hsien, excavated materials of a pebble chopper and flake industry have been reported from Hupei[99] and Kweichou,[100] and surface and incidental archaeological collections are known from Szechwan and Kwangsi.[101] Human teeth classifiable as *Homo erectus* have now been reported from T'ung-tzu in Kweichou and from Yun-hsien,[102] Yün-hsi,[103] and Chien-shih[104] in Hupei. These remind us of the fact that another tooth—which Koenigswald found in a Hong Kong drugstore in the late 1930s—from a hominid which he had termed *Sinanthropus officinalis*, was believed by him to have come originally from a reddish clay stratum somewhere in South China.[105] New finds are now emerging to fill the South China void between the *Homo erectus* of Peking and that of Java, but we need many more sites to learn about their culture.

Upper Pleistocene: *Homo sapiens* and the Middle and Upper Palaeolithic

As indicated earlier, both human morphology and lithic technology underwent gradual but perceptible change during the long (two-hundred-thousand-year) occupation of the Chou-k'ou-tien cave. In the words of Wu and Lin,

Because of the long time span covered by the fossils of Peking Man, it may even be possible to trace changes in morphology, and in particular an increase in cranial capacity, over the history of the habitation of the site. The average capacity of four skulls found in the eighth and ninth layers . . . is 1,075 cubic centimeters. The one skull unearthed in the third layer . . . has a capacity of 1,140 cubic centimeters. . . .

The stone tools found in the eighth through the 11th layers represent the earliest culture . . . characterized by large tools weighing more than 50 grams and longer than 60 millimeters and by the indiscriminate application of the three toolmaking processes

97. S. H. Cheng, *KHTP* 1982 (11), 683–85.
98. C. C. Hsu and Y. C. Yu, *AAS* 3 (1984), 62–65.
99. Y. H. Li et al., *VP* 12 (1974), 139–57; K. H. Chou, *KKYWW* 1982 (3), 1–3.
100. W. C. P'ei et al., *VP* 9 (1965), 270–79; M. L. Wu et al., *VP* 13 (1975), 14–23; Y. H. Li and P. H. Wen, *Ku-jen-lei lun-wen-chi*, pp. 77–93; M. L. Wu, *AAS* 3 (1984), 195–201.
101. D. A. Hooijer, *Southwestern J. Anthropol.* 7 (1951), 77–81; D. C. Graham, *J. West China Border Res. Soc.* 7 (1935), 47–56; H. de Terra, *Pleistocene Formations and Stone Age Man in China*, Peking: Institut de Géo-Biologie, 1941, pp. 36–37; Teilhard et al., *Bull. GSoC* 14 (1935), 179–205.
102. C. H. Hsu, in *Ku-jen-lei lun-wen-chi*, pp. 175–79; J. K. Wu and H. J. Tung, *VP* 18 (1980), 142–48; cf. J. K. Wu and H. C. Wu, *VP* 20 (1982), 1–8.
103. L. Ch'ün, *AAS* 2 (1983), 203.
104. C. Kao, *VP* 13 (1975), 81–87; Y. Y. Chang, *AAS* 3 (1984), 85–91.
105. *Anth. Papers, Am. Museum Nat. Hist.* 43 (1952), 308.

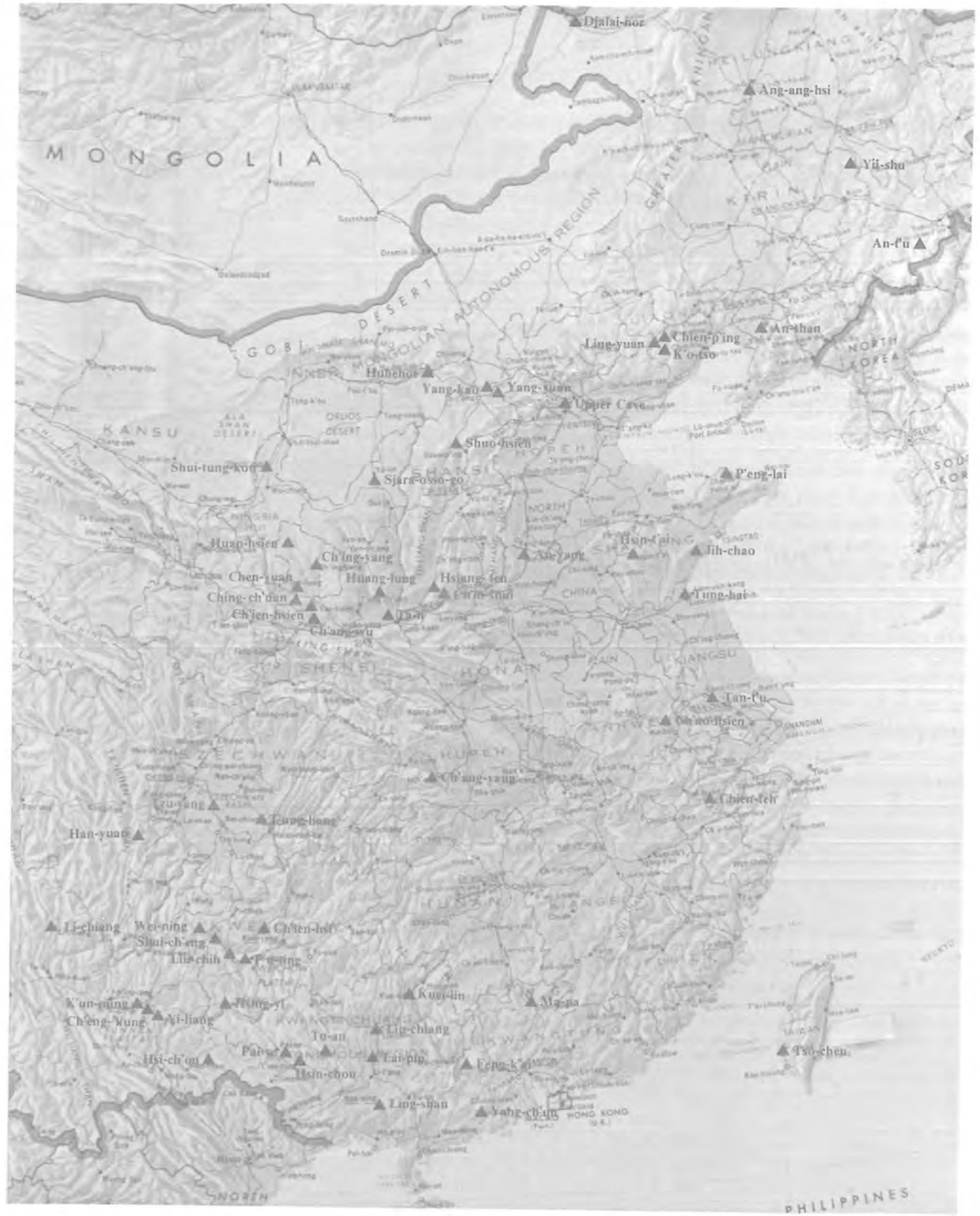
(i.e., anvil percussion, direct percussion, and bipolar percussion). At this stage tools made out of softer materials such as sandstone account for 15 to 20 percent of the artifacts. In the middle stage, . . . the anvil percussion process was practically abandoned and the bipolar-percussion process became the main method of flaking stone. As a result the proportion of the tools having a weight of less than 20 grams and a length of less than 40 millimeters increased to 68 percent. In contrast large tools diminished to 12 percent. The last stage . . . was clearly the most advanced: the tools had become smaller and the tool materials were of better quality. Among the stone tools excavated from layers one through five the small tools increased dramatically to 78 percent of the total, whereas the large tools decreased further to 5 percent. Although the tools . . . were still made mainly out of quartz, fewer were made out of the coarse varieties of stone, such as vein quartz, and the fraction of the tools made out of flint increased to as much as 30 percent in the uppermost layers.[106]

Shortly after the end of the Chou-k'ou-tien occupation, somewhere around two hundred thousand years ago—if the few uranium-series dates can be relied upon—significant, qualitative changes became evident in both human fossils and palaeolithic implements, which had also become much more extensively distributed. This is apparent in a brief description of the principal Upper Pleistocene sites (fig. 23).

Early Homo sapiens *and Middle Palaeolithic*

A human cranium was unearthed at T'ien-shui-kou, in Ta-li county, easternmost Shensi, together with 181 stone pieces and mammalian fossils in 1978.[107] The site was excavated a second time in 1980, resulting in 384 more lithic pieces as well as additional mammalian fossils.[108] The Ta-li cranium (fig. 24) is that of a young adult male and is morphologically regarded as archaic *Homo sapiens:*[109] It "differs markedly from that of *H. erectus* from [Chou-k'ou-tien]. The broadest part of the cranial vault is near the superoposterior border of the temporal squama rather than near the base of the skull. The interparietal distance is 136 mm and the parietobasal index is 91.3, which make the [Ta-li] hominid similar to many other early *H. sapiens* in these respects. The thickness of the cranial walls is slightly less than the average for [Peking] Man but exceeds that of most Western early *H. sapiens*."[110] Three absolute dates are available for Ta-li: a palaeomagnetic date of

106. R. Wu and S. Lin, *Scientific American* 248, no. 6 (1983), p. 92.
107. Y. Y. Wang et al., *KHTP* 24 (1979), 303–06; H. C. Wu and Y. C. Yu, *VP* 17 (1979), 294–302.
108. S. S. Chang and C. M. Chou, *AAS* 3 (1984), 19–28.
109. H. C. Wu, *Scientia Sinica* 1981 (2), 200–06.
110. R. Wu and X. Wu, in Wu and Olsen, eds., *Palaeoanthropology and Palaeolithic Archaeology in China*, p. 93.



< 0.73 million years ago, a uranium-series date of 180,000–230,000, and a thermoluminescence date of 41,000–71,000.[111] In table 4 only the uranium-series date was selected because the < 0.73 MYA date is useless and the T-L date pertains to layer 8, which is posterior to layer 3, from which the cranium came. The uranium-series date of 200,000 BP places the Ta-li cranium immediately following the end of Chou-k'ou-tien, and it suggests a convenient temporal threshold for humans to step from *erectus* to *sapiens* in this part of the world.

Significant innovations are seen on the Palaeolithic implements at Ta-li also. In general, the artifacts are smaller than the Choukoutienian (over 90 percent under four centimeters long), and more than 80 percent of the artifacts from layer 3 were made of flint, and only 10 percent of quartzite. The major types are scrapers, points, awls, and engravers, but choppers and stone balls are absent. Flake implements predominate, and secondary retouches are relatively coarse.

Another site in this time range—200,000 BP—is Ting-ts'un, in Hsiang-fen, southern Shansi, on the Fen River valley. Here three human teeth came to light in 1954 and a parietal bone of a child was discovered in 1976.[112] The stone industry here indicates a considerable advance over those of the Lower Palaeolithic. While the predominant technological traditions continue to be characterized by flakes and choppers and chopping tools, the skills of stone-making were markedly refined, and the various types of implements included heavy triangular points, polygonal scrapers, and stone balls, as well as points, scrapers, choppers and chopping tools (fig. 25). Bifacially flaked core implements increased in number, the striking platforms and the core surfaces were quite often prepared before striking, and, most important, there were some finely made parallel-sided flakes which were probably the forerunners of the blades of the next technological stage. The heavy prismatic points and the stone balls in the Ting-ts'un assemblages are particularly noteworthy; apparently they carry on the same typological tradition of the middle Huang Ho Lower Palaeolithic cultures.

Somewhat later in time, but still of an early type in human morphology, are the human fossils (eleven parietal fragments, two occipital bones, one maxillary, one lower jaw fragment, and two teeth) found at the site of Hsü-chia-yao, in Yang-kao, northeastern Shansi, in the Sang-kan River valley, a short distance west of Ni-ho-wan, which were excavated in 1974, 1976, and 1977.[113] Details of the

111. Y. Y. Wang et al., *KHTP* 24 (1979), 306.
112. W. C. P'ei et al., *Shansi Hsiang-fen-hsien Ting-ts'un chiu-shih-ch'i shih-tai yi-chih fa-chüeh pao-kao* (Report of the excavations of the palaeolithic sites at Ting-ts'un, in Hsiang-fen-hsien, Shansi), Peking: Science Press, 1958; H. C. Wu, *VP* 14 (1976), 270.
113. L. P. Chia and C. Wei, *KKHP* 1976 (2), 97–113; L. P. Chia et al., *VP* 17 (1979), 277–88; M. L. Wu, *VP* 18 (1980), 229–37.

23. Palaeoanthropological and Palaeolithic sites in Upper Pleistocene China.

24. The Ta-li cranium from Shensi. (Photo courtesy of the Institute of Vertebrate Palaeontology and Palaeoanthropology, Chinese Academy of Sciences.)

25. Ting-ts'un Palaeolithic implements. (From *Hsin Chung-kuo ti k'ao-ku shou-huo*, 1962, p. 5.)

morphology of these fossils point to a position "intermediate between North China's *H. erectus* and modern *H. sapiens sapiens* populations."[114] On the other hand, nearly twenty thousand stone and bone pieces and a large assemblage of vertebrate fossils were unearthed from the same deposits, and the stones are characterized by their small size, by a decisive appearance of the blade technology, and by a large number of stone balls. Especially noteworthy among the lithic types are the engravers, small points, and various scrapers, including the thumbnails (fig. 26). An Upper Palaeolithic industry appears to be on its way.

These three northern Chinese finds of early *Homo sapiens* are all associated with a Middle Palaeolithic industry. Human fossils of comparable age and morphology have also been reported in limestone-cave deposits in South China, but no lithic implements have been found with them. These include a maxilla and a premolar from Ch'ang-yang, Hupei;[115] an occipital bone from Ch'ao-hsien, Anhwei;[116] and a cranium from Ma-pa, in Kwangtung.[117] All of them are described as having neanderthaloid characteristics.

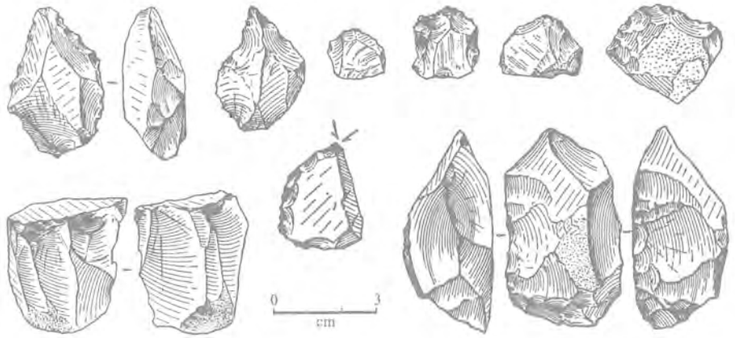
Modern Humans and Upper Palaeolithic

The small number of chronometric dates at our disposal (table 4) suggest that palaeoanthropological and archaeological sites that may be classified as Middle Palaeolithic are found in the time interval from two hundred thousand to fifty thousand years ago, providing "an important link between the relatively uniform Early Palaeolithic cultures of China and their highly diversified Late Palaeolithic descendants."[118] The Upper Palaeolithic cultures after about fifty thousand years ago became highly diversified indeed, often exhibiting regional characteristics, and they have been found in all parts of China, in some regions quite densely (fig. 23). A brief description of these industries in selected regions follows:

THE MIDDLE YELLOW RIVER VALLEY

This is the region of the Classic "Ordosian" industries represented by the sites at Shui-tung-kou and Sjara-osso-gol. *Ordos* is the Mongolian name of the northern grasslands of the middle Huang Ho where it flows northward, turns east, and returns toward the south; it includes the modern administrative units of eastern Ninghsia, southwestern Inner Mongolia, northern Shensi, and northwestern Shansi. Palaeolithic sites have been uncovered throughout the area, but particularly in the Huang Ho and the Sjara-osso-gol valleys since the 1920s, and are collectively known as the Ordosian culture. Associated human-fossil remains of Ordos Man include an incisor, three frontal bones, a parietal, a piece of facial skeleton, a mandibular fragment, and a few long bones.[119] Besides some "primitive" features in the parietal, the morphology of Ordos Man is insufficiently represented for any definitive study, but it must be noted that the shovel-shaped depression again occurs on the incisor.

114. R. Wu and X. Wu, op cit. (n. 110).
115. L. P. Chia, *VP* 1 (1957), 247–57.
116. C. H. Hsu et al., *AAS* 3 (1984), 202–08.
117. *WW* 1959 (1), 47; *VP* 3 (1959), 104; J. K. Wu and J. T. P'eng, *VP* 3 (1959), 175–82.
118. Z. Qiu, in Wu and Olsen, eds., *Palaeoanthropology and Palaeolithic Archaeology in China*, p. 208.

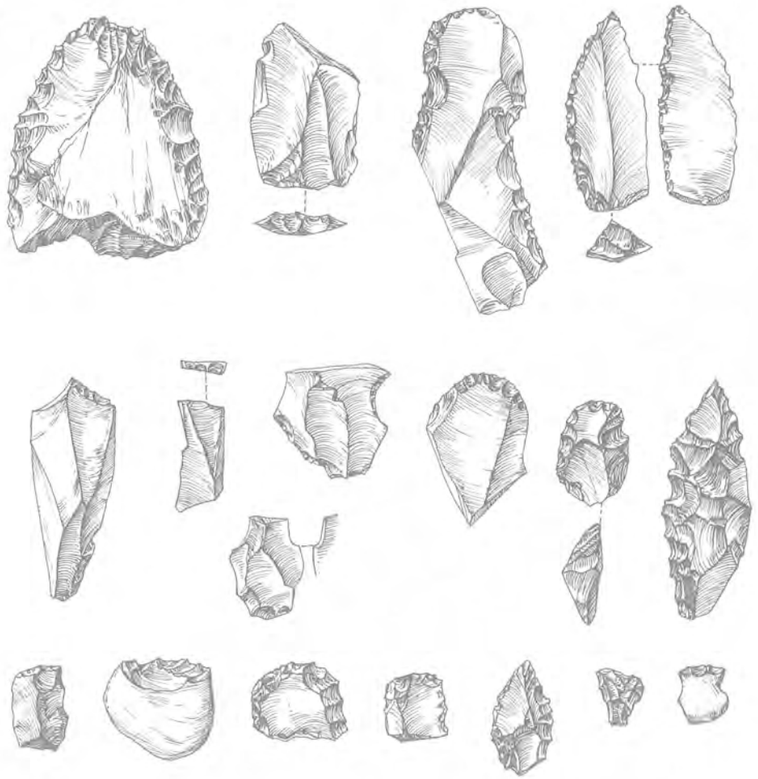


26. Hsü-chia-yao Palaeolithic implements. (From *KKHP* 1976, no. 2, pp. 102–07.)

Much is known, on the other hand, of Ordos stone industries. Although some seven or eight clusters of sites have been investigated and reported,[120] the best-known assemblages are those uncovered at Hsiao-ch'iao-pan in the Sjara-osso-gol valley in southern Inner Mongolia[121] and at Shui-tung-kou in eastern Ninghsia east of the Huang Ho.[122] According to the various studies of these assemblages,[123] the main features of the Ordos industries may be summarized as follows (fig. 27):

1. The two basic technological components of the Lower Palaeolithic—that is, the use of flakes and pebbles for fashioning tools—remained in the Ordosian.

119. E. Licent et al., *Bull. GSoC* 5 (1926), 285–90; Y. P. Wang, *WWTKTL* 1957 (4), 22–25; *VP* 7 (1963), 190–91; J. K. Wu, *VP* 2 (1958), 208–12; K. J. Tung et al., *KHTP* 1981, 1192–94.
120. K. C. Chang, *Arctic Anthropol.* 1 (1963) (2), 32–33.
121. P. Teilhard, *Anthropologie* 33 (1924), 630–31; *Natural History* 26 (1926), 239–42; P. Teilhard and E. Licent, *Bull. GSoC* 3 (1924), 46–48; E. Licent and P. Teilhard, *Anthropologie* 35 (1925), 220–28; M. Boule et al., *Le Paléolithique de la Chine*, Paris: Inst. Paléontologie Humaine, Memoir no. 4, 1928.
122. P. Teilhard and E. Licent, *Bull. GSoC* 3 (1924), 45–46; E. Licent and P. Teilhard, *Anthropologie* 35 (1925), 206–19; P. Teilhard, *Natural History* 26 (1926), 239; Y. P. Wang, *KK* 1962 (11), 588–89; L. P. Chia et al., *VP* 8 (1964), 75–83.
123. Including my own study in 1959 of the Sjara-osso-gol and Shui-tung-kou collections at the Institut de Paléontologie Humaine at Paris, whose courtesy is gratefully acknowledged.



27. Upper Palaeolithic implements from the sites at Shui-tung-kou (*upper group*) and Sjara-osso-gol (*lower group*). (From M. Boule et al., *Le Paléolithique de la Chine*, 1928.)

2. Significant technological advances, however, are observed in the new industry. Choppers and chopping tools are so rare as to be insignificant. More important, flakes were struck from elaborately prepared cores. This is indicated by prepared cores (discoidal, tortoise-shell, and prismatic), the faceted striking platform, and the uniformity of flake shapes.
3. Two kinds of flakes are most common: triangular flakes struck from discoidal and tortoise-shell cores, and parallel-sided flakes (blades) struck from prismatic cores. The significant concurrence of pebble tools, triangular ("Mousterian") flakes, and blades is an Eastern feature similar to the Upper Palaeolithic of Siberia.

4. In the total stone assemblages, artifacts with secondary retouch formed a very small percentage, but several types had become definitely established. These include the triangular flakes retouched along one or both long edges—probably scrapers; points of triangular flakes retouched along both edges near the point; secondarily retouched blades; scrapers on ends of blades; and burins on ends of blades (of several varieties).

On the whole the blade artifacts of the Ordosian are identical with many Périgordian and Aurignacian types of western Europe, but the rarity here of backed blades is conspicuous. Its comparative significance aside, the Ordosian stone industry exhibits a clear tendency to specialize: artifact types were no longer generalized, all-purpose implements; rather, each served a limited number of purposes. More specialized implements were obviously more effective, but each set of such tools must have had a more restricted range of uses and was adapted to certain kinds of environments and ecological situations. With these points in mind we cannot fail to recognize the potential significance of a very detailed study of the geological period in question—its regional facies and minute chronological divisions—and, in the meantime, the absence of such study in the current stage of our discipline in China. In comparing the Sjara-osso-gol and the Shui-tung-kou assemblages, W. C. P'ei and Y. H. Li observed,

The Quaternary deposits in Sjara-osso-gol and Shui-tung-kou were formed at the same time, in the same basin, under identical conditions, and can be regarded as of the same geological stratum. Certain differences, however, in animal fossils and stone artifacts existed between the two sites, indicating that their geographic environments differed during the Late Pleistocene stage. Specifically, a larger number of mammals lived in the Sjara-osso-gol region, which indicates that the area was more moist and more thickly vegetated, providing man with a larger number of game animals. But materials for stone manufacture were scarce here, and its inhabitants had to manufacture small stone tools. Mammals, on the other hand, were fewer in the Shui-tung-kou region, which means the area was more arid and barren, and man's living resources were scanty. Rock materials here were more abundant, however, and a larger number of stone tools was produced.[124]

P'ei's and Li's inference here appears to be reasonable, but it may have given the human and cultural factors too passive a role. The differences between the Shui-tung-kou and the Sjara-osso-gol assemblages may very well be the result of active adaptation. Microlithic implements became highly popular during early

124. *VP* 8 (1964), 114.

postglacial times, when the land was covered with heavy vegetation and game was abundant—favorable conditions for the development of composite implements made of bone shafts and microlithic blades. Quite possibly a microlithic complex was already coming into being in relatively moist and vegetated areas like the Sjara-osso-gol as early as the final Pleistocene stage. A cultural tendency to regionally different stone assemblages seems to have been well on the way within the Ordosian itself.

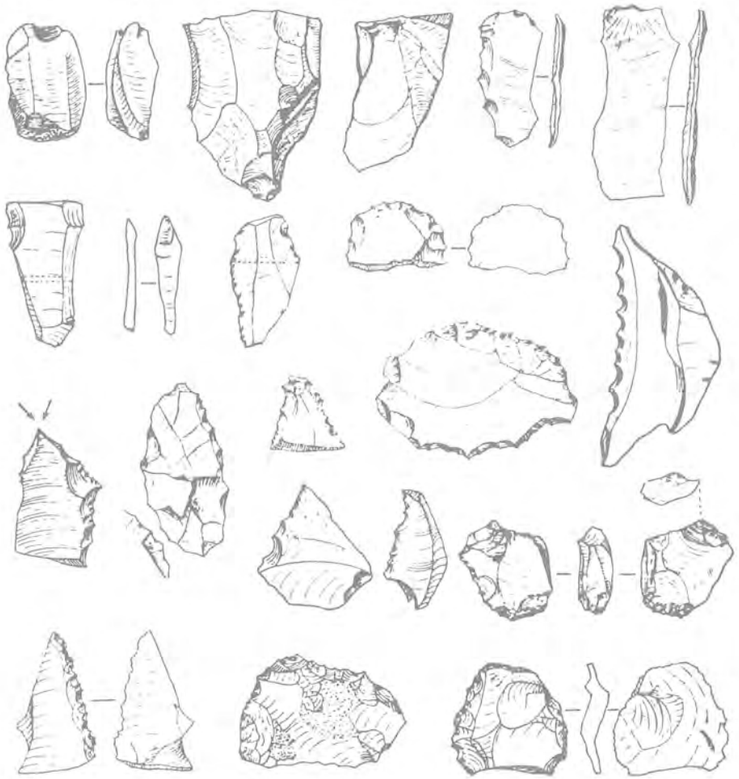
A number of other, more or less contemporary Upper Palaeolithic sites have been reported within the middle Huang Ho basin, south and west of Ordos. These include the sites in Huang-lung,[125] Ch'ien-hsien,[126] in the Wei River valley of Shensi and those in Huan-hsien,[127] Ch'ing-yang,[128] Chen-yuan,[129] Ching-ch'uan,[130] and Ch'ang-wu[131] in the upper Ching River valley of eastern Kansu and western Shensi. Human fossils (parietals) were found in Huang-lung and Ching-ch'uan, and the rest have yielded stone implements. In contrast to the Ordosian, the assemblages here are characterized by quartzite flakes (often made into scrapers) and stone balls, and blades and engravers are rare.

SHANSI

In the last three or four decades the loessic plateau of Shansi has proved to be a prolific center of palaeolithic studies, due in large part to the energetic interest of two local archaeologists, the late Wang Tse-yi and Wang Chien. For the Upper Palaeolithic, the principal sites are Shih-yü[132] and Hu-t'ou-liang[133] in northern Shansi and neighboring Hopei and Hsia-ch'uan[134] in southern Shansi.

The site at Shih-yü was excavated in 1963. Brought to light were a human occipital, more than twenty thousand pieces of stone implements and flakes, a polished stone disc, many burned stones and bones, pieces of animal bones apparently broken by humans, and more than five thousand animal teeth. The animals represented include ostriches, Ordos deer (*Megaloceros ordosianus*), gazelles, woolly rhinoceroses, horses (*Equus przewalsky*) and donkeys (*Equus*

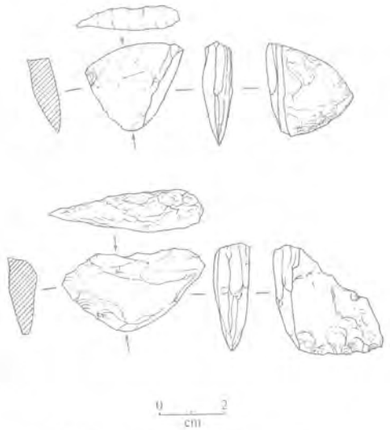
125. L. H. Wang and Y. Li, *AAS* 2 (1983), 315–18.
126. C. L. Ch'iu, *AAS* 3 (1984), 212–14.
127. C. Y. Hsieh, *KKHP* 1982 (1), 35–47.
128. C. Y. Hsieh and L. C. Chang, *VP* 15 (1977), 212–22.
129. C. Y. Hsieh and C. C. Hsu, *KK* 1983 (2), 97–100.
130. W. W. Huang and Y. P. Lin, *AAS* 3 (1984), 11–18; Y. W. Chang and C. Y. Hsieh, *KKYWW* 1981 (2), 5–11.
131. W. P. Huang and S. H. Chang, *AAS* 1 (1982), 14–17; P. Kai and W. P. Huang, *AAS* 1 (1982), 18–28.
132. L. P. Chia et al., *KKHP* 1972 (1), 39–58; Y. C. Yu and C. W. Li, *KKYWW* 1982 (5), 44–48; Y. C. Yu, *KHTP* 1982, 1008–10.
133. P. Kai and C. Wei, *VP* 15 (1977), 287–300; P. Kai, *AAS* 3 (1984), 244–51.
134. C. Wang et al., *KKHP* 1978 (3), 259–87.



28. Upper Palaeolithic implements from the Shih-yü site, northern Shansi. (From *KKHP* 1972, no. 1, p. 49.)

heminus), and several kinds of cattle, indicating an Upper Pleistocene date and an environment characterized by "broad steppes near mountains, interspersed with brush forests, with a wide temperature range summer to winter and an annual temperature lower than the present."[135] The stone implements include, in the terminology of the archaeologists reporting on the Shih-yü site, bipolar nuclei and flakes, polyhedral nuclei, flakes, microflakes, small choppers, points, scrapers, burins, and other types (fig. 28). Essentially these are the same types seen at the

135. L. P. Chia et al., *KKHP* 1972 (1), 47.



29. Wedge-shaped cores from Hu-t'ou-liang. (From *VP* 15, 1977, p. 293.)

Ordosian sites, but the Shih-yü assemblage characteristically includes many fine-chipped small tools, including small points, engravers, and wedge-shaped core scrapers. A horse humerus found here bears a series of carvings on its surface, and Yu Yü-chu interprets this as scenes of hunting a gazelle and an ostrich. If true, this would be the only objet d'art of the Chinese Palaeolithic.

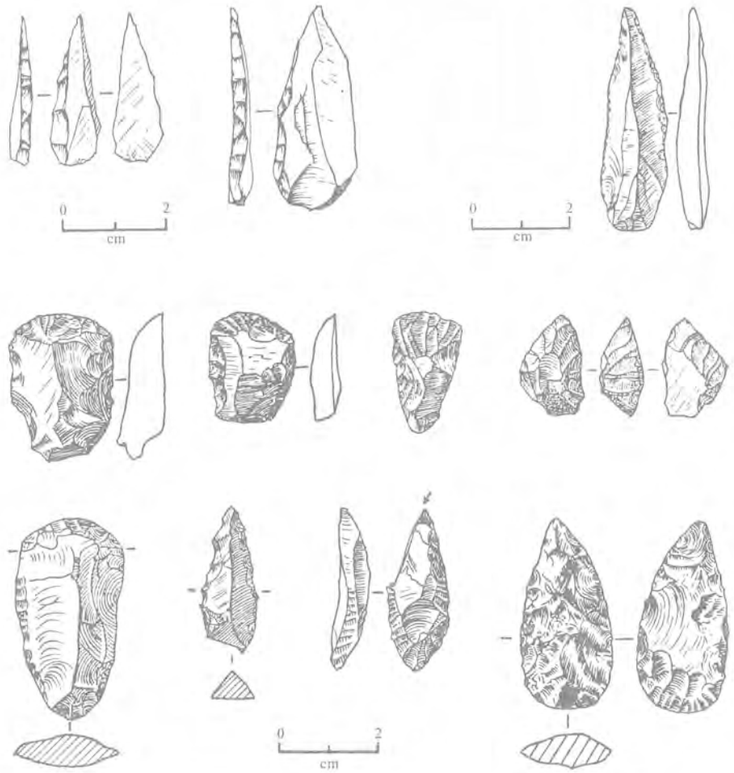
Excavated in the early 1970s, the Hu-t'ou-liang site in Yang-yuan, northwestern Hopei, is an important Upper Palaeolithic site. It is the first Chinese palaeolithic site so excavated and recorded as to yield a plan of the horizontal distribution of stone and bone pieces, and it is remarkably characterized by the so-called wedge-shaped cores (fig. 29) that have long been of interest to students of Asian-American connections.

Hsia-ch'uan is the name of a small town used to refer to a cluster of sites in Yuan-ch'ü, Ch'in-shui, and Yang-ch'eng counties in southwestern Shansi, excavated mostly in 1973. Mainly of flint (92 percent), the stone artifacts are made on small blades and are characterized by a variety of types, some of which are unique or at least rare elsewhere. The common types are engravers, scrapers, and points, and the distinctive ones include backed blades, core scrapers, end-scrapers and small prismatic points (fig. 30). The Hsia-ch'uan assemblage resembles the western European Upper Palaeolithic even more completely than the Ordosian. Many of its types are again found at the Hsüeh-kuan site in P'u-hsien, west of Hsia-ch'uan, excavated in 1979–80.[136]

NORTH CHINA PLAIN

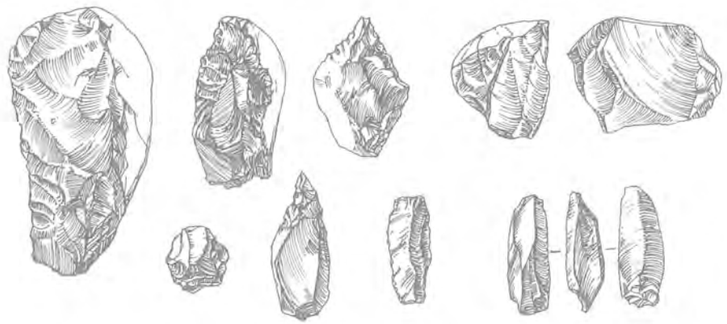
Two cave sites in this region are located on the eastern periphery of the loess plateau and mountains of western North China, namely, Hsiao-nan-hai in An-yang, northern Honan,[137] and the Upper Cave at Chou-k'ou-tien,[138] both probably between ten and twenty thousand years old. The former, Hsiao-nan-hai, is a limestone cave in the hill region thirty kilometers southwest of An-yang, in northern Honan. Ancient habitation remains were discovered in 1960 in association with typical Sjara-osso-gol fauna. More than seven thousand pieces of stone were excavated, about 90 percent chert, but only about a hundred were secondarily retouched artifacts. Again there is a combination of implements of pebble, flake, and blade, similar to the Ordosian, but a microlithic tendency is even more pronounced than at Sjara-osso-gol. A few types—especially a variety of heavy scrapers on sides of flakes—are distinctive here, but burins are poorly developed (fig. 31).

136. H. C. Wang et al., *AAS* 2 (1983), 162–70.
137. C. M. An, *KKHP* 1965 (1), 1–27; J. S. Aigner, *Anthropologie* 10 (1976), (2–3), 39–50.
138. W. C. P'ei, *Palaeontologia Sinica*, ser. D, 10 (1940); *VP* 1 (1957), 9–24.

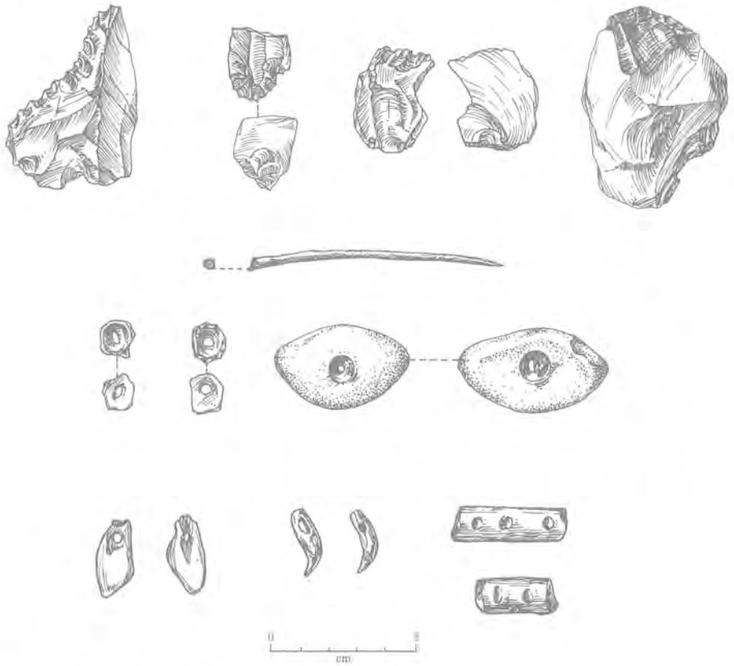


30. Hsia-ch'uan Palaeolithic implements. (From *KKHP* 1978, no. 3.)

One of the best known Palaeolithic assemblages was found in the Upper Cave of Chou-k'ou-tien. Its fauna, still yielding remains of such persisting Pleistocene forms as *Hyaena ultima, Ursus spelaeus, Elephas* sp., and *Paradoxurus,* definitely testifies to the introduction of completely modern forms: *Homo sapiens, Cervus elaphus, Siphneus armandi,* and *Struthio,* as well as some southern, warm-climate species: *Cynailurus jubatus* and *Paguma.* The site was probably a burial place and gives no indication of intensive occupation. The industrial assemblage includes some stone tools (scrapers, flakes, and chopper–chopping tools), and abundant bone and antler artifacts (worked bone, bone needles, worked antler, and perforated teeth of badgers, foxes, deer, wildcats, polecats, and tigers), together with



31. Upper Palaeolithic implements from Hsiao-nan-hai cave near An-yang, Honan. (From *KKHP* 1965, no. 1.)



32. Artifacts of the Upper Cave, Chou-k'ou-tien. (From W. C. P'ei, *Palaeontologia Sinica*, ser. D, 9, 1939.)

mollusk shells and fish bones (fig. 32). According to W. C. P'ei, the Upper Cave man lived in calcareous caves.[139] Nearby there were woods in which tigers, leopards, bears, and wolves dwelt; there were steppes on which the Chinese deer, the red deer, and the gazelle roamed about, and plains and lakes in which gigantic fish swam. The man hunted in the woods and fished by the lakes and made abundant bone and shell artifacts. The marine shells in this site indicate also either extensive trade connections or long-distance seasonal migrations. In the cave were found skeletal remains of humans, apparently seven individuals. Since skulls or skull fragments and lower jaws are preserved, Weidenreich has been able to determine that this population was composed of an adult male over sixty, a relatively young male adult, two young adult females, one adolescent, and two children. It is interesting to note that all of the remaining skullcaps show depression, fractures, or holes which, according to Weidenreich, "apparently have been caused by heavy blows with sharp and blunt implements delivered at a time when the scalp still covered the bones." Weidenreich thus infers that these were remains of a single family who, being "victims of a sudden attack and dismembered, were thrown into the cave."[140] This suggestion is certainly plausible, but other explanations cannot be ruled out. The earth which surrounded the skeletons was partly covered with hematite, indicating that funeral rites probably took place. The damage to the skulls, as W. C. P'ei has suggested, could have been caused later by rockfalls from the cave ceiling. It is therefore entirely possible that the family, if it was one, fell victim to a local epidemic and was buried in the cave by kinsfolk or companions.

Another intriguing aspect of the Upper Cave skulls concerns their racial characteristics. Weidenreich's morphological analysis of the three best-preserved adult skulls convinced him that "they typify three different racial elements, best classified as primitive Mongoloid, Melanesoid, and Eskimoid types."[141] This conclusion led the late Ernest A. Hooton to discuss the Upper Cave population in his book *Up from the Ape*, under the heading "The Old Man of China Who Married an Eskimo and a Melanesian."[142] Recent findings about Upper Palaeolithic man in South China, as will be mentioned later, have shed much new light on this problem. If Wu Hsin-chih is right in identifying the Upper Cave specimens as altogether Mongoloid, according to recent studies of casts,[143] it then seems that

139. *Chung-kuo shih-ch'ien shih-ch'i chih yen-chiu* (Studies of the prehistoric period of China), Shanghai: Commercial Press, 1948, pp. 72–73.
140. F. Weidenreich, *Bull. Nat. Hist. Soc. Peiping* 13 (1938–39), 163.
141. Ibid., p. 170.
142. E. A. Hooton, *Up from the Ape*, p. 401.
143. *VP* 5 (1961), 181–203.

by the beginning of the Recent (Holocene) period the population in North China and that in the southwest and in Indochina had become sufficiently differentiated to be designated as Mongoloid and Oceanic Negroid races respectively, even though both of them may have evolved out of a common Upper Pleistocene substratum as represented by the Tzu-yang and the Liu-chiang skulls (see below).

MANCHURIA AND EASTERN INNER MONGOLIA

A cluster of Upper Palaeolithic sites has been brought to light in Liaoning, in southern Manchuria, including Chien-p'ing,[144] Hsi-pa-chien-fang in Ling-yuan,[145] and Ko-tzu-tung in K'o-tso,[146] in western Liaoning, and Chin-niu-shan in Ying-k'ou[147] and Hsien-jen-tung in An-shan[148] in eastern Liaoning. Both Chien-p'ing and Chin-niu-shan (upper stratum) have yielded human humeri; only stone tools were found elsewhere. Flakes, scrapers, and points characterize the Ko-tzu-tung assemblage, which had been dated to Middle Pleistocene but was modified down to Upper Pleistocene according to a reexamination of its fauna. The other sites feature small scrapers and points and, at Chin-niu-shan, bone points.

Further east, in Kirin province, human and/or Palaeolithic remains have been unearthed in An-t'u[149] and Yü-shu.[150] In the north, remains were found in Ang-ang-hsi[151] and Djalai-nor.[152] At the latter site implements of stone, bone, and antler, and willow basketwork have been found in direct association with remains of woolly rhinoceros, bison, and mammoth.

An Upper Palaeolithic workshop site where implements were manufactured during a lengthy interval was excavated in 1976 at Ta-yao-ts'un, near Huhehot, Inner Mongolia.[153]

EAST COAST

A small number of scattered localities in Hsin-t'ai, Jih-chao and P'eng-lai in Shantung,[154] Tung-hai and Tan-t'u in Kiangsu,[155] and Chien-teh, northern

144. J. K. Wu, *VP* 1961 (4), 287–88.
145. *VP* 11 (1973), 223–26.
146. *VP* 13 (1975), 122–36.
147. *VP* 16 (1978), 129–43.
148. J. Y. Fu, *AAS* 2 (1983), 103.
149. P. Chiang, *VP* 20 (1982), 65–70.
150. C. C. Sun et al., *VP* 19 (1981), 281–90.
151. W. W. Huang et al., *AAS* 3 (1984), 234–42.
152. V. J. Tolmatchov, *Eurasia Septentrionalis Antiqua* 4 (1929), 1–9; P. Teilhard, *Early Man in China*, p. 78.
153. *WW* 1977 (5), 7–14.
154. E. C. Tai and Y. C. Pai, *VP* 10 (1966), 82–83; H. C. Wu and K. F. Tsung, *VP* 11 (1973), 105–06; P. C. Li, *KK* 1983 (1), 70; H. P. Hsu and S. F. Yang, *AAS* 3 (1984), 295; *KK* 1985 (5), 385–88.
155. Y. H. Li et al., *VP* 18 (1980), 239–46: W. M. Li et al., *AAS* 1 (1982), 169–78.

Chekiang,[156] were found in recent years that yielded preceramic, possibly Palaeolithic, assemblages and/or human remains. The only find of significant size is the Ta-hsien-chuang site in Tung-hai, northern Kiangsu, where flake scrapers and core keel-scrapers are characteristic.[157]

THE SOUTHWEST

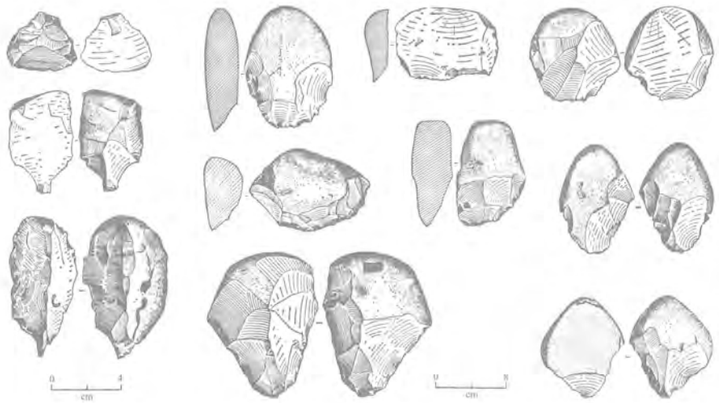
In the Upper Pleistocene, as in later periods of prehistory, the Chinese Southwest (western Kwangtung, Kwangsi, Kweichow, Yunnan, and much of Szechwan) formed a cultural historical unit that shared distinctive features both with Southeast Asia and with the regions just described. Many palaeoanthropological and archaeological sites have been found here—especially in the limestone caves that are abundant in the karst landform characteristic of the region—and their Pleistocene dating is primarily determined on the basis of associated fauna, which contained species now extinct here such as the giant tapir, giant panda, stegodon, and orangutan. Culturally, many sites have yielded choppers and chopping-tools characteristic of the Lower Palaeolithic industry in this whole area, but at an equally large number of sites more diversified and advanced assemblages can be seen. The former sites are in Kwangtung and Kwangsi; the rest of the Southwest appears to be more diversified.

The pebble tool variety of the region's Upper Palaeolithic industries is well attested in assemblages of the Huang-yen-tung cave in Feng-k'ai and Tu-shih-tzu cave in Yang-ch'un, western Kwangtung[158] and the Pao-chi-yen cave in Kuei-lin,[159] Ch'ang-she-ling in Hsin-chou (Hsiang-chou) (fig. 33),[160] and Shang-sung-ts'un in Pai-se,[161] in Kwangsi. In the Huang-yen-tung cave, "most of the stone implements were made on natural pebbles. The types are massive and were mainly struck on one side in one direction only. The technique was coarse and simple, and in most cases no secondary retouch was used."[162] For the Pao-chi-yen artifacts, the same description applies: "All are pebble tools; the pebble's natural surface was used as the striking platform, which was not prepared."[163] The Pai-se implements are characterized by pebble tools, one-direction striking, and massive size.[164]

The many Upper Palaeolithic sites that have been found in Kweichou, Yunnan,

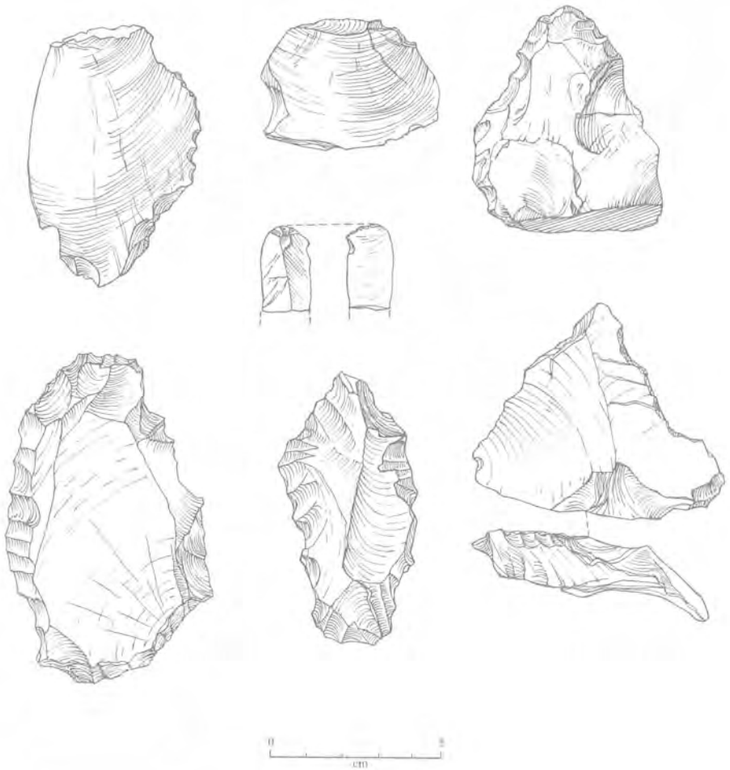
156. T. F. Han and S. S. Chang, *VP* 16 (1978), 255–63.
157. Y. H. Li et al., *VP* 18 (1980), 239–46.
158. F. Y. Sung et al., *VP* 19 (1981), 98, 86.
159. L. H. Wang et al., *AAS* 1 (1982), 30–35; L. C. Ch'iu et al., *VP* 18 (1980), 200.
160. *KK* 1983 (10), 865–68.
161. Y. H. Li and Y. C. Yu, *VP* 13 (1975), 225–28.
162. F. Y. Sung et al., *VP* 19 (1981), 98.
163. L. H. Wang et al., *AAS* 1 (1982), 33–34.
164. Y. H. Li and Y. C. Yu, *VP* 13 (1975), 227.

33. Palaeolithic implements from Hsin-chou, Kwangsi. (From *KK* 1983, no. 10, p. 867.)



and Szechwan all contain a substantial element of the same pebble tools, but overall they are characterized by the use of flakes (fig. 34), which were sometimes struck from the same river pebbles, but often other, more easily fracturable materials are used. In Kweichou, the flake industry is well known at the Kuan-yin-tung cave in Ch'ien-hsi,[165] the Ts'ao-hai district in Wei-ning,[166] the Hsiao-hui-tung cave in Shui-ch'eng,[167] and the Mao-mao-tung cave in Hsing-yi.[168] At the best-excavated site, Kuan-yin-tung, more than 60 percent of all artificially produced stone pieces had been secondarily retouched, and several types were well defined, including scrapers, end-scrapers, choppers, points, concave scrapers, and engravers, although these types differ markedly from the same types in the north in that they were produced on pebble flakes (of flint, siliceous limestone, sandstone, and volcanic rocks) rather than on blades.[169] The other Kweichou sites are similar, although the Mao-mao-tung assemblage is distinguished by its many finely made points, its convex-scrapers, and its bone and antler artifacts. The stone industries found in Yi-liang,[170] Ch'eng-kung,[171] and Li-chiang[172] in Yunnan,

165. W. C. P'ei et al., *VP* 9 (1965), 270–78; Y. H. Li and P. H. Wen, in *Ku-jen-lei lun-wen-chi*, pp. 43–66.
166. M. L. Wu et al., *AAS* 2 (1983), 320–28.
167. T. T. Ts'ao, *VP* 16 (1978), 67–72.
168. T. T. Ts'ao, *VP* 20 (1982), 155–64; *AAS* 1 (1982), 36–40; *SCYC* 1985 (2), 47–55.
169. Y. H. Li and P. H. Wen, in *Ku-jen-lei lun-wen-chi*, pp. 83–84.
170. Y. H. Li and W. W. Huang, *VP* 6 (1962), 182–88.
171. C. C. Hu, *VP* 15 (1977), 225–28.
172. C. Wei et al., *AAS* 3 (1984), 225–32.



34. Palaeolithic implements from Ch'ien-hsi (Kweichou) and Yi-liang (Yunnan). (*Lower half*, Ch'ien-hsi, from *VP* 9, 1965, pp. 277–99; *upper half*, Yi-liang, from *VP* 6, 1962, pp. 184–87.)

and in T'ung-liang,[173] Fu-lin,[174] and Tzu-yang[175] in Szechwan all share the same features, although the Fu-lin assemblage is distinctive in its blade industry and its more elaborate manufacturing technology.

A large number of human fossils have been unearthed in the southwest from Upper Palaeolithic contexts. The major finds are the skulls from Tzu-yang,

173. H. M. Li and S. S. Chang, *VP* 19 (1981), 359–69; S. S. Chang et al., *VP* 20 (1982), 165–79.
174. L. Yang, *VP* 1961 (4), 353–59; S. S. Chang, *VP* 15 (1977), 14–27.
175. H. M. Li and S. S. Chang, *AAS* (1984), 215–24; T. E. Lü et al., *KKHP* 1983 (3), 331–44; cf. K. C. Fan and C. Y. Hu, *KKYWW* 1984 (4), 39–41.

Szechuan,[176] Liu-chiang, Kwangsi,[177] and Li-chiang, Yunnan.[178] All of them are fully modern. The Liu-chiang skull has some morphological attributes that are comparable with Oceanic Negroid characteristics, and all three skulls show similarities to features of modern Mongoloid populations. In addition, a number of human teeth occurred in Late Pleistocene strata in Tu-an, Kwangsi,[179] Hsi-ch'ou,[180] and K'un-ming[181] in Yunnan, and Shui-ch'eng in Kweichou.[182]

Palaeolithic studies in China are at a stage where discoveries and excavations, the formulation and comparison of types, and the time-space arrangements of sites and assemblages are still our major preoccupations. New sites are reported continuously, and each new assemblage has the potential of forcing new chronological and typological alignments. For that reason I have employed the most general permissible framework for my description, resulting in three major segments of the whole Pleistocene human history:

> 1,000,000–200,000 BP	*Homo erectus* and Lower Palaeolithic
200,000–50,000 BP	Early *Homo sapiens* and Middle Palaeolithic
50,000–12,000 BP	*Homo sapiens sapiens* and Upper Palaeolithic

The first and the last segments are much more firmly definable than the Middle Palaeolithic, but the latter is real enough. The Lower Palaeolithic is not as simple and homogeneous as we once thought on the basis of much fewer data,[183] but the same general pattern appears to apply to the whole area. Chia Lan-po, Yu Yü-chu, and others contrast K'o-ho with locality 1 of Chou-k'ou-tien and see two sharply different phases in the Lower Palaeolithic: K'o-ho, characterized by large prismatic points, large choppers of various types made of broad and large flakes, and stone balls, and locality 1 of Chou-k'ou-tien, distinguished by small implements (microliths) of a great diversity of types, made of irregular small flakes and with small and careful retouch.[184] This hypothesis deserves careful consideration but

176. W. C. P'ei and J. K. Wu, *Tze-yang Man*, Peking: Science Press, 1957.
177. J. K. Wu, *VP* 3 (1959), 109–18.
178. *VP* 15 (1977), 159–61.
179. C. J. Chao et al., *VP* 19 (1981), 45–54.
180. T. C. Ch'en and K. C. Ch'i, *VP* 16 (1978), 33–46.
181. H. Y. Chang et al., *VP* 16 (1978), 288–89.
182. T. T. Ts'ao, *VP* 16 (1978), 68–70.
183. Fumiko Ikawa-Smith, "The Early Palaeolithic Tradition of East Asia," in *Early Palaeolithic in South and East Asia*, Fumiko Ikawa-Smith, ed., The Hague: Mouton, 1978, pp. 1–10; S. Yi and G. A. Clark, *Current Anthropol.* 24 (1983), 181–202.
184. L. P. Chia et al., *KKHP* 1972 (1), 54; L. P. Chia and Y. C. Yu, *KKHP* 1973 (2), 25; L. P. Jia and W. W. Huang, in Wu and Olsen, eds., *Palaeoanthropology and Palaeolithic Archaeology in China*, pp. 259–65.

must be reexamined as the scope of our data widens. The related hypothesis, however, that the same two traditions of the Lower Palaeolithic continued throughout the Pleistocene and became the forerunners of the contrasting post-Pleistocene farming and herding cultures, has become simplistic as the Upper Pleistocene finds increase and their diversity and complexity become increasingly apparent. The Upper Palaeolithic assemblages are now describable under several regional headings—middle Yellow River valley, Shansi, North China plains, Manchuria, East Coast, and Southwest—but even within the same regions significant diversities are already discernible, for example, those between Shui-tung-kou and Sjara-osso-gol, between northern and southern Shansi, and between Kwangsi and the rest of the Southwest. In addition to regional diversification, Upper Palaeolithic cultures in North China are also distinguished for their blade industry—the proliferation of special-purpose tools such as backed blades, engravers, small points, various scrapers, and composite tools.

The term Middle Palaeolithic can serve to designate the lithic assemblages, found from the 200,000–50,000 BP interval, that are transitional in nature. The Lower Palaeolithic choppers and prismatic points as well as flake scrapers still occupy a significant place in the Middle Palaeolithic industry, but blades began to appear in larger numbers and some of the Upper Palaeolithic types may be discerned. The human fossils associated with the Middle Palaeolithic assemblages are also transitional in morphology between *Homo erectus* and *Homo sapiens sapiens*, although none of them are the classic specialized neanderthals.

The Lower-Middle-Upper Palaeolithic framework is too general to tie the Chinese sequence to the detailed sequences elsewhere, and it is not neat or precise, but it is open-ended and flexible enough to accommodate—at least to a point—the enormous new data and new research surely to come in the immediate future. A number of more systematic Western-language accounts of the Chinese Palaeolithic are available for readers who desire more details and more of the controversies.[185]

At some point Chinese palaeolithic archaeology will advance beyond discovery, description, and typological analysis into a "behavioral" approach, inquiring into such topics as "bipedal locomotion, increased use of the forelimbs, active food sharing, the division of labor, and the establishment of a home base," as well as "subsistence strategies such as cooperative hunting, the gathering of edible vegetal resources, and the preparation of food prior to consumption."[186] Ameri-

185. Jia Lanpo, *Early Man in China*, op. cit. (n. 26); Wu and Olsen, eds., *Palaeoanthropology and Palaeolithic Archaeology in China;* Jean Aigner, in Ikawa-Smith, ed., *Early Palaeolithic in South and East Asia*, pp. 163–232; *Archaeological Remains in Pleistocene China.*
186. R. Wu and S. Lin, in Wu and Olsen, eds., *Palaeoanthropology and Palaeolithic Archaeology in China*, p. 16.

can influence must account for the introduction of this sort of jargon into China prior to any real archaeological work that translates it into practice, but Chinese archaeology as represented in the 1978–82 Chou-k'ou-tien project has already progressed remarkably far, and we hope such approaches can be applied extensively and can serve anthropological objectives. As of now, what has been accomplished suffices to establish the fact that the end of the Pleistocene saw large areas of China occupied by considerable populations on a sophisticated hunting-fishing-gathering subsistence with diversified and specialized tools. This fact is enough to give us the baseline for the next major step in human prehistory in China, the beginnings of agricultural life.

2

The Early Farmers

(8000–5000 B.C.)

More than 80 percent of the contemporary Chinese are farmers, and the Chinese way of life as we know it since the dawn of history is inconceivable without agriculture. Archaeological advances in the last several decades have now pushed the beginning of agriculture in China very close to the beginning of the Holocene, the geological modern period. That means that, of the span of time that humans existed in China, only 1 percent has seen agriculture. For the rest of their long existence the ancestors of the Chinese farmers engaged in hunting, fishing, and collecting. The description of the archaeological remains from this whole long period in the last chapter may leave the impression that throughout the Palaeolithic period human culture was primitive and that the material culture primarily consisted of chipped stone implements. That impression cannot be more wrong. That only chipped stones remain to represent the material culture of our forebears is the accident of archaeological preservation, because we know, both from the archaeology of the few nonlithic cultural remains that managed to survive (such as the cave art of western Europe) and from extrapolation from the ethnography of modern hunters-and-fishers, that our Palaeolithic ancestors had full knowledge of their environment, cunning and resourcefulness that enabled them to compete with fellow creatures in that environment, and cosmology and religion that rounded out their life in the wild. In the true sense of the word, the Palaeolithic people laid the foundation for all the subsequent developments. We will have occasion, later, to come back to this point, for when we examine some of the fundamental characteristics of Chinese civilization we will realize that they can often be traced back to the people who left behind those stone choppers, scrapers, and engravers. By 13,000–10,000 years ago, our Palaeolithic ancestors were found throughout China, and they were ready for the next big step, the agricultural transformation.

The Early Holocene Environment

The beginning of the Holocene—marked by the end of the Tali glacial, the extinction of the Pleistocene fauna, and the emergence of the modern climate at 13,000 to 10,000 years before the present[1]—saw a Chinese landscape considerably different from today's. During the next several thousand years, essentially the whole period of prehistory and early history of the agricultural Chinese, despite

1. Liu Dongsheng et al., in *Striae* 16 (1982), 21–23, places the beginning of Holocene at 10,000 B.P., as do most contemporary authors. C. C. K'ung and N. C. Tu (*ABS* 22, 1980, 330–38) and T. P. Chang et al. (*SGS* 1981 [3], 259–68), however, on the basis of the same Peking pollen profile, place it at 13,000 and 12,000 B.P., respectively.

fluctuations, the climate was warmer and more moist. During the periods of highest temperature and precipitation parts of the eastern plains of North China were submerged and the other parts were marshy; Shantung was essentially an island separated from the western highlands of North China by water and marshes; the Yellow River drained into the East China Sea at what is now central Honan; the coastal plains and marshes and the middle Yellow River valleys were forested; the lakes in the middle Yangtze River valley were larger; and the coasts along the mouth of the Yangtze were submerged. The evidence for this by now clear picture of the early Holocene Chinese environment consists of sea-level changes along the east coast, layers of peats and other stratified deposits in the areas where vegetation changed, pollen and spore profiles in various parts of the country, bony remains of the ancient animals, and pertinent textual records and references.

Recent studies of both the continental shelf under the seas off the east coast[2] and the remains of ancient marine mollusks along the old coastlines in the interior[3] have disclosed the cycle of marine transgressions and regressions during the later parts of the Pleistocene. In one estimation, during the 40,000–30,000 BP interval, at a Tali glacial stadial, the sea level was approximately 70–80 meters lower than the present. The sea level went up considerably, to 30–40 meters below the present, during the 24,000–22,000 interval, but it retreated again to about 110 meters below at the end of the 18,000–15,000 interval. Beginning with the onset of the Holocene, with the melting of ice sheets and glaciers, the sea level went up dramatically, to approximately the present level by 7000 BP and to at least 6–7 meters above the present level at the height of post-Pleistocene transgression perhaps during 6000–5000 BP. After that there were at least three fluctuations, with a range of 4–5 meters, until the last 200 years when a regressive trend took hold.[4] One of the outcomes of the postglacial marine transgressions was the fact that the coastline was to the interior—and west—of the present line (fig. 35).

Interacting with this more western position of the seacoasts was the formation of the Yellow River delta and the North China alluvial plain. Originating in the mountains of Chinghai, the Yellow River has to flow through about 580,000 square kilometers of loessic highlands before it reaches its lower course in the present alluvium, carrying with it huge quantities of silt, which at the present time

2. K. O. Emery et al., in *The Late Cenozoic Glacial Ages,* Karl K. Turekian, ed., New Haven: Yale University Press, 1971, pp. 381–90.
3. H. T. Chao et al., *KHTP* 1980 (6), 279–81; *SGS* 1981 (1), 29.
4. C. H. Lin, *AGS* 1977 (2), 109–15; C. P. Min and P. H. Wang, *J. T'ung-chi University,* 1979 (2), 109–25; H. T. Kuo, *SGS* 1979 (4), 330–40; P. H. Wang et al., *AGS* 1981 (1), 1–12; C. T. Shen and M. F. Chou, *KHTP* 1981 (3), 162–65; T. C. Liu, *KHTP* 1983 (7), 1062–64.

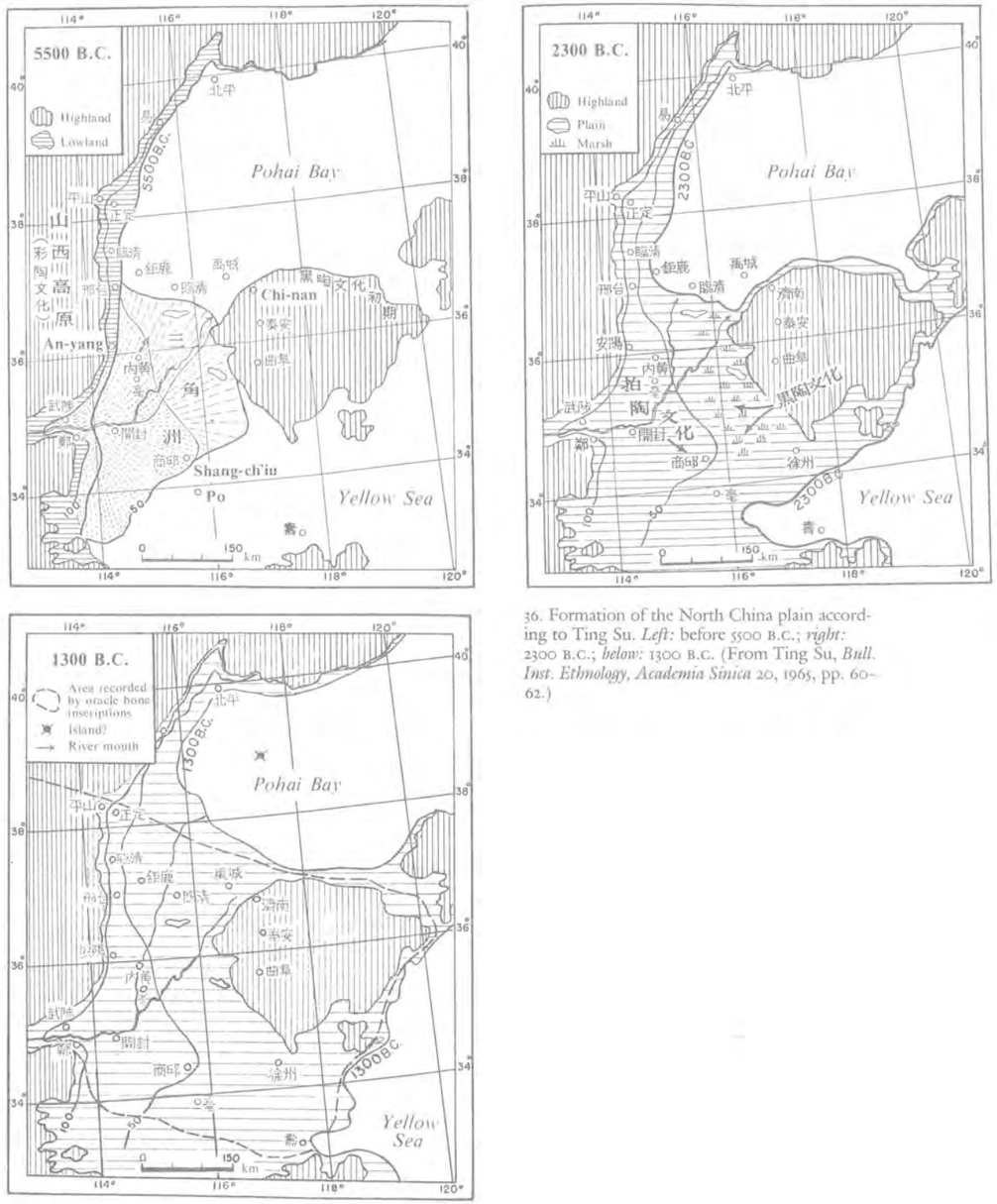
35. Maximum marine transgression during the Holocene in the China Sea. (From *AGS* 1981, no. 1, p. 8.)

is estimated to amount to 1.6 billion metric tons per year.[5] In prehistoric times, before deforestation further hastened the erosion of the loessland, the Yellow River may have carried less silt, but the present alluvial plain of North China—from central Honan around the city of Cheng-chou, where the river pours out from the western highlands, to the present seacoast—has undoubtedly formed chiefly as the result of the cumulation of the Yellow River silt. Based on historical texts, Ting Su speculated that from A.D. 1195 to 1855 the average cumulation of the Yellow River alluvium was 3.9 millimeters per year.[6] Applying this figure, even loosely and tentatively, to the whole length of the Holocene, we must admit the strong possibility that the North China plain did not exist at the height of the postglacial marine transgressions (fig. 36).[7] The principal lowland areas for human habitation in North China were along the eastern foothills of the western highlands and around the highland of Shantung. In present terms the inhabitable lowlands were confined to the western portions of Hopei along the T'aihang mountains, the central axis of Honan along the T'aihang and Chungt'iao Mountains, and the areas of Shantung along the T'ai-shan Mountain and the Eastern Shantung Highlands.

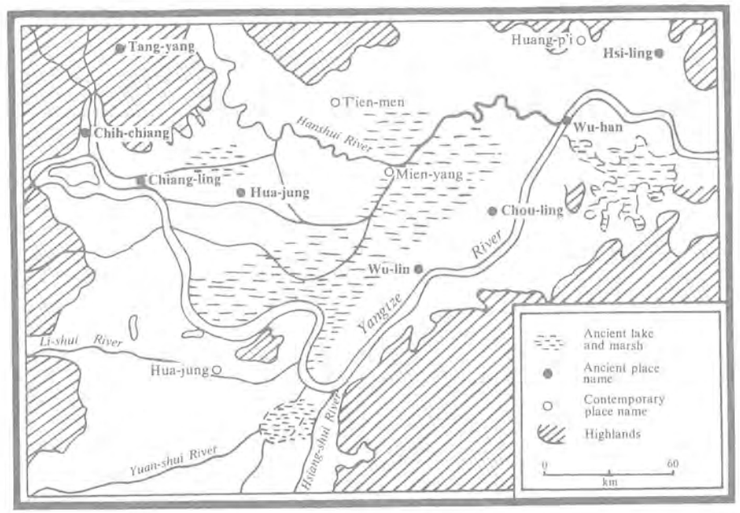
The postglacial greener and wetter landscape was not confined to the north. All three of the major Yangtze River lakes—Tung-t'ing, Po-yang, and T'ai—were components of larger bodies of water during the postglacial marine transgressions.[8] The ancient lakes Yün-meng (fig. 37)[9] and P'eng-li[10] in the ancient texts dwarfed their contemporary remnants and were significant bodies of water in the lives of prehistoric and early historic inhabitants of the Middle Yangtze valley. Lake T'ai-hu, on the other hand, was a bay on the seacoast at the height of marine transgression.[11] All these areas will be fully described later along with their regional cultural histories.

The warmer temperature and abundant moisture in postglacial China favored vegetational growth along the seacoasts, lakeshores, and river valleys throughout the area, and the physical remains of many ancient forests have been unearthed in North China in the peats found under the top layer of secondary loess or grayish

5. Y. L. Tsou, *Supplement to Fu-tan Hsüeh-pao (Social Sciences): Special Issue on Historical Geography*, 1980, pp. 12–23.
6. Ting Lung-hsiang, *Chung-kuo ti-hsing* (Landforms in China), Taipei: Commission for Chinese Culture Publications, 1954, pp. 202–03.
7. S. Ting, *Bull. Inst. Ethnology, Academia Sinica* 20 (1965), 155–62.
8. T. F. Huang et al., *Oceanologia et Limnologia Sinica* 7 (1965), 396–426.
9. T'an Ch'i-hsiang, *Supplement to Fu-tan Hsüeh-pao (Social Sciences): Special Issue on Historical Geography*, 1980, pp. 1–11; Chang Hsiu-kuei, *Fu-tan Hsüeh-pao (Social Sciences)*, 1980 (2), 40–48.
10. C. H. T'an and H. K. Chang, *Fu-tan Hsüeh-pao (Social Sciences)*, 1982 (2), 42–51.
11. W. T. Wu, *Acta Georgraphica Sinica* 38 (1983), 113–26.



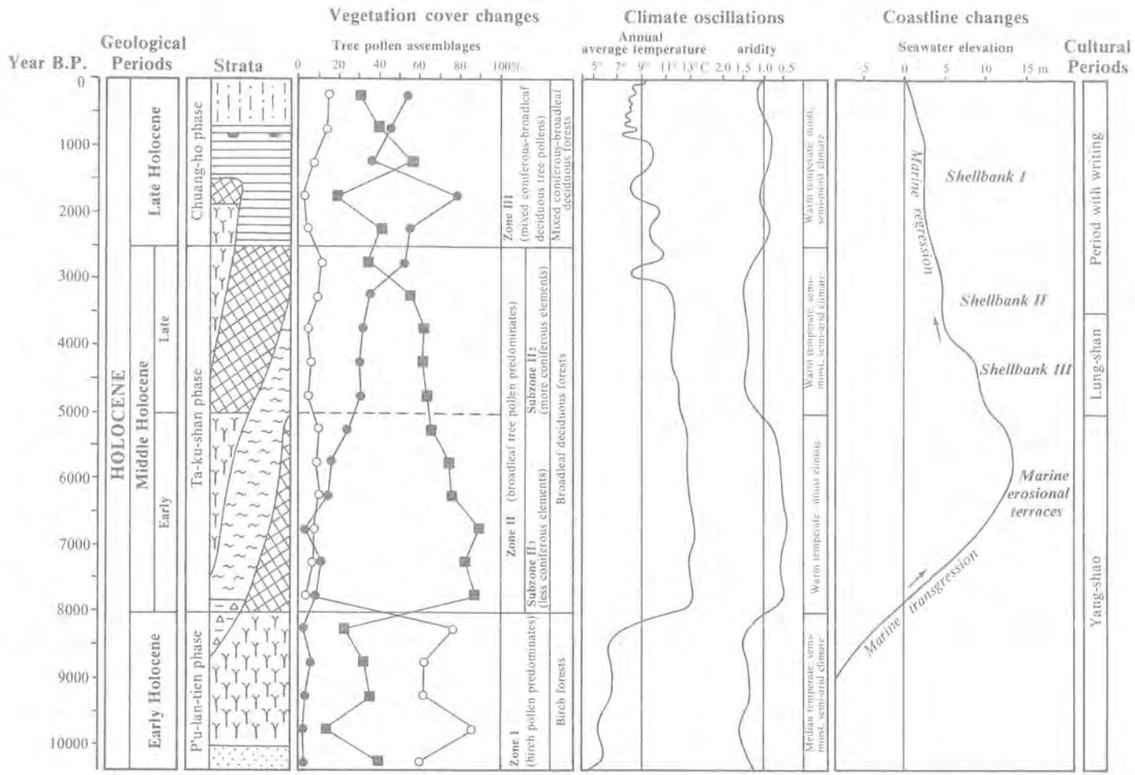
36. Formation of the North China plain according to Ting Su. *Left:* before 5500 B.C.; *right:* 2300 B.C.; *below:* 1300 B.C. (From Ting Su, *Bull. Inst. Ethnology, Academia Sinica* 20, 1965, pp. 60–62.)



37. Lake Yün-meng in the Ch'in and Han periods. (From Chang Hsiü-kuei, *Fu-tan Hsueh-pao* 1980, no. 2, fig. 1.)

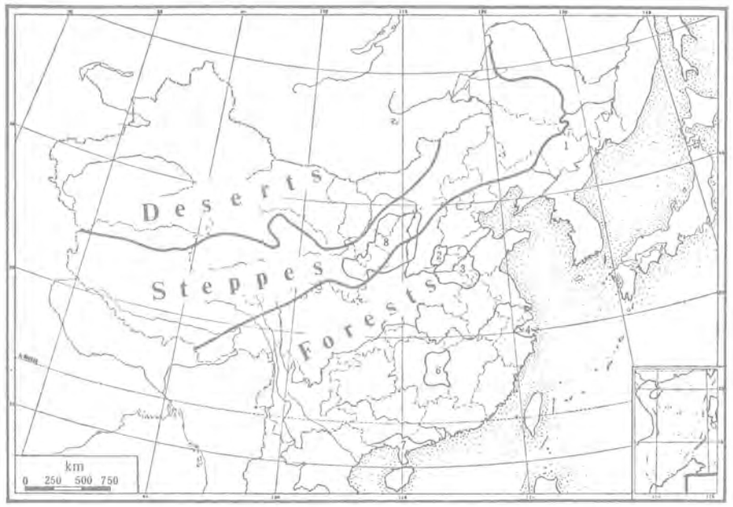
yellow alluvium.[12] Studies of pollen and spores from these peats and related postglacial deposits in many parts of China—ranging from southern Liaoning,[13] Peking and its vicinity,[14] the eastern Hopei Plains,[15] Shanghai and the Hangchou Bay area,[16] Taiwan,[17] to Urumchi in Sinkiang and the Himalayas[18]—have shown a consistent pattern of vegetational and climatic changes involving the rises and declines of forests and their compositions. To take the southern Liaoning profile (fig. 38) as an example, the Holocene stratigraphy here consists of three stages: the P'u-lan-tien phase of the early Holocene (10,000–8000 BP), the Ta-ku-shan phase of the middle Holocene (8000–2500 BP), and the Chuang-ho phase of the late Holocene (2500 to the present). In the early Holocene, birch forest was densely distributed over Liaoning, interspersed with deciduous broad-leaf trees

12. J. G. Andersson, *Essays on the Cenozoic of Northern China*, Mem., *GSuC*, ser. A, no. 3, 1923; C. L. Liu et al, *Quaternaria Sinica* 4 (1965), 105–17.
13. *Geochimica* 1974 (1), 25–26; *Scientia Sinica* 1977 (6), 603–12.
14. C. C. K'ung and N. C. Tu, *ABS* 22 (1980), 330–38; T. P. Chang et al., *SGS* 1981 (3) 259–65; Y. L. Chang et al, *Journal of Stratigraphy* 8 (1984), 56–61; K. S. Chou, *Huan-ching Pien-ch'ien Yen-chiu (Studies of Environmental Changes)*, 1 (1984), 35–42.
15. T. K. Yang et al., *AGS* 1979 (4), 263–79.
16. S. C. Chu et al, *KHTP* 1983, 296–99; H. C. Sun et al., *ABS* 23 (1981), 146–50; K. F. Wang and Y. L. Chang, *Li-shih Ti-li* 1 (1981), 126–31.
17. M. Tsukada, *Proc. Nat. Acad. Sci.* 55 (1966), 543–48.
18. Liu Dongsheng et al., *Striae* 16 (1982), 21–23; see chap. 1 n. 20.



38. Natural environmental changes in southern Liaoning in the last ten thousand years. (From *Chung-kuo K'o-hsueh* 1977, no. 6, p. 612.)

(mainly the elm). Still colder and drier than the present, the P'u-lan-tien phase nevertheless saw marked climatic amelioration. The second, Ta-ku-shan, phase saw a more dense deciduous broad-leaf forest (consisting to a large extent of oaks and alders) replacing the original birch forest, and arid, salt, and semiarid, semihumid plants, including *Artemisia, Chenopodiaceae, Polygonaceae, Gramineae, Compositae,* grew extensively along the coasts and on the slopes. During the later part of the phase, deciduous broad-leaf trees were progressively invaded by conifers, predominantly the pine. The early Ta-ku-shan phase (8000–5000 BP) was perhaps the postglacial climatic optimum, with an annual mean temperature of 3–5 degrees Celsius higher than the present. Starting about 2500 BP, in the Chuang-



39. Major types of vegetation cover in China during the historic period. (From *Chung-kuo tzu-jan ti-li: Li-shih tzu-jan ti-li*, 1982, fig. 3:1.)

ho phase, the climate became cooler and more humid, and the forests became mixed with coniferous and broad-leaf trees. Ferns and herbs thrived at the expense of forests and eventually predominated on the plains, valleys, beaches, and slopes.[19] A climatic optimum of +3–4°C is also noted for the Peking area from 7700–5600 BP, +2–3°C for Shanghai from 7500–5000 BP, and +2–3°C for Taiwan from 8000–4000 BP. An upward shift of 2–4°C higher than the present would move the mixed mesopytic forests of the Yangtze valley to North China (fig. 39),[20] giving the northern inhabitants a much richer environment to exploit than the present semiarid conditions allow.[21]

Consistent with the picture of a greener, warmer, and wetter China painted on the basis of palynology, the faunal remains from prehistoric peats and dwelling sites also suggest that animals inhabited a thicker and more southern forest.

19. See n. 13.
20. C. W. Wang, *The Forests of China* (Maria Moors Cabot Foundation Publications, no. 5, Cambridge, Mass.: 1961), pp. 71, 91, 131.
21. See P. T. Ho, *The Cradle of the East* (Chinese University of Hong Kong, 1975), for a different view, which attributes present-day climatic and vegetational environment to prehistoric and early historic North China. In a recent restatement (*Journal of Asian Studies* 43, 1984, 723–33), Ho insists that palynological study of the Western North Chinese loess confirms this view, but the loess samples from Western North China he used in his book for this purpose came from Wu-ch'eng loess, which is totally irrelevant to a postglacial climate.

According to the reports on many early postglacial geological deposits and prehistoric and early historic sites,[22] these animals include, aside from such species that still inhabit the northern forests, the following "southern" species: the elaphure (*Elaphurus davidianus, E. menziesianus*), water buffalo (*Bubalus mephistopheles, B. indicus*), bamboo rat (*Rhizomys sinensis*), elephant (*Elephas indicus*), rhinoceros, tapir (*Tapirus* cf. *indicus*), and water deer (*Hydropotes inermis*). The existence of the elephant in the northern forest is further corroborated by early historical texts,[23] which also repeatedly refer to a marsh area, called K'ung-sang, in the southwestern Shantung area,[24] confirming the topographic discussion earlier.

Recognition of a warm, humid, and forested China—insofar as its lowlying and waterside areas are concerned—enables us to envision an environment—or a vast area with numerous microenvironments—with diverse and plentiful animal and plant resources, which were at the turn of the Holocene being effectively exploited by the terminal Palaeolithic inhabitants. When students of agricultural origins hypothesize about the transformation of these hunters-fishers-gatherers into the early cultivators and animal herders, they tend to agree that diverse and plentiful environmental resources were a prerequisite, for only among the people in these areas could the necessary experiments toward domestication take place.[25] To understand and demonstrate the transformation into agricultural life in China the archaeologists and biologists will have to investigate in detail the faunal and floral changes that took place in the several millennia before and after the beginning of the Holocene. A beginning has been made in the studies of domesticated pigs and dogs and their wild ancestors in China,[26] but botanical studies toward an understanding of the cultivation of native grasses, roots and tubers, and trees have not yet begun. N. I. Vavilov has long recognized that "in wealth of its endemic species and in the extent of the genus and species potential of its cultivated plants, China is conspicuous among other centers of origin of plant forms."[27] Li Huei-

22. J. G. Andersson, *BMFEA* 15 (1943), 35–40; P. Teilhard de Chardin and C. C. Young, *Palaeontologia Sinica*, ser. C, 12 (1936); *Hsi-an Pan-p'o*, Peking: Wen-wu Press, 1963; L. P. Chia et al., *VP* 15 (1977), 150–56; *VP* 18 (1980), 327–33.
23. M. C. Ch'en, *Yenching Journal of Chinese Studies* 20 (1936), 485–576; W. T. Meng, *Yü-kung* 1 (1934); H. H. Hu, *Chia-ku-hsüeh Shang-shih Lun-ts'ung* 2 (1945).
24. For *K'ung-sang*, see Fu Ssu-nien, in *Essays Presented to Mr. Ts'ai Yuan P'ei on His Sixty-Fifth Birthday*, Nanking: Inst. Hist. and Philol., Academia Sinica, 1933, pp. 1132–33.
25. C. O. Sauer, *Agricultural Origins and Dispersals*, New York: Am. Geog. Soc., 1952; L. R. Binford, "Post-Pleistocene Adaptation," in *New Perspectives in Archaeology*, S. R. Binford and L. R. Binford, eds., Chicago: Aldine, 1968, pp. 313–41.
26. S. J. Olsen and J. W. Olsen, *Science* 197 (1977), 533–35; S. J. Olsen, *VP* 18 (1980), 169–75; Y. H. Li, *VP* 19 (1981), 276–80.
27. N. I. Vavilov, *The Origin, Variation, Immunity, and Breeding of Cultivated Plants*, K. S. Chester, trans., *Chronica Botanica*, 13 (1949/51), p. 26.

Table 5: Principal Cultivated Plants of China

	North China	*South China/Southeast Asia*
Cereals	Broom-corn millet (*Panicum miliaceum*)	Rice (*Oryza sativa*)
	Foxtail millet (*Setaria italica*)	Job's-tears (*Coix lacryma-jobi*)
Roots/tubers	Chinese artichoke (*Stachys sieboldii*)	Chinese yam (*Dioscorea batatas*)
		Taro (*Colocasia antiquorum*)
		Greater yam (*Dioscorea alata*)
		Yam (*D. esculenta*)
Legumes	Soybean (*Glycine max*)	Red beans (*Phaseolus angularis*)
Vegetables	Garlic (*Allium sativum*)	Amaranth (*Amaranthus mangostanus*)
	Mallow (*Malva verticillata*)	White gourd (*Benincasa cerifera*)
	Knotweed (*Polygonum hydropiper*)	Luffa (*Luffa acutangula*)
	Welsh Onion (*Allium fisulosum*)	Water spinach (*Ipomoea aquatica*)
	Chinese cabbage (*Brassica chinensis, B. pekinensis*)	Lily (*Lilium tigrinium*)
		Manchurian waterrice (*Zizania latifolia*)
Fruit trees	Peach (*Prunus persica*)	Oranges (*Citrus aurantium, C. sinensis, C. reticulata*)
	Chinese plum (*P. salicina*)	Kumquat (*Fortunella japonica*)
	Apricot (*P. armeniaca*)	Loquat (*Eriobotrya japonica*)
	Hawthorn (*Crataegus pinnatifida*)	Litchi (*Litchi chinensis*)
		Longan (*Euphoria longana*)
	Persimmon (*Diospyros kaki*)	Chinese olive (*Canarium pimela*)
	Chinese jujube (*Zizyphus vulgaris*)	
Beverages and masticatories		Tea (*Thea sinensis*)
Fiber crops	Hemp (*Cannabis sativa*)	Ramie (*Boehmeria nivea*)
		Chinese jute (*Abutilon avicinnae*)
Other industrial crops	Mulberry (*Morus alba*)	Tea oil (*Camellia oleifera*)
	Varnish tree (*Rhus verniciflua*)	Tung oil tree (*Aleurites cordata, A. fordii*)

Source: based on H.L.Li, 1966

lin lists for both North China and South China the distinctive cultivated plants that must have been derived from native wild ancestors (table 5).[28] These wild animals and plants abounded in the early postglacial environment, and the terminal Palaeolithic inhabitants used them for food, material, fiber, medicine, and other purposes—and experimented upon for cultivation.

Terminal Palaeolithic Cultures

Archaeological remains of early postglacial segments now belong to two ill-defined but clearly recognizable segments: (1) terminal Palaeolithic cultures, most likely postdating the Tali glacial period, thus post-10,000 BP, but largely without ceramics, and (2) earliest ceramic cultures, which are sometimes, but not always, known to be agricultural.

At this stage the terminal Palaeolithic cultures are very inadequately known, but we must know this period in detail in order to understand the process of the beginning of agriculture in China. The more than a dozen sites that can be described in this connection (fig. 40) belong to two different groups. The first are sites in North China and its northern adjacent regions, at which a microlithic assemblage is found. The second group includes caves and other sites in the southwest, where cultural remains identical with the Upper Palaeolithic industry described in the previous chapter are found associated with modern fauna.

In the northern microlithic group, the sites in Sha-yuan, in Chao-yi and Ta-li, eastern Shensi province,[29] in Ling-ching, Hsü-ch'ang, central Honan province,[30] and in Hsüeh-kuan, P'u-hsien, southern Shansi province,[31] are more significant than the others. They are located at the heart of late prehistoric development, and their lack of ceramic association is an acceptable indication of their preceramic status, although in some cases the possibility cannot be entirely ruled out that the chipped stones found at these sites were remains of specialized components of larger systems involving ceramics elsewhere. This possibility is suggested by the microlithic workshop site where several hundred microlithic implements and flakes were found together with Lung-shan potsherds and polished stones at Feng-huang-ling in Lin-yi, Shantung.[32]

The Hsüeh-kuan site in southern Shansi we mentioned earlier in connection

28. Li Hui-lin, *Tung-nan-ya tsai-p'ei chih-wu chih ch'i-yuan* (Origins of the cultivated plants in South and East Asia), Hong Kong: Chinese University of Hong Kong, 1966.
29. C. M. An and J. T. Wu, *KKHP* 1957 (3), 1–2; S. S. Chang, *VP* 3 (1959), 47–56.
30. *VP* 10 (1966), 86; K. H. Chou, *KK* 1974 (2), 91–108.
31. H. C. Wang et al., *AAS* 2 (1983), 162–70.
32. H. P. Hsu, *KK* 1983 (5), 385–88.

with the Upper Palaeolithic assemblages at Hsia-ch'uan nearby. The Hsüeh-kuan assemblage is similar to Hsia-ch'uan, featuring keel-shaped and semiconical cores, microblades, microflakes, scrapers of many varieties, projectile points, engravers, backed blades, and so on. A single C-14 date of 13,550 ± 150 BP places the site at the borderline between the Pleistocene and the Holocene.

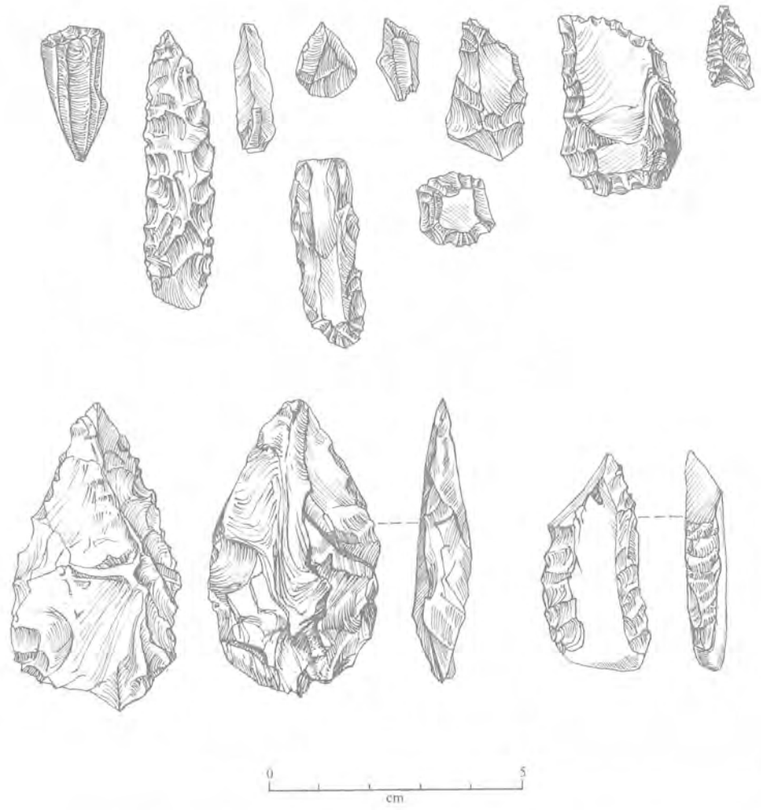
The Sha-yüan assemblage of Shensi is of uncertain age, but it is believed to date from early postglacial times. Cultural remains from fifteen localities were collected during 1955 and 1956 in the area of Chao-yi Hsien and Ta-li Hsien, in the central part of eastern Shensi—an area in the western portion of a sand-dune region (referred to as Sha-yüan by the local inhabitants) of considerable dimensions. Many of the flakes, stone implements, and bone fragments that were collected are badly rolled, and no habitation layers have been recognized, indicating that the original cultural deposits have been destroyed by strong sand-bearing winds over the centuries. The frequent movements of the sand dunes may also have disturbed the original distribution. The fifteen localities, therefore, are really nothing more than fifteen spots where cultural remains happen to have been concentrated.

Surface specimens, 519 in all, were singled out as representative by the investigators of the Institute of Archaeology, Academia Sinica. Most of these consist of chipped flakes and implements, of which only a few were secondarily retouched. The rest include two polished stone arrowheads—presumably later intrusions—a bone bead, a mollusk-shell ornament, and a fragment of a stone ornament. The chipped stones fall into two major categories. The microliths consist of small flakes and blades made of flint, quartzite-silicate sandstone, agate, opal, jade, and light-colored siliceous pebble by means of indirect percussion and pressure flaking. Retouching, when it occurs, is in most cases limited to a single surface. In typology, these microliths include cores, leaf-shaped points, microblades, points, arrowheads, and scrapers. The other category consists of flakes of quartzite-silicate sandstone and light-colored siliceous pebbles; agate also occurs occasionally. These flakes as a rule are larger than the microliths, but their maximum length is still less than nine centimeters. According to the investigators, direct percussion was the principal technique for making this series of flakes and implements, which include such types as points and scrapers (fig. 41).

Although more precise dating of the Sha-yüan assemblage is needed, it is one of the most significant discoveries in the prehistoric archaeology of North China in recent years. It is the first evidence in North China proper of a microlithic industry (probably of the early postglacial period) that shows affinities with the microlithic horizons in Manchuria, Mongolia, and Soviet Siberia and thus indicates a widespread cultural substratum in North China on which later cultural

40. Terminal Palaeolithic and related sites in China.

41. Sha-yüan stone implements. (From *KKHP* 1957, no. 2, pp. 5, 8.)



developments might have been built. On the other hand, the Mousterian-like flakes of this assemblage indicate an unmistakable linkage with the Ordosian industries of the upper Pleistocene period in the same region.

The lithic assemblage at Ling-ching, northwest of Hsü-ch'ang, in central Honan, collected in 1965 but not fully described until 1974, completes the link that places the microlithic industry into the center of North China. The 1,353 pieces of quartz, flint, and quartzite collected here include pebble implements, flake implements, and microliths, the last kind being the most numerous and including microcores, microblades, scrapers, and burins. Two pieces of human femurs were

also found. Mammalian fossils associated with the stones include such Pleistocene animals as woolly rhinoceros, ostrich, red deer (*Cervus elaphus*), elephants, horses, and donkeys, suggesting that the Ling-ching assemblage may be dated to the terminal Pleistocene, probably contemporaneous with Upper Cave.

The other microlithic assemblages of North China cannot be firmly dated and their position in the sequence of cultural development in their regions is not always clear. The two sites in northern Shansi[33] contain small numbers of potsherds and could be peripheral Neolithic. Two microlithic sites are located in Chinghai. One (Ta-yü-t'ai) yielded chipped pebble "knives," and the other, La-yi-hai, was dated by carbon 14 to 6745 ± 85 BP. Both appear to be contemporary with full-fledged farmers to the east.[34] The two microlithic sites in Inner Mongolia[35] are probably late steppe manifestations and do not qualify to be preceramic, as indicated by the pollen content of one of the sites, which reflects a dry and cold steppe-desert environment.[36] Three microlithic sites in central and northern Manchuria—Ku-hsiang-t'un, Hsin-pa-erh-hu Left Banner, and Hailar—exhibit a full range of lithic types, but at least two of them have yielded small numbers of potsherds.[37] The chronological uncertainty of most of these sites furnishes excellent grounds for caution in dealing with the microlithic as a chronological or cultural entity.[38]

A different situation prevailed in the early postglacial period south of the Ch'in Ling Mountains and the Huai Ho valley. There are widespread finds of chipped stone implements in Szechwan,[39] Kwangsi,[40] Yunnan,[41] and in the western part of Kwangtung as far as the Pearl River delta.[42] A paucity of reliable data still makes a classification of regional facies extremely difficult, but some significant assemblages from this area offer clues. In the Red Basin of Szechwan, the antiquity of the chipped axes is suggested by their geographical distribution,[43] but the

33. C. Y. Ch'en and Y. C. Wu, *KKYWW* 1984 (3), 1–4; W. C. P'ei, in *Yen-pei wen-wu k'an-ch'a-t'uan pao-kao,* Peking: Bureau of Cultural Relics, 1951, pp. 23–24.
34. K. T. Wang and K. N. Liu, *KK* 1984 (7), 577–81; P. Kai and K. T. Wang, *AAS* 2 (1983), 49–58.
35. K. F. Wang, *KK* 1983 (8), 673–78; *KK* 1975 (1), 23–24, 26.
36. K. S. Chou et al., *KK* 1975 (1), 25–26.
37. For Ku-hsiang-t'un, see Tokunaga Shigeyasu and Naora Nabusu, *Jinruigaku-Zasshi* 48 (1933), 12; *Manshuteiko Kitsurinshō Ku-hsiang-t'un kaikkai hakkutsu hutsu kenkyū hobun,* Tokyo: Waseda University, 1934. For Hsin-pa-erh-hu Left Banner, see S. L. Kai, *KK* 1972 (4), 20–23. For Hailar, see C. M. An, *KKHP* 1978 (3), 289–315.
38. C. M. An, *KKHP* 1978 (3); C. C. T'ung, *KKHP* 1979 (4), 403–22; L. P. Chia, *VP* 16 (1978), 137–43.
39. T. K. Cheng, *Archaeological Studies in Szechwan,* Cambridge University Press, 1957.
40. W. C. P'ei, *Bull. GSoC* 14 (1935), 393–412; L. P. Chia and C. L. Ch'iu, *VP* 4 (1960), 39; Y. M. Ku, *VP* 6 (1962), 193–99.
41. M. N. Bien and L. P. Chia, *Bull. GSoC* 18 (1938), 327–48.
42. *VP* 4 (1960), 38; C. Mo, *KKHP* 1959 (4), 1–15; J. T. P'eng and W. Wang, *WW* 1959 (5), 75; W. Schofield, *Hongkong Naturalist* 5 (1935), 272–75; R. Maglioni, *Hongkong Naturalist* 8 (1938), 211.
43. T. K. Cheng, op. cit. (n. 39).

stratigraphical evidence at Tai-hsi is scanty. Little is known about the cultural associations of these chipped axes in a preceramic context. More is known about Yunnan and Kwangsi, however, where chipped stone tools, shell-middens, and charred animal bones have been found in limestone caves and rock shelters. In a cave at Ch'i-lin-shan, in Lai-pin Hsien, Kwangsi, cultural debris, charred bones, two quartzite flakes, one chopper made of quartzite pebble, and parts of a human skull were discovered in 1956, in a yellowish breccia stratum, in association with bones of deer, wild boars, and a large number of mollusk shells. The human skull fragments include a large part of the upper jaw, the hard palate, the right zygomatic bone, and the occipital bone; it is reportedly the skull of a male individual of advanced age. Its morphological features are certainly indicative of *Homo sapiens,* but the flat malar bone and a well-marked ridge at the entrance to the nasal floor are said to indicate that this skull does not belong to the Mongoloid pattern.[44] A rock-shelter site at Hei-ching-lung, near Ch'iu-pei in Yunnan, has yielded, in addition to charcoal and ash layers and two pieces of flint flakes, many seeds of *Celtis* and bones of *Canis gray,* Ursidae indet., Felinae indet., *Cervus* sp., Bovidae indet., and *Macacus* sp.[45] Similar assemblages were found in 1959 at Ya-p'u-shan near Hsi-chiao-ts'un and Ma-lang-ch'uan-shan near Ma-lang-chi-ts'un, both in Tung-hsing Hsien, western Kwangtung. Four strata are excavated at these two sites: topsoil; shell bed with pottery and Neolithic implements; bed with shells and concretions with abundant chipped implements; and red sandstone basement rocks. The cultural remains from the third layer are characterized by core implements including hand-axes, choppers, and so forth, most of which retain the original cortex of the pebbles. The associated fauna, all of modern species, is distinguished by such forms as *Rusa, Bubalus,* and various mollusks.[46]

Around the Pearl River delta area, open sites have been discovered where chipped stone implements were found in a preceramic context. In addition to the somewhat dubious finds in the Hong Kong area,[47] a highly important assemblage has been brought to light since 1955 at Hsi-chiao-shan in Nan-hai County, Kwangtung.[48] An inactive volcano called the Hsi-chiao-shan, approximately twelve square kilometers in area and surrounded by creeks and dried-up ponds, is about seventy kilometers southwest of Canton. Around the hill, fourteen prehistoric localities have been discovered. These can be grouped into three classes: preceramic, sub-Neolithic, and Neolithic. The last two will be discussed

44. L. P. Chia and J. K. Wu, *VP* 3 (1959), 37–39.
45. M. N. Bien and L. P. Chia, *Bull. GSoC* 18 (1938), 345–46.
46. *VP* 4 (1960), 38.
47. W. Schofield, *Hongkong Naturalist* 5 (1935); *Proc. 3rd Far Eastern Prehist. Congr.* 1938, p. 243.
48. C. Mo, *KKHP* 1959 (4), 1–15; J. T. P'eng and W. Wang, *WW* 1959 (5), 75.

later, but it should be remarked here that these three groups represent a common culture substratum characterized by chipped stone implements. The implements found in a nonceramic context, as well as those in association with pottery and polished stone tools, include both flake and core implements made of flint and sandstone. The core implements apparently resemble the familiar chopper–chopping tool varieties, but some of the flakes bear faceted platforms and many of them fall into categories of end scrapers, points, and flake blades. A full-fledged microlithic assemblage, including microblades and engravers, has also been identified here.[49] Further to the east, a similar lithic assemblage has been discovered in Taiwan, on the east coast of the island, near Ch'ang-pin.[50]

P'ei-li-kang and Related Cultures in North China

If the cultures described above were those of the hunting-fishing-collecting peoples inhabiting China around the beginning of the Holocene at about 10,000 years ago, among whom and among whose immediate descendants the crucial agricultural experiments took place, then there is a critical gap of about 1,000–1,500 years that is still to be accounted for in the contemporary archaeology of North China, whereas in the South the gap is just about being closed.

In North China modern archaeology has pushed the earliest known Neolithic, agricultural stages further and further back. In the 1920s through the 1940s the earliest known Neolithic culture, Yang-shao, whose name was derived from Yang-shao village in Mien-ch'ih county, Honan, excavated in 1921 by J. G. Andersson,[51] was dated by Andersson to approximately 2500 B.C.[52] In the subsequent decades, as many Neolithic sites were brought to light and it was established that there had been more than a single Neolithic culture or cultural phase, it became clear that the Neolithic culture must have begun much earlier than 2500 B.C. in order for the many cultures to have evolved before the beginning of historical Chinese civilization at the end of the third millennium B.C. But only in the early 1970s when Chinese laboratories began to publish radiocarbon dates were the students of Neolithic archaeology given good grounds to push the start of the Yang-shao Culture to the fifth millennium B.C.[53] Then, in the late 1970s, a series of new cultural sites, which seemed to predate the Yang-shao Culture both

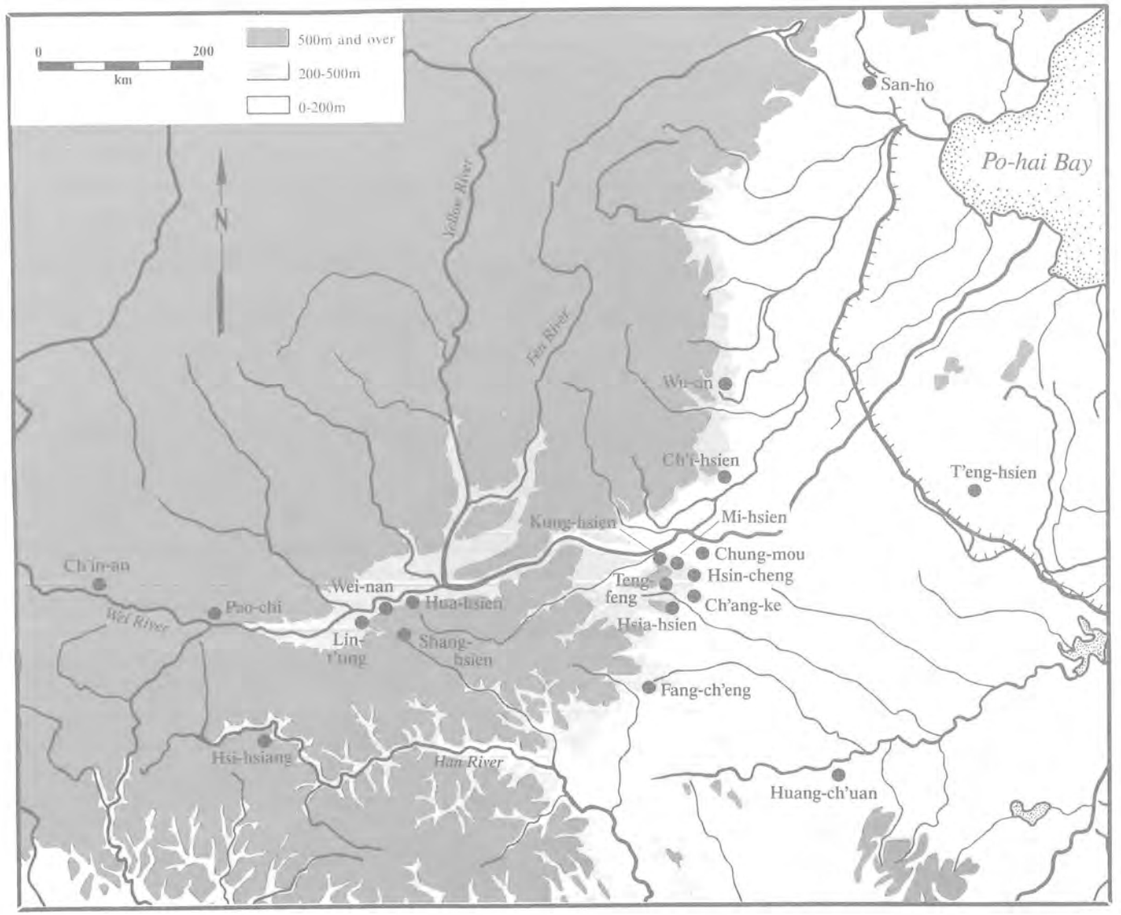
49. C. Tseng, *KKTWW* 1981 (4), 1–13.
50. W. H. Sung, "Ch'ang-pin wen-hua," *Newsletter of Chinese Ethnology* (Taipei) 9 (1969), 1–27.
51. J. G. Andersson, *Bull. GSoC* 5 (1923).
52. J. G. Andersson, *BMFEA* 15 (1943), 295.
53. The first batch of Yang-shao Culture C-14 dates (B.P.) were: 5890 ± 110 (ZK–38), 5730 ± 100 (ZK–121), 5670 ± 100 (ZK–122), and 5420 ± 100 (ZK–127); see *KK* 1972 (5), 56–58.

stratigraphically (at some sites) and chronometrically, began to appear in the archaeological scene. These are the sites of the P'ei-li-kang and related cultures of North China and of the upper Hanshui River valley of Shensi.

Although relics from this early stratum had long been known in isolated finds, the first site recognized as before Yang-shao was Tz'u-shan in Wu-an county, in southern Hopei, first excavated in 1976–77.[54] In the years that follow, many sites that yield a similar culture have been found in central Honan on the eastern slopes of the Fu-niu Mountains, the most extensive and best excavated being the site at P'ei-li-kang, in Hsin-cheng county.[55] These new finds have further clarified the nature of a number of Neolithic sites in Shensi, largely of Yang-shao persuasion but represented at the lower ends of the deposits by remains that had appeared somewhat different although not clearly identifiable.[56] These earlier finds are now recognized to be similar to Tz'u-shan and P'ei-li-kang and are placed in the same cultural horizon.

This new cultural horizon is now found to be distributed in four clearly defined clusters, each exhibiting its own regional characteristics (fig. 42). The first consists of Tz'u-shan and nearby sites in southern Hopei, on the eastern slope of the T'ai-hang Mountains.[57] The second cluster is made up of at least forty sites in Honan, including (from north to south) the site at Hua-wo, in Ch'i-hsien;[58] Yeh-wang and Feng-chuang, in Chung-mou;[59] Eh-kou,[60] Ma-liang-kou,[61] and other sites in Mi-hsien;[62] Tung-kang-ling in Teng-feng;[63] T'ie-sheng-kou[64] and Chao-ch'eng[65] in Kung-hsien; P'ei-li-kang,[66] Sha-wo-li,[67] T'ang-hu,[68] and Hsi-t'u-ch'iao[69] in Hsin-cheng; Shui-ch'üan in Hsia-hsien;[70] Ta-chang-chuang in Fang-ch'eng;[71] and Lu-chai in Huang-ch'uan.[72] Most of the Honan sites are on the eastern slopes of the Fu-niu Mountains, but a few follow the small river valleys into the Lo River plain. The third cluster of sites (fifteen sites by 1982) is situated in the valley of the Weishui River from eastern Shensi to eastern Kansu and also in the valley of the upper Tan-chiang River, a northern tributary of the Hanshui River, and it includes such sites as Lao-kuan-t'ai and Yuan-chün-miao in Hua-

54. *KK* 1977 (6), 361–72. The first report contains two C-14 dates of 7330 ± 105 and 7355 ± 100 B.P.
55. *KK* 1978 (2), 73–79.
56. P C. Su, *KKHP* 1965 (1), 55–56; S. T. Lang and L. L. Chao, *KKTWW* 1984 (6), 56–63.
57. *KK* 1977 (6), 361–72; *KKHP* 1981 (3), 303–46.
58. *KK* 1981 (3), 279–81.
59. *KK* 1979 (3), 206–07.
60. *WW* 1979 (5), 14–17; S. L. Li, *WW* 1980 (5), 20–27; *KKHCK* 1 (1981), 1–26.
61. *KK* 1981 (3), 282–84.
62. *KK* 1979 (3), 208.
63. *KK* 1979 (3), 208, 222.
64. *WW* 1980 (5), 16–18.
65. *KK* 1979 (3), 222.
66. *KK* 1978 (2), 73–79; *KK* 1979 (3), 197–205; *KK* 1982 (4), 337–40; *KKHP* 1984 (1), 23–51.
67. *CYWW* 1982 (2), 14; *KK* 1983 (12), 1057–65.
68. *KK* 1979 (3), 206; *KK* 1984 (3), 193–96.
69. *KK* 1979 (3), 206.
70. *KK* 1979 (6), 562–63.
71. *KK* 1983 (5), 398–403.
72. L. H. Yang, *CYWW* 1981 (4), 59.

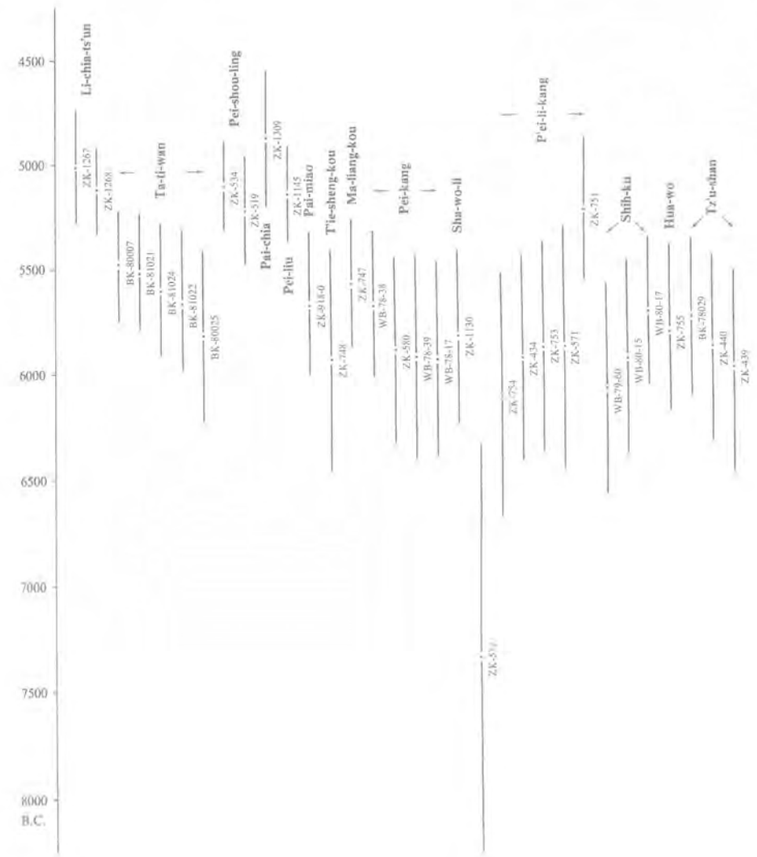


42. Principal sites of Tz'u-shan, P'ei-li-kang, and related cultures.

hsien;[73] Pei-liu in Wei-nan;[74] Pai-chia-ts'un in Lin-t'ung;[75] Tzu-ching in Shang-hsien;[76] Pei-shou-ling in Pao-chi, Shensi;[77] and Ta-ti-wan in Ch'in-an, Kansu.[78] The final cluster of sites is in southern Shensi, south of the Tsinling Mountains, in the upper Hanshui River valley, including Li-chia-ts'un, in Hsi-hsiang,[79] and several other sites.[80] On the whole, these sites are strewn along the lower terraces of the eastern edges of the western highland of North China, facing the marshes and the wetland that separated the western highland from Shantung, and along the Weishui River valley into the western interior at least to eastern Kansu. Recent studies of the Ta-wen-k'ou Culture of Shantung[81] and the Ta-hsi Culture of eastern Szechwan and Western Hupei[82] have shown that very early phases of these cultures may be contemporaneous with P'ei-li-kang, Tz'u-shan, and so forth. The earliest Ta-wen-k'ou phase, found at Pei-hsin, in T'eng-hsien,[83] would bring this culture across the wetland to the western slopes of Shantung. These we will come back to later on.

The earlier farming cultures at the archaeological sites in these four clusters share many characteristics. First of all, a large series of radiocarbon dates place all of these sites between 6500 and 5000 B.C. (fig. 43). Most of the sites whose areas were reported were between 10,000 and 20,000 square meters, and the deposits are relatively thin, between 0.5 and 1 meter.[84] The density of the sites appears to be considerable; in Mi-hsien, for example, in an area about 8 kilometers long and half as much wide, six sites have been identified. On this, however, we must wait for more survey data obtained in a systematic manner. The sites that have been excavated consist of dwelling areas and cemeteries (fig. 44, 45). Most of the houses were round or occasionally square, 2–3 meters in diameter, with plastered floors sunk into the ground (fig. 46), although at Ta-ti-wan the houses were built at the ground level. Many underground storage pits were found amidst the houses, some with straight walls but others wider at the bottom. Many of the pits were filled with grains. Burials were mostly single, furnished with pottery vessels

73. *KKHP* 1980 (3), 297–304.
74. *KKTWW* 1982 (4), 1–10.
75. *KK* 1983 (3), 271–72; *KK* 1984 (11), 961–70.
76. *KKTWW* 1981 (3), 33–47.
77. *KK* 1979 (2), 97–106, 118.
78. *WW* 1981 (4), 1–15, 96; *KKTWW* 1982 (2), 1–4, 9; *WW* 1983 (11), 1–30.
79. *KK* 1961 (7), 352–54; *KK* 1962 (6), 290–91, 295; C. W. Wei, *CKHNL* 1 (1979), 14–22.
80. C. W. Wei, *KKTWW* 1981 (4), 69–77, 65.
81. See chapter 3.
82. W. M. Yen, in *Chung-kuo k'ao-ku nien-chien 1984* (Yearbook of Chinese archaeology, 1984), Peking: Wen-wu Press, pp. 12–13; W. M. Yen, *WW* 1985 (3), 24.
83. *KK* 1980 (1), 32–44; *KKHP* 1984 (2), 159–90.
84. C. W. Wei, *KKTWW* 1981 (4), 74.

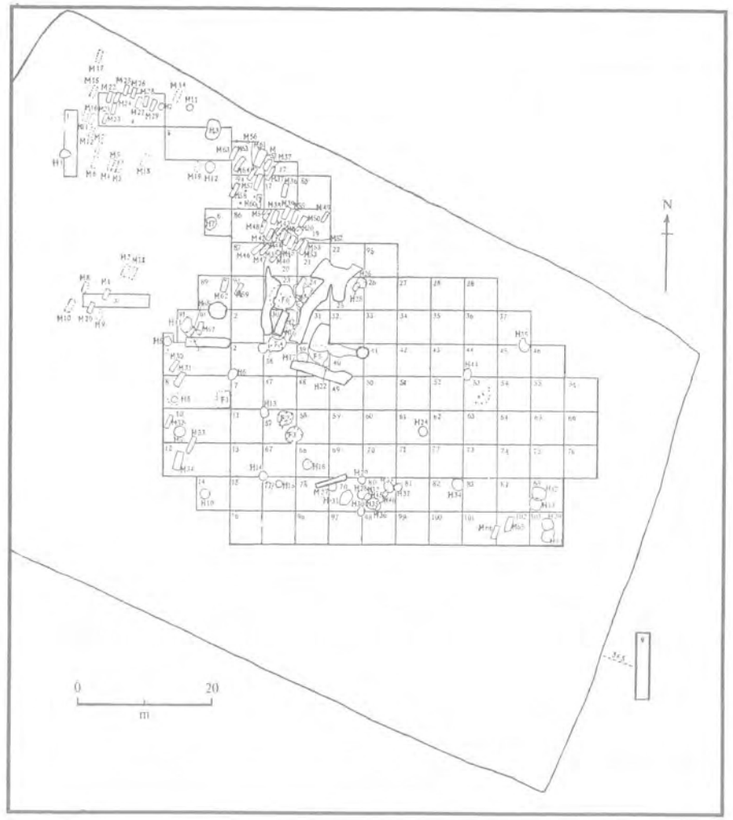


43. Radiocarbon profile of Tz'u-shan, P'ei-li-kang, and related cultures.

alone or in combination with stone axes and spades or with stone mortars and pestles (fig. 47). In a few cases, small turquoise ornaments were found in the graves. At the Sha-wo-li site, age was determined on three burials, and the dead persons were between twelve and fourteen years of age.

Remains of grains, stone axes, stone sickles, and stone mortars and pestles are among the archaeological objects indicating that by this time there had been considerable agriculture. Some of the grains have been identified as the foxtail

44. Excavated area of the Eh-kou site in Mi-hsien, Honan. (From *KKHCK* 1, 1981, p. 2.)



millet (*Setaria italica*), confirmed by a spodogrammic analysis,[85] and the broomcorn millet (*Panicum miliaceum*). Other plant remains include the oil cabbage, walnut, hazelnut, and small-leaf celtis at Tz'u-shan and the oak and Chinese jujubi date at Eh-kou. Grains and possibly other plant products were processed with mortars and pestles (fig. 48), the former of which with a concave surface and four little legs is a striking diagnostic artifact of both the Tz'u-shan and the P'ei-li-kang

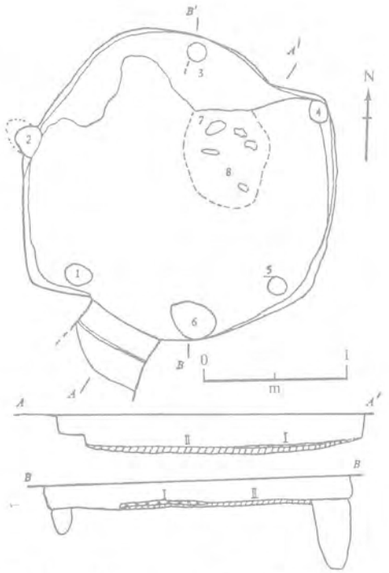
85. C. H. Huang, *KK* 1982 (4), 419.

45. Part of the cemetery at the P'ei-li-kang site in Hsin-cheng, Honan. (From *KK* 1979, no. 3, pl. 1.)

clusters. The long sickles with sharp teeth are especially distinctive among the P'ei-li-kang cluster (fig. 49).

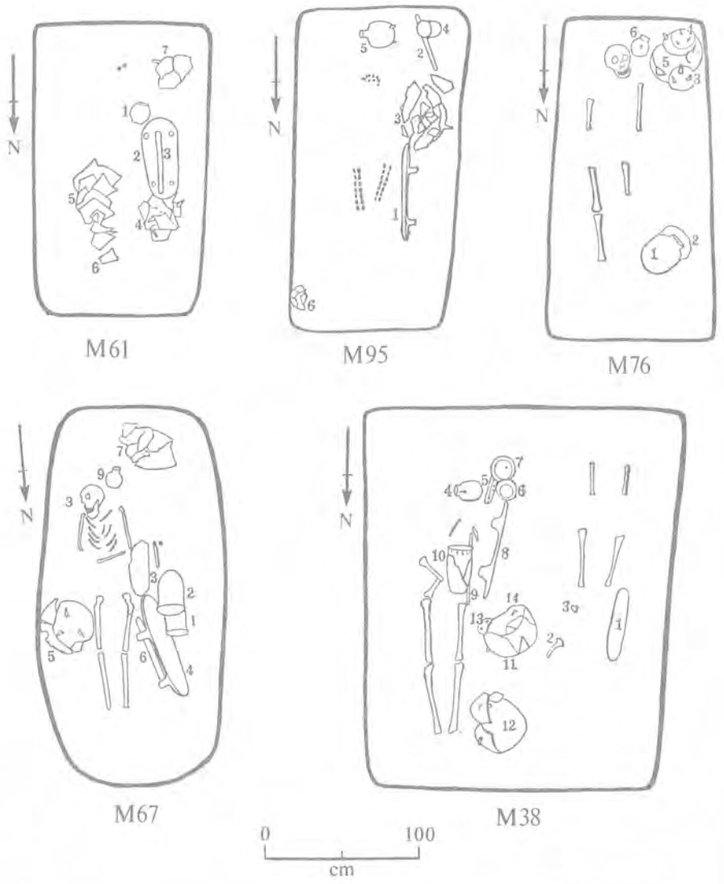
Pigs and dogs were the principal animals domesticated, their importance attested both by their skeletons and in the case of the pig by clay figurines (fig. 50). Pig jawbones are often found as a part of grave furnishings. Chicken (*Gallus gallus domesticus*) was probably a domesticated fowl; most of the foot bones found were from males. Among wild animals, the various deer (sika deer, elaphure, water deer) were the most plentiful. The antlers indicate that they were hunted in all seasons.

Among the stone implements a considerable number at some sites (for example, at Hua-wo in Ch'i-hsien) were flaked, not polished (fig. 51), and microliths are often found, suggesting a near-Palaeolithic microlithic ancestry and the continuing importance of hunting. Among the polished or semipolished implements, the most common type is the stone ax with oval cross-section, and other types include the hoe, adz, chisel, sickle knife, hammer, and mortar and pestle, which vary in frequency of occurrence in the different clusters (fig. 52). Bone artifacts include the spearhead, arrowhead, harpoon, hairpin, needle, engraver, and net-knitting needle. There are also some antler and tooth artifacts. Shells were an important material for sickles.



46. Plan and cross-section of house floor F-2 at Eh-kou, Mi-hsien, Honan. (From *KKHCK* 1, 1981, p. 4.)

47. Plans of five P'ei-li-kang burials. (From *KKHP* 1984, no. 1, p. 28.)



48. A storage pit believed to be a food-processing locus, at Tz'u-shan, Hopei. (*1*: stone mortar; *2*: stone pestle; *3, 4, 22*: stone axes; *5, 12, 13*: tripods; *6–8, 14, 19*: pottery bowls; *9–11*: clay pot supports; *15–18*: small bowls; *20*: charcoal; *21*: stone spade.) (From *KKHP* 1981, no. 3, p. 322.)

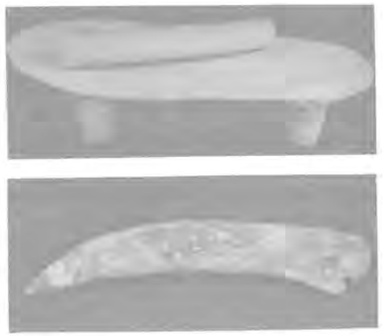
All pottery was handmade, most with coarse and sandy paste. The kiln temperature was estimated at 700, 850, and 930 degrees Celsius for three Tz'u-shan samples and 950 and 960°C for two P'ei-li-kang samples. The ware was mostly red or brown, although many variations occur. The surface was mostly plain, and the decorations include cord-marks, comb-impressions, comb-rocker stampings at some sites, appliqués, incisions, and press-and-pick designs (fig. 53). In form, the most characteristic types are round jars with narrow necks and two shoulder-lugs, bowls with or without ring feet (pedestals), and conical tripods attached to the bottoms of a variety of vessels including bowls and urns. Here in ceramic typology the different regional clusters exhibit noticeable differences. The Tz'u-shan cluster has, characteristically, the cup with straight walls and the clay pot-supports, and the Weishui River cluster is typified by the deep urns on three tiny legs (fig. 54). There are many other differences among the clusters as well. The prevalence of sickles in the P'ei-li-kang cluster was mentioned earlier. In burial custom, almost all of the P'ei-li-kang burials were placed so that the head was in the south, whereas a western orientation is characteristic of the Weishui valley cluster.

The distinctive ceramic types of the four clusters of these 6500–5000 B.C. sites of North China have tempted the archaeologists to engage in a neverending classificatory controversy.[86] Some call them different cultures—the Tz'u-shan Culture, P'ei-li-kang Culture, Lao-kuan-t'ai Culture, and Li-chia-ts'un Culture, whereas others propose to lump some or even all of them together. In view of their geographical congruence and their many common features, especially when they are viewed in contrast to other contemporary or subsequent cultures, we may group them into a single major culture, to be referred to for the purposes of this book as the P'ei-li-kang Culture, in light of the apparent greatest antiquity of the P'ei-li-kang cluster and the large number of sites there. As more contemporary sites elsewhere are brought to light in the near future, we will continue to assess the classificatory issues with regard to this culture. A crucial area to watch for new finds in contiguous space is the Szechwan hills and the middle Yangtze Valley of Hupei, which lie directly to the south and downstream of the Lower Weishui Valley and the southern Shensi clusters.

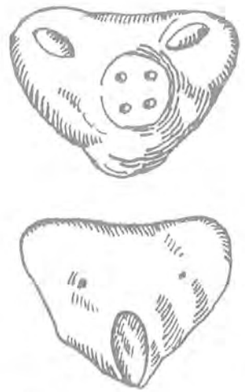
The Early Cord-marked Pottery Culture of South China

One of the reasons Szechwan and Hupei play a pivotal role in the agricultural beginnings of China is that this area lies between the areas of the P'ei-li-kang Culture of the North and the vast space of South China where very early ceramics with likely agricultural association have been unearthed. Radiocarbon dates from

86. W. M. Yen, *KK* 1979 (1), 45–50; Y. M. Li and H. Ch'en, *KK* 1979 (4), 347–52; C. M. An, *KK* 1979 (4), 334–46; S. L. Li, *WW* 1980 (5), 20–27; C. H. Chang, *KKTYWW* 1981 (1), 53–58; Y. M. T'ang, *KKTYWW* 1981 (1), 58–62; C. W. Wei, *KKTYWW* 1981 (4), 65, 69–77; S. L. Ching, *She-huei K'o-hsüeh Chan-hsien* 1981 (2), 220–23; C. M. An, *She-huei K'o-hsüeh Chan-hsien* 1982 (1), 204–07; J. L. Chang, *KKTYWW* 1982 (4), 71–74; J. T. Wu, *KKTYWW* 1983 (2), 52–59; C. H. Chang, *KKTYWW* 1984 (1), 86–91; C. M. An, *KK* 1984 (10), 936–44.

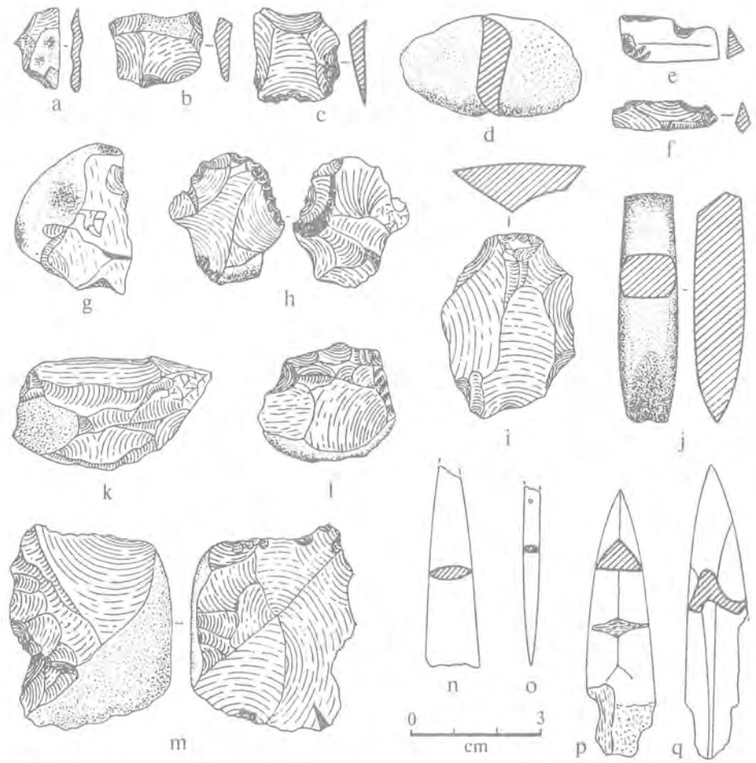


49. Stone mortar and pestle (*left*) and sickle (*right*) found at Sha-wo-li, Hsin-cheng, Honan. (From *KK* 1983, no. 12, pl. 1.)



50. Clay figurines of pigs found at P'ei-li-kang. (From *KK* 1979, no. 3, p. 202.)

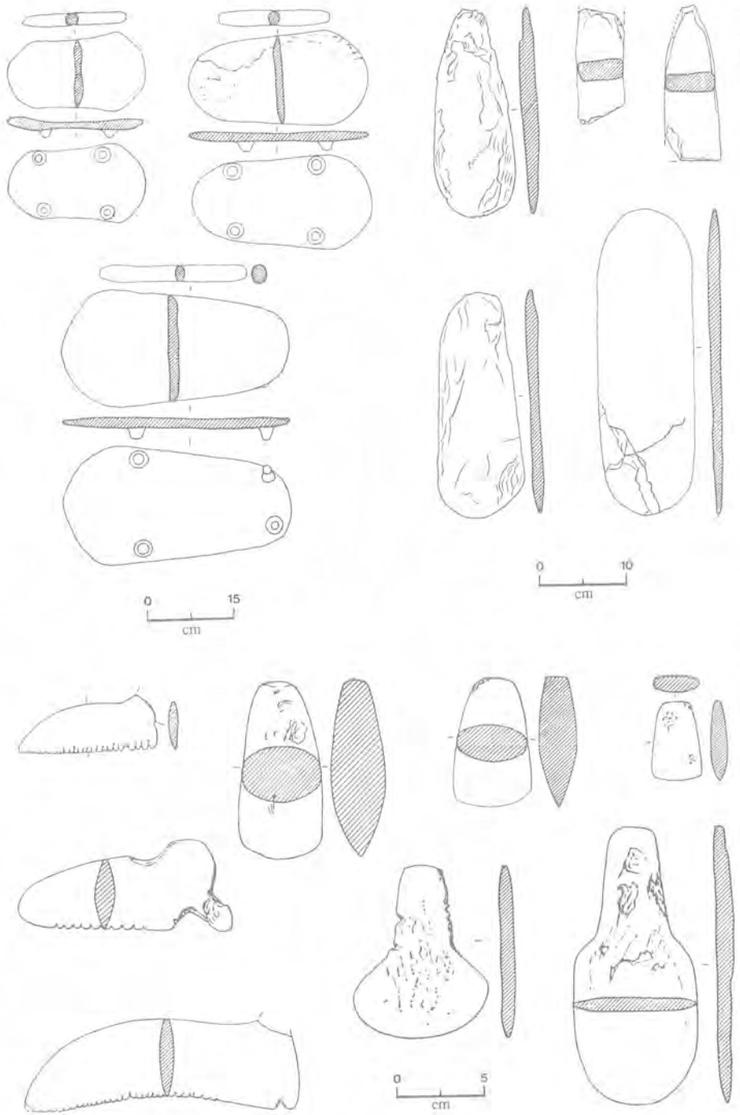
51. Stone (a–m) and bone (n–q) implements from Hua-wo in Ch'i-hsien, Honan. (From *KK* 1981, no. 3, p. 280.)

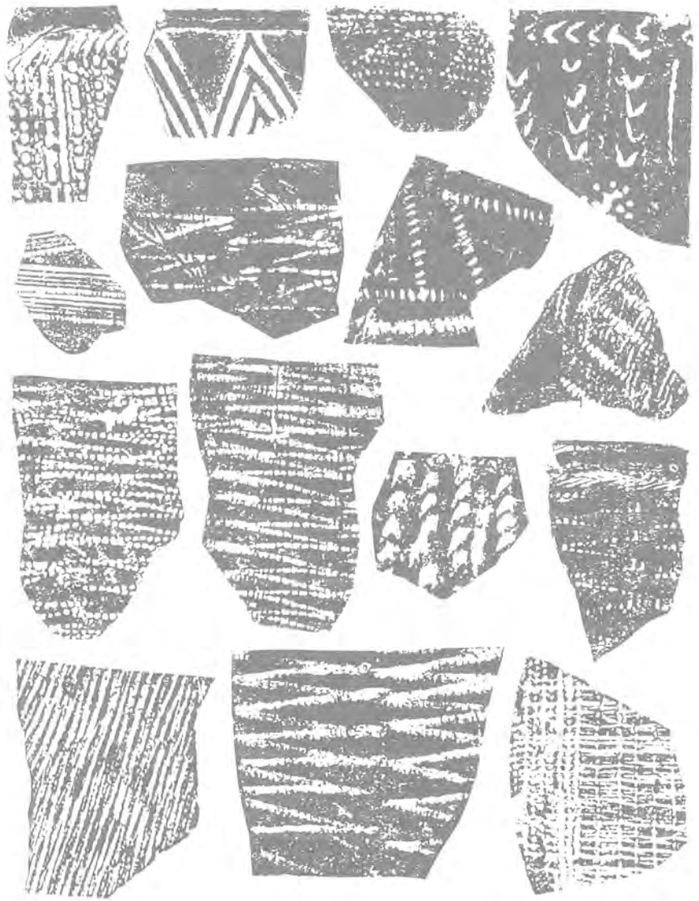


deposits in several limestone caves, where there is often a cultural continuum from preceramic to ceramic phases, show that ceramics may have appeared more or less with the onset of the Holocene (fig. 55). These ceramics are very different from the pottery of the P'ei-li-kang Culture, but there are also some similarities. The interrelationship of the southern and the northern pottery traditions is of course of great interest.

Only a small number of sites in South China can now be placed into the millennia before 5000 B.C., but that number is sure to grow in the years to come, and any statement about these cultures other than preliminary description and summary would be premature. The sites are of two kinds: limestone caves and

52. Major types of polished and semipolished stone implements found at Eh-kou, Mi-hsien, Honan. (From *KKHCK* 1, 1981, p. 16.)



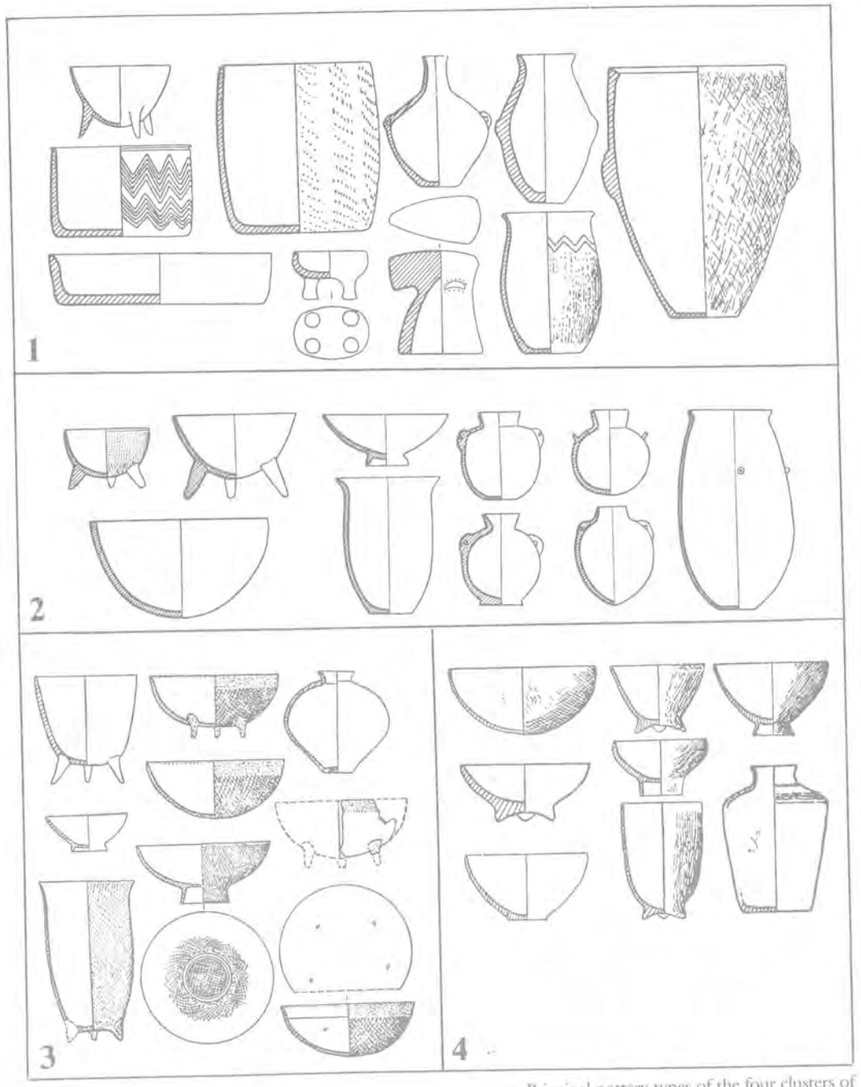


53. Some pottery decorations at Tz'u-shan. (From *KK* 1977, no. 6, p. 369.)

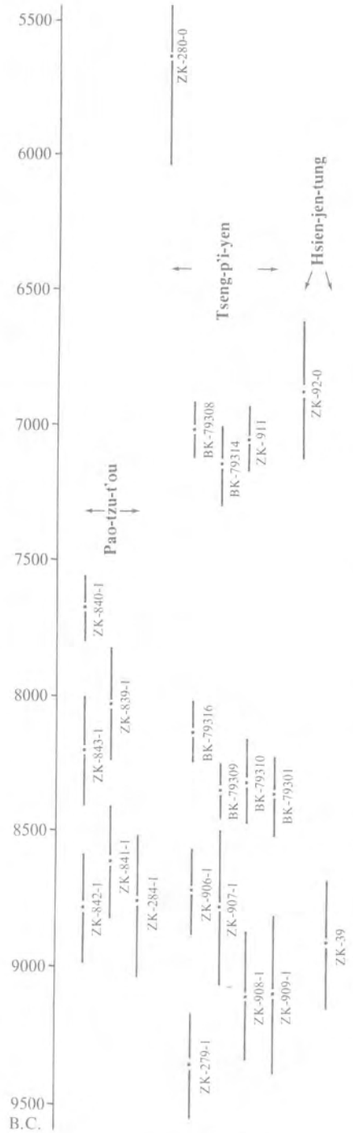
open-air stations. The latter are with or without shell-middens and are on sea-shores or river terraces.[87]

The hills of South China constitute a vast karst structure,[88] with innumerable

87. S. F. P'eng, *WW* 1976 (12), 15–22.
88. *Karst in China*, Shanghai: Renmin Press, 1976.



54. Principal pottery types of the four clusters of P'ei-li-kang and related cultures. (*1*: P'ei-li-kang cluster; *2*: Tz'u-shan cluster; *3*: Wei-shui cluster; *4*: Li-chia-ts'un cluster.) (1 and 2 from *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, p. 37; 3 from *KK* 1984, no. 11, p. 1016; 4 from *KK* 1984, no. 11, p. 1018.)



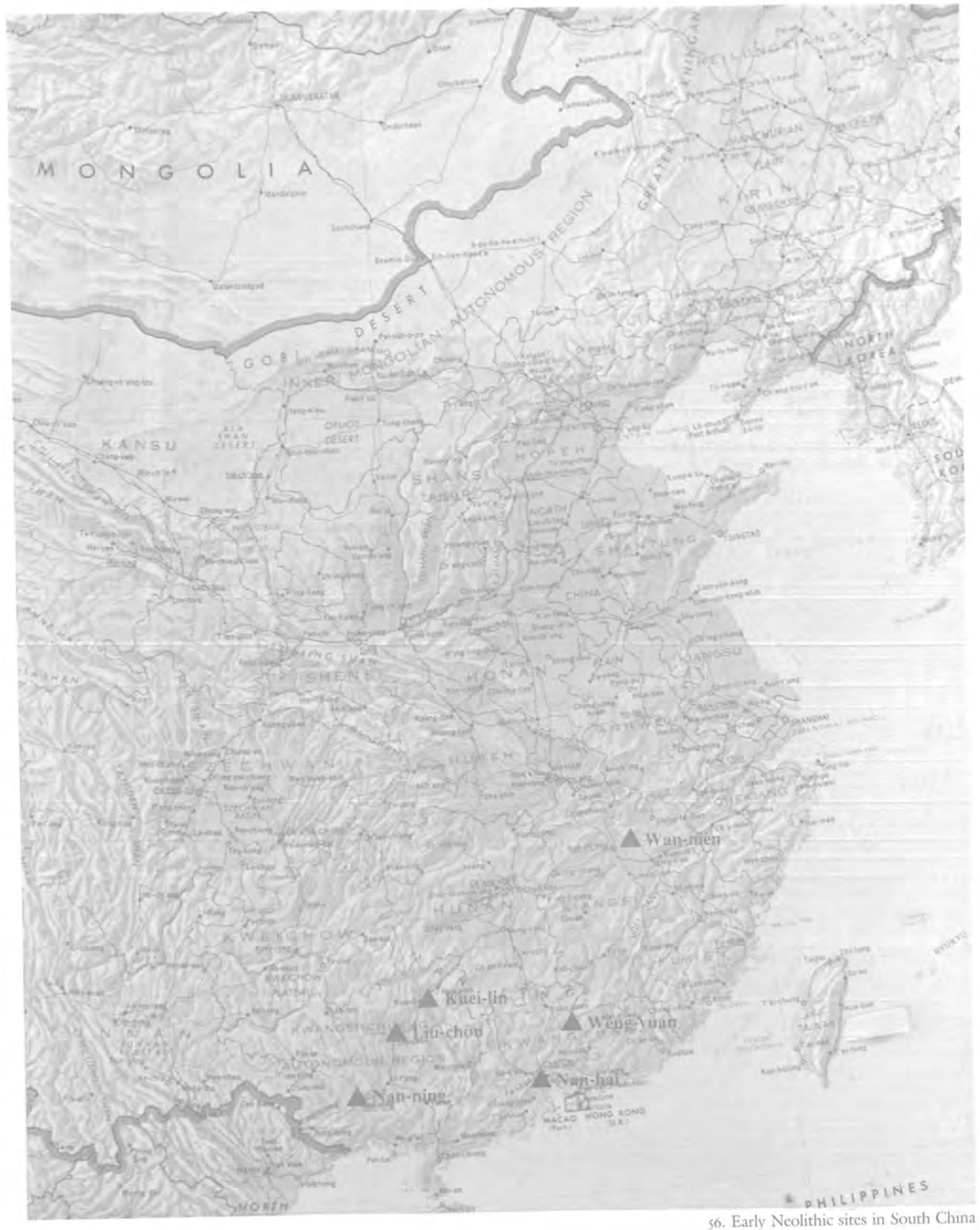
55. Radiocarbon profile of the early Neolithic cave sites in South China.

caves formed by underground water, and many caves were used in one form or another by prehistoric people. Some of the cave deposits that are dated to the Pleistocene have been described in the first chapter. Only a few caves with early ceramics have been investigated and reported: Hsien-jen-tung or Spirit Cave in Wan-nien, in northeastern Kiangsi;[89] several caves in Ch'ing-t'ang-yü, in Weng-yuan, northern Kwangtung;[90] Li-yü-tsui[91] and Pai-lien-tung[92] in Liu-chou, Kwangsi, the former a rockshelter and the latter a cave; and Tseng-p'i-yen in Kuei-lin, also in Kwangsi (fig. 56).[93] Only a few of the caves need to be briefly described.

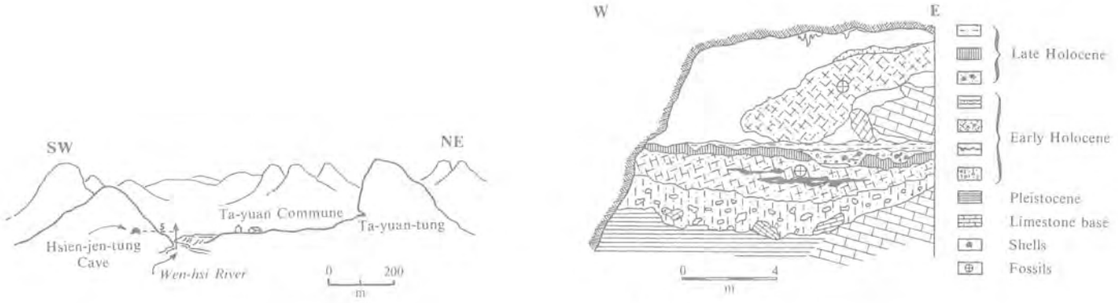
Hsien-jen-tung, discovered in 1962, was the first cave site with early ceramics to command attention and debate concerning this level of prehistory, presumably because of its location, not in some peripheral region like Kwangsi, where cave sites had long been known,[94] but in an area of China where Shang and Chou civilizations had an archaeological presence and were in turn preceded by Neolithic cultures. The cave, which faces east, is situated at the base of a limestone hill and about 5 meters above the small river that flows between the hill and the nearest village, Ta-yuan Commune (fig. 57, l). The length from the entrance to the rear wall is some 35 meters, and the greatest height and width, at the back of the cave, are 26 and 20 meters respectively. A small branch cave is entered from the north wall. At the bottom of the cave is a layer of brown sandy deposits formed during the Pleistocene. A thin layer of yellow sands and limestone breccia, probably of the earliest postglacial, was formed on top of the brown sand. A third layer of sandy soil was the layer of Neolithic human occupation, with lenses of ash, artifacts, and human bones. In this third layer was formed a horizontal fissure, into which later debris of human occupation during the early historic period was deposited. The early ceramic culture came from the third, main cultural layer of the cave (fig. 57, r).

In addition to hearths, ashes, and storage pits, the cultural strata yielded artifacts of stone, bone, antler, shell, pottery, and animal and human bones. The stone implements include choppers, scrapers, and polished awls, chisels, possibly dibble disks, and grinding stones. Bone artifacts include needles, awls, arrowheads, and harpoon heads. These stone, bone, and other implements indicate

89. Y. W. Kuo and C. H. Li, *KKHP* 1963 (1), 1–15; W. P. Huang and H. H. Chi, *VP* 7 (1963), 263–71; C. H. Li, *WW* 1976 (12), 23–35.
90. J. T. P'eng, *KK* 1961 (11), 585–88.
91. N. H. Ho et al., *KK* 1983 (9), 769–74.
92. *VP* 13 (1975), 137; K. H. Chou and K. Y. Yi, *Pai-lien-tung yi-chih ti chung-yao fa-hsien* (Important discoveries of the Pai-lien-tung site), Peking, 1982.
93. H. M. Wu and C. C. Yang, *KK* 1976 (3), 175–79, 160; Y. H. Li and T. F. Han, *VP* 16 (1978), 244–54.
94. W. C. P'ei, *Bull. GSoC* 14 (1935), 393–412.



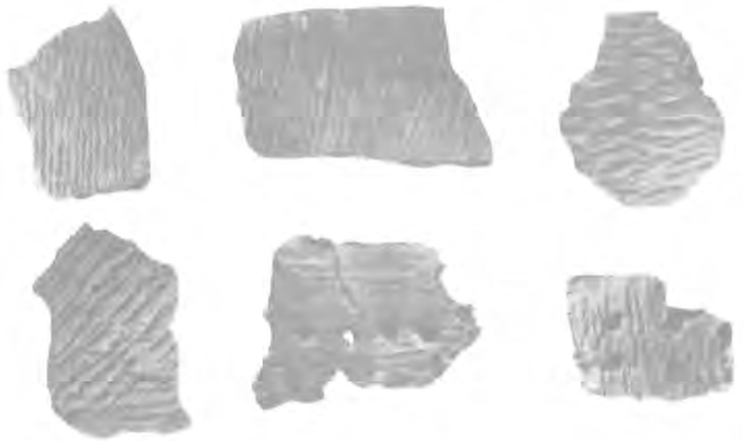
56. Early Neolithic sites in South China



57. Location of the Hsien-jen-tung cave (*left*) and cross-section of its deposits (*right*). (From *VP* 7, 1963, p. 265.)

hunting and fishing, but the polished stone disks with holes, if indeed they were digging-stick rings, suggest gardening. The animal bones indicate the range of wild game utilized: deer, water-deer, boar, sheep, several kinds of wild cats, weasels, badgers, macaques, rabbits, big birds such as vultures and chickens, mollusks, fishes, turtles, and crabs. Plant remains are not reported. Potsherds are plentiful but fragmentary. The paste is coarse, tempered with sand and grit, and the texture is brittle and loose. The thickness is uneven, from 4 to 14 millimeters, and the color is heterogeneous red and gray. The only shape that can be determined is a round-based jar with a straight rim. The surface decoration is predominantly cord-marked; the cords were of various strands and were often impressed on both the inside and the outside surfaces. Under the rim are found puncture marks. At times the corded surface was painted over with red pigment or incised with regular or irregular crosshatches (fig. 58).

The condition of the deposits and the general range of the artifacts in the other South Chinese caves are essentially similar to the above, although some of the other caves exhibit particularly noteworthy features. The Li-yü-tsui cave in Liu-chou has yielded a wide range of stone implements (fig. 59) as well as several burials of flexed posture in the cultural debris. The Tseng-p'i-yen cave of Kuei-lin has yielded in its cultural debris no fewer than eighteen human burials in selected areas within the cave and they were again mostly flexed. Six of the skulls had an artificial perforation at the top, and red ochres were found on some of the skeletons. Among the stone implements, in addition to digging-stick rings there are also three elongated pebbles with a flat end that are believed to be pestles. The pig bones are of special significance. Sixty-seven individual pigs were counted from jawbones, and forty of them yielded reliable age determinations. Of these, eight or 20 percent are under a year old, six or 15 percent are over two years old,



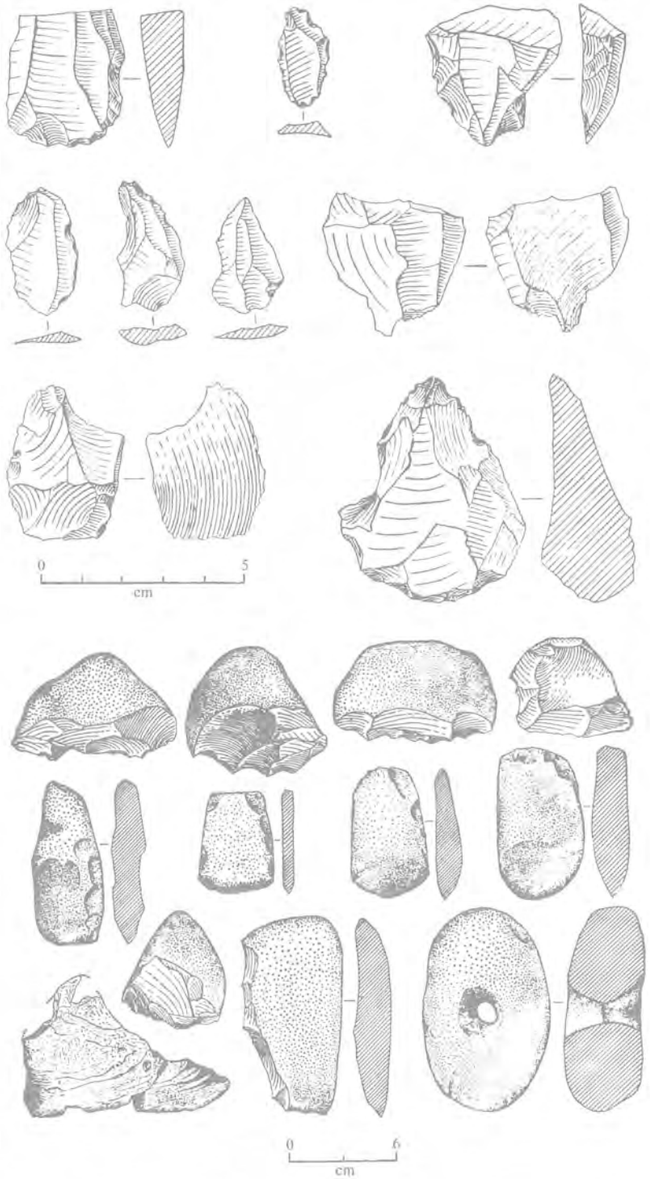
58. Cord-marked potsherds at Hsien-jen-tung. (From *KKHP* 1963, no. 1, pls. 3–4.)

while the majority, twenty-six individuals or 65 percent, were killed between one and two years old. It should be mentioned that the average life of the wild boar is placed at about ten years. No teeth show deep wear, the canines are few, small, and without protruding sockets. All of these are convincing indications that the Tseng-p'i-yen pigs were domesticated.[95]

In view of the large range of cultural debris and the remains of hearths, pottery, and kitchen garbage within the cave, the caves appear to be permanent dwelling-places or home bases for the South Chinese early ceramicists, and they often buried their dead in the kitchen-midden as well. The caves were usually located at the base of small hills, facing slopes or river banks, and were thus accessible to a great variety of economic resources in the wooded hills, on the slopes, and in the rivers and lakes. The remains of all kinds of subtropical mammals, birds, fishes, reptiles, and crustaceans are reflections of the people's range of exploitative activities. In light of the finds of possible digging-stick rings and pestles, utilization or even cultivation of plants is likely, and the likelihood is further reinforced by the Tseng-p'i-yen domesticated pigs. From the Spirit Cave in northwestern Thailand, which was in exactly the same ecosystem as that of South China, Chester Gorman was able to recover, aside from similar stone artifacts and cord-marked pottery, remains of such food plants as the almond (*Prunus*), *Terminalia*,

95. Y. H. Li and T. F. Han, *VP* 16 (1978), 248; Y. H. Li, *VP* 19 (1981), 276–80.

59. Flake implements (*upper*) and pebble implements (*lower*, except lower left, which is a shell knife) from Li-yü-tsui. (From *KK* 1983. no. 9, pp. 771–72.)



betel (*Areca*), bean (*Vicia* or *Phaseolus*), pea (*Pisum*), bottle-gourd (*Lagenaria*), trapa (*Trapa*), pepper tree (*Piper*), butternut (*Madhuca*), Chinese olive (*Canarium*), candle nut (*Aleurites*), and cucumber (*Cucumis*).[96] The application of new recovery technologies (such as flotation) to the Chinese sites will undoubtedly yield similar remains. Most of these plants most likely grew wild in the nearby forests or waterside, but some of these or other plants may have been cultivated.

The Spirit Cave (Thailand) plants are dated by carbon 14 to about 7000 B.C., and that early date again shows up in force in the Hsien-jen-tung and Tseng-p'i-yen radiocarbon samples (fig. 55). The apparent great antiquity of the Southern Chinese cave pottery to this date is faced with much skepticism from leading archaeologists, who believe that radiocarbon samples recovered from a limestone environment must have been somehow contaminated.[97] But an extensive series of experiments with samples collected from a variety of limestone environments by the physicists of the radiocarbon laboratories at both the Institute of Archaeology and Peking University have shown no consistent pattern of deviation from samples collected elsewhere,[98] and the early dating of the Tseng-p'i-yen site is confirmed by the thermoluminescence technique, which has resulted in twelve dates ranging from 7160 ± 930 B.P. to 10,370 ± 870 B.P., approximately the same range as the radiocarbon samples.[99] As of now we must say that Tseng-p'i-yen pottery is the earliest found in China so far. That does not, however, suggest that pottery was "diffused" from South China to North China, even though the earliest pottery yet found from P'ei-li-kang is dated two millennia later. In this age of discovery, especially with regard to the early postglacial, every new find can open up new vistas on the ancient cultural-historical scene, and the game of who-is-earlier or who-gives-who-receives cannot be played for at least another ten years.

The same early age was again detected in samples from an open-air site (fig. 55), Pao-tzu-t'ou in Nan-ning, Kwangsi, which is on a river terrace and has nothing to do with limestone caves. A series of shell-midden sites (including Pao-tzu-t'ou) was found in the 1960s and early 1970s along the Yüng-chiang River, and these sites yielded human burials and artifacts of the same range and similar kinds as those found in the caves. The pottery was also cord-marked; some of it was shell-tempered. Incised lines are again found, generally below the rim and often forming parallel arcs or concentric semicircles. Digging-stick rings have not been

96. *Science* 163 (1969), 671–72.
97. C. M. An, *KK* 1984 (3), 274.
98. *KKHP* 1982 (2), 243–50.
99. W. T. Wang, *KKHCK* 4 (1984), 321–27.

reported, but there are many stone axes, adzes, and pestles.[100] The largest series of open-air sites with early pottery is in the Hsi-chiao-shan area at the delta of the Pearl River south of Canton, but here the cultural tradition was a protracted one and the main part of the occupation is dated to a later period. The sequence undoubtedly has an early phase, possibly dating to the present interval and connecting with the preceramic phases of the Pleistocene, but no chronometric data are yet available for this segment.[101]

100. *KK* 1975 (5), 295–301.
101. S. T. Yang, *KKHP* 1985 (1), 9–32.

3

Regional Neolithic Developments In North China (5000–3000 B.C.)

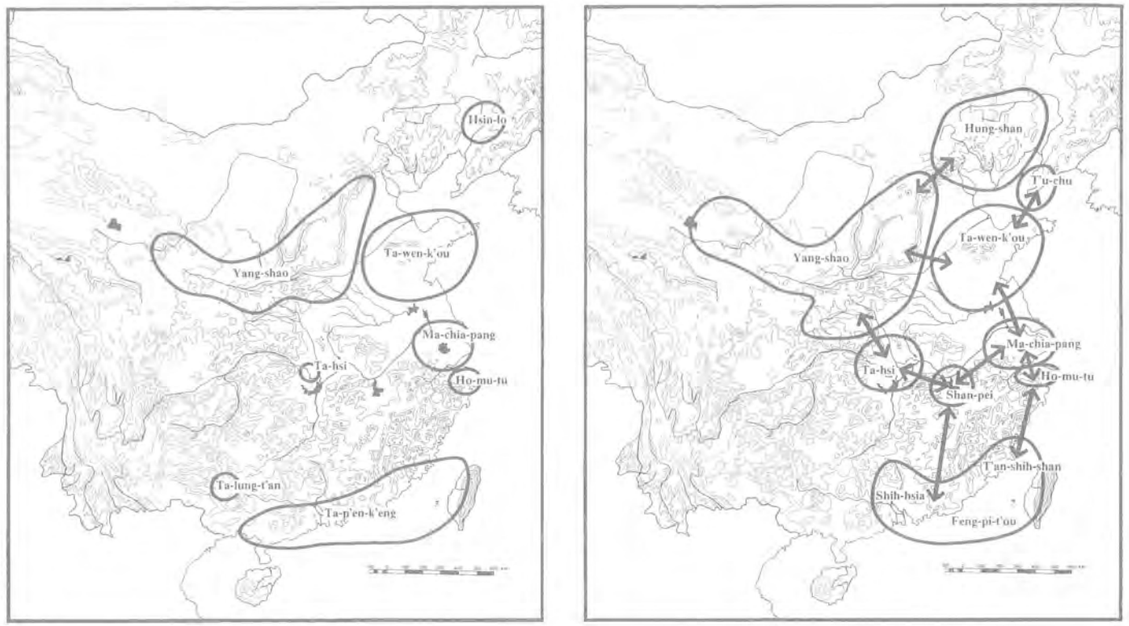
We know of two major Neolithic traditions in China before 5000 B.C.: the P'ei-li-kang and related cultures of the North, and the early cord-marked cultures of the South. By 5000 B.C. a number of clearly recognizable Neolithic cultures had sprung up all over China, in clearly defined regions, and they are all individually distinctive (fig. 60). Since the earlier Neolithic cultures are still known only tentatively and at a preliminary stage, we are not in a position to speculate on the pre-5000 B.C. derivations of all the 5000–3000 B.C. cultures, but certain linkages are unmistakable and others strongly suggested.

The largest and the best known of the next group of Neolithic cultures is the Yang-shao Culture of the middle Yellow River valley in the modern provinces of Shensi, Shansi, southern Hopei, the western half of Honan, the eastern half of Kansu, and the eastern portion of Chinghai. The core of the Yang-shao distribution is identical to the known area of distribution of the P'ei-li-kang and related cultures, and the descent of Yang-shao from the earlier cultures is unmistakable; there is even clear indication that some of the regional phases of Yang-shao directly descended from the regional clusters of the earlier Neolithic.

The second regional Neolithic culture that had taken shape by 5000 B.C. is the Ta-wen-k'ou Culture of Shantung, in the eastern part of North China, separated from the Yang-shao by the wetlands that are now the Yellow River alluvium. The Ta-wen-k'ou sites are found on the low hills and terraces around the Shantung highlands and the seacoasts. As we have seen, this area had a Palaeolithic stratum, but the earliest phase of Ta-wen-k'ou, the Pei-hsin phase, was a member of the P'ei-li-kang horizon. The Ta-wen-k'ou may share, at least in part, its ancestry with the Yang-shao.

North of the Yang-shao and Ta-wen-k'ou spheres we have by 5000 B.C. the Hsin-lo Culture of the lower Liao-ho River valley, which was followed by the Hung-shan and Fu-ho cultures. The Liao-ho valley was a major center of Palaeolithic cultures and the Hsin-lo Culture was undoubtedly a regional development, although important elements of its ceramics can be traced back to the P'ei-li-kang.

In South China the earlier cord-marked pottery cultures may have been ancestral to most of the 5000 B.C. Neolithic regional cultures, but the continuity is not always clear and influence from the North at times seems to have played a part. The most important Neolithic region in terms of subsequent development is the southern Huai River valley and the lower Yangtze valley, the region of the Ma-chia-pang Culture, which share numerous important features with Ta-wen-k'ou. South of Ma-chia-pang is the Ho-mu-tu Culture of northern Chekiang, a very important early rice-farming culture that is still inadequately known. Up the Yangtze valley we encounter the Ta-hsi Culture of western Hupei and eastern



60. Distribution of Neolithic cultures in China at 5000 B.C. (*left*) and at 4000–3000 B.C. (*right*).

Szechwan and, much later, the Ch'ü-chia-ling Culture of eastern and central Hupei. Finally, the southeastern coasts and the inland southwest each had its distinctive Neolithic tradition.

In this chapter I describe the salient features of each of these regional Neolithic cultures in North China and discuss some of the significant issues that have been brought up in the archaeological literature. All the cultures discussed here began during the 5000–3000 B.C. interval, but if they lasted through a later period I follow them to the end.

The Yang-shao Culture of the Middle Yellow River Valley

The Yang-shao Culture, the earliest known Neolithic culture of this area, was discovered in 1920 by the farmers of Yang-shao village, in Mien-ch'ih County, northwestern Honan. Here is J. Gunnar Andersson's account of how the finds from Yang-shao-ts'un came into his hands:

In the autumn of 1920 I had sent my collector Liu Ch'ang-shan to the district west of Loyang in Honan. . . . Liu's principal mission was to collect more of the Tertiary remains of vertebrates, but I had also asked him to keep his eyes open for the possibility of Stone-age discoveries.

Imagine my surprise and delight when on his return in December to Peking Liu unpacked a collection of several hundred axes, knives and other objects of stone, many of them exceptionally fine and well-preserved. The collection was the more remarkable as Liu related that he had purchased everything from the inhabitants of a single village, Yang Shao, where the peasants had collected the coveted objects in their fields.[1]

The next year Andersson and several associates went to visit and excavate Yang-shao-ts'un, bringing to light a Yang-shao Neolithic culture characterized by red pottery painted with black decorative designs as well as by polished stone axes and knives.[2] In the sixty-five years since then, hundreds of sites associated with the Yang-shao have been found, and scores excavated, in a large area of the middle Yellow River basin from central Honan to Kansu and Chinghai, and the culture they represent is now the best-known Neolithic culture in China. Ironically, Yang-shao itself is no longer regarded as a type-site of the culture because its stratigraphy was never really clearly understood and its main cultural component may belong to a post–Yang-shao Neolithic period. But the name stuck.

In the vast area of its distribution the Yang-shao Culture now has to be seen and described in several regional phases, although all the phases share common characteristic features in architecture, stone implements, pottery technology and ornamentation, and general level of societal development as to warrant their overall classification as a single culture.[3] The principal regional phases are (1) the Weishui and lower Fenho River valley phases, (2) the central Honan phases, (3) the northern Honan and southern Hopei phases, and (4) the Kansu and Chinghai phases (fig. 61). Yang-shao Culture sites occur outside these four regions, but these are few in number and their regional affiliations still uncertain.

THE WEISHUI AND LOWER FENHO RIVER VALLEY PHASES

In the core area of Yang-shao Culture archaeology, these phases include the Weishui River basin of Shensi and the eastern end of Kansu to the area of T'ien-shui, the lower Fenho River basin of Shansi approximately south of Wan-ch'üan

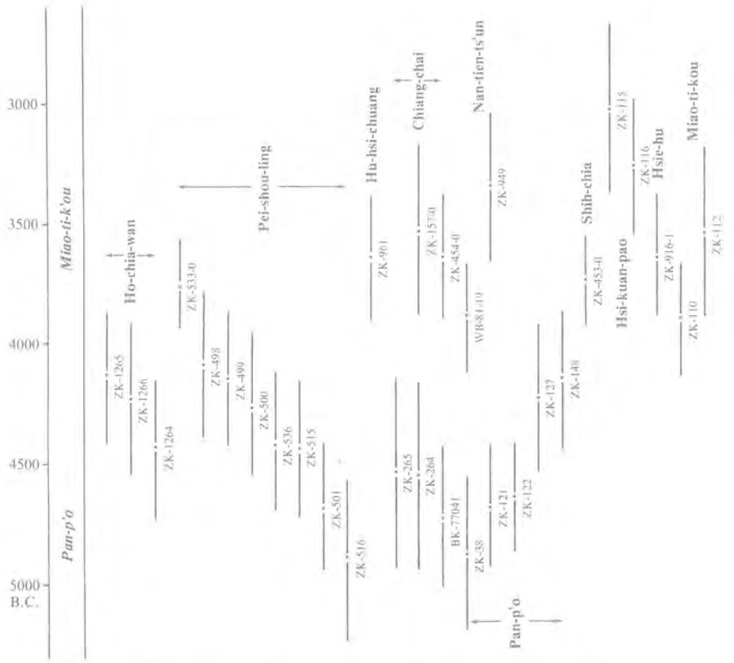
1. *Children of the Yellow Earth*, London: Kegan Paul, Trench, Trübner, 1934, p. 164.
2. J. G. Andersson, *Bull. GSoC* 5 (1923); *BMFEA* 17 (1945).
3. For general discussions of the Yang-shao Culture, see C. F. Yang, *KKHP* 1962 (1), 49–79; C. M. Kung, *SCYC* 1983 (1), 71–90, 59; *Hsin Chung-kuo ti k'ao-ku fa-hsien yü yen-chiu* (Archaeological discoveries and studies in New China), Peking: Wen-wu Press, 1984, pp. 41–68, 105–17.

61. Regional phases of the Yang-shao Culture and location of principal sites.

and Hsia-hsien, and extreme northwestern Honan around the Sanmen Gorge Reservoir area in Shan-hsien. More than a dozen major sites have been excavated and reported in this area, including, from east to west, Ching-ts'un, in Wan-ch'üan,[4] Hsi-yin-ts'un in Hsia-hsien,[5] and Tung-chuang-ts'un and Hsi-wang-ts'un in Jui-ch'eng,[6] all in southwestern Shansi; Miao-ti-kou and San-li-ch'iao in Shan-hsien, in extreme northwestern Honan;[7] Heng-chen-ts'un in Hua-yin,[8] Yuan-chün-miao in Hua-hsien,[9] Shih-chia in Wei-nan,[10] Chiang-chai in Lin-t'ung,[11] Pan-p'o in Sian,[12] and Pei-shou-ling in Pao-chi,[13] all in Shensi; and Ta-ti-wan in Ch'in-an, in eastern Kansu.[14] The culture found at these, and many

4. K. C. Tung, *Shih-ta Yüeh-k'an* 3 (1933), 99–111; C. W. Bishop, *Antiquity* 7 (1933), 389–404.
5. Li Chi, *Hsi-yin-ts'un shih-ch'ien ti yi-ts'un* (Prehistoric remains in Hsi-yin-ts'un), Peking: Tsing-hua University, 1927; S. Y. Liang, *New Stone Age Pottery from the Prehistoric Site at Hsi-yin-ts'un, Shansi,* Memoirs, Am. Anth. Assoc., no. 30 (1930).
6. *KKHP* 1973 (1), 1–62; C. P. Chang, *KK* 1979 (1), 37–44.
7. *Miao-ti-kou yü San-li-ch'iao,* Peking: Science Press, 1959.
8. *KK* 1960 (9), 5–9; *KK* 1977 (4), 247–50, 256; *KKHCK* 4 (1984), 1–39.
9. *Yuan-chün-miao Yang-shao mu-ti* (The Yang-shao cemetery at Yuan-chün-miao), Peking: Wen-wu Press, 1983.
10. *KK* 1978 (1), 41–53; J. L. Chang, *KKYWW* 1980 (2), 90–93; C. P. Chang, *KKHP* 1981 (2), 147–63.
11. *KK* 1973 (3), 135–45; *KK* 1975 (5), 280–84, 263; *WW* 1975 (8), 82–83; *KKYWW* 1980 (3), 1–13; *KKYWW* 1981 (1), 63–71; *KKYWW* 1981 (2), 36–43.
12. *Hsi-an Pan-p'o,* Peking: Wen-wu Press, 1962; KK 1973 (1), 146–48.
13. *KK* 1959 (5), 229–30, 241; 1960 (2), 4–7; 1979 (2), 97–106, 118; *Pao-chi Pei-shou-ling*, Peking: Wen-wu Press, 1983.
14. *WW* 1983 (11), 1–14, 21–30.

62. Radiocarbon profile of the Wei-shui and Fen-ho phases of the Yang-shao Culture.



other, sites had a life-span of approximately two thousand years, from 5000 to 3000 B.C. (fig. 62), and internal changes necessitate some scheme of subdivision into stages. A tripartite subdivision of the Weishui–Lower Fenho Yang-shao Culture phases into an early (Pan-p'o), a middle (Miao-ti-kou), and a late (Late Pan-p'o or Hsi-wang-ts'un) stage or phase is generally agreed upon,[15] but there is considerable dispute as to whether there should be another phase, called Shih-chia, to be inserted between Pan-p'o and Miao-ti-kou[16] or if Shih-chia should be regarded merely as a late substage of Pan-p'o.[17] Whatever the division, the whole of Yang-shao history is well manifested in the deposits of the lengthy occupations

15. W. M. Yen, *KK* 1977 (3), 182–88; *KKYWW* 1980 (1), 64–72; *Hsin-chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, pp. 42–47.
16. C. M. Kung, *SCYC* 1983 (1), 73; J. L. Chang, *KKYWW* 1980 (2).
17. H. P. Liang, *KK* 1979 (3), 260–68; *KK* 1978 (1), 41–53; C. P. Chang, *KKHP* 1981 (2), 147–63.

63. Pottery jar and millet grains from Pan-p'o, Sian, Shensi. (From *Hsi-an Pan-p'o*, 1982, fig. 27.)

at Chiang-chai, Pan-p'o, and Pei-shou-ling, where the cultural change is stratigraphically documented. More on this later.

Most of the Yang-shao sites are ruins of the prehistoric villages that were distributed rather densely on the lower loessic terraces along the banks of the three major rivers of the region—Yellow River, Weishui, and Fenho—or, as in the overwhelming majority of the cases, along the banks of their tributaries. The time period of their occupation was within the climatic optimum of the Northern Chinese postglacial, and the Pan-p'o stage occurred during the warmest and wettest recent interval in the area.[18] The lower terraces as well as the floor of the valley were undoubtedly covered with abundant vegetational growth and were rich in wild game and food and other economic plants. The villagers also had access to the natural resources of the rivers and of the higher terraces and mountains. The faunal remains at the Yang-shao sites give ample indication that many of these animal resources were exploited; the site of Pei-shou-ling, for example, turned up the Chinese bamboo rat, mole rat, macaque, badger, raccoon, fox, brown bear, wild boar, elaphure, musk deer, water deer, another kind of deer (*Capreolus capreolus*), turtles, several fish, snails, and mollusks.[19] At other sites, the leopard, wild horse, rhinoceros, antelope, rabbit, and marmot have also been found. At the Pan-p'o site, seeds of the chestnut, hazelnut, pine, and Chinese hackberry tree were found, indicating that gathering took place in the woods.

The dominant mode of Yang-shao subsistence, however, was undoubtedly agriculture. Carbonized remains of foxtail millet (*Setaria italica*) have been identified at Pan-p'o (fig. 63), and those of broom-corn millet (*Panicum miliaceum*) at Ching-ts'un and Chiang-chai.[20] Remains of cultivating implements include hoes, spades, and possibly digging sticks. Perforated stone disks, possibly weights for digging sticks, have been found in considerable quantity. Other relevant implements are polished stone celts, often oval in cross section and presumably effective tools for field clearance, and polished or chipped rectangular and semilunar stone or pottery knives, which were probably fastened to the hand with string or leather ropes through a hole or around two side notches and were used for cutting, scraping, weeding, and harvesting. Some of the pottery jars found widely in the Yang-shao context were presumably used for storing grains, the remains or impressions of which are sometimes found therein. Some of the harvest must have been prepared and preserved in the form of flour, for grinding stones have also been discovered (fig. 64).

18. *Wei-ho hsia-yu ho-liu ti-mao* (The riverine landforms of the Lower Wei-ho), Peking: Science Press, 1983, pp. 78, 80.
19. *Pao-chi Pei-shou-ling*, p. 146.
20. C. W. Bishop, *Antiquity* 28 (1933); C. H. Huang, *KK* 1982 (4), 419.

64. Stone implements from the Yang-shao Culture site at Pan-p'o, Sian. (From *Hsi-an Pan-p'o*, 1963.)

The most important domesticated animals in this stage were dogs and pigs, whose bones have been unearthed from almost every site. Much less common were cattle[21] and sheep and goats.[22] Hemp was probably cultivated,[23] and silkworms (*Bombyx mori*) were raised. A half-cut cocoon of the latter was found at Hsi-yin-ts'un in southern Shansi.[24] The many stone and pottery spindle whorls

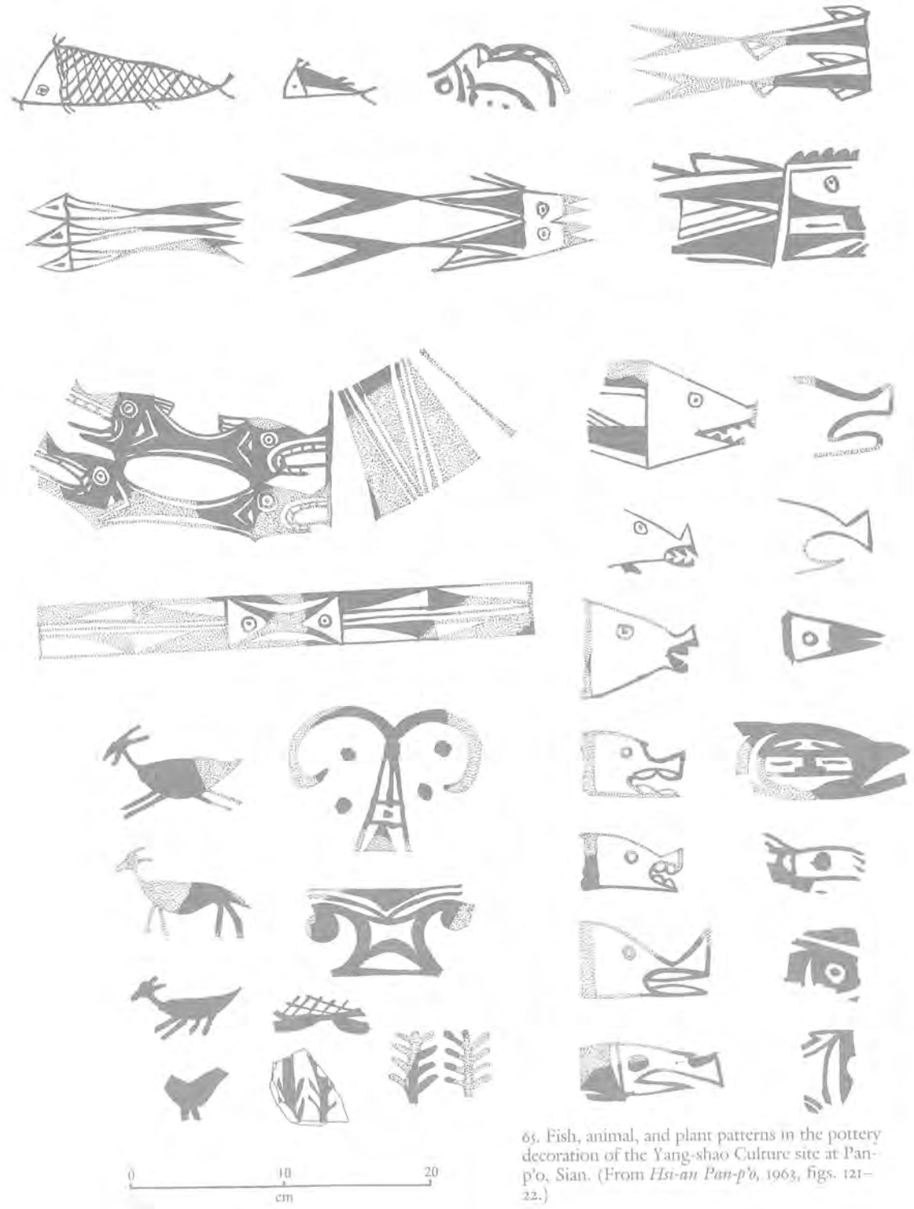
21. *Bos exiguus* Matsumoto was reported from Pei-shou-ling.
22. J. G. Andersson, *BMFEA* 15 (1943), 43.
23. J. G. Andersson, *Bull. GSoC* 5 (1923), 26.
24. Li Chi, *Hsi-yin-ts'un shih-ch'ien ti yi-ts'un*, pp. 22–23.

and eyed bone needles were probably used with hemp, silk, and other fabrics.

Wild grain collecting, hunting, and fishing supplemented the diet. Remains of a kind of foxtail weed (*Setaria lutescens*) were found at Ching-ts'un, and seeds of vegetables were found in a pottery jar at Pan-p'o.[25] Bones of a variety of wild animals were recovered from the middens of the Yang-shao settlements. The hunters must have used bow and arrow and spear, for remains of stone and bone points and arrowheads are numerous. Some roundheaded arrowheads were probably employed for shooting birds. Stone balls have been found occasionally, perhaps slingstones for the hunt. The importance of fishing is indicated by the abundance of bone fish spears, harpoons, and fishhooks as well as grooved pottery and stone net-sinkers, fish designs on pottery, and the bones of fish. The decorative fish motif on pottery is particularly abundant in the Wei River valley sites (fig. 65).

These early cultivators lived in villages. There are several indications that their settlements shifted from one locale to another after a short period of occupancy, that some favorable locales were repeatedly occupied, and that the shifting and repetitive settlement pattern probably resulted from the slash-and-burn technique of cultivation. The deposits of the villages, often very thick, usually consist of multioccupational remains, which seems to indicate that these localities were occupied discontinuously but repetitively. A house at a site near Sian, Shensi, has a succession of three floors, apparently the result of three discontinuous occupations.[26] Furthermore, we find that, in the same general neighborhood, the Yang-shao sites were widely distributed over a vast area, and each component consists of remains that show no marked changes in typology through time. In 1952 and 1953 twenty-one Yang-shao sites were located in the vicinity of Sian, Shensi. The investigators of these sites remarked, "The Yang-shao sites are many and widely distributed. Remains at a single locality are chronologically simple and neighboring localities can easily be given a relative dating on their respective cultural inventories."[27] At Miao-ti-kou, Shan-hsien, Honan, similar phenomena have also been recorded.[28] Finally, the general cultural configuration gives similar indications which, taken together, point convincingly to the conclusion that the pattern of settlements was characterized by shifting and repetitive occupations. As the report of the Pan-p'o excavations has stated, "Regarding cultivation, the Pan-p'o inhabitants may have employed a slash-and-burn technique. After burning, the soil in the field becomes more fertile and easy to till. At the time, there was

25. Bishop, *Antiquity* 28 (1933), 395; *Hsi-an Pan-p'o*, p. 223.
26. Y. H. Chang, *KK* 1961 (11), 601–08.
27. P. C. Su and J. T. Wu, *KKTH* 1956 (2), 37.
28. *KKTH* 1958 (11), 68.



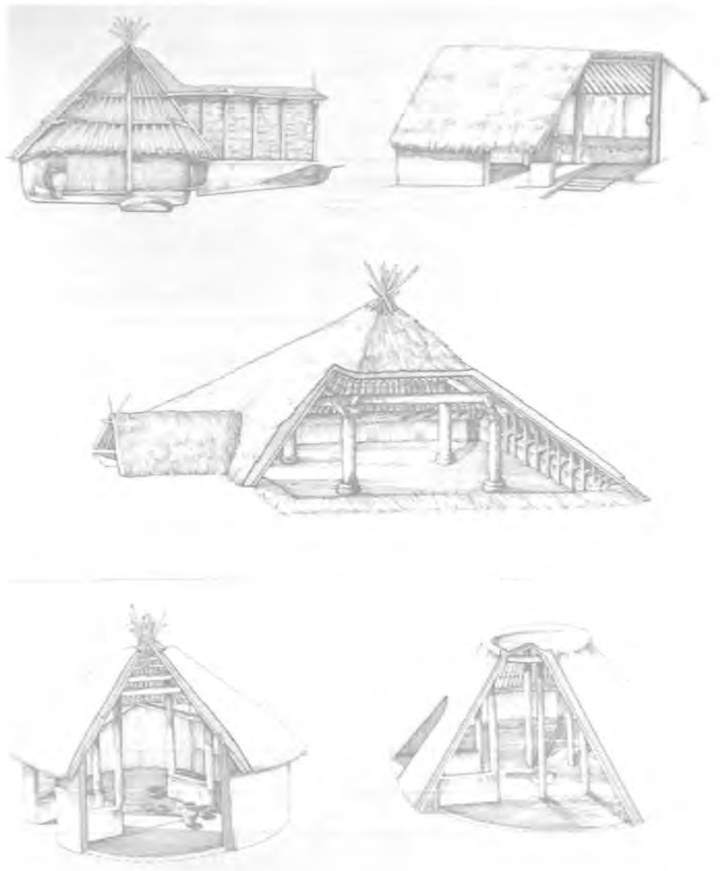
65. Fish, animal, and plant patterns in the pottery decoration of the Yang-shao Culture site at Pan-p'o, Sian. (From *Hsi-an Pan-p'o*, 1963, figs. 121–22.)

a great amount of land relative to the sparse population, permitting patches of field over wide areas to be fallowed and used in rotation."[29]

The villages supported by agriculture at this level were moderate in size; the best excavated sites at Pan-p'o, Chiang-chai, and Pei-shou-ling were each about 50,000–60,000 square meters in area. Their physical layouts are also well known and identical. The Pan-p'o site is on a river terrace about 800 meters east of the river Ch'an, a tributary of the Wei River, and about 9 meters above the riverbed. The area of the settlement is estimated at about 50,000 square meters, and its shape is an irregular oval with the long axis oriented north-south. The houses (46 of which were excavated) and most of the storage pits and animal pens are clustered at the center of the site in an area of about 30,000 square meters outlined by a ditch 5 or 6 meters deep and wide. The village cemetery is in the northern part of the village, outside the ditched dwelling area, and pottery kilns are concentrated in the eastern portion. Within the dwelling area, houses of fairly permanent nature were constructed. The most common kinds were 3 to 5 meters in diameter and were square, oblong, or round, with plastered floors. They were semisubterranean or at ground level, had wattle-and-daub wall foundations, and upper walls and roofs were supported by large and small wooden posts (fig. 66). During a later occupation, a huge longhouse was constructed (over 20 meters long and 12.5 meters wide). It was divided into compartments by partition walls. During this stage the communal house was at the center of the village plaza, with the small houses surrounding the plaza, their doors facing the center. Each house and each compartment of the longhouse was equipped with a hearth (a burned surface in the earlier occupations and a gourd-shaped pit in the later occupations). The pottery-making center, east of the dwelling area, had no fewer than six kilns (fig. 67), in one of which were found some unfired pots. North of the dwelling area was the village cemetery, in which were found more than 130 adult burials—single, with the exception of one double and one quadruple burial—the skeletons lying face upward and stretched out. Infants and children were buried in urns between the dwellings.

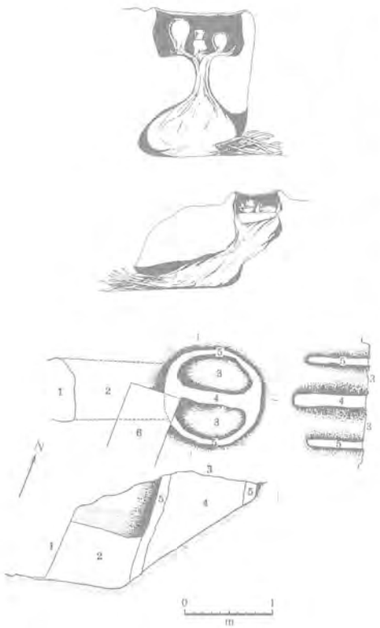
Chiang-chai—another Yang-shao site only 15 kilometers east of Pan-p'o, in Lin-t'ung County—excavated in 1972–79, is providing the best layout yet of a Yang-shao village. The village again consisted of three components: dwelling area, cemetery, and kilns (fig. 68). The dwelling area, composed of more than a hundred houses (associated with over two hundred hearths and over three hundred storage pits) and a central plaza (about 4,000 square meters, with a depressed center), was separated from the burial areas to the east and south by

29. *Hsi-an Pan-p'o*, p. 224.



66. Reconstructed house types at the Yang-shao Culture site at Pan-p'o. (From *Hsi-an Pan-p'o*, 1963.)

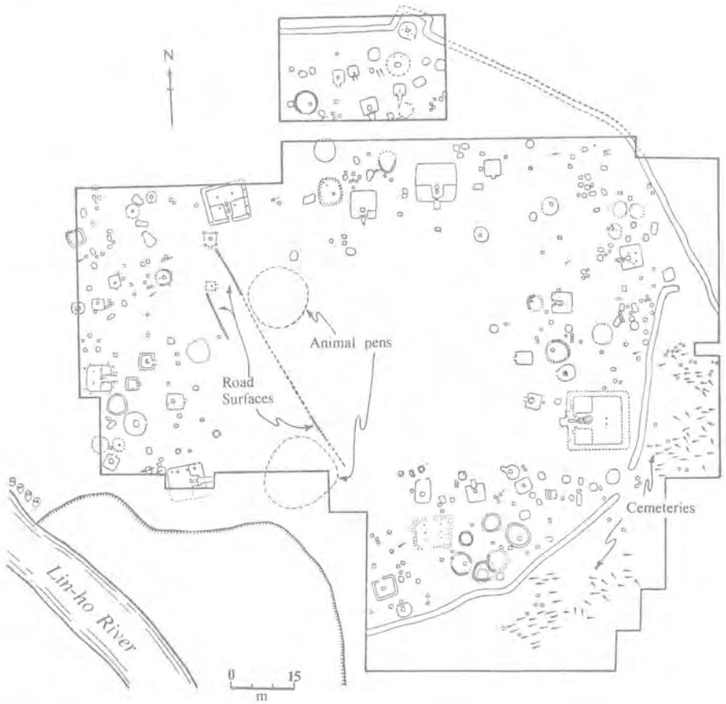
segments of ditches, which were probably joined by palisade-style fences. The kilns were in a separate area in the southwest. The houses clustered in five groups arranged around the plaza (fig. 69), each group headed by a large house, with the entrances of all the houses facing the plaza, and the burials were grouped in three discrete sections. The houses are similar to those at Pan-p'o: they were round or square, semisubterranean, with wattle-and-daub walls and thatched roof. The



67. Pottery kilns at Pan-p'o (*above*) and Chiang-chai, Lin-t'ung, Shensi (*below*). (At right, *1*: kiln door; *2*: fire chamber; *3*: platform in chamber; *4*: middle fire channel; *5*: circular fire channel; *6*: a modern burial). (*Left* from *Hsi-an Pan-p'o*, 1963, fig. 118; *right* from *KK* 1973, no. 3, p. 135.)

largest house (fig. 70), 11.70 by 10.55 meters, was rectangular and built upon unlevel ground. The eastern part of the floor was dug into the ground, but the western part had to be built on elevated pavings. Both the walls and the floor were hardened by fire. The entrance had a threshold and a ramp leading inside. At about a meter from the entrance was a small square pit, next to which was a small square platform with a depressed top. Further inside was a hearth. Two clay platforms (perhaps beds) were constructed at the two sides inside the entrance, about 9 centimeters tall and hardened by fire.

The village layout at Pei-shou-ling is not as completely known as Pan-p'o or Chiang-chai, since it has not been as fully excavated. But we know enough to see that a dwelling area is in the north and a cemetery is in the south, and that the houses in the dwelling area again faced a central plaza.



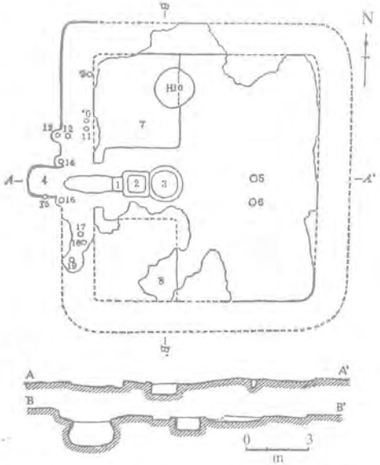
68. Layout of the Yang-shao Culture village at Chiang-chai. (From *Hsin Chung-kuo ti K'ao-ku fa-hsien ho yen-chiu*, 1984, fig. 15.)

69. Reconstruction of the Chiang-chai village. (From Shih Hsing-pang, *Pan-p'o shih-tsu kung-she*, 1979, fig. 2.)

The planned layout, with houses arranged somewhat in a circle facing a central plaza, and the segmentation of the houses suggest strongly that the inhabitants of these villages were organized according to membership in unilinear groups of kin or clans and lineages.[30] This is the first indication of the celebrated Chinese clan and lineage institutions. Such a social organization—or indications of it—was quite common in Neolithic societies everywhere, but in the case of the Chinese it is noted for its persistence into later stages of history and its expanded roles in a state form of society, as I will explain later. At these Neolithic villages, the clan or lineage type of social organization is further suggested by the layouts of the cemeteries.

The burial customs varied quite a bit: some burials are singular, others multiple, and some are primary, others secondary. Some of the secondary burials show the proper skeletal arrangement (fig. 71), but in others the bones were placed in piles of some order (fig. 72). Children were placed in burial urns and buried amidst the dwelling houses in some villages but in the cemetery in other villages. All the adult dead were buried (heads west in most cases) in rectangular earthen pits, mostly stretched out and lying face-up but sometimes flexed. Grave furnishings consisted mostly of pottery vessels, but often they included bone ornaments and stone implements. There is some variation in the amount of furnishings, but the range is not terribly large. Often in a cemetery, however, a single individual stood out as particularly richly furnished. One example is Tomb no. 7 at Chiang-chai (fig. 73), which contains 8,577 bone beads, 12 stone beads, and several red pottery vessels. Another example is Tomb no. 152 at Pan-p'o. While it was the tomb of a child of three or four, it was nevertheless a plank-lined earthen pit

30. K. C. Chang, *Am. Anthropologist* 60 (1958), 298–334.



70. House floor F-1 at Chiang-chai. (*1*: small square pit; *2*: platform with concave top; *3*: hearth; *4*: doorway; *5, 6*: postholes; *7, 8*: platforms; *9–19*: postholes). (From *KK* 1975, no. 5, p. 281.)

71. Part of the Yang-shao Culture cemetery at Yuan-chün-miao, in Hua-hsien, Shensi. (From *Yuan-chün-miao Yang-shao mu-ti*, 1983, Pl. 5.)

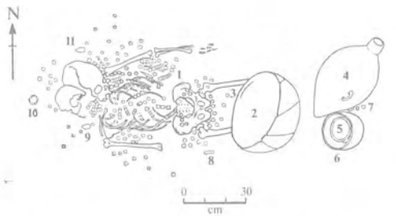
furnished richly with 79 pieces of pottery and stone artifacts as well as large quantities of millet grains. Other anomalies occasionally occur in these earthen pits. Some had a "second-level ledge," namely, a ledge around the sides formed by the excavation of a small pit (at the bottom of which the body was placed) at the bottom of a larger pit (fig. 74). Some of the pits were filled with boulders (fig. 75), and some were filled with burned clay fragments. Impressions of mats were often detected around the body, which was probably wrapped with mattings, and some pits contained impressions of planks, barks, or boughs. In a few cases, parts of the foot bones or limb bones were removed and placed in an urn. In the case of the multiple burials, the pits were sometimes larger, or, as at Heng-chen, a large pit at the bottom of which several smaller pits were excavated, each containing several skeletons (fig. 76). At some sites (for example, Pan-p'o, Pei-shou-ling), the multiple burials were those of dead persons of similar ages and, as well as could be determined, of the same sex, but at other sites (for example, Yuan-chün-miao) the many bodies in the same pit were of different ages and sexes. These variations must be accounted for by the differing relationships of the persons buried together, although several possible explanations could be offered. At the Yuan-chün-miao site, the fifty-seven graves (most of them secondary multiple burials) were arranged in six north-south rows, the earliest being the first and fourth rows and the latest the third and sixth rows (fig. 77). This layout and chronological

72. Secondary burials at the Yang-shao Culture cemetery at Shih-chia, Wei-nan, Shensi. (From *KK* 1978, no. 1, pl. 12.)

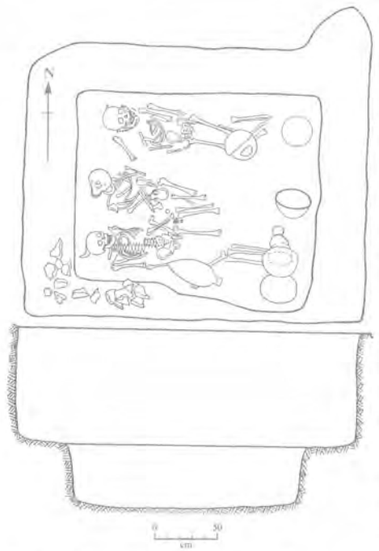
order have led to the reasonable speculation that the cemetery was divided into two moieties, reflecting the two-clan composition of the village.

It should be mentioned that the mortality table shown by some of these cemeteries does not suggest an easy life for the villagers. At Yuan-chün-miao, 37 of the dead or almost 19 percent were children under fifteen, and 106 or some 54 percent died between the ages of twenty and forty. At Chiang-chai, 20 or 50 percent of the dead died between twenty and fifty years of age. The estimated stature of the adult male at four cemeteries all comes to be just under 170 centimeters on the average (fig. 78).

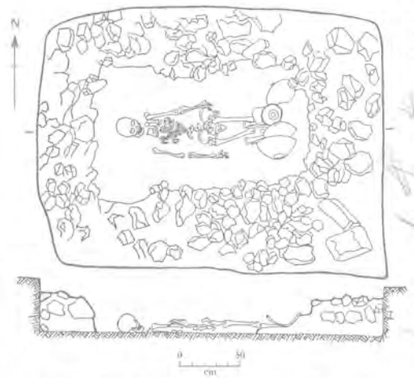
Turning to the Yang-shao farmers' technological achievements, we have considerable data on their ceramics and on their stone, bone, and antler industries. Stone implements were polished, pecked, and chipped. The most frequently found types are axes and adzes, with cylindrical bodies or an oval or lentoid cross section, used for felling trees and for carpentry; hoes and spades, with flat bodies



73. Burial no. 7 at Chiang-chai. (*1*: Bone beads; *2, 3*: pottery bowls; *4*: pointed-bottomed jar; *5, 6*: pots; *7*: stone bead; *8*: bone tube; *9*: pottery file; *10*: stone scraper; *11*: jade pendant.) (From *KK* 1973, no. 3, p. 139.)



74. Burial no. 457 at Yuan-chün-miao. (From *Yuan-chün-miao Yang-shao mu-ti*, 1983, p. 17.)



75. Burial no. 458 at Yuan-chün-miao. (From *Yuan-chün-miao Yang-shao mu-ti*, 1983, fig. 8.)

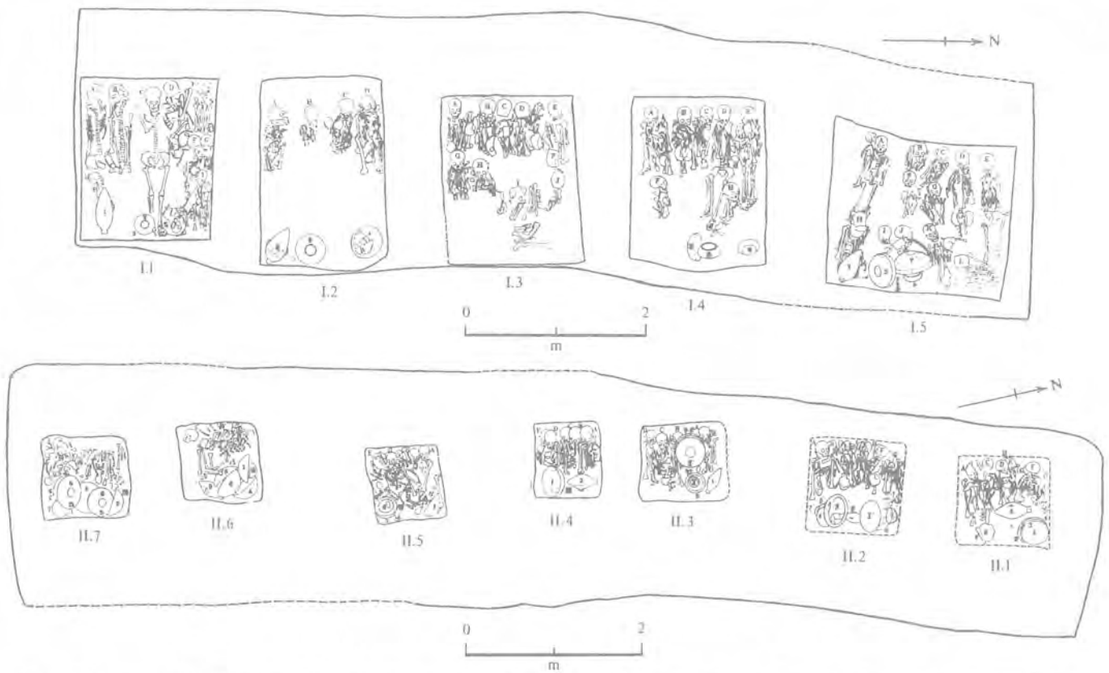
and often with a hafting portion, for cultivation; chisels for carpentry and possibly woodcarving; rectangular knives, with central holes or two side notches, for weeding, harvesting, skinning, and scraping; and arrowheads. Other stone artifacts are net-sinkers, mealing, grinding, and polishing stones, spindle whorls, and so on. Ornaments such as rings and beads were often made of semiprecious stones, including jade. Bone and antler were used for implements—needles, awls, fishhooks, arrowheads, spearheads, chisels, hoes, points, polishers, and beads (fig. 79)—and for ornaments (fig. 80).

Their pottery was handmade and molded, and indications of coiling techniques were observed at many sites. A turntable may have been used for finishing the rim. Pottery-making implements recovered include bone scrapers, stone polishers, paint-grinding stones, and paint containers. Natural red ochre served as the pigment for dark red and brown designs. Kilns were discovered at many settlements. Several classes of pottery were made for various purposes. For drinking water there were red or gray-brown, thick-walled, pointed-bottomed pots, containing a noticeable amount of sand or mica temper and decorated with thick and thin cord, mat and basket impressions. The tripods with solid legs (*ting*) were cooking utensils. For storage, coarse or fine red and gray pottery in the form of thin-necked, big-bellied jars were manufactured (fig. 81). Red and gray cups and canteens of a variety of pastes were made for drinking (fig. 82); and beautifully polished red and black designs were made of fine paste for use at meals or for rituals (fig. 83). In addition to these receptacles, spindle whorls, knives, sling balls, and net-sinkers were also made of baked clay. The prevalence of cord, mat, and basket-impressed decorations on pottery suggests a high level of development of fabric and basket technology, and a variety of basketry techniques is discerned from the remains at Pan-p'o (fig. 84).

At several Yang-shao sites, Pan-p'o and Chiang-chai among them, some of the pottery vessels had an incised sign or symbol on them (fig. 85), often on the black band near the rim of bowls. They all occurred singly, perhaps marking the makers of the pottery, or possibly the owners. Li Hsiao-ting and Kuo Mo-jo have convincingly shown that some of these signs are comparable with some numerals and clan emblems of the Shang.[31] There is not yet evidence to claim that the Yang-shao people had any writing system, but it may be said that the Yang-shao pottery signs were probably one of the sources of the historical writing system of North China.

Compared with the other regions, the pottery of this region was characterized throughout by the bowls, basins, flat-based urns, narrow-necked jars, and point-

31. H. T. Li, *J. Nanyang Univ.* (Singapore), 3 (1969), 1–28; M. J. Kuo, *KKHP* 1972 (1), 1–13.



76. Burial pits 1 and 2 at Heng-chen-ts'un, in Hua-yin, Shensi. (From *KKHCK* 4, 1984, p. 6.)

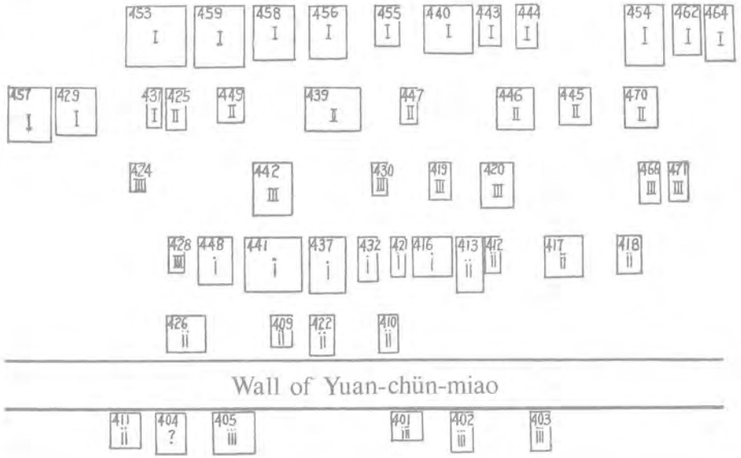
ed-based water jars. The three stages in the developmental history of Yang-shao in this area are marked by different manifestations in formal types and in decorations (figs. 86–89).

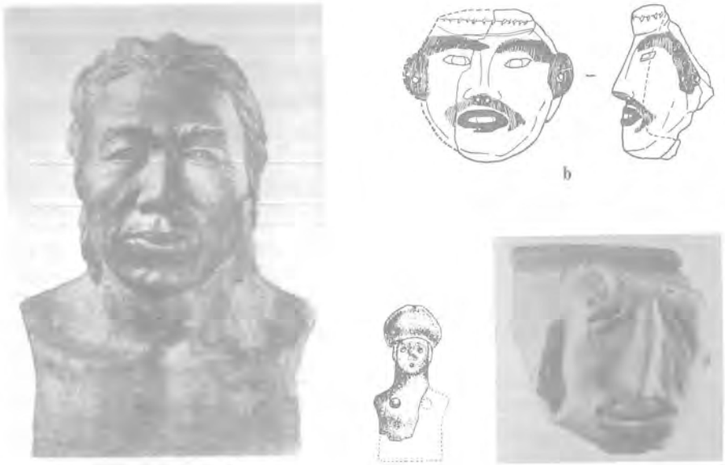
CENTRAL HONAN

The Central Honan phases of Yang-shao Culture are found in the western half of Honan (fig. 90), represented by some forty sites, the best-known being those at Wang-wan in Lo-yang,[32] at Ch'in-wang-chai in Hsing-yang,[33] and Ta-ho-ts'un in Cheng-chou.[34] Because of the latter two sites, the dominant phase is variously referred to as Ch'in-wang-chai[35] or Ta-ho-ts'un.[36] The phase falls within the P'ei-

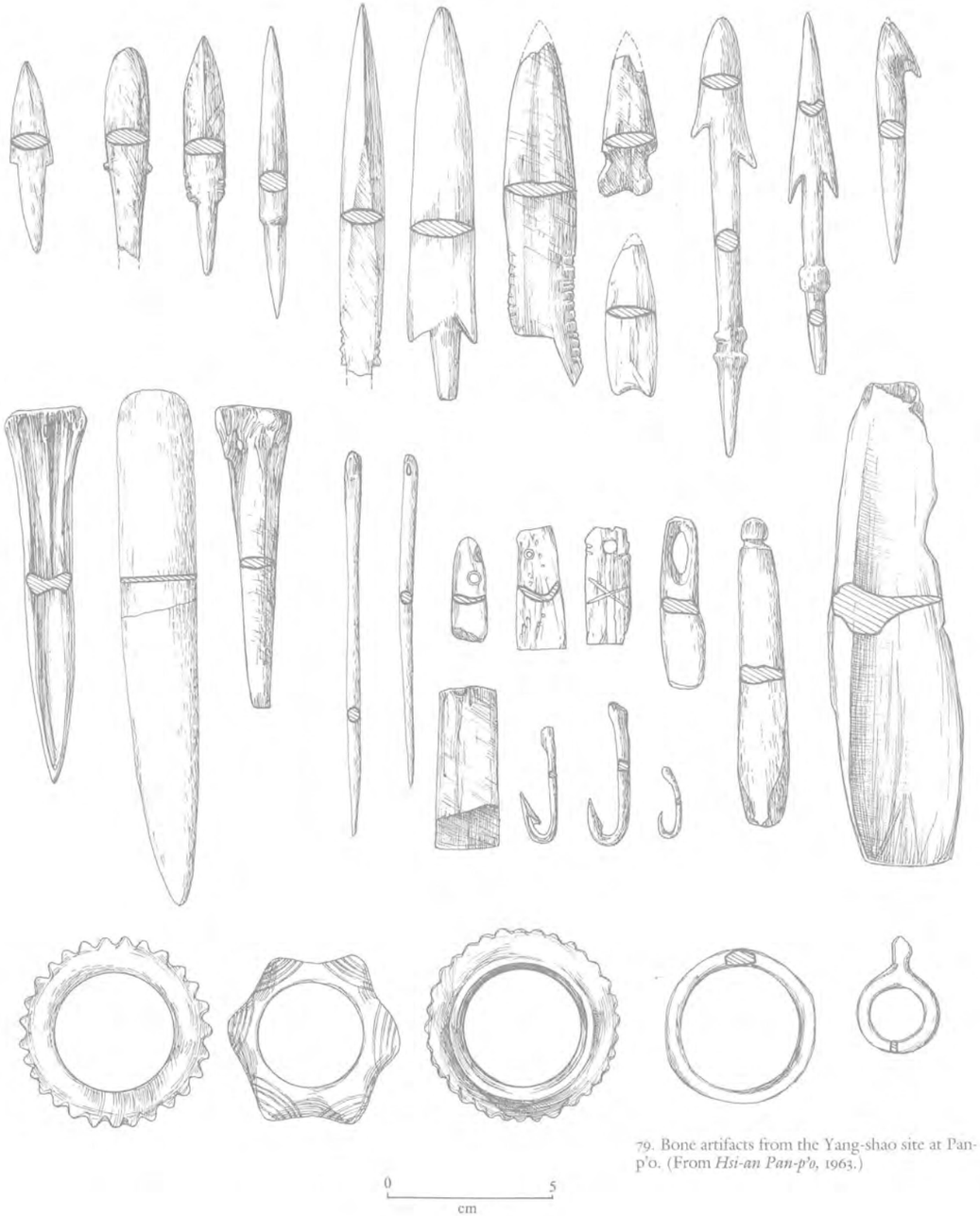
32. *KK* 1961 (4), 175–76.
33. T. J. Arne, *Painted Stone Age Pottery from the Province of Honan*, Palaeontologia Sinica, ser. D, 1, pt. 2, 1925; J. G. Andersson, *BMFEA* 19 (1947), 109–24; N. Hsia, *KHTP* 2 (1951), 724–29; C. T. Li, *CYWW* 1981 (3), 1–3.
34. *KK* 1973 (6), 330–36.
35. C. M. Kung, *SCYC* 1983 (1), 79.
36. C. H. Cheng, *CKHNL* 3 (1984), 50–58; *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, pp. 47–49.

77. Layout of the tombs in the Yuan-chün-miao cemetery. (From *Yuan-chün-miao Yang-shao mu-ti*, 1983, fig. 6.)

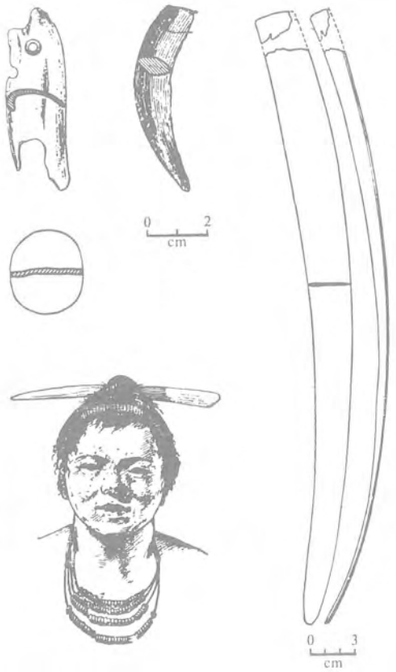




78. Human faces in the Yang-shao Culture. (*a*: Reconstruction of a male bust based on Tomb no. 72 at Pan-p'o; *b-d*, clay human figures, *b* from Pei-shou-ling, Pao-chi, *c* from Teng-chia-chuang, Lin-t'ung, *d* from Chiang-hsi-ts'un, Fu-feng.) (*a* from *Hsi-an Pan-p'o*, 1963, pl. 193; *b* from *Pao-chi Pei-shou-ling*, 1983, p. 75; *c* from *KKYWW* 1982, no. 1, p. 6; *d* from *KK* 1959, no. 11, pl. 8:1.)



79. Bone artifacts from the Yang-shao site at Pan-p'o. (From *Hsi-an Pan-p'o*, 1963.)



80. Shell, tooth, and bone ornaments and probable use of bone pin as woman's headdress. (From *Yuan-chün-miao Yang-shao mu-ti*, 1983, p. 42.)

li-kang cluster of 6500–5000 B.C., but both radiocarbon chronology (fig. 91) and typology of this phase cannot connect it up with the earlier culture, leaving a gap yet to be filled, a gap that corresponds to the early or Pan-p'o stage in the previous region. The radiocarbon dates of the site of Shuang-miao-kou in Teng-feng (fig. 91), a site referred to as "early Yang-shao" in the radiocarbon sample report but not yet described in the archaeological literature, suggest that a Yang-shao Culture phase comparable to Pan-p'o may yet turn up here, but as of now the Ta-ho-ts'un phase appears to correspond to the middle and late stages of the Weishui Yang-shao.

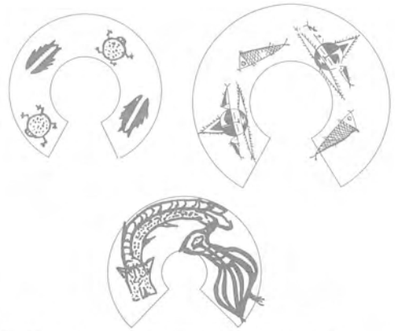
Many features found at Ta-ho-ts'un are characteristic of the Central Honan phase as a whole. The site was located on an alluvial terrace on the southern bank of the Yellow River, now about 7.5 kilometers south of the river. Remains were scattered in an area about 300,000 square meters, about 1,500 square meters of which was excavated from 1972 to 1975 in seven seasons. Although only a small part of the site has been uncovered, the archaeologists brought to light 22 house floors, 101 storage pits, and 106 burials (including 62 urn burials), densely packed (fig. 92). Some of the house floors and parts of the walls were well preserved (fig. 93), and a compound of four rooms (F17–20) was uncovered, in two of whose rooms utensils and implements were left in place, furnishing rare data on the daily

81. Utilitarian pottery vessels at Pan-p'o. (From Shih Hsing-pang, *Pan-p'o shih-tsu kung-she*, 1979, fig. 14.)

82. Painted pottery vessels at Pan-p'o. (From Shih Hsing-pang, *Pan-p'o shih-tsu kung-she*, 1979, fig. 11.)

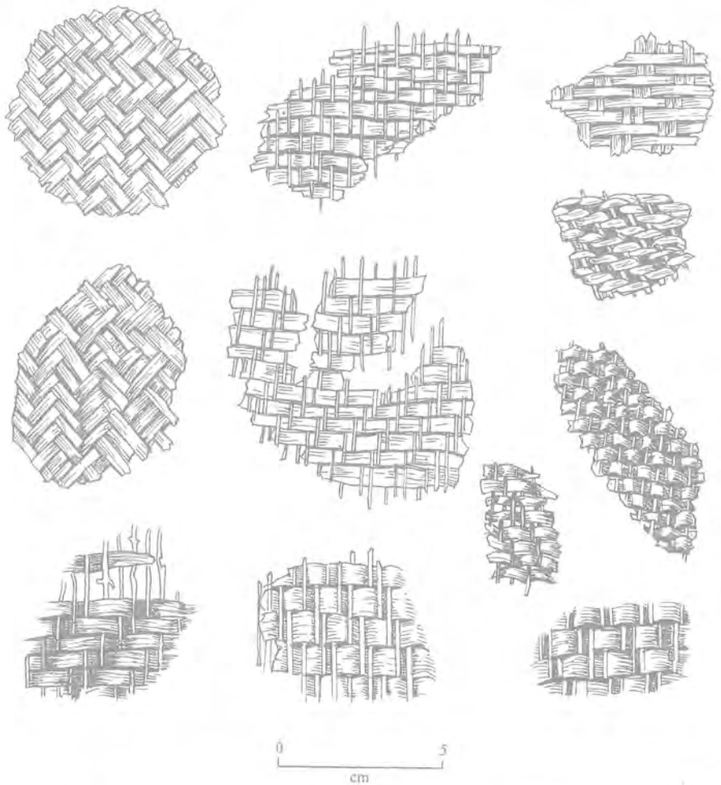
activities of the inhabitants of a Yang-shao village (figs. 94–95). On the basis of these remains, the process of house construction has been reconstructed as follows:

1. The floor was paved, first with one or two layers of sand and clay tempered with straw, each layer 10–15 centimeters thick, and then with a layer of sandy clay (15–20 millimeters). The area of the paving extended some 50 centimeters beyond the intended walls.
2. Along the lines of the walls timber posts (8–12 centimeters in diameter) were



83. Three decorative designs of the Yang-shao Culture. (*Left*: Chiang-chai; *right*: Pan-p'o; *below*: Pei-shou-ling). (*Left* from *KK* 1973, no. 3, p. 141; *right* from *Hsi-an Pan-p'o*, 1963, fig. 128; *below* from *Pao-chi Pei-shou-ling*, 1983, p. 105.)

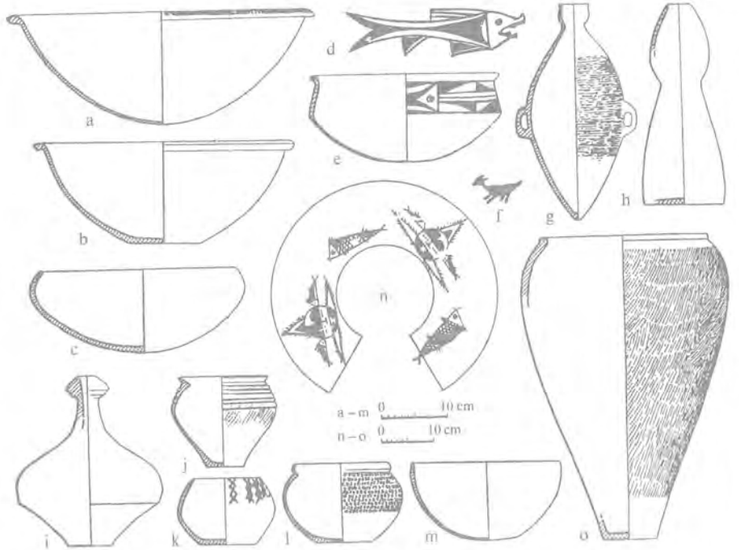
84. Types of basketry at Pan-p'o, reconstructed from impressions on pottery. (From *Hsi-an Pan-p'o*, 1963, fig. 119.)



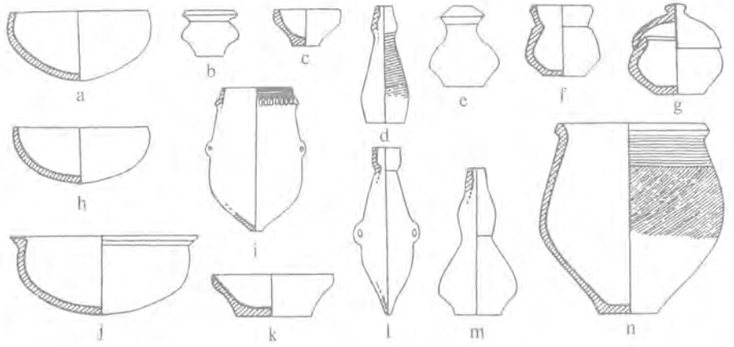
85. Incised symbols on Yang-shao pottery. (*1*: from Pan-p'o; *2*: from Chiang-chai). (From *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, fig. 18.)

planted between 8 and 30 centimeters apart. Horizontal rows of wooden rods were then tied to the posts about 10 centimeters apart. Bundles of reeds were bound to the rods between posts set at a greater distance apart.

3. Wattle-and-daub was then plastered on both sides of the wooden skeletons of the walls to a thickness of 15–20 centimeters.
4. The floors inside were then plastered with very sandy clay. One to three layers, each 1.5–4 centimeters, were applied. The last layer was then extended upward at the corners to cover the walls. Earthen tables on the floor were constructed at this time, and so were the fire walls and the clay-plastered wooden posts placed inside the rooms.

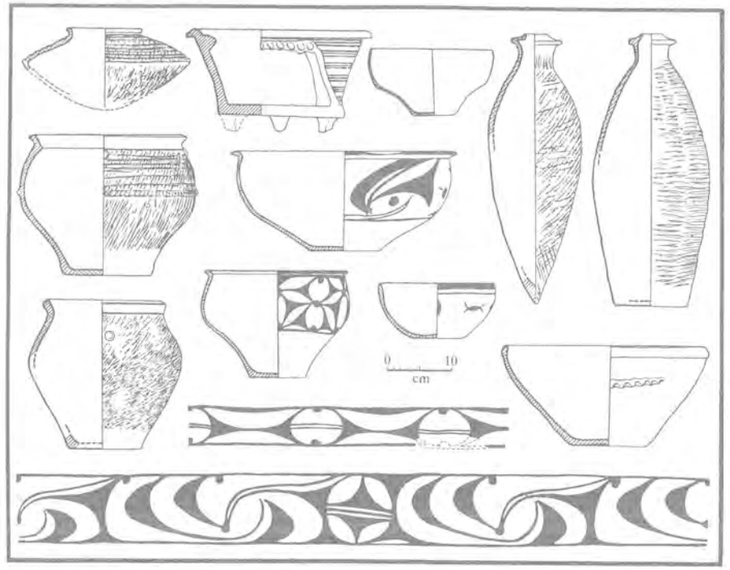


86. Pottery types of the Pan-p'o phase of Yang-shao Culture. (From *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, fig. 12.)



87. Pottery types of the Shih-chia phase of Yang-shao Culture. (*j–l*, from Chiang-chai, the rest from Shih-chia.) (From *SCYC* 1983, no. 1, p. 74.)

88. Pottery types of the Miao-ti-kou phase of Yang-shao Culture. (From *Hsin Chung-kuo k'ao-ku fa-hsien ho yen-chiu*, 1984, p. 45.)



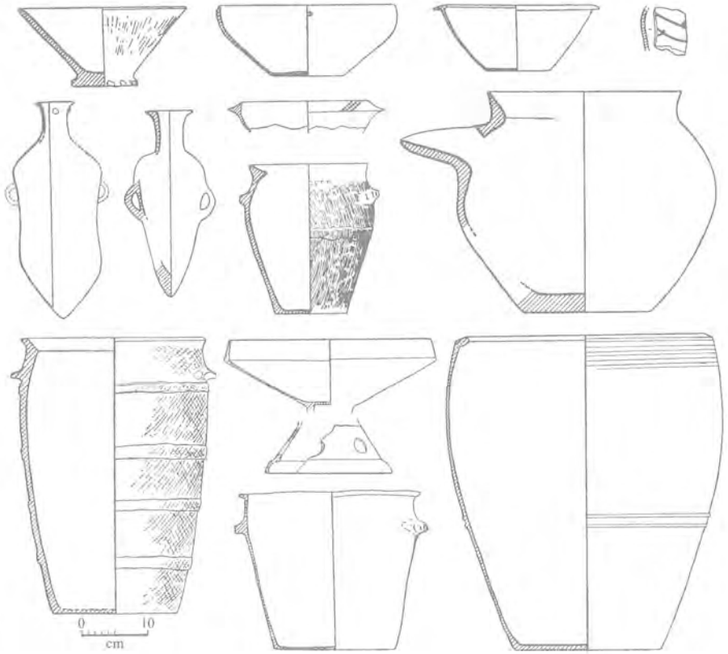
5. The roof was constructed of wooden beams and rafters, and wattles-and-daub and thatched straw.
6. Finally, the floors and walls were baked (by burning wood piled inside and out) to brick-like coloration and hardness.[37]

In the house compounds were found utensils for daily living, cooking wares, implements such as axes, adzes, spindle whorls, awls, and grinding stones, and a jar of carbonized grains.[38] It appears that many living activities took place within these houses.

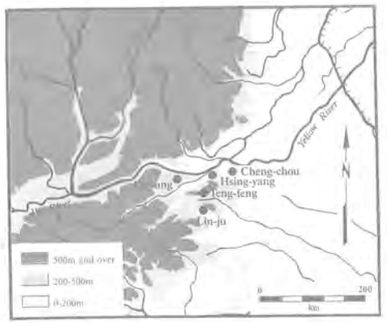
The Ta-ho-ts'un pottery has many distinctions. Red pottery predominated in the earlier stages, while gray and brown wares increased later. Wheel-made pottery began toward the end. Some characteristic shapes are urns with wide shoulders, solid-foot tripods (*ting*), and, for the first time, shallow bowls on stands (*tou*) (fig. 96). White slip is widely used, and the painted designs were often applied with black and brown pigments. Some designs are found only in this region: the sun, the solar halo, stars, the moon, network, S-design, X-design, and so forth (fig. 97). A particularly remarkable design, found on a large burial urn, consists of a cormorant, with a fish hanging on its beak, and a stone ax fastened onto a solid handle with an *X* painted on it (fig. 98). Found at the site of Yen-ts'un, in Lin-ju,[39] this painted design is datable to level 3 of Ta-ho-ts'un and is generally regarded to have ritual significance.[40] The use of painted and fancy-looking urns for burial is also distinctive of this area (fig. 99).

In addition to urn burials, there are also pit graves, all single, few of them

37. *KKHP* 1979 (3), 322–24.
38. The carbonized grains were identified as sorghum, or *kaoliang*, by Li Pan of the Cytology Laboratory of the Institute of Genetics of the Chinese Academy of Sciences; see *KKHP* 1979 (3), 372–73. This identification is disputed by An Chih-min, *WW* 1981 (11), 68–71, who cited a spodogrammic study of the grains in question, showing that they were not sorghums. Rice impressions on clay have been reported at the Hsi-kao-yai site in Lo-yang; see *WW* 1981 (7), 42.

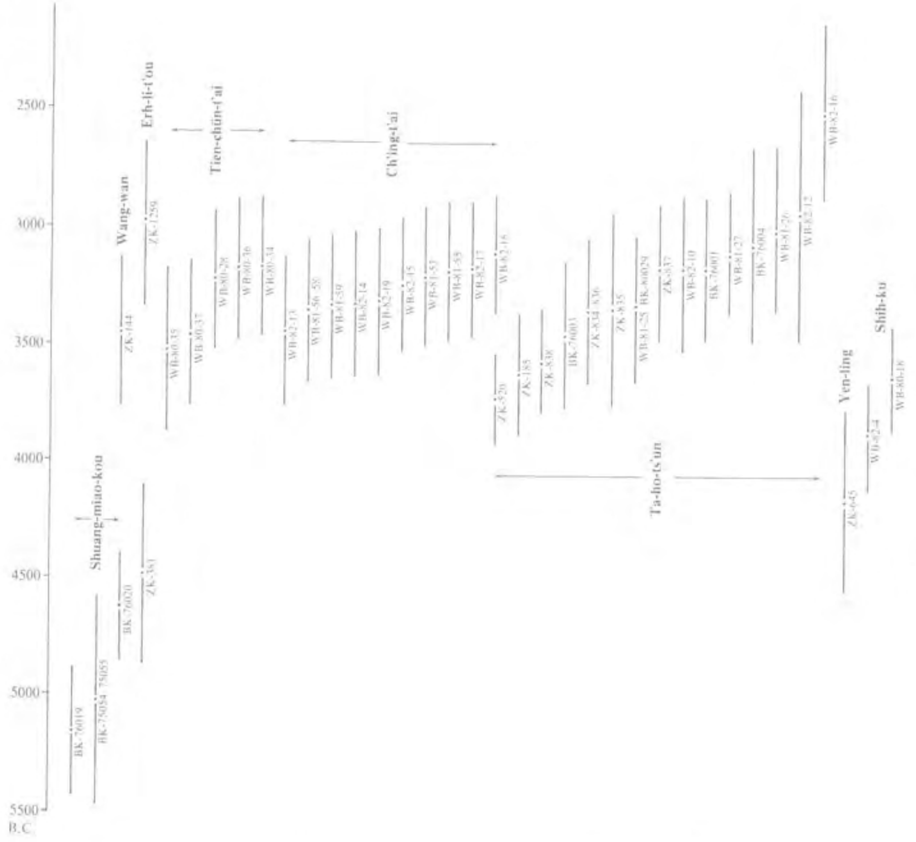


89. Pottery types of the Hsi-wang-ts'un (or Late Pan-p'o) phase of Yang-shao Culture. (From *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, p. 44).



90. Major sites of the Central Honan phase of the Yang-shao Culture.

39. *CYWW* 1981 (1), 3–6.
40. C. H. Cheng, *CYWW* 1982 (2), 48–51; Y. C. Fan, *CYWW* 1983 (3), 8–10.



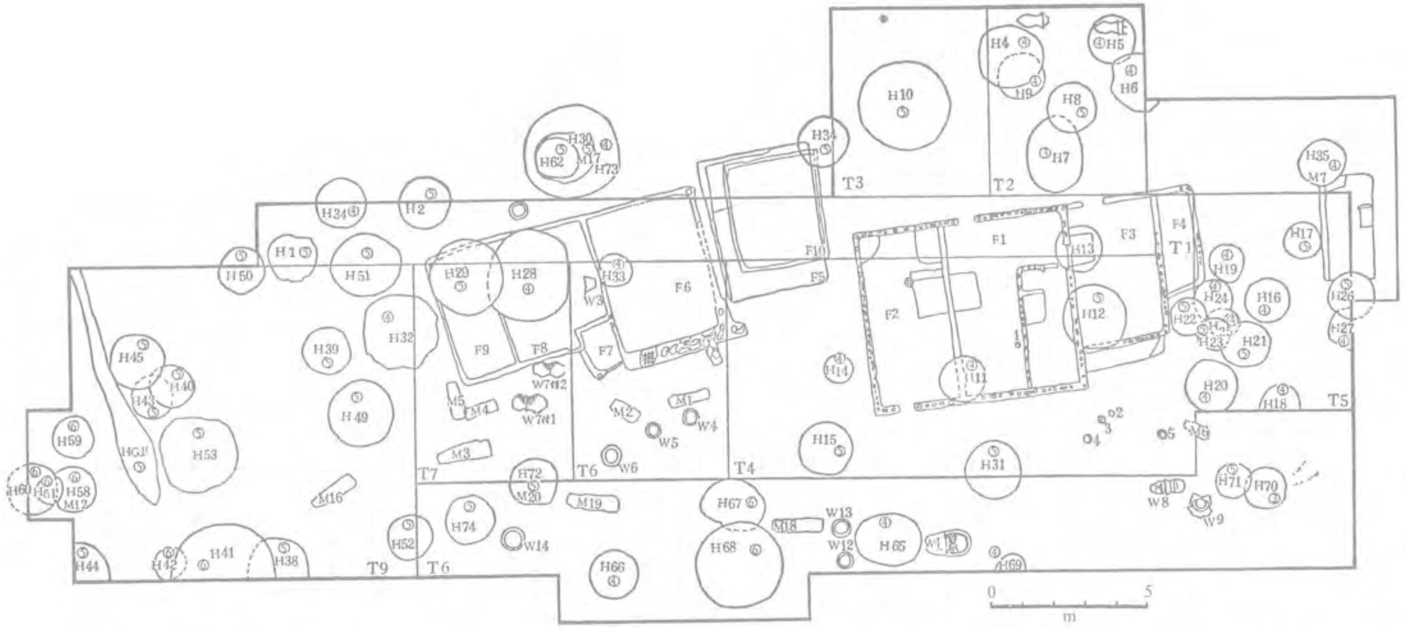
91. Radiocarbon profile of the Central Honan phase of the Yang-shao Culture.

furnished, with utensils and tools. The pit graves were arranged parallel to one another in the cemetery.

NORTHERN HONAN AND SOUTHERN HOPEI

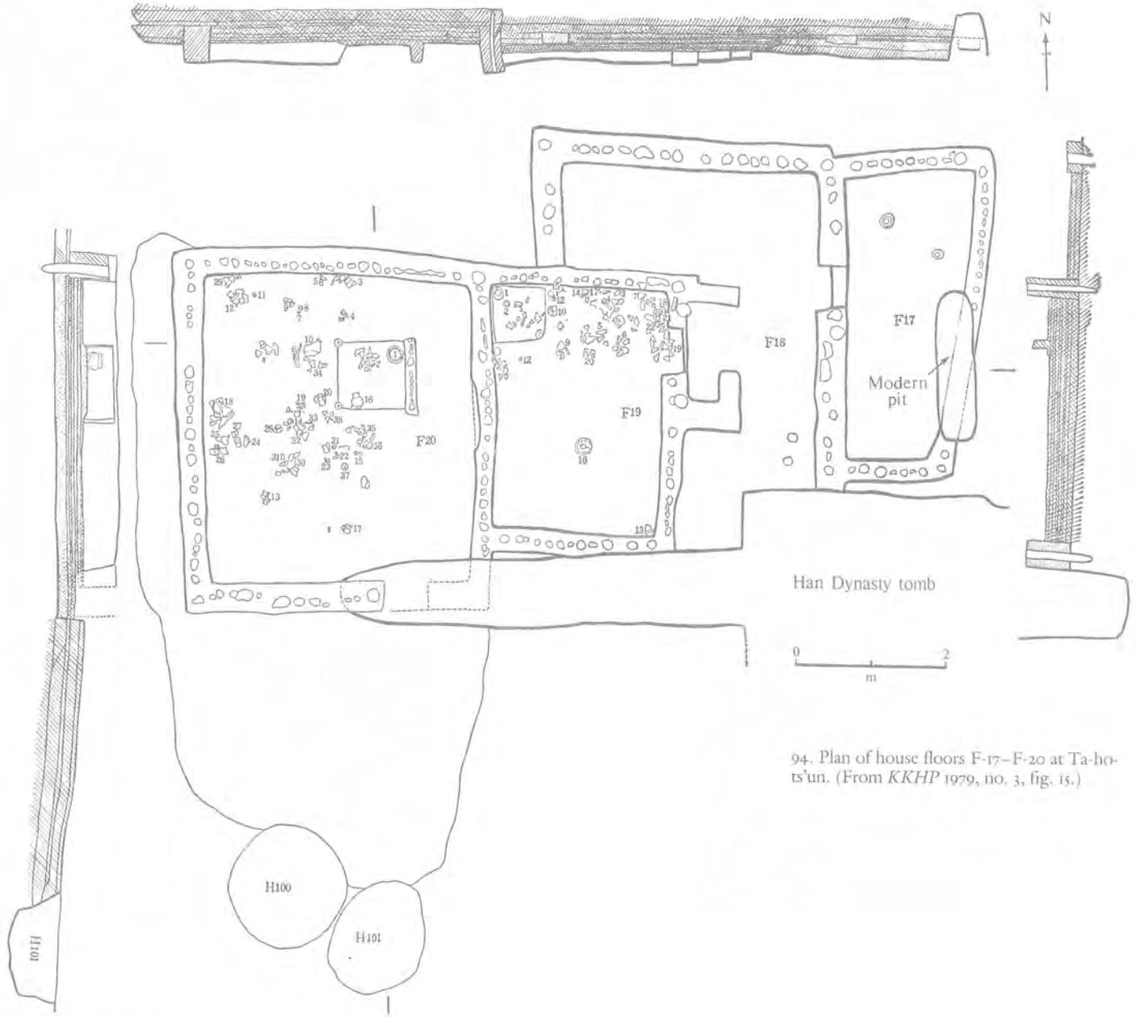
The phases here, though distinctive and long-lasting, are known only from a small area in southern Hopei and northern Honan (fig. 100), and have not been extensively investigated. The principal sites are Hou-kang and Ta-ssu-k'ung-ts'un in An-yang, in northern Honan;[41] Hsia-p'an-wang[42] and Chieh-tuan-ying[43] in Tz'u-hsien, and Nan-yang-chuang in Cheng-ting,[44] in southern Hopei. The

41. S. Y. Liang, *An-yang fa-chüeh pao-kao* 4 (1933), 609–26; *KK* 1961 (2), 63–76; 1965 (7), 326–28; 1972 (3), 14–25; 1972 (5), 8–19; 1982 (6), 565–83.
42. *KKHP* 1975 (1), 73–115; *KK* 1979 (1), 51–81.
43. *KK* 1974 (6), 356–72.
44. *CYWW* 1981 (1), 6–12; *WWTLTK* 1 (1977), 150.

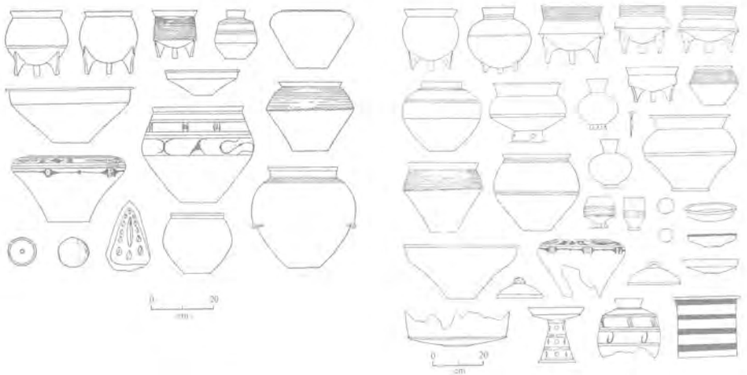


92. Partial plan of the Ta-ho-ts'un site, excavation area 1 (west). (*T*: trench; *F*: floor; *M*: burial; *W*: urn burial; *H*: storage pit; *1–5*: postholes of periods 1–5.) (From *KKHP* 1979, no. 3, p. 313.)

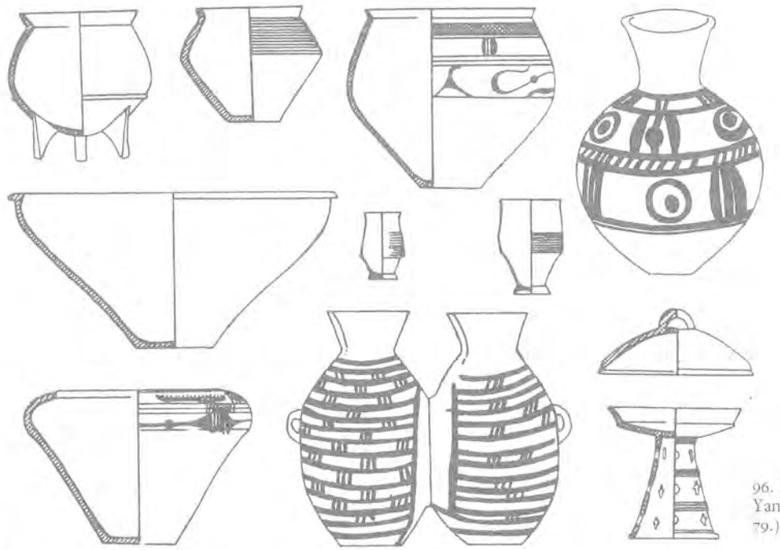
93. House floors F-1–F-4 at Ta-ho-ts'un. (From *KK* 1973, no. 6, pl. 2:1.)



94. Plan of house floors F-17–F-20 at Ta-ho-ts'un. (From *KKHP* 1979, no. 3, fig. 15.)

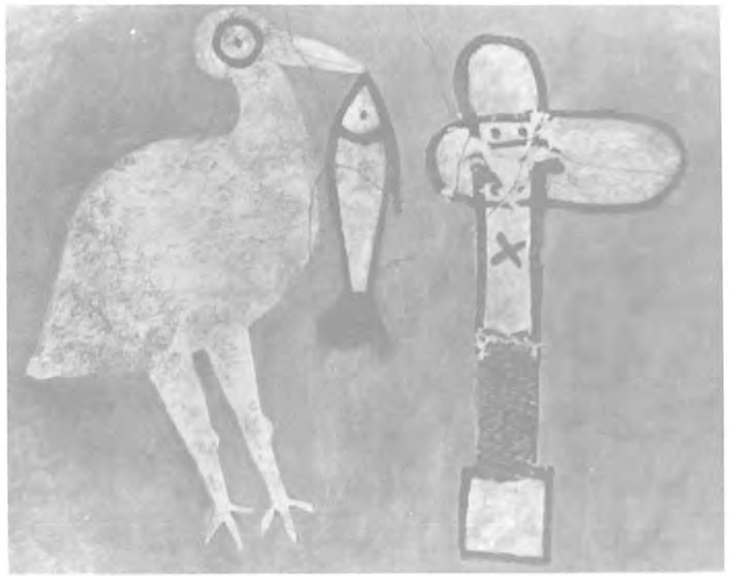


95. Pottery vessels and other objects found on house floors F-19 (*left*) and F-20 (*right*) at Ta-ho-ts'un. (From *KKHP* 1979, no. 3, pp. 322–23.)



96. Pottery types of the Ta-ho-ts'un phase of the Yang-shao Culture. (From *SCYC* 1983, no. 1, p. 79.)

97. Painted pottery sherds from Ta-ho-ts'un. (From *KKHP* 1979, no. 3, pl. 14.)

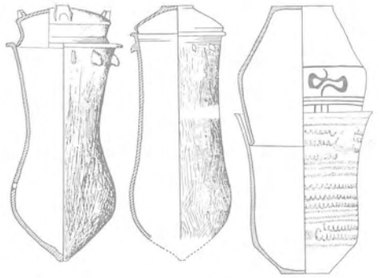


98. Painted cormorant and stone ax on a pottery urn found at Yen-ts'un, Lin-ju, Honan. (From *CYWW* 1981, 1.)

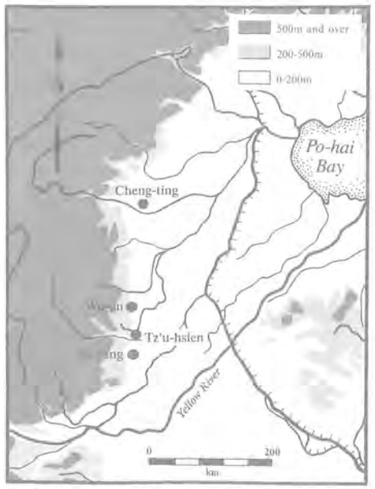
carbon-14 profile here (fig. 101) shows that the Hou-kang phase goes back right to the end of the Tz'u-shan phase; in fact, many observers consider Hou-kang a direct descendent of Tz'u-shan and P'ei-li-kang of the same area.[45]

The site of Hou-kang, which was first excavated in 1931 as a part of the excavations of Yin-hsü, the Ruins of Yin, the last capital of the Shang Dynasty,[46] achieved fame early in the history of Chinese archaeology as the first site where a stratified relationship was found to establish the chronological sequence of Yang-shao, Lung-shan, and Shang, the three earliest Chinese prehistoric and ancient cultures known at the time (fig. 102).[47] Despite this fame, however, not very much is known here or at other sites with the same culture. A few house floors are known, and these were roundish semisubterranean pit-houses very simply constructed and poorly furnished. The usual storage pits are encountered, as are a few pit graves without furnishings. The most distinctive artifacts are the Hou-kang

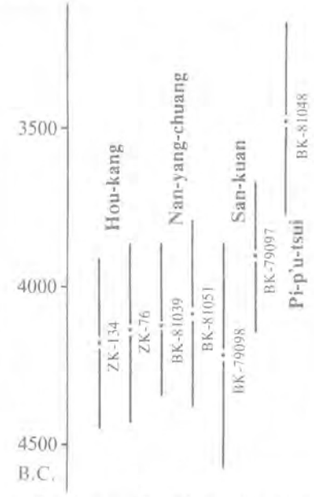
45. C. M. An, *KK* 1979 (4), 334–46; C. H. Ting, *SCYC* 1983 (1), 91–98; J. L. Chang, *K'ao-ku yü Wen-wu Ts'ung-k'an* 1 (1983), 14–19.
46. K. C. Chang, *Shang Civilization,* New Haven: Yale University Press, 1980, p. 48.
47. S. Y. Liang, in *Papers Presented to Mr. Ts'ai Yuan P'ei on His Sixty-fifth Birthday,* Inst. Hist. and Philol., Academia Sinica, 1935, pp. 555–67.



99. Burial urns at Ta-ho-ts'un. (From *KKHP* 1979, no. 3, p. 344.)



100. Major sites of the northern Honan-southern Hopei phase of the Yang-shao Culture.



101. Radiocarbon profile of the northern Honan-southern Hopei phase of the Yang-shao Culture.

pottery: red pottery bowls, basins, jars, and *ting* tripods; black-on-red painted pottery, with a few simple designs (broad band on bowl rim, groups of parallel lines, triangles filled with parallel lines and crosshatches); the "red-top bowl" (*hung-ting wan*), with a broad red band under the rim over a (mostly) gray lower half—the red and gray colors the result of differential oxidization during firing and not from painting; and incised and punctated designs (fig. 103).

Another cultural phase in the northern Honan and southern Hopei area is marked by the Ta-ssu-k'ung-ts'un style, which was first encountered at the Hou-chia-chuang site in An-yang,[48] but its significance was not recognized until 1958–59 with its discovery at Ta-ssu-k'ung-ts'un, also in An-yang.[49] The style, as now known from a number of sites in the An-yang and Tz'u-hsien (Hopei) area,[50] is particularly characterized by decorative bands around the vessel of roundish units separated by parallel wavy lines. The units often consist of two adjoined semicircles, broad ribbons, S-shapes, "cowries," and "moth-antennae," most of which are also common Ch'in-wang-chai motifs (fig. 104). In both phases the prevailing vessel forms are the basin, bowl, and jar.

There are various opinions on the relative chronological interrelationship of Hou-kang and Ta-ssu-k'ung-ts'un, an issue that cannot be enlightened by stratigraphy.[51] In view of the stylistic similarity of Hou-kang to Tz'u-shan and that of Ta-ssu-k'ung-ts'un to Ta-ho-ts'un, it seems certain that Hou-kang is the earlier of the two.

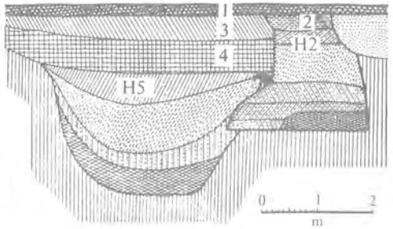
THE KANSU AND CHINGHAI PHASES

The Neolithic "Painted Pottery Culture" of Kansu and Chinghai was discovered by J. G. Andersson, right after his triumphs at Yang-shao-ts'un in 1920 and 1921 and at Sha-kuo-t'un in Liaoning, where another cave site with painted pottery was found in 1922.[52] In 1921–23, Andersson undertook a series of archaeological surveys in eastern Kansu in the Yellow River valley near Lan-chou and in the T'ao-ho and Ta-hsia-ho river valleys.[53] The prehistoric sites he discovered he classified into six groups, three of which are Stone Age and were called Ch'i-chia, Pan-shan/Ma-chia-yao, and Ma-ch'ang. Actually these were four different phases,

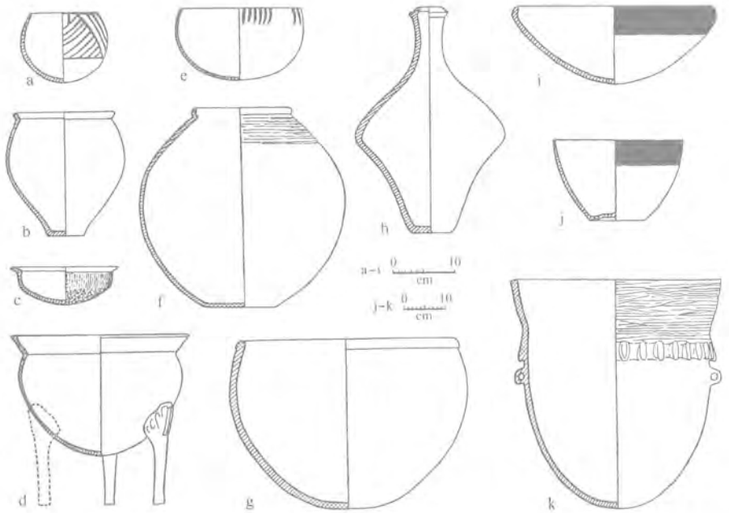
48. C. T. Wu, *KKHP* 1 (1936), 201–11.
49. *KK* 1961 (2), 63.
50. *KK* 1965 (7), 326–38.
51. Y. M. T'ang, *KK* 1977 (4), 233–41; H. C. Yang, *KK* 1977 (4), 242–46; T. L. Kao, *KK* 1979 (1), 51–55, 81.
52. J. G. Andersson, *Palaeontologia Sinica*, ser. D, 1 (1923).
53. *Preliminary Report on Archaeological Research in Kansu*, Memoirs, GSuC, no. 5, 1925.

because the finds at Pan-shan were mortuary remains and those at Ma-chia-yao were habitation remains. Andersson, however, considered these two phases to be entirely contemporary and representative of two different types of assemblage. He thought this stage was strictly contemporaneous with the Yang-shao culture of Honan.

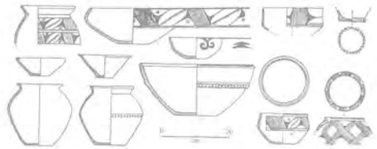
During the more than sixty years since Andersson's initial work in Kansu, many more sites have been investigated and several extensively excavated (fig. 105). Andersson's grouping of the four cultural phases remains valid but, besides the great amount of additional information each is accruing, three important modifications must now be made. First, the entire Kansu Yang-shao culture has been shown to be a later offshoot of the eastern phases of the Yang-shao culture. Second, the Ch'i-chia phase must now be removed as an early phase of the Yang-shao sequence and placed in a later period (see chapter 5). Finally, the Ma-chia-yao and the Pan-shan assemblages are no longer generally regarded as contemporary complexes of different types but are thought to be two separate phases of the Yang-shao culture in Kansu. Stratigraphic and stylistic studies now suggest the



102. Three cultural layers at Hou-kang, An-yang, Honan, 1972 excavations. (*1*: Recent; *2*: Shang; *3*, *4*: Yang-shao Culture; *H2*: Lung-shan pit; *H5*: Yang-shao pit.) (From *KK* 1972, no. 5, p. 9.)



103. Pottery types of the Hou-kang phase. (From *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, p. 53.)



104. Pottery types of the Ta-ssu-k'ung-ts'un phase. (From *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, p. 53.)

following sequence of the Kansu Yang-shao phases: Ma-chia-yao, earliest; Pan-shan, following; and Ma-ch'ang, latest and farthest west.[54]

The question of the Ch'i-chia Culture has been settled without a doubt, but there has been continued discussion concerning the interrelationship of the Kansu Yang-shao phases and those of Shensi and Honan, and of the three phases within the Kansu and Chinghai area itself. In ceramic style, the Kansu-Chinghai phases differ significantly from the Shensi-Honan phases: this is not in dispute and has been recognized since the beginning of their discoveries.

In a very striking way the painted motifs of the Kansu group are different from those of the other groups. The colours are red and black, but the red is seldom so fresh and bright as it is in western Honan. Except at Hsin-Tien, the painting seems to have been done with the intention of covering the surface as much as possible, and not leaving any blank space, contrary to what is found in the Shansi and Honan groups. . . . The painted decoration, unlike that of the other groups, is intended to be viewed from the top, instead of from the side. The motifs are very complicated, though there are a number of stock designs, which frequently occur.[55]

Admitting the differences in decorative motif and form between the painted pottery of Kansu (represented by Ma-chia-yao) and Honan (represented by Yang-shao-ts'un), Andersson nevertheless considered these two phases as "strictly contemporary" regional variations.[56] Some scholars would elevate the "regional variations" to the status of different cultures and remove the Ma-chia-yao Culture from Yang-shao Culture altogether,[57] while others retain Ma-chia-yao within the Yang-shao domain but let go of the Pan-shan and Ma-ch'ang phases.[58] There is also an art-history view that sees the Ma-chia-yao ceramic style as necessarily ancestral to the Miao-ti-kou styles to the east.[59]

For a number of compelling reasons I follow the recent orthodox view of the Kansu-Chinghai phases as western and later extensions of the Yang-shao Culture of Shensi, and I place these phases into the Ma-chia-yao/Pan-shan/Ma-ch'ang sequence. First of all, the Kansu-Chinghai carbon-14 profile (fig. 106) is decidedly in favor of such a sequence. The stratigraphical picture in eastern Kansu, where the several pertinent phases overlapped (fig. 107), shows the first Yang-shao phase

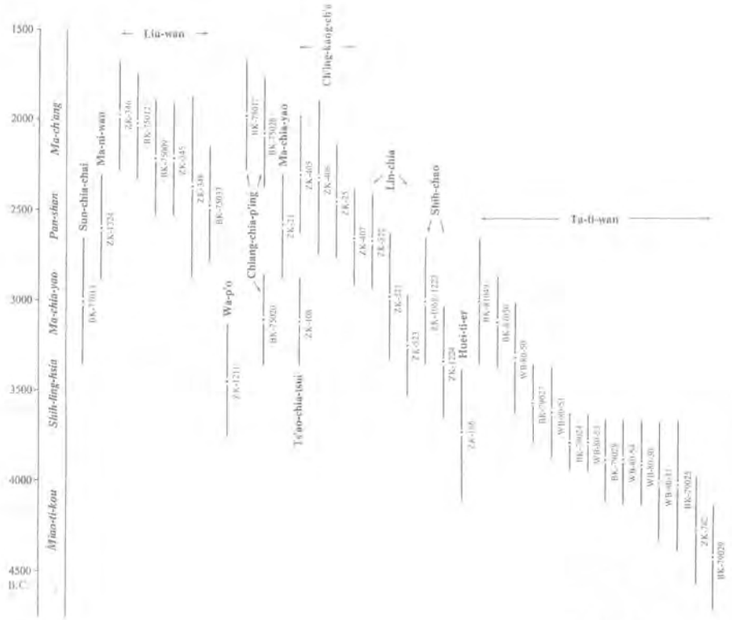
54. C. F. Yang, *KKHP* 1962 (1), 49–79; H. P. Shih, *KK* 1962 (6), 318–29; W. M. Yen, *WW* 1978 (10), 62–76; H. C. Chang et al., *CKHNL* 1 (1980), 50–71.
55. G. D. Wu, *Prehistoric Pottery in China*, London: Kegan Paul, Trench, Trübner, 1938, p. 146.
56. *BMFEA* 15 (1943), 104.
57. N. Hsia, *KKHP* 4 (1949), 71–137; *Hsin Chung-kuo ti k'ao-ku shou-hu* (Archaeological results in New China), Peking: Wen-wu Press, 1962, p. 22; *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, p. 106.
58. C. M. Kung, *SCYC* 1983 (1), 90, n. 58.
59. Louisa G. F. Huber, *BMFEA* 53 (1981), 7.

105. Major sites of the Kansu-Chinghai phases of the Yang-shao Culture.

as Pan-p'o, which is then followed by Miao-ti-kou. A new phase—called Shih-ling-hsia, after the site by that name in Wu-shan, on the upper Weishui river in eastern Kansu—has recently been proposed, which is seen intermediate between Miao-ti-kou and Ma-chia-yao (fig. 108).[60] The stratigraphical interrelationship of the resultant six phases (Pan-p'o, Miao-ti-kou, Shih-ling-hsia, Ma-chia-yao, Pan-shan, and Ma-ch'ang) is well established by the stratified sites listed in table 6. The geographical and chronological overlaps of these phases in eastern Kansu[61] suggest strongly that it was in this area that the later phases, starting with Ma-chia-yao, emerged on the basis of the Shensi Yang-shao Culture.

60. T. C. Hsieh, *WW* 1981 (4), 21–27.
61. *KK* 1983 (12), 1066–75, 1107.

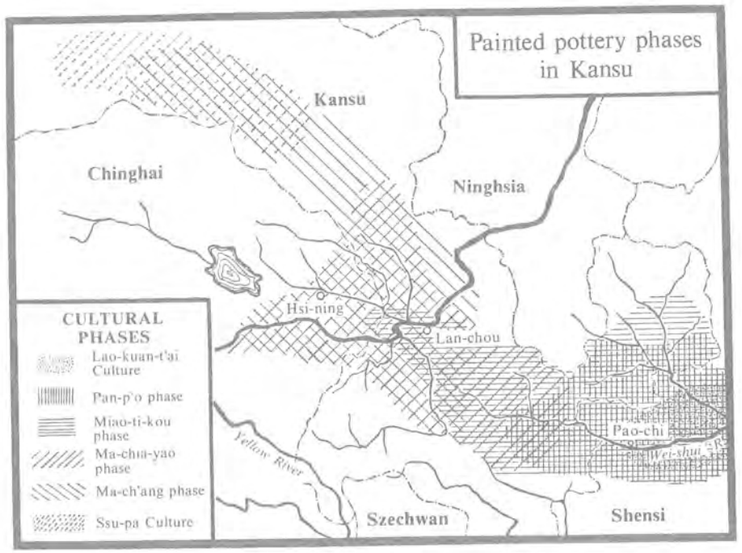
106. Radiocarbon profile of the Kansu-Chinghai phases of the Yang-shao Culture.



The sites of the *Ma-chia-yao* phase are distributed extensively, from Ch'ing-shui of extreme eastern Kansu in the east to Kuci-nan of eastern Chinghai in the west, and are particularly dense in the upper Weishui River, the middle and lower T'ao-ho River, and the Huang-shui River valleys. The principal sites include Ma-chia-yao, in Lin-t'ao, the "type site,"[62] Lin-chia in Tung-hsiang,[63] Chiang-chia-p'ing in Yung-teng,[64] and Yen-crh-wan in Lan-chou,[65] all in Kansu, and Ho-t'ao-chuang in Min-ho, Chinghai.[66]

Ma-chia-yao sites have yielded houses, pits, kilns, and burials. In earlier strata at Lin-chia, house floors were square or rectangular, semisubterranean, and equipped with hearths and entrance stairs, but in the later stratum the floors were

62. B. Sommarstrom, *BMFEA* 28 (1956).
63. *KKHCK* 4 (1984), 111–61.
64. H. C. Chang et al., *CKHNL* 1 (1980), 57–58.
65. *KKHP* 1957 (1), 1–8.
66. *WW* 1979 (9), 29–32.



107. Overlapping Yang-shao Culture phases in Kansu. (From *WW* 1978, no. 10, p. 64.)

built on level ground and walls were built on excavated foundations. In two pottery vessels on the floor of House no. 8 at Lin-chia were found some carbonized fruits of hemp, *Cannabis sativa*, and from a storage pit was unearthed a huge quantity (1.8 cubic meters) of carbonized ears and grains of broom-corn millet (*Panicum miliaceum*).[67] The Lin-chia site has yielded another important artifact: a bronze knife, found under the northern wall of the floor of House no. 20. Apparently cast with two molds, the knife is 12.5 centimeters long and has a small handle, which was probably inserted into a larger wooden handle. Metallurgraphical studies show that the knife was made of copper and tin alloy, with 6–10 percent tin. This is the earliest bronze artifact found in China to date.[68] Various layers at the site have also yielded slag fragments, which have been analyzed to show copper, tin, lead, and iron, suggesting bronze metallurgy at the site.

Despite the bronze knife, there is no question about Ma-chia-yao's being a

67. *KK* 1984 (7), 654–55, 663.
68. *KKHCK* 4 (1984), 125, 161. Two pieces of copper alloyed with zinc (brass) are said to have been unearthed at Pan-p'o and Chiang-chai, but their provenance is uncertain; see C. M. An, *KKHP* 1981 (3), 269–72.

108. Pottery types of the Shih-ling-hsia phase. (From *WW* 1981, no. 4, p. 23.)

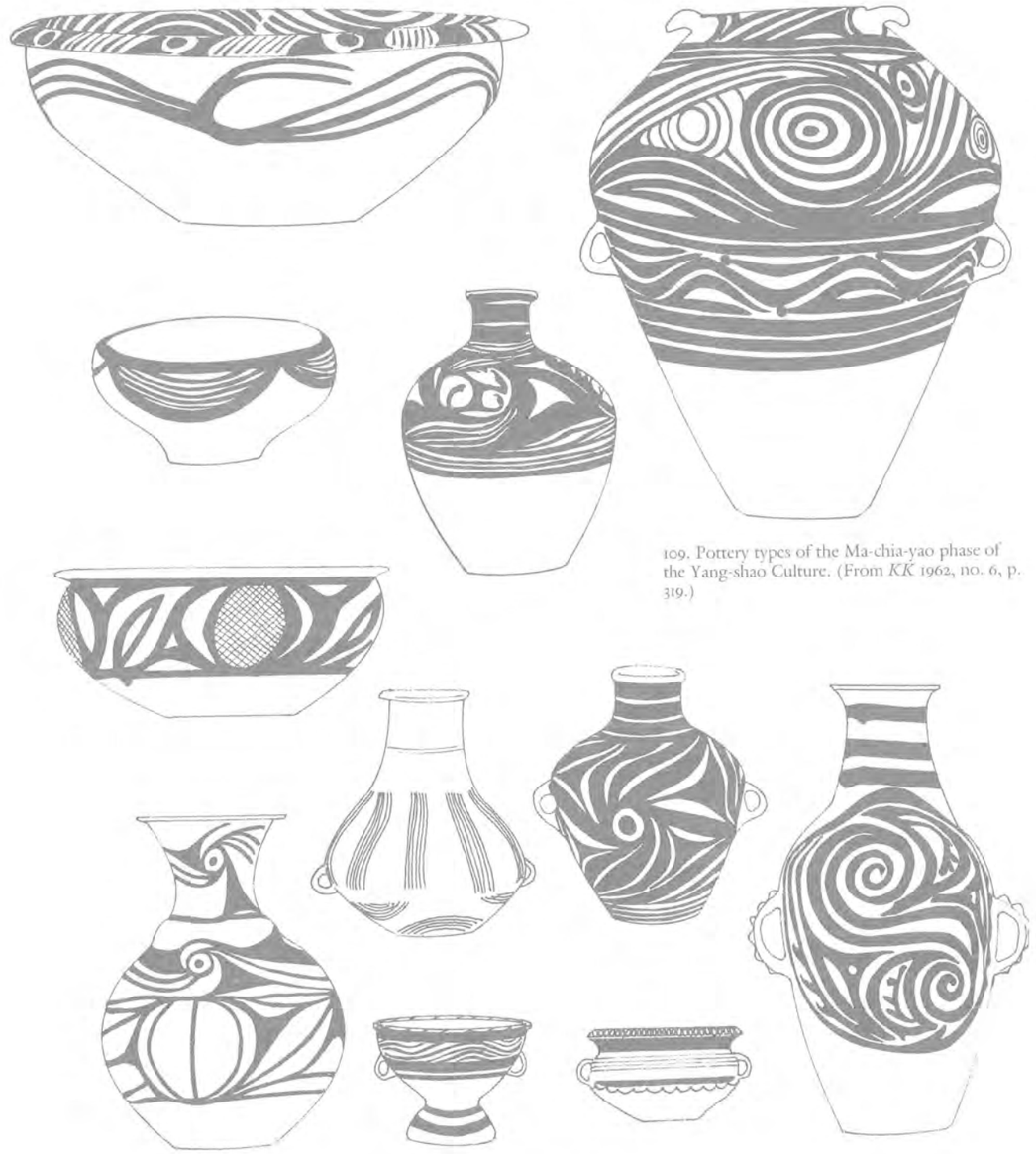
Table 6: Stratified Relationships among the Six Yang-shao Culture Phases in Eastern Kansu

	Ta-ti-wan, Ch'in-an	*Shao-tien, Ch'in-an*	*Ma-chia-yao/ Wa-chia-p'ing, Lin-t'ao*	*Lo-chia-kou, T'ien-shui*	*Shih-ling-hsia, Wu-shan*	*Chiang-chia-p'ing, Yung-teng*	*Yuan-yang-ch'ih, Yung-ch'ang*
Sites							
Six phases						Ma-ch'ang	Ma-ch'ang
							Pan-shan
		Ma-chia-yao	Ma-chia-yao	Ma-chia-yao	Ma-chia-yao	Ma-chia-yao	
	Shih-ling-hsia			Shih-ling-hsia	Shih-ling-hsia		
	Miao-ti-kou	Miao-ti-kou	Miao-ti-kou	Miao-ti-kou			
	Pan-p'o	Pan-p'o					
Pre-Yang-shao phase	Ta-ti-wan						
Sources	*WW* 1983 (11)	Chang Hsueh-cheng et al., *CKHNL* 1 (80)	*KKTH* 1958 (9)	*WW* 1976 (3)	*KK* 1961 (3)	*Wen-wu K'ao-ku Kung-tso San-shih-nien*	*KK* 1974 (5)

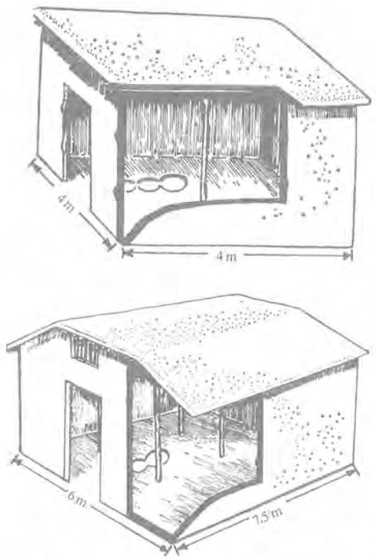
Stone Age culture. Agricultural implements include stone hoes, axes, sickles, grinders, pestles, and so forth, and there are also bone tools. The bronze, so far as we know, was a minor industry that had little significance in subsistence and economy.

Burials are mostly found near the dwelling area. The ones in Kansu are single burials of the face-up, stretched kind, but those in Chinghai are characteristically secondary burials. In a large grave at Ho-t'ao-chuang were found remains of wooden caskets, furnished with more than thirty pottery vessels, many painted. At Shang-sun-chia, in Ta-t'ung, Chinghai, were Tomb 268, that of an adult male, and Tomb 369, of an adult female. A painted pottery vessel was broken into two halves; the upper half was buried with the man and the lower half with the woman.[69]

69. H. C. Chang et al, *CKHNL* 1 (1980), 58.



109. Pottery types of the Ma-chia-yao phase of the Yang-shao Culture. (From *KK* 1962, no. 6, p. 319.)



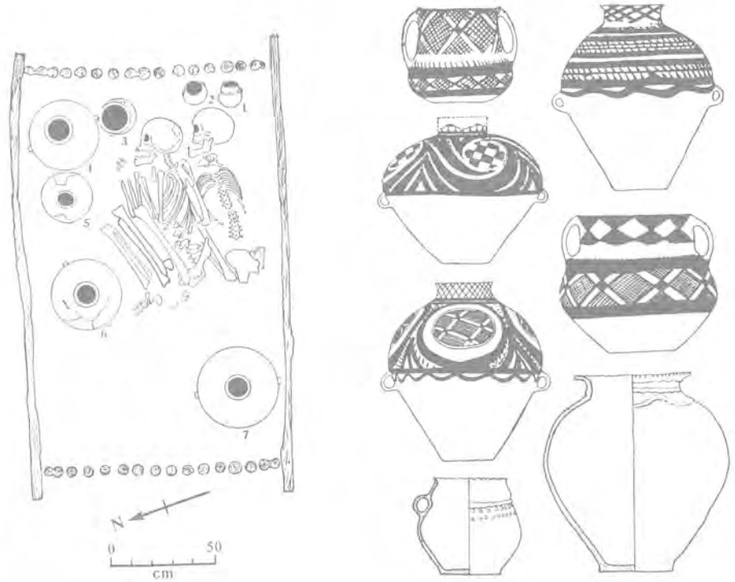
110. Reconstructions of houses of the Pan-shan phase at Ch'ing-kang-ch'a, Kansu. (From *KKHCK* 2, 1982, pp. 12–13.)

The Ma-chia-yao pottery is characterized by a number of distinctively shaped bowls, jars, and small-mouthed jars of fine paste and high luster, with black decorations painted on red or yellow. Characteristic designs appear on the insides of shallow bowls and beakers. The painted decorations consist of animals (frogs and birds) and geometric patterns, the latter being distinctively curvilinear and gracefully executed (fig. 109).

The next phase, *Pan-shan*, overlaps with Ma-chia-yao in the eastern end of Kansu, but it extends northward through Lan-chou to as far north as Wu-wei and Yüng-ch'ang and westward into the Kuei-te basin of Chinghai; the principal sites, aside from the type site, Pan-shan-ch'ü, in Lin-t'ao,[70] include Ti-pa-p'ing, in Kuang-ho;[71] Hua-chai-tzu,[72] Ch'ing-kang-ch'a,[73] and T'u-ku-t'ai[74] in Lan-chou; Chang-chia-t'ai in Ch'ing-t'ai,[75] all in Kansu; and Liu-wan, in Lo-tu, in Chinghai.[76] Most of the finds were from burials, more than four hundred having been excavated under archaeological supervision, but dwelling sites have also been found. The houses at Ch'ing-kang-ch'a were square and semisubterranean (fig. 110). Most Pan-shan burials were single, flexed, contained in wooden caskets, and furnished with pottery vessels, but some had a stretched posture, some were double burials, and some were secondary burials (fig. 111). The painted vessels from these burials include the famous Pan-shan jars that are in many museum collections throughout the world as a result of Andersson's extensive purchases. These are characterized by the tall jar with small mouth, wide belly, two loop handles at the largest diameter of the body, and flat bottom. Most of the painted decorations are in red and black and form a wide band covering the upper part of the body; the basic motifs are a large variety of spirals and gourd-shaped units (fig. 112).

The *Ma-ch'ang* phase, named after the type site at Ma-ch'ang-yen in eastern Chinghai,[77] followed the Pan-shan phase; it had similar pottery forms, but the decorative designs are less elaborate and tend to be composed of anthropomorphic patterns (fig. 113). The distribution of the Ma-ch'ang phase is similar to that of Pan-shan but it extends further west to as far as Chiu-ch'üan and even Yü-men in western Kansu. Important sites include, aside from Ma-ch'ang-

70. Nils Palmgren, *Palaeontologia Sinica*, ser. D, 3 (1934); J. G. Andersson, *BMFEA* 15 (1943), 104–40.
71. *KKHP* 1978 (2), 193–209.
72. *KKHP* 1980 (2), 221–38.
73. *KK* 1972 (3), 26–31, 53; *KKHCK* 2 (1982), 10–17.
74. *KKHP* 1983 (2), 191–222.
75. *KK* 1976 (3), 180–86.
76. *Ch'ing-hai Liu-wan*, Peking: Wen-wu Press, 1984.
77. N. Palmgren, *Palaeontologia Sinica*, ser. D, 3 (1934); J. G. Andersson, *BMFEA* 15 (1943), 104–40.



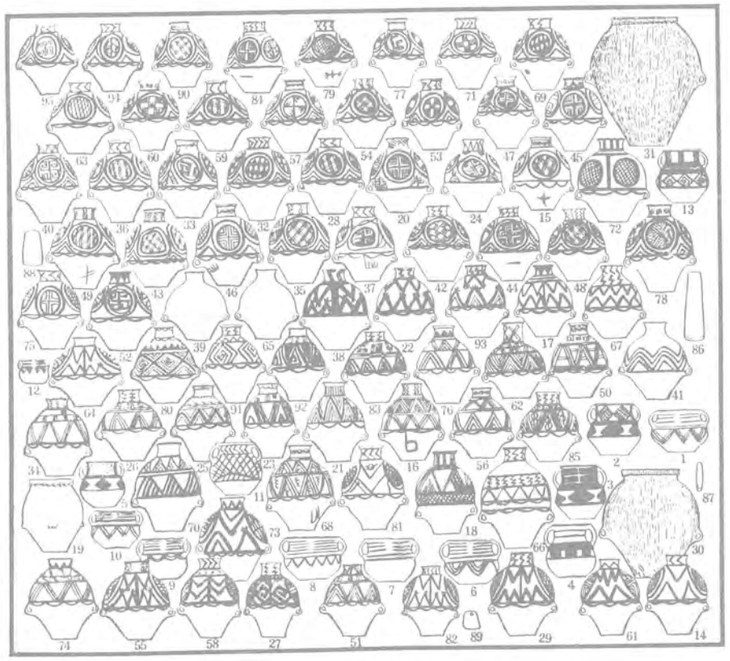
111. A Pan-shan phase burial at T'u-ku-t'ai, Lan-chou, and its pottery vessels. (From *KKHP* 1983, no. 2, p. 198.)

yen, the dwelling site at Ma-chia-wan in Yüng-ching, Kansu,[78] and the burial sites at Yuan-yang-ch'ih in Yüng-ch'ang, Kansu,[79] and at Liu-wan in Lo-tu, Chinghai.[80] The Ma-chia-wan houses are the best examples of Ma-ch'ang dwellings; they are, again, round or square semisubterranean, with wattle-and-daub walls and probably thatched roofs. Among the cemeteries, the one at Liu-wan is undoubtedly the most spectacular. Here on the slopes of a hill, 1,500 burials were excavated between 1974 and 1978, including 257 of the Pan-shan phase, 872 of the Ma-ch'ang phase, and the rest belonging to the later Ch'i-chia (366) and Hsin-tien (5) cultures. Among the Ma-ch'ang tombs, most are single and stretched, but there are also many secondary, flexed, and multiple burials. Wooden coffins were often used, but grave furnishings varied from very little to several dozen vessels (fig. 114). Grains of millet (*Setaria italica*) are among the contents of the vessels both here and at Yuan-yang-ch'ih.[81]

78. *KK* 1975 (2), 90–96, 101.
79. *KK* 1974 (5), 299–308, 289; *KKHP* 1982 (2), 199–226.
80. *Ch'ing-hai Liu-wan*.
81. C. H. Huang, *KK* 1982 (4), 419; *KKHP* 1982 (2), 218.

112. Pottery types of the Pan-shan phase. (From *KK* 1962, no. 6, p. 323.)

113. Pottery types of the Ma-ch'ang phase. (From *KK* 1962, no. 6, p. 324.)



114. Ma-ch'ang phase burial M-564 and its pottery vessels at Liu-wan, Lo-tu, Chinghai. (From *Ch'ing-hai Liu-wan*, 1984, fig. 38A.)

115. Pottery with symbols of the Ma-ch'ang phase at Liu-wan. (From *Ch'ing-hai Liu-wan*, 1984, p. 161.)

The variations in the amount of grave furnishings suggest a society at a sophisticated level; this is also indicated by the huge number of painted signs on pottery (fig. 115). At Liu-wan, at least 139 different signs can be isolated (fig. 116). Some of these signs are identical with specific characters in the early historic writing systems; this we will take up again later.

In the decorative art of the Kansu and Chinghai pottery vessels, three pots are of particular interest. One is a basin unearthed in 1973 at Sun-chia-chai in Ta't'ung, Chinghai, from a Ma-chia-yao phase site. On the inside of the rim is a row of dancing figures, holding hands and wearing what appear to be penis sheaths (fig. 117).[82] A second is a Pan-shan phase bowl collected by Andersson. On the interior surface was painted in black a human figure in skeletal fashion (fig. 118).[83] The third is a Ma-ch'ang phase urn, excavated from Liu-wan. In between painted lines was plastered a human figure with both male and female sexual organs and two pairs of breasts, one small like a man's and the other supple (fig. 119).[84] Both skeletal art and bisexual symbolism are commonly encountered shamanic elements found in the ethnographic present throughout the world,[85] and the Kansu-Chinghai examples are probably their earliest known representations. Adding the dancing scene to these, we see here interesting evidence about important ritual and religious orientations among the Yang-shao inhabitants of this area.

OTHER YANG-SHAO CULTURE PHASES

The four regions of Yang-shao Culture constitute the core area of its manifestation and development, and we see it developed in the middle Yellow River valley, along its tributaries, and along the eastern slopes of the western North China highlands to southern Hopei and central Honan. The eastern and western limits of the culture are pretty well established: the western fringes of the lower Yellow River alluvium in the east and central Kansu and eastern Chinghai in the west. Future investigations may bring out more details of the eastern and western geographical boundaries, but the larger picture is already in focus.

The northern and southern reaches of the Yang-shao Culture are, on the other hand, not at all well established. From the Weishui and Yellow River basins the prehistoric inhabitants could have gone both north and south upstream along the tributaries and uphill into the plateaus and mountains on both sides. Archaeological investigations in these mountainous and highland areas have disclosed a number of Yang-shao or Yang-shao-related sites (fig. 120), but definitive boundaries are far from being established. I briefly survey the pertinent data, first north of the middle Yellow River basin, then south, from west to east.

82. *WW* 1978 (3), 48–49.
83. Andersson, *BMFEA* 15 (1943), 241 and pl. 182: 1.
84. Y. S. Li, *WW* 1978 (4), 88–89.
85. Joseph Campbell, *The Way of the Animal Powers*, vol. 1 of *Historical Atlas of World Mythology*, London: Alfred van der Marck, 1983, pp. 131–33, 142.

116. Pottery symbols of the Ma-ch'ang phase, Liu-wan. (From *Ch'ing-hai Liu-wan*, 1984, pp. 162, 164.)

In the upper Ching-ho River valleys of northeastern Kansu and northwestern Shensi, an area separated by the Liu-p'an Mountains in the west from the Yang-shao occupation of eastern Kansu, there are the Yang-kua site in Ning-hsien, Kansu,[86] and the Ts'ui-chia-ho site in Hsün-yi, Shensi.[87] At Yang-kua, the corded and occasionally painted buff pottery is mostly flat-based and characterized by urns with straight or slightly curved walls and shallow bowls, but it shows similarities with the Hsi-wang-ts'un (late Pan-p'o) phase of Weishui and

86. *KK* 1983 (10), 869–76.
87. F. C. Ts'ao and F. Ching, *KKYWW* 1984 (4), 3–8.

117. Painted dancers on a Ma-chia-yao phase pottery bowl, at Sun-chia-chai, Ta-t'ung, Chinghai. (From *Ch'ing-hai ts'ai-t'ao*, 1980, fig. 12.)

lower Fen-ho Yang-shao. The houses tended to be in loess caverns or deeply semisubterranean. Pig bones and polished stone implements are found. In this area at a later period was the Lower Stratum Culture of Ch'ang-shan, in Lung-tung,[88] which appears to continue the Yang-kua tradition but lacks apparent Yang-shao affiliations. If Yang-shao did come this far up the Ching-ho River, it either underwent drastic changes or encountered a very different native cultural stratum. At the Ts'ui-chia-ho site, further down the Ching-ho River, a typical Pan-p'o phase assemblage was unearthed, suggesting that Yang-shao had come as far as the Shensi-Kansu border on the Ching-ho valley.

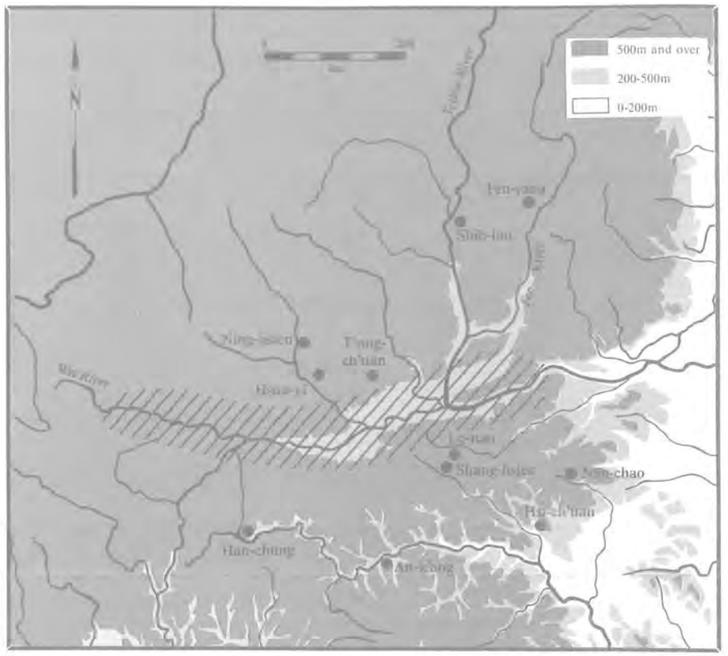
Moving eastward we encounter a series of Yang-shao sites near the city of T'ung-ch'uan, uphill from the Weishui valley on the Shih-ch'uan River.[89] In house construction and in pottery forms and styles, despite minor variations, this area has the same Pan-p'o/Miao-ti-kou/Hsi-wang-ts'un sequence that prevails in the Weishui basin. A plastic decoration on a cord-marked urn found at the Ch'ien-mou site, consisting of a lizard with a human head, is of particular interest.[90]

118. Skeletal human figure on a Pan-shan phase pottery bowl at Pan-shan. (From *BMFEA* 15, 1943, pl. 182:1.)

88. *KK* 1981 (3), 201–10.
89. *KKHCK* 2 (1982), 1–5; *KKYWW* 1983 (2), 111–12; *KKYWW* 1984 (1), 5–33.
90. *KKYWW* 1983 (2), 111–12.

119. Bisexual human figure on a Ma-ch'ang phase pottery jar at Liu-wan. (From *Ch'ing-hai Liu-wan*, 1984, color pl. 2.)

120. Yang-shao Culture sites peripheral to the core area.



Turning to Shansi, the distribution of the Yang-shao Culture up from the lower Fen-ho basin into the Lü-liang Mountains is scarcely known. A couple of sites in Fen-yang[91] and Shih-lou[92] appear to bring the Yang-shao Culture of the lower Fen-ho to the mountains, but many sites remain to be explored.

South of the Yellow River basin archaeological work is known in the Pai-lung-chiang River valley of southeastern Kansu, in the upper Lo-ho, Tan-chiang, and Han-shui river valleys of southeastern Shensi, and in the upper Han-shui River valley of southwestern Honan. All of these rivers, except for the upper Lo-ho, which flows into the Yellow River east of Lo-yang, are upper courses of the tributaries of the Yangtze River, and the footsteps of the Yang-shao Culture bearers in these areas should be of interest on the question of Yellow-Yangtze cultural interrelationships at this time.

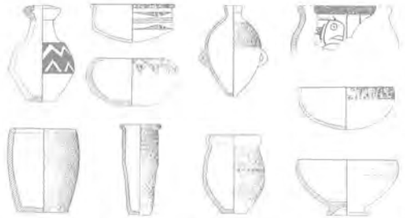
91. *KK* 1983 (1), 961–65, 972.
92. *KKHP* 1985 (2), 185–208.

In the Pai-lung-chiang valley, Miao-ti-kou phase assemblages have been located in Wu-tu,[93] and Ma-chia-yao assemblages also in Wu-tu and further upstream in Chou-ch'ü, Ti-pu, and Min-hsien.[94] This area is separated from the upper Weishui valley by relatively low mountains to the west of the main Tsinling Mountains, and the discoveries here of characteristic Miao-ti-kou and Ma-chia-yao assemblages indicate that the major barrier from Shensi and eastern Kansu to the Szechwan basin probably lay further to the south with the Min-shan Mountains.

In eastern Shensi prehistoric people bearing a Yang-shao Culture had definitely penetrated the Tsinling barrier along the eastern end, since characteristic Pan-p'o and Miao-ti-kou assemblages have been unearthed in both the upper Lo-ho River and the upper Tan-chiang River valleys.[95] Further down the Tan-chiang River, in southwestern Honan, before Tan-chiang joins the Han-shui River, are the important archaeological assemblages at Hsia-wang-kang in Hsi-ch'uan,[96] a couple of sites in T'ang-ho,[97] Chao-wan in Chen-p'ing,[98] and Erh-lang-kang in Nan-chao.[99] The ceramic assemblages from this area, including painted pottery, *ting* tripods, and urns, are similar to the Ta-ho-ts'un phase of Yang-shao Culture,[100] which was easily accessible to this area along the eastern peripheries of the Fu-niu Mountains. However, the Hsia-wang-kang assemblage contains such elements as the *tou* vessels with high pedestals that are reminiscent of the Ch'ü-chia-ling Culture downstream in the lower Han-shui River valley. Southern Honan was undoubtedly the contact point between the Neolithic cultures of the Yellow and the Yangtze river valleys. The faunal remains at the site show that this was the warmest region occupied by any Yang-shao Culture.[101]

Going west from here and upstream along the Han-shui River we encounter the An-k'ang and Han-chung districts of southern Shensi. In the An-k'ang district several sites were identified in the last decade, yielding mostly Li-chia-ts'un-type cord-marked pottery, with some mixture of Pan-p'o and Miao-ti-kou sherds.[102] The same holds true for the Han-chung district, the area of the type site of Li-

93. *WWTLTK* 2 (1978), 26–29.
94. *WWTLTK* 2 (1978), 29–32; *KKYWW* 1982 (4), 108; *KKYWW* 1983 (5), 20–33.
95. T. Y. Wei and Y. T. Wang, *KKYWW* 1981 (3), 17–27; *KKYWW* 1981 (3), 27–32; *KKYWW* 1981 (3), 33–47.
96. *WW* 1972 (10), 6–15, 28.
97. *KK* 1963 (12), 641–45; *KK* 1965 (1), 1–3.
98. *KK* 1962 (1), 23–27.
99. *WW* 1959 (7), 55–59.
100. C. H. Cheng, *CKHNL* 3 (1984), 56.
101. L. P. Chia and C. P. Chang, *WW* 1977 (6), 41–49.
102. *KKYWW* 1980 (2), 12–15; *KKYWW* 1983 (6), 484–88, 495.



121. Pan-p'o phase pottery vessels at Ho-chia-wan, Hsi-hsiang, Shensi. (From *KKTWW* 1981, no. 4, pp. 22–23.)

chia-ts'un. Aside from scattered small sites,[103] Ho-chia-wan[104] and Hung-yen-pa[105] are noteworthy for their significant component of painted sherds and vessels described as Pan-p'o and Miao-ti-kou. The Ho-chia-wan assemblage particularly, with its neat and wide-ranging Pan-p'o–style vessels, is impressive (fig. 121), as it suggests considerable contact and interaction with the lower Weishui valley. The human figure carved out of a bone found there is among the earliest bone sculptures in Chinese prehistory (fig. 122). Han-chung has always been a crucial staging area in Shensi-Szechwan communications. The rich lower Weishui River flavor in its Neolithic assemblage is highly significant.

The Ta-wen-k'ou Culture of Shantung and Kiangsu

After its discovery in Honan and Kansu in the early 1920s, Yang-shao was soon established as the supreme prehistoric culture of the western loessland of North China, and the eastern lowlands of North China and the Shantung peninsula became the next target of archaeological curiosity. In 1930–31, the Department of Archaeology of the Institute of History and Philology, Academia Sinica, whose ongoing excavations at Yin-hsü in An-yang were temporarily halted by political strife, excavated the site of Ch'eng-tzu-yai, near the township of Lung-shan, in Li-ch'eng county (now Chang-ch'iu county), Shantung, which was discovered by Wu Chin-ting, a member of the staff of the Institute and a native of Shantung.[106] The Neolithic culture unearthed here—the Lung-shan Culture—exhibited several remarkable characteristics. Its pottery included pieces that were thin, lustrous, and black, drastically different from the painted red sherds at Yang-shao-ts'un. Its stone inventory, though broadly similar to the Yang-shao, contained a number of new types, and its abundant shell artifacts were also distinctive.[107] Thus, in the Neolithic archaeology of North China there appeared two parallel cultures: Yang-shao in the west, and Lung-shan in the east.

122. Human face carved on bone at Ho-chia-wan. (From *KKTWW* 1982, no. 5, pl. 12.)

In 1931, the famed Hou-kang stratigraphy referred to earlier was unearthed, showing that in northern Honan at least Lung-shan Culture was later than Yang-shao. The time period before Lung-shan thus became an archaeological vacuum in the east, from which either a new culture or a culture ancestral to Lung-shan

103. C. Y. T'ang and S. C. Wang, *KK* 1977 (5), 351–52; C. W. Wei and C. Sun, *KKTWW* 1980 (2), 6–11; C. Y. T'ang, *KKTWW* 1981 (1), 1–4.
104. *KKTWW* 1981 (4), 13–26; C. W. Wei and Y. C. Yang, *KKTWW* 1982 (5), 5.
105. *KKTWW* 1982 (5), 6–11.
106. C. T. Wu, *Bull. Inst. Hist. Philol., Academia Sinica* 1 (1930), pt. 4.
107. Li Chi et al., *Ch'eng-tzu-yai,* Nanking: Inst. Hist. Philol., 1934.

could conceivably emerge in Shantung or in the eastern coastal regions in general. Such a culture did in fact emerge in the eastern coastal area in the 1950s.

In 1951 a new type of prehistoric culture was recognized at the Ch'ing-lien-kang site, in Huai-an county, northern Kiangsu, at which pottery of a red ware (some even painted with decorative designs) and flat, polished stone axes with a large hole at the center of the blade are particularly characteristic.[108] In the first report of the site the new culture was considered to have begun "after the rise of the Lung-shan Culture" and to have ended "prior to the Han dynasty."[109] The stratigraphical relationship between the Ch'ing-lien-kang and the Lung-shan strata at the site at Erh-chien-ts'un, in the city of Lien-yün-kang on the coast of northern Kiangsu,[110] established for the first time that the Ch'ing-lien-kang Culture predated the Lung-shan Culture as a whole. In the meantime, a little farther to the north, at Kang-shang-ts'un in T'eng-hsien, southern Shantung, another site was found in 1952 yielding red pottery, some of which were also painted.[111] The nature of the new finds in Shantung was clearly recognized in 1959 with the excavation of the Ta-wen-k'ou site in T'ai-an (also known as the Pao-t'ou site in Ning-yang).[112] Thus, by the end of the 1950s a new culture was established in the eastern lowlands and coastal regions of North China, a culture stratigraphically earlier than the Lung-shan Culture. This new culture was variously christened the Ch'ing-lien-kang Culture or the Ta-wen-k'ou Culture,[113] depending on whether the initiative had come from the archaeologists in Kiangsu or from those in Shantung. Then, in 1964, at the site at Pei-hsin, in T'eng-hsien, Shantung,[114] a cultural phase was found which appeared earlier than Ta-wen-k'ou and bore similarities with the P'ei-li-kang Culture identified later.

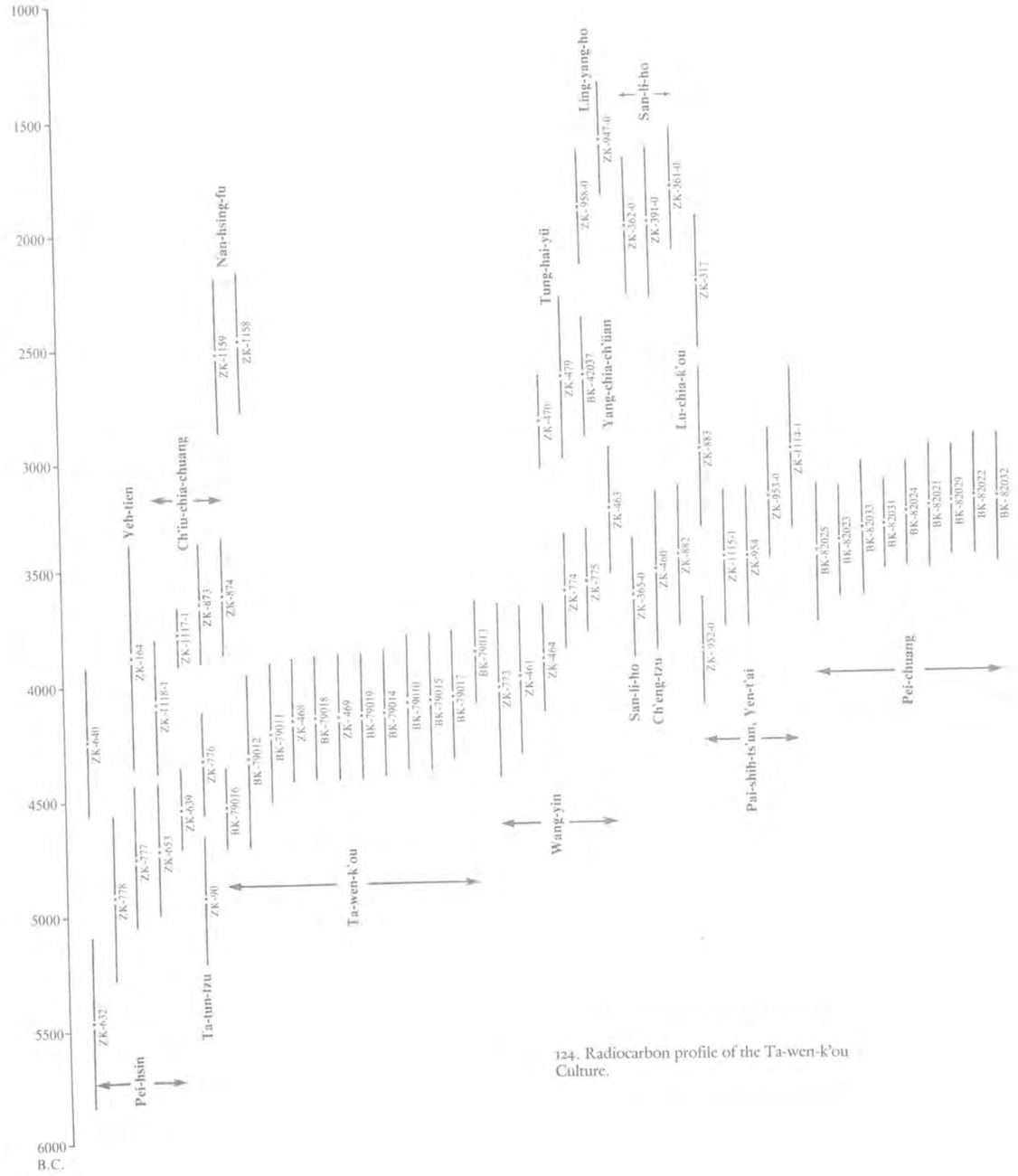
As of now, about one hundred Ta-wen-k'ou Culture sites have been identified, its core distributional area being the central and southern Shantung peninsula and northern Kiangsu, the northern part of the area drained by the Huai-ho River, although isolated sites or assemblages of the culture have been found in eastern Shantung, northern Anhwei, and even central Honan (fig. 123).[115] The principal sites of this culture, in addition to Ta-wen-k'ou and Ch'ing-lien-kang, include, in Shantung, from northwest to southeast, Shang-chuang, in Shih-

108. *KKHP* 1955 (1), 13–24.
109. Ibid., p. 23.
110. *KK* 1962 (3), 111–16.
111. *WWTKTL* 1954 (2), 98.
112. *WW* 1959 (9), 83; 1959 (10), 61–64; 1978 (4), 58–66; *Ta-wen-k'ou,* Peking: Wen-wu Press, 1974.
113. *KKHP* 1958 (1), 7–23; 1964 (2), 57–106.
114. *KK* 1980 (1), 32–34.
115. *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu,* p. 86.

123. Major sites of the Ta-wen-k'ou Culture.

p'ing;[116] Hsi-hsia-hou, in Ch'ü-fu;[117] Wang-yin, in Yen-chou;[118] Nan-hsing-fu in Ch'ü-fu;[119] Yeh-tien, in Tsou-hsien;[120] Ching-chih, in An-ch'iu;[121] San-li-ho, in Chiao-hsien;[122] Ch'eng-tzu, in Chu-ch'eng;[123] and Tung-hai-yü, in Jih-chao;[124] and in Kiangsu, Ta-tun-tzu[125] and Liu-lin[126] in P'i-hsien; and Hua-

116. *WW* 1978 (4), 35–42.
117. *KKHP* 1964 (2), 57–105.
118. *KK* 1979 (1), 5–14, 26.
119. *KK* 1984 (12), 1057–68.
120. *WW* 1972 (2), 25–30; *Tsou-hsien Yeh-tien*, Peking: Wenwu Press, 1985.
121. *KKHP* 1959 (4), 17–29.
122. *KK* 1977 (4), 262–67.
123. *KKHP* 1980 (3), 329–84.
124. *KK* 1976 (6), 377–82.
125. *KKHP* 1964 (2), 9–54; *KKHP* 1974 (2), 125–40; *KKHCK* 1 (1981), 27–81.
126. *KKHP* 1965 (2), 9–46.



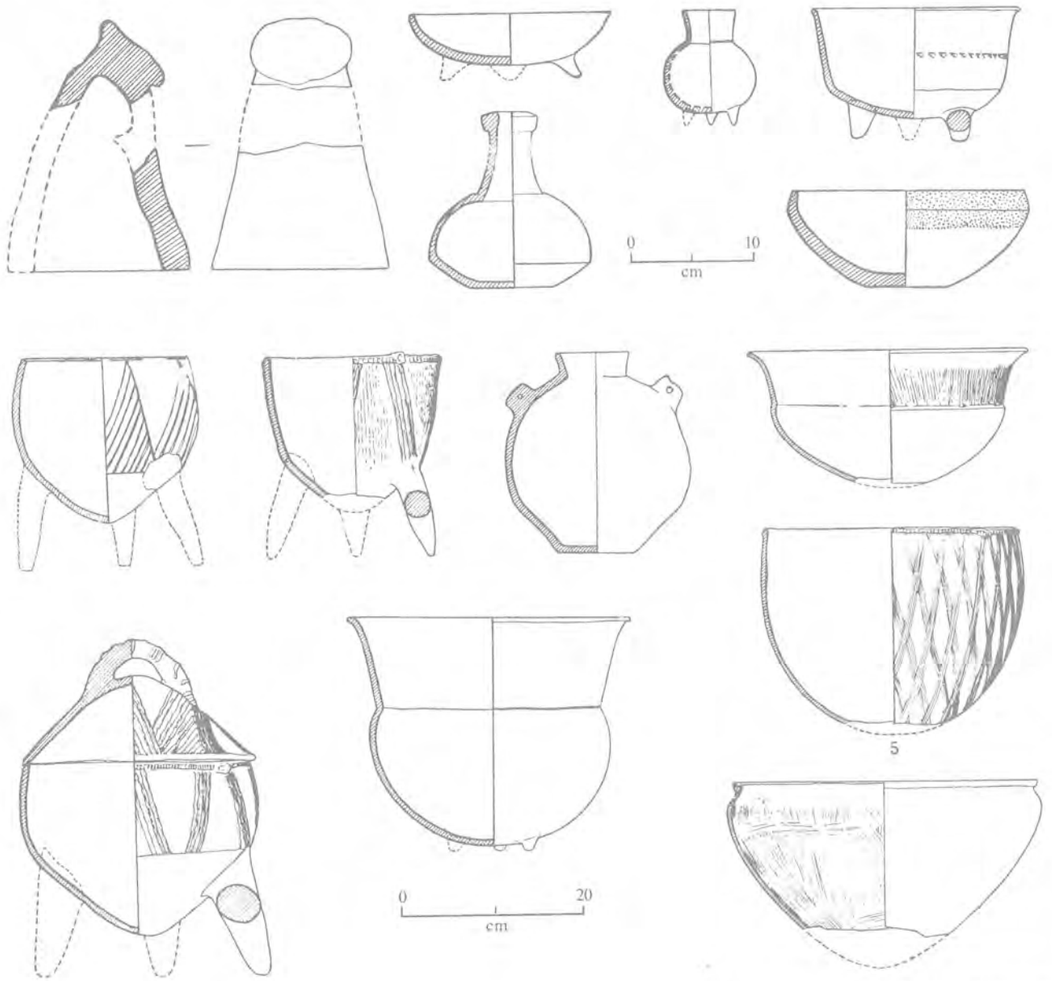
124. Radiocarbon profile of the Ta-wen-k'ou Culture.

t'ing-ts'un in Hsin-yi.[127] Most of the sites are mortuary, and many of the excavations are exploratory and have only been reported in a preliminary manner. Our understanding of the culture, which had a life span of more than two millennia (fig. 124), is, therefore, still limited.

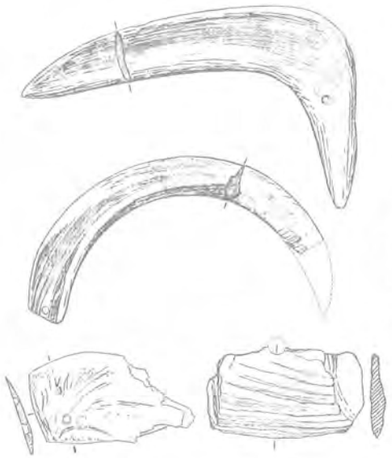
Before we describe what we know of the Ta-wen-k'ou Culture and its development, mention must be made here of the archaeological assemblages unearthed at Pei-hsin, in T'eng-hsien, Shantung, and other sites. Pei-hsin was found in 1964 and excavated in 1978 and 1979. In addition to some storage pits and two jar burials of children, no architectural remains were unearthed. Among the stone implements, the hoe is the most common; they were flaked or partially polished. There were also stone knives, sickles, axes, chisels, grinding stones, pestles, and so on, and bones and antlers were made into arrowheads, harpoons, chisels, spatulas, scrapers, needles, awls, and hairpins. Pottery, which was handmade by coiling, includes coarse brown ware and fine gray ware. The coarse-ware pottery was decorated with appliqués, incisions, comb-incisions, fingernail impressions, punctates, mat impressions, and painting in black or red. The types include the *ting* tripod, beaker, support, jar, bowl, basin, plate, and water bottle (fig. 125). At the bottoms of some bowls were impressions made by grains of cereals which appear to be millets. Among the bones of animals are the following: domestic pig, cattle, deer, water-deer, elaphure, badger, raccoon, chicken, turtles, fishes, mollusks, and snails. Pollen grains in the soil suggest a "wetter, more lacustrine and at times warmer climate" than the present.[128] More characteristic Ta-wen-k'ou remains were also recovered at the site in a stratigraphically later level. Comparing the Pei-hsin assemblage with Ta-wen-k'ou, the excavators see both similarities and differences. At this time Pei-hsin appears to be intermediate between the P'ei-li-kang and the Ta-wen-k'ou in a strict sense, and it may hold the key to the origins of the Ta-wen-k'ou Culture. It is significant to note that comparable assemblages have also been found at the lowest levels at the Ta-wen-k'ou sites in Wang-yin and Ta-wen-k'ou itself.

Like Pei-hsin, Ta-wen-k'ou was the culture of farmers of the millet, grains of which have been found at San-li-ho and other Ta-wen-k'ou sites, and sickles of bone, tooth, and shells are abundant (fig. 126). The natural environment here was wetter and warmer than Shantung is today, and Shantung today is a lot lusher and more humid than the western loessland. From the site of Wang-yin, archaeologists have found a large number of bones of the Yangtze alligator (*Alligator sinensis* Fauvel), representing at least twenty individual animals. The scatter and

127. *WWTKTL* 1956 (7), 21–26, 13.
128. *KKHP* 1984 (2), 186.



125. Pottery types of the Pei-hsin phase. (From *KKHP* 1984, no. 2.



126. Bone, tooth, and shell sickles at Ta-wen-k'ou. (From *Ta-wen-k'ou*, 1974, fig. 33.)

condition of the bones suggest that these alligators were collected from the rivers and ponds nearby and used as food. This has led Chou Pen-hsiung of the Institute of Vertebrate Palaeontology and Palaeoanthropology of the Chinese Academy of Sciences to conclude, "It can be estimated that, from the Neolithic to the historic period, the Yellow River and Huai-ho River plains were crisscrossed with rivers and densely dotted with large and small lakes and were covered with a full vegetation. The neighborhood of the Wang-yin site, in particular, had the Ssu-shui River nearby, the Ta-wen-ho River in the north, Lake Nan-yang-hu in the southwest, and Lake Tung-p'ing-hu in the northwest, furnishing a natural condition suitable for the habitation of the Yangtze alligators."[129] From this one gets some flavor of the lacustrine and marshy landscape of the prehistoric inhabitants of Shantung.

Very few house floors have been reported, and they vary a lot. At Wang-yin and Nan-hsing-fu, semisubterranean floors were found; only one was found at the latter site, square with rounded corners, about three meters to a side. At San-li-ho and Ch'eng-tzu, houses were built on the ground level, their wall foundations having been dug into the ground (fig. 127). Two clay models of houses were unearthed at Ta-tun-tzu; they have conical roof, eaves all round, doors at the front, and windows at the back and the sides. A pottery kiln was reported at Ta-wen-k'ou. It is mostly underground and had three chimneys sloping up to ground level (fig. 128).

Tombs are numerous: more than 800 excavated in the cemetery at Wang-yin alone, and more than 340 unearthed at Ta-tun-tzu. They are all of the rectangular pit-grave type, identical with the Yang-shao. Most of the burials are single, face up, and stretched, although at some cemeteries there are multiple (fig. 129, r) or secondary burials. Most of the corpses were placed with their heads to the east or north. Many had coffins, and in some large tombs the coffins were placed inside a wooden chamber lining the grave pit, and the second-level ledge—that is, a ledge around the coffin formed by digging a smaller pit at the bottom of a larger pit—is seen in many cases for the placement of grave furnishings (fig. 129, l). The grave goods, consisting of pottery, ornaments, implements, and pig heads, varied greatly. At Ta-wen-k'ou, some tombs had one or two items in them, such as a deer tooth, a stone hoe, a spindle whorl, or a pottery vessel, but most tombs had 10 or 20 items (fig. 130). The richest burials had 50, 60, or even more than 180 pieces.

The skeletal materials from these burials provide useful information about the Ta-wen-k'ou inhabitants. Some skulls show artificial deformation, and many had their upper lateral incisors extracted in adolescence. Yen Yen concluded, according to a study of the Ta-wen-k'ou and Hsi-hsia-hou populations, that the inhabitants were of the Polynesian type but that they differed markedly from the contemporary Yang-shao inhabitants.[130] Recent restudies by Han K'ang-hsin and P'an Ch'i-feng[131] have come to exactly the opposite conclusion insofar as their relationship with Yang-shao is concerned.

129. P. H. Chou, *KKHP* 1982 (2), 257.

From the tombs and from the remains at the dwelling sites, stone, bone, antler, shell, turtle (fig. 131), and ivory artifacts, pottery vessels, sherds came to light to characterize the Ta-wen-k'ou Culture and contrast it with Yang-shao. A summary paper on the Ta-wen-k'ou Culture lists the following as its stylistic features:[132]

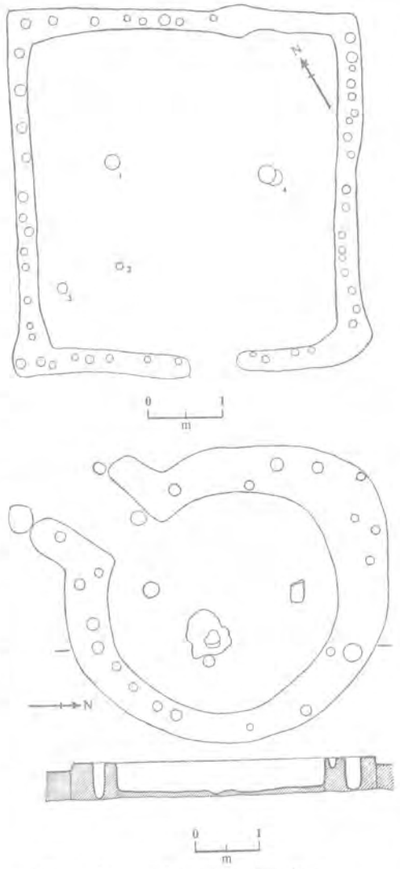
1. The stone ax and stone hoe were finely polished from the middle period on and were flat and angular, often bored by pecking or tubular-boring (fig. 132).

2. Because of variations of manufacturing techniques and selections of the paste, the pottery vessels exhibit complex color schemes, including red, black, gray, white, and orange.

3. The prevailing surface decorations include pick-punctates, hollows, appliqués, incisions, bow-strings, and, in the middle and later periods, basket impressions. Cord-markings and check-stampings are absent. In the middle period a striking design was the weavings composed of large hollows, mostly on pedestals. Some designs were painted. Black paintings only were used in the early period, and in the middle period red, brown, and white were applied as well. Designs were neatly and regularly geometric, skillfully applied, with sharply but harmoniously contrasting colors. Some vessels were only partially painted.

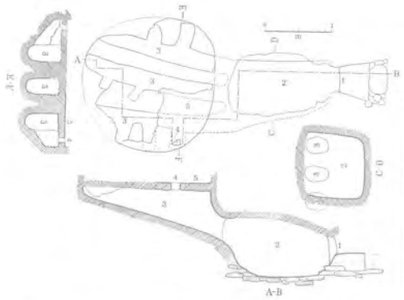
4. The pottery forms were complex and highly varied, mostly falling into the general categories of tripods and pedestaled vessels. The major types are *ting* tripods (with such vessel forms as the jar, bottle, cooking pot, bowl, basin, and cup), *tou* pedestaled bowls, water bottles, back-carried bottles, *kuei* and *ho* tripods, high-stem cups, *ku* cups, urns, basins, cups, ladles, *kuei* containers, tall jars, and funnels. Among these, the bowl-shaped *ting* tripod, the *ku* cup, back-carried bottle, *kuei* tripod, *ho* tripod, high-stem cup, and the funnel are all distinctive of the Ta-wen-k'ou Culture (figs. 133, 134).

5. High artistic achievement is seen in the crafts of the Ta-wen-k'ou Culture. Such products as the string ornament of jade flower petels, the perforated jade hoe, the engraved ivory holder, the ivory tube, the ivory comb with hollow engravings, the engraved bone holder inlaid with turquoise, and the animal-shaped vessels of clay plainly indicate the high degree of skill in the fine crafts attained by these people (fig. 135).

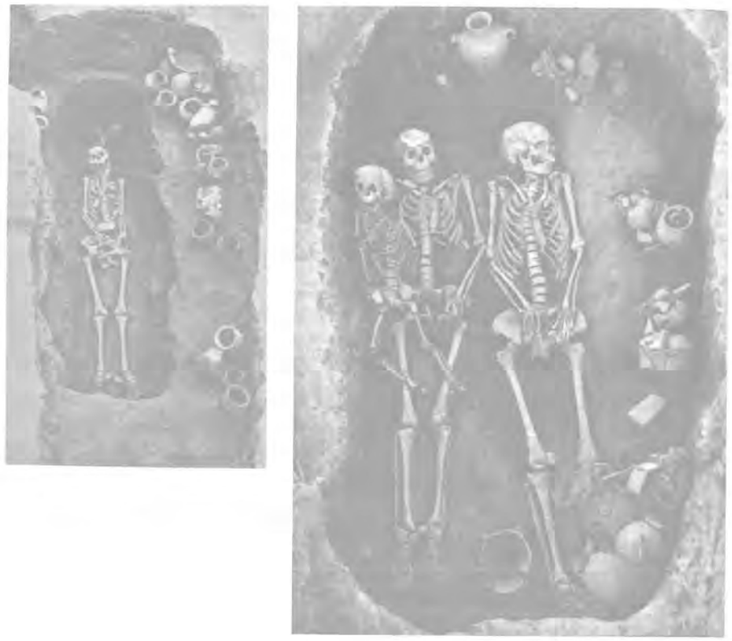


127. House floors at the Ta-wen-k'ou site at Ch'eng-tzu, in Chu-ch'eng, Shantung. (From *KKHP* 1980, no. 3, pp. 333, 348.)

130. *KKHP* 1972 (1), 91–122; *KKHP* 1973 (2), 91–126.
131. *KKHP* 1980 (3), 387–401.
132. *WW* 1978 (4), 61–62; cf. H. L. Ma, *KKHCK* 4 (1984), 252–77.



128. Pottery kiln at Ta-wen-k'ou. (*1*: kiln door; *2*: fire chamber; *3*: fire channel; *4*: fire hole; *5*: grill.) (From *Ta-wen-k'ou*, 1974, fig. 91.)

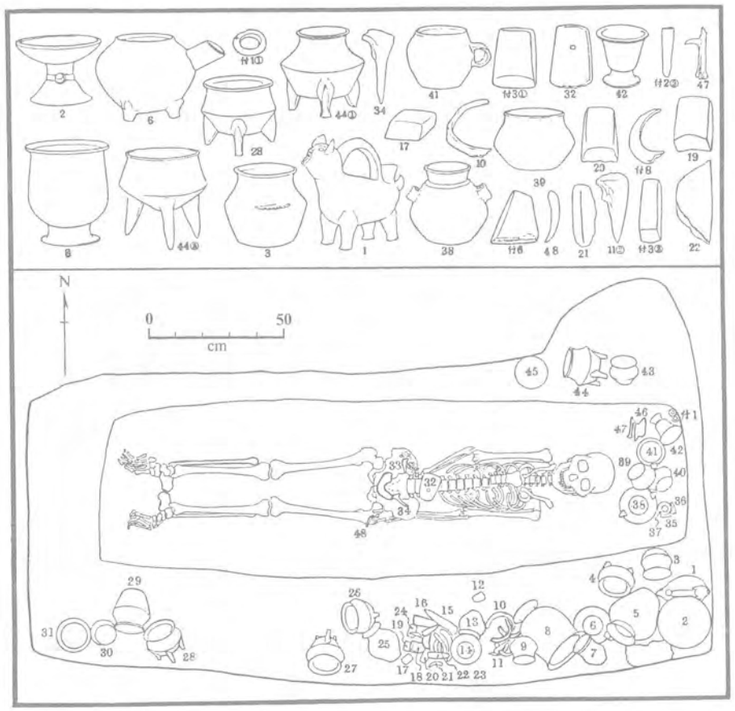


129. Human burials at Ta-wen-k'ou. (From *Ta-wen-k'ou*, 1974, pls. 10, 18.)

6. They also wore necklaces and jade, stone, and pottery bracelets. In addition to the features above, the head deformation, tooth extraction, and such aspects of the burial customs as the prevalence of the second-level ledge, the use of wooden coffins and burial chambers, and the use of pig heads and meat and deer teeth as grave furnishings are highly distinctive in comparison with contemporary cultures elsewhere.

Within the tradition so characterized, the Ta-wen-k'ou Culture underwent changes that are highly perceptible and may be used for dating sites. There are various schemes to divide the Ta-wen-k'ou Culture into various periods, the most elaborate distinguishing eleven stages.[133] All of these, however, are agreeable to

133. *WW* 1978 (4), 58–66; K. J. Kao, *KKHP* 1978 (4), 399–419; F. S. Ts'ai, *WWCK* 1 (1980), 66–73; J. T. Wu, *KKHP* 1982 (3), 261–81; J. Wu, *WW* 1982 (10), 44–56.



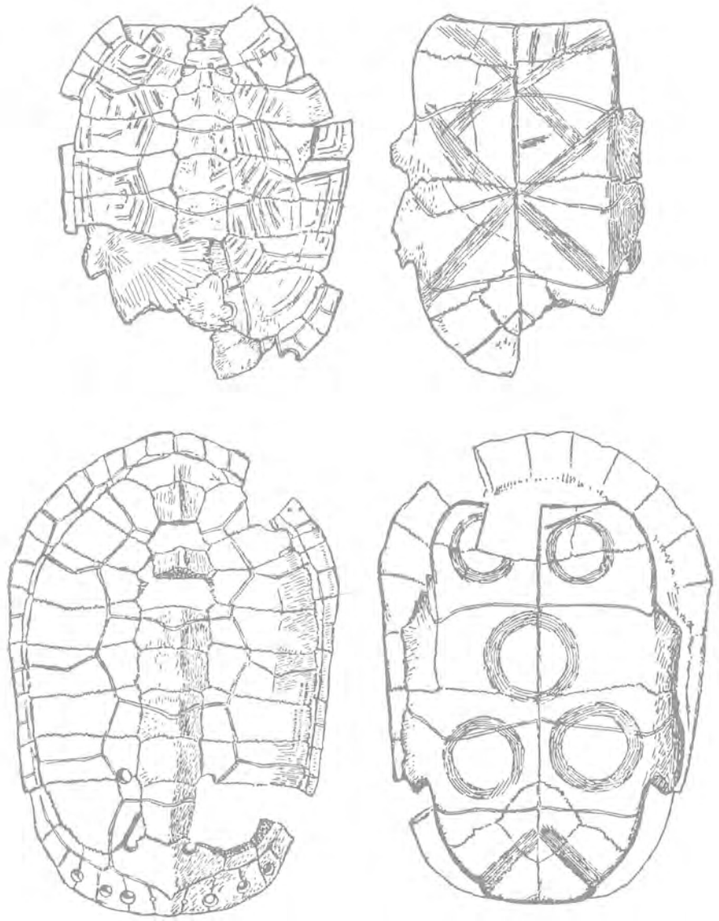
130. Burial no. 9 and its pottery vessels at Ta-wen-k'ou. (From *Ta-wen-k'ou*, 1974, fig. 14.)

an early-middle-late division at a general level. According to a recent synthesis, the three periods are characterized as follows (fig. 136):[134]

Early Ta-wen-k'ou (ca. 4300–3500 B.C.). Type sites are the cemeteries at Wang-yin and Liu-lin. Finely polished stone hoes and other types began to appear late during this period. Pottery wares are fine or tempered with sand, shell, or mica, handmade, and mainly red or brown in color. There is some gray ware but very little black ware. Surface decorations were incised, appliquéd, pick-punctated, stamped, or painted. Characteristic types include the *ting* tripod with cooking pot or bowl bodies, *ku* cup, and *tou* on pedestals with holes. Also distinctive of this

134. J. Wu, *WW* 1982 (10), 46–47.

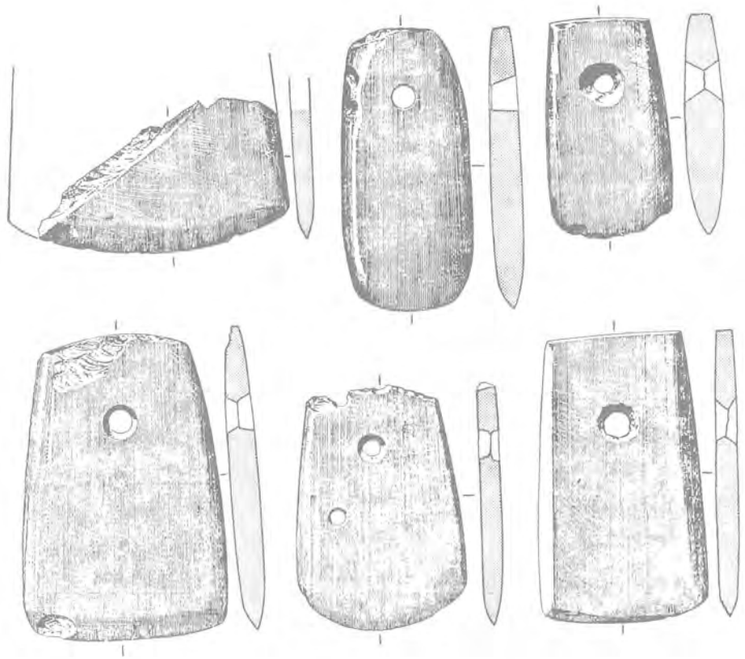
131. Polished and perforated turtle shells at Ta-tun-tzu, P'i-hsien, Kiangsu. (From *KKHP* 1964, no. 2, p. 29.)



period are the bowls painted with flower petals, whorls, and stars in multiple colors, urns on solid tripods and with spout, and funnels.

Middle Ta-wen-k'ou (ca. 3500–2900 B.C.). Type sites are early and middle strata burials at Ta-wen-k'ou, lower-level burials at Ch'eng-tzu, lower-level burials at

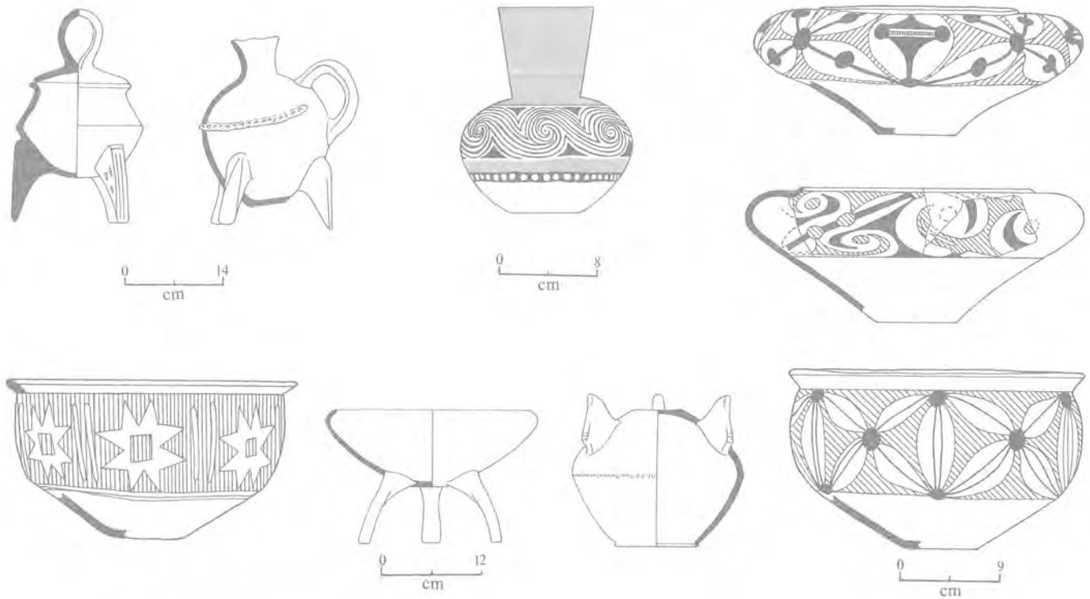
132. Polished stone hoes at Ta-wen-k'ou. (From *Ta-wen-k'ou*, fig. 27.)



Hsi-hsia-hou, and upper-level burials at Ta-tun-tzu. In pottery, sand-tempered brown ware and fine red ware still predominated, but gray ware had increased in proportion. Still mostly handmade, the pottery included some *ting* tripods and urns that were retouched at the rims with slow wheels and even some small vessels made on the fast wheel. Painted designs were still popular and included geometric forms such as the cross or the lozenge outlined in white and, a little later, simple and clear-cut large red dots. Pottery types include the *ting* tripod with an angular fold in the body wall, the *kuei* tripod with solid feet, the back-carried bottle, the *tou* vessel on a large, tall pedestal with hollowed woven designs, the gray-white *tsun* beaker, a cup with one handle, and the *kuei* tripod with almost no body and three baggy legs.

Late Ta-wen-k'ou (ca. 2900–2400 B.C.). Type sites are late-level burials at Ta-wen-k'ou, upper-level burials at Hsi-hsia-hou and Ch'eng-tzu, and lower-level burials

133. Pottery types of the Ta-wen-k'ou Culture. (From *Ta-wen-k'ou*, 1974; and *KKHP* 1964, no. 2, p. 34.)



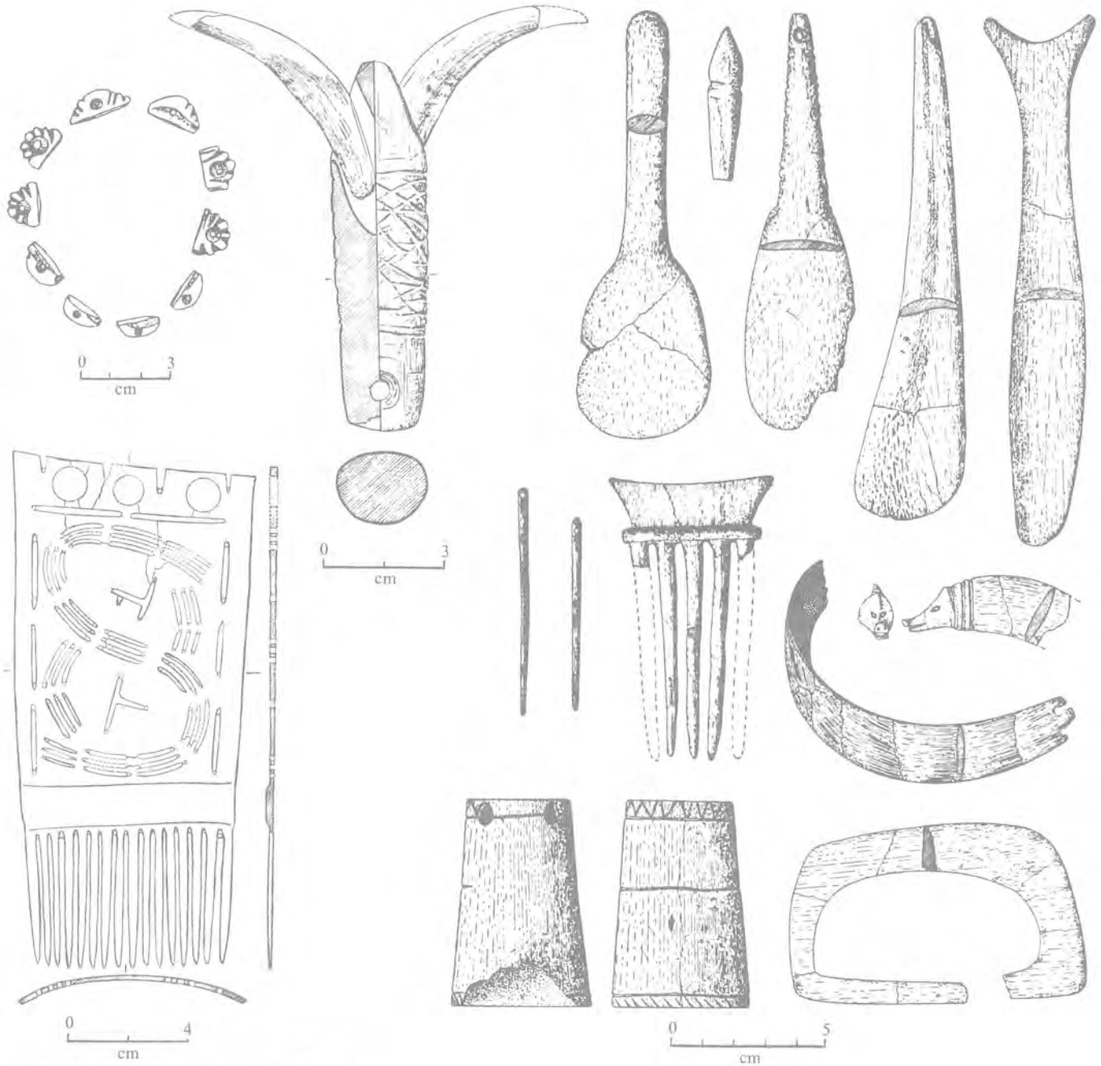
at San-li-ho. Among the stone artifacts there appeared for the first time ritualized stone and jade *yüeh* axes. In pottery, gray and black wares predominated, including some polished lustrous black pottery. A new ware, fine-sandy, hard, and white or yellow, appeared, but painted pottery was now rare. Basket impressions appeared. Characteristic types include the basket-impressed *ting* tripod, the *kuei* tripod with narrow neck, body, and small legs, the *kuei* tripod with almost no body and large baggy legs, the *tou* vessel with folded body on a high stand, the *ku* bottle with a wide shoulder, a cup of blackware with a high handle, the tall jar, the *ho* tripod with long spout, the thin and tall back-carried bottle, the *tsun* beaker with body wide at lower part, and incised signs on the wall of big-mouth *tsun* urns (fig. 137).

The appearance of ritual objects and wheel-made pottery in the later periods indicates changes beyond technology and style. Social changes from early to late periods are visible in the grave furnishings. In the early period Wang-yin cemetery, grave furnishings are modest, each grave having only two or three items. In men's graves they are often stone implements, but in women's graves one finds stone or pottery spindle whorls, suggesting that social divisions were based on sexual division of labor. At Liu-lin, another Early Ta-wen-k'ou cemetery, again most tombs are modestly furnished, although some graves are better off, and again men's and women's graves are furnished with stone implements and spindle whorls, respectively. In addition, in the Wang-yin and Liu-lin cemeteries the graves were arranged regularly according to a preconceived plan. The plan of the cemeteries broke down in the late Ta-wen-k'ou. In the San-li-ho and Hsi-hsia-hou cemeteries, for example, the tombs were apparently placed helter-skelter. The furnishings in the individual graves also varied to a much greater degree than before. At San-li-ho, some graves were unfurnished, but others very richly furnished, one having more than 25 pottery vessels, another more than 30 lower jaws of pigs. At Ch'eng-tzu, among the 87 second-stratum (Late Ta-wen-k'ou) burials, 5–7 percent are characterized by a large pit, burial caskets, many and fine pottery vessels, and lower jaws of pigs, whereas more than 62 percent are without furnishings. The graves of the haves and the have-nots were also placed in different parts of the cemetery at Ch'eng-tzu: rich graves in the northern sector, and poor graves in the eastern sector.

134. Animal-shaped pottery vessel from San-li-ho, Chiao-hsien, Shantung. (From *KK* 1977, no. 4.)

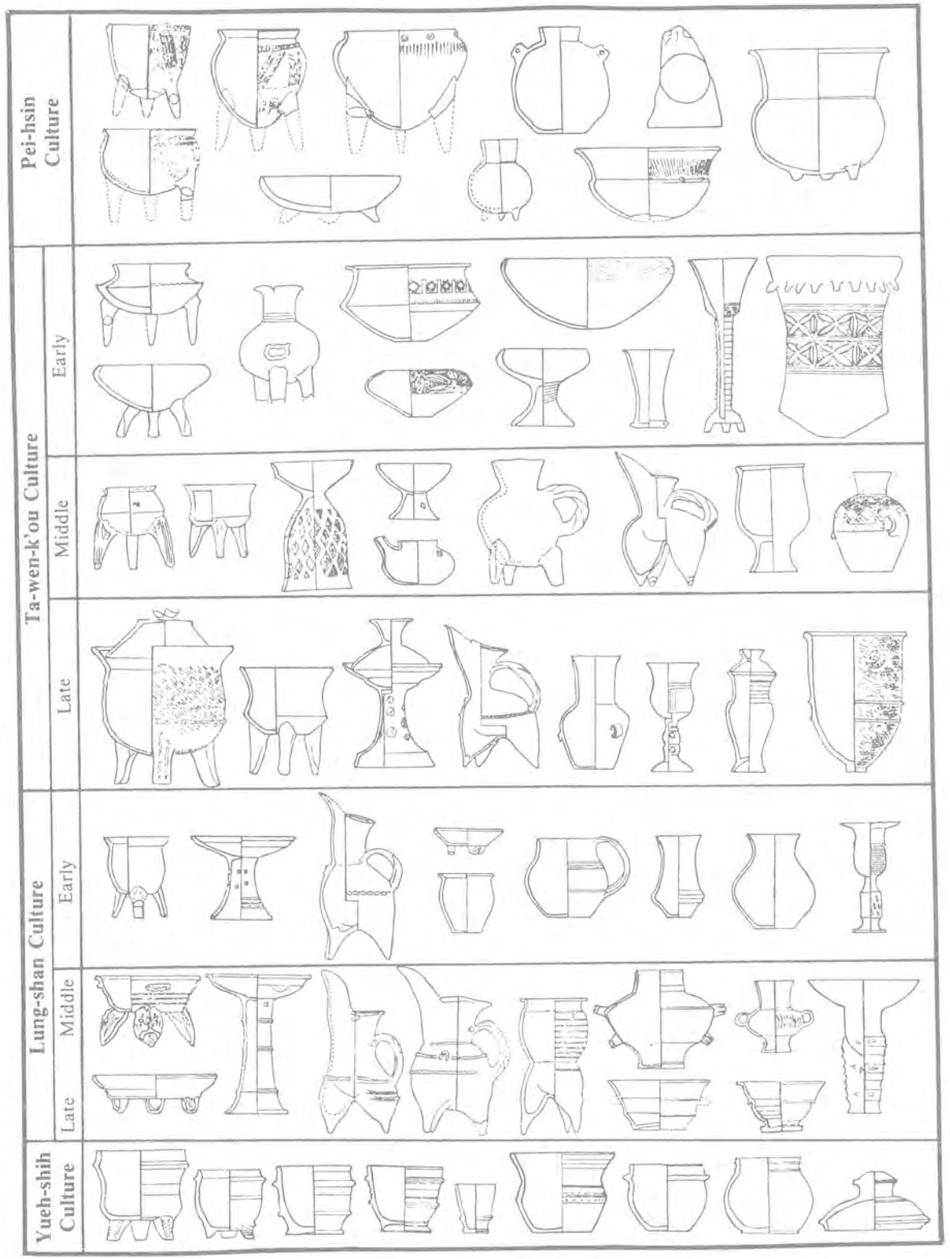
Early Neolithic Cultures of the Liao-ho River Valley and Southern Manchuria

North of the Yellow River valley is the eastern Inner Mongolian plateau drained by the Liao-ho River system, formed in the upper reaches by two major tribu-

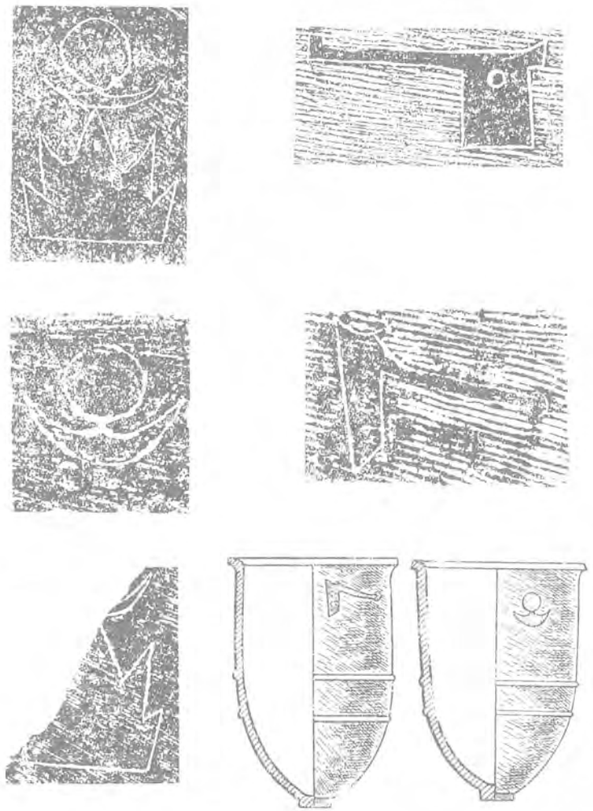


135. Bone, tooth, and ivory objects of the Ta-wen-k'ou Culture. (From *Ta-wen-k'ou*, 1974, fig. 78; *KKHP* 1965, no. 2, p. 30; *KKHCK* 1, 1981, p. 40.)

136. Ceramic types of the various prehistoric cultures of Shantung. (From *WW* 1982, no. 10, p. 47.)



137. Incised symbols on Ta-wen-k'ou pottery. (From *Ta-wen-k'ou*, 1974, fig. 94.)



taries, Sharamurun and Lao-ha rivers. Now the area is arid and steppe-like, but in early antiquity, when the rest of North China was wetter, warmer, and greener, eastern Inner Mongolia was no exception. As Teilhard de Chardin pointed out many years ago:

During the Late Pleistocene, the distribution and local facies of the modern deserts are fully recognizable. Yet their depressions are abundantly filled with temporary lakes, not so temporary however that they could not feed at places a rich population of Mollusks. Heaps of Lymnaea *and* Planorbis *occur in the high terraces along the "nors" of East Mongolia. . . . The continuation of this regime, or even a somewhat moister period, is necessary for explaining the distribution of human industry during Neolithic times. Since the Neolithic, an increasing aridity is positively indicated by a general extension of the sand dunes, a general reduction of the "nors," and a general deflation of the Late Pleistocene silts. The influence of human agency. . . . seems to be, on the whole, insufficient for explaining the main phenomenon.*[135]

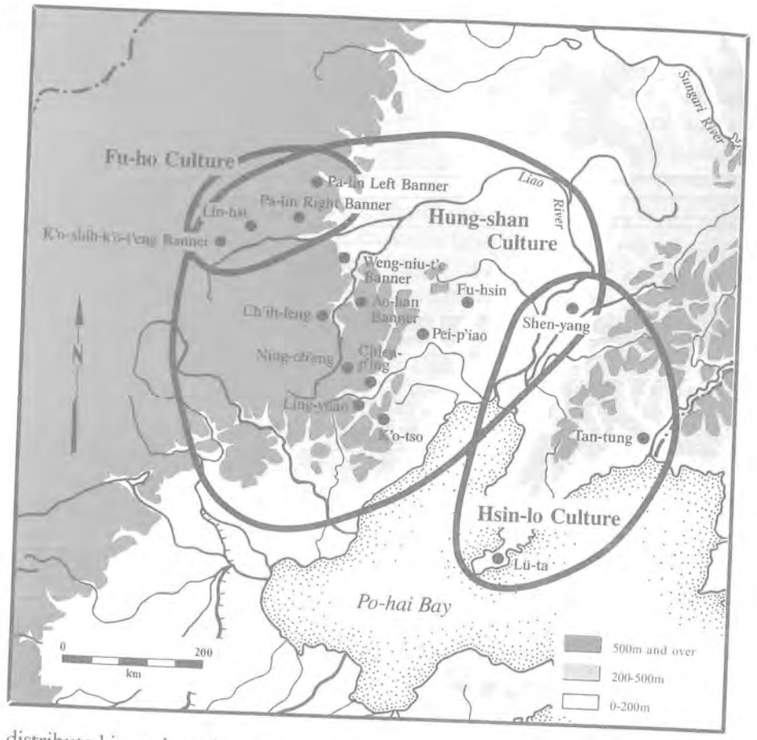
These "nors" in Mongolia are now largely desiccated, but the windblown cultural remains in this region "occurred with such regularity in the various basins and hollows, large and small," as to suggest that their formation took place under climatic conditions decidedly different from those of the present day at a time when these basins were filled with water.[136]

The cultural remains referred to above have long been known to archaeologists, though for systematic investigation and excavations we have had to wait until the 1970s. In fact, eastern Mongolia and southern Manchuria were among the first areas of China into which modern archaeology was introduced, by the Japanese scholar Torii Ryūzō. The Japanese militarists' designs on this area date from the end of the nineteenth century, and Torii was one of the first scholars to come to the scene, in 1895, the year of the Shimonoseki Treaty, the first of the unequal Sino-Japanese treaties. As a pioneer, Torii discovered many ancient sites and relics here,[137] and Japanese and Russian investigators were responsible for most of the major finds in the area.[138] Insofar as the Liao-ho River valley is concerned, by 1949 the widespread impression was that a Microlithic Culture of hunters and fishers and perhaps part-time farmers, featuring chipped small stone tools, was dominant throughout the Inner Mongolian highlands and river valleys as a third culture of North China beside the Yang-shao and the Lung-shan.[139]

In the 1950s Chinese archaeologists were preoccupied with the Yellow River valley, which was the area of most of the major finds of the decade. However, enough of the Microlithic Culture was known for *Hsin Chung-kuo ti K'ao-ku Shou-huo* (Archaeological results in New China), the major synthesis of Chinese archaeology in the 1950s, to observe that "the primitive cultural remains that are

135. P. Teilhard de Chardin, *Bull. GSoC* 16 (1936–37), 219.
136. N. C. Nelson, *Natural History* 26 (1926), 250; John Maringer, *Contribution to the Prehistory of Mongolia*, Stockholm, Statens Etnografiska Museum, 1950, pp. 207–08.
137. Torii Ryūzō, *Jinruigaku-Zasshi* 24 (1909), 356–57; R. Torii and K. Torii, *Populations primitives de la Mongolie Orientale*, Tokyo: Peidai Rika Kiyo 36 (1914), 1–100; R. Torii, *Taiyō* 15 (1896); R. Torii, *Minami Manshū Chosa Hokoku*, Tokyo: Peidai Rika Kiyo, 1911.
138. See C. M. An, *Chung-kuo shih-ch'ien k'ao-ku-hsüeh shu-mu* (Bibliography of prehistoric archaeology of China), Peking: Yenching University, 1951, s.v. "Jehol-Chahar," "Liao-tung and Liao-hsi," "Chi-lin, Sung-Chiang," "Hei-lung-chiang, Inner Mongolia Autonomous Region."
139. W. C. P'ei, *Chung-kuo shih-ch'ien shih-ch'i chih yen-chiu*, Shanghai: Commercial Press, 1948.

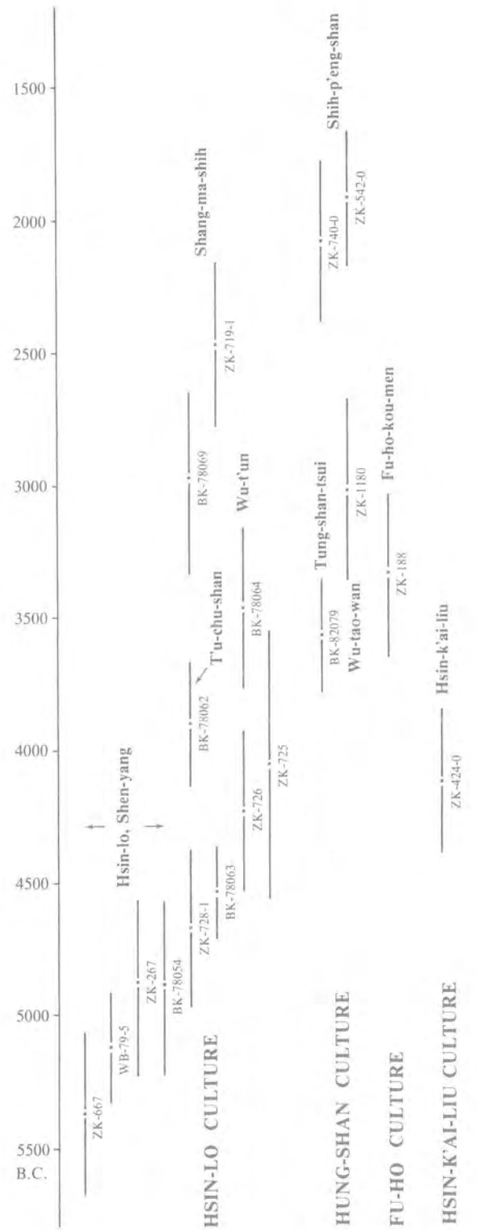
138. Major sites of the Hsin-lo, Hung-shan, and Fu-ho Cultures.



distributed in such a wide area, other than sharing the common characteristic of microliths, actually exhibit many variations in cultural morphology. To engage in a complete analysis of the cultural characteristics in the various regions, and to recognize individual archaeological cultures within the general Microlithic category, are important topics for future studies of the Microlithic Culture."[140]

Such studies are still in a beginning stage and are ongoing. As of now, several archaeological phases are recognizable in the general area of eastern Mongolia and southern Manchuria; they are found in various places and in different millennia and centuries. All share the microliths and comb-impressed, comb-incised, and rocker-stamped pottery, but regional and local differences are profound. We

140. *Hsin Chung-kuo ti k'ao-ku shou-hu,* p. 37.



139. Radiocarbon profile of the major earlier Neolithic sites in the north.

will describe only those that are the most visible in the available record (figs. 138, 139).[141]

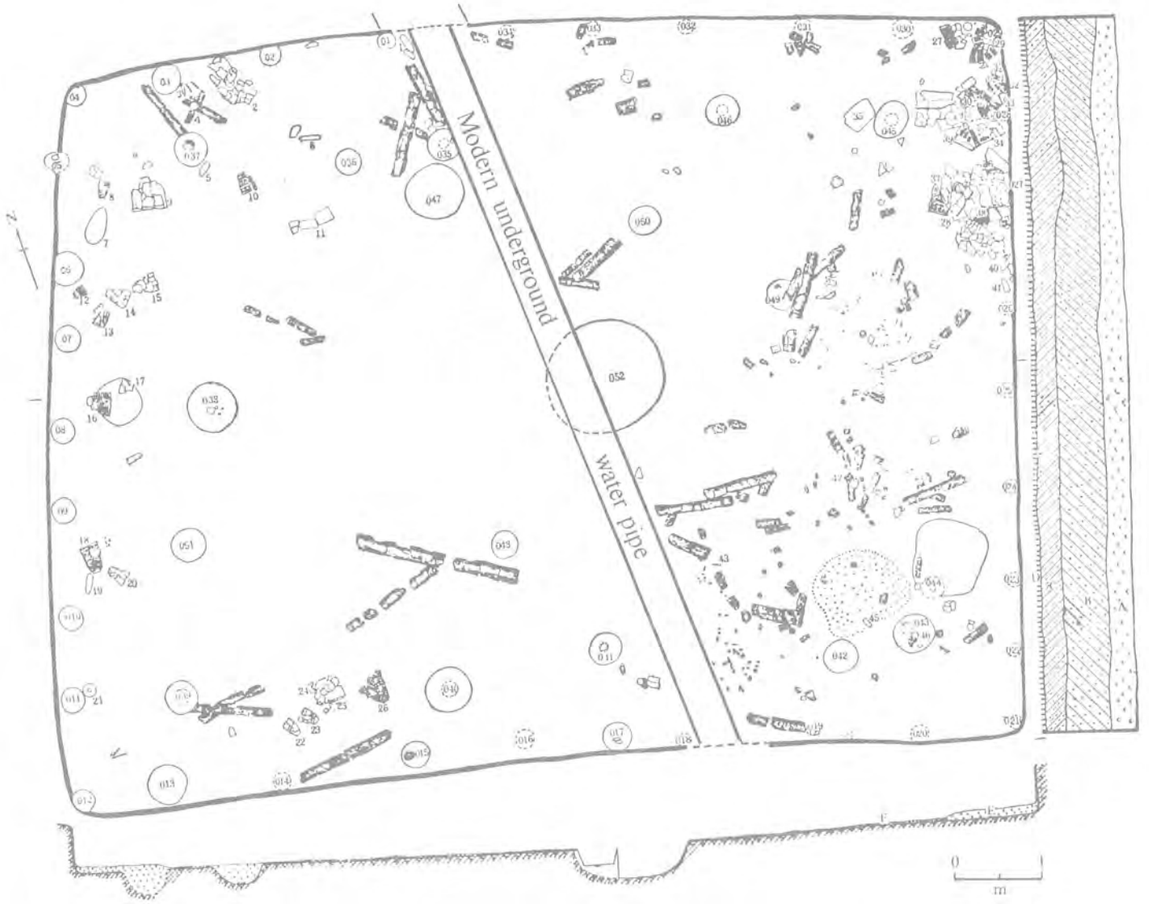
HSIN-LO AND RELATED PHASES

Several sites brought to light in recent years in different parts of the area under discussion—Hsin-lo in Shen-yang on the lower Liao-ho River valley, Hsing-lung-wa in Ao-han Banner in the upper Ta-ling-ho River valley, Hsiao-chu-shan, Shang-ma-shih, and other sites on the larger Ch'ang-shan Island off the southern tip of Liaotung Peninsula, and Hsin-k'ai-liu on the shore of Lake Hsing-k'ai (Khanka) on the eastern border with the Soviet Union—have yielded archaeological remains of ceramic cultures that are dated to the fifth millennium B.C. Although each of these sites has its distinctive features, their remains indicate a cultural substratum common to the northeastern regions of China that was characterized by a distinctive ceramic tradition as well as a microlithic inventory. Furthermore, this substratum shares important features with prehistoric cultures in the Maritime Territory of the USSR and Korea.

The site at Hsin-lo was excavated in 1973[142] and 1978[143] on top of and around a low hill about 5 to 10 meters above the plain by the side of a small river. Two house floors were found, both rectangular and semisubterranean, one only 4.6 by 5.2 meters in size and the second 11.1 by 8.6 meters. The corners were rounded, and a hearth was at the center of the floor. The large floor (fig. 140) appeared to be a locus of sundry productive activities: most of the pottery remains were concentrated at the northern end of the east side of the house, close against the wall. Individual pottery vessels were placed near the post-holes along the east and west walls. Piles of microliths and small spalls were found along the east wall, possibly marking the location of their manufacture. Carbonized grains (apparently of millets) were found inside a post-hole at the southeastern corner and on the floor area nearby. Bone tools, stone beads, and grinding stones were unearthed on the south side toward the east, woodcarvings at the northwest corner, and coal objects, graphite fragments, and red ochres mostly at the northeastern and northwestern corners. Animal bones were found at the southwestern and northeastern corners.[144]

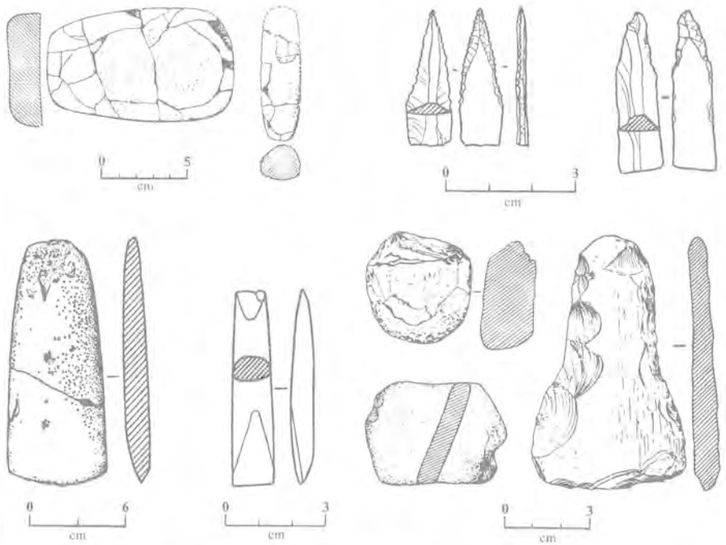
From inside and around the house floors a large amount of stone implements, pottery, and other artifacts came to light. Three kinds of stones are easily classifiable: microliths (principally arrowheads, points, and scrapers), chipped stones (choppers, net-sinkers, scrapers, and possibly hoes), and polished stones (axes, chisels, mortars and pestles), indicating a lot of hunting and fishing activities and grinding of grains (fig. 141). Remarkably, the site has yielded a number of mineral products apparently not of native origins: small objects made of coal crystals,

141. Cf. K. M. Liu and K. C. Hsü, *CKHNL* 1 (1980), 72–79; T. S. Kuo and S. Ma, *KKHP* 1985 (4), 417–43.
142. *KKHP* 1978 (4), 449–66.
143. *KKHP* 1985 (2), 209–22.
144. Ibid., 212.

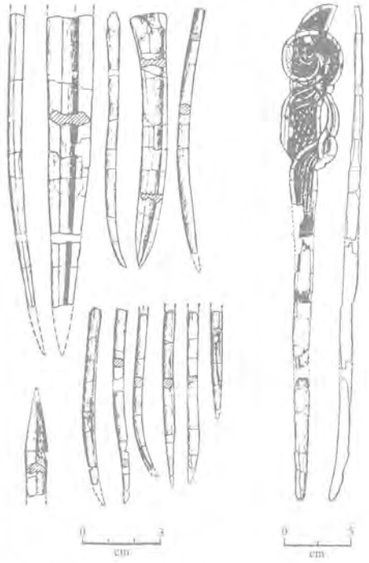


140. House floor F-2 at Hsin-lo, Shen-yang, Liaoning. (*01–051*: postholes; *052*: hearth; *1, 5, 6, 9, 33*: stone pestles; *7, 11, 35*: stone mortars; *3*: woodcarving of bird; *41, 44*: stone axes; *43*: engraver; *45*: grinding stone; others: pottery vessels). (From *KKHP* 1985, no. 2, p. 210.)

141. Stone implements from Hsin-lo. (From *KKHP* 1978, no. 2, pp. 452–54; *KKHP* 1985, no. 2, pp. 215–16.)



142. Bone implements and woodcarving of a bird (*right*) from Hsin-lo. (From *KKHP* 1985, no. 2, p. 219.)



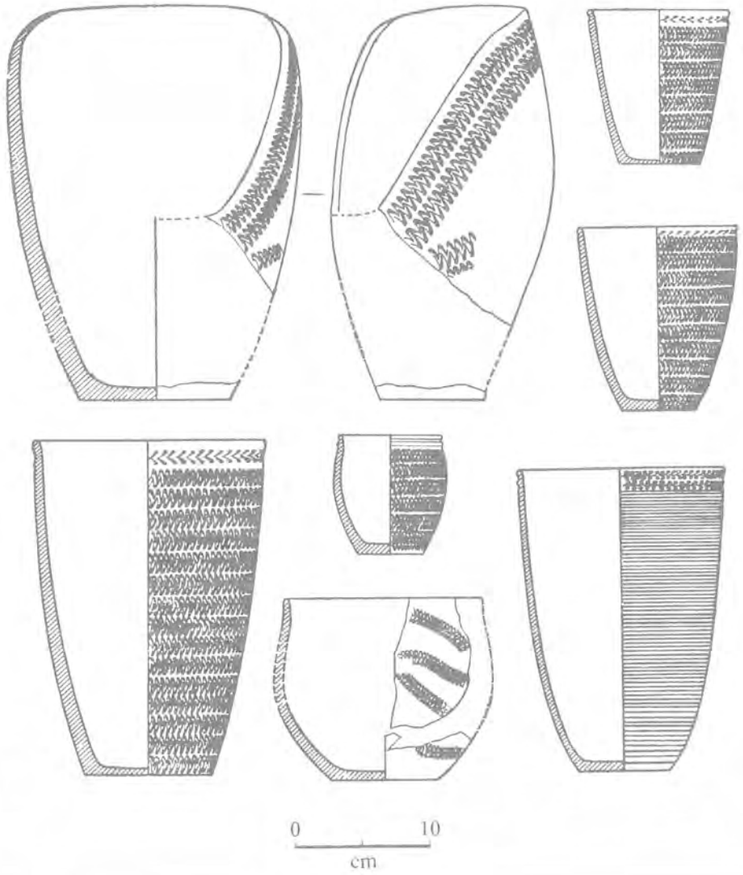
determined to have come from the Fu-shun coal fields about fifty kilometers away;[145] jade engravers and beads, presumably from Hsiu-yen and K'uan-tien, also in Liaoning province; agates, known to have come from a Shen-yang suburb; graphites; and red ochres. There are also bone tools and woodcarvings (fig. 142).

The most striking component of the Hsin-lo inventory is its pottery: almost all of sandy red or brown paste; over 90 percent of a single form, a deep urn with a flat base; and more than 85 percent of the sherds and vessels bear horizontal bands of rocker-stamped designs. A comb was apparently the principal instrument for surface treatment: it was used to impress, incise, or drag along the edges of the vessels and then rocker-stamp bands horizontally around the body. Six urns with slanted mouths were found in the first season (fig. 143).

Pottery similar to the Hsin-lo ware is found at several coastal sites in Tung-kou, in the northern end of the Liaotung Peninsula, from the lower stratum at the Kuo-chia-ts'un site in Ta-lien, and from the lower strata of several shell-midden sites on the small islands off the tips of the peninsula, for example, the sites at

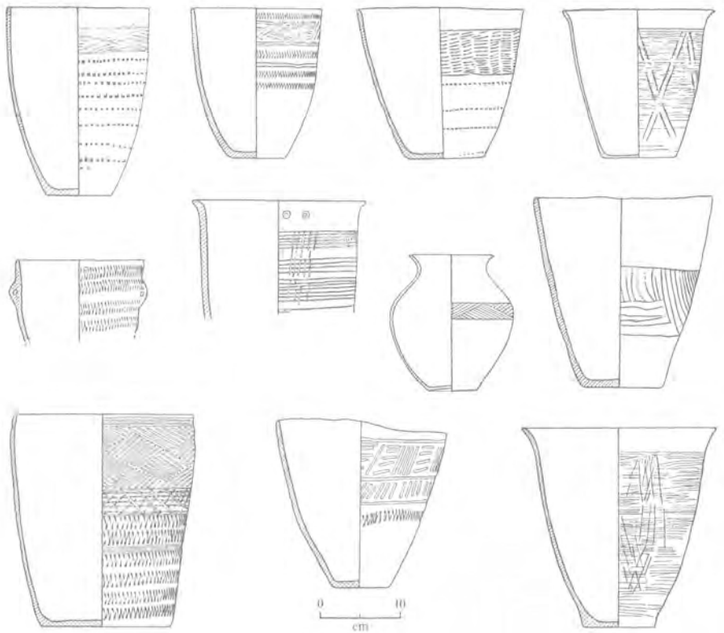
145. *KK* 1979 (1), 79–81.

143. Pottery types at Hsin-lo. (From *KKHP* 1978, no. 4, p. 455.)



Hsiao-chu-shan (also known as T'u-chu-tzu) on Kuang-lu Island (fig. 144) and Shang-ma-shih on the Greater Ch'ang-shan Island.[146] Here on the Ch'ang-shan Islands the pottery was darker and often tempered with soapstone powder, and

146. *KKHP* 1981 (1), 63–109; *KK* 1984 (1), 21–36; *KKHP* 1984 (3), 287–328. The sites on the Ch'ang-shan islands were investigated by Japanese archaeologists; see Miyake Toshinari, *Manshū Kakuhō* 4 (1936), 163–86.



144. Pottery types from the lower stratum at Hsiao-chu-shan, Ch'ang-tao. (From *KKHP* 1981, no. 1, p. 69.)

the rocker-stamping was more elaborate and comb-impressions more prevalent, but the predominant form is again the deep urn with a flat base. Stone axes, pestles, and mortars were found, suggesting possible agriculture, but the shell-middens are obvious indication of the exploitation of molluskan shellfish by the insular inhabitants.

The Hsin-k'ai-liu site, considerably to the east of the previous phases, on the shore of Lake Hsing-k'ai (Lake Khanka), is of the same substratum but exhibits too many differences from Hsin-lo and Hsiao-chu-shan to be considered the same phase.[147] Located on a hill between the main body of the lake and a smaller lake to the north, the site was excavated in 1972 and has yielded cultural debris, thirty-two burials, and ten fish-storage pits. Some of the burials were accompanied by secondary interments (fig. 145), and all of them were furnished with hunting and

147. *KKHP* 1979 (4), 491–516.

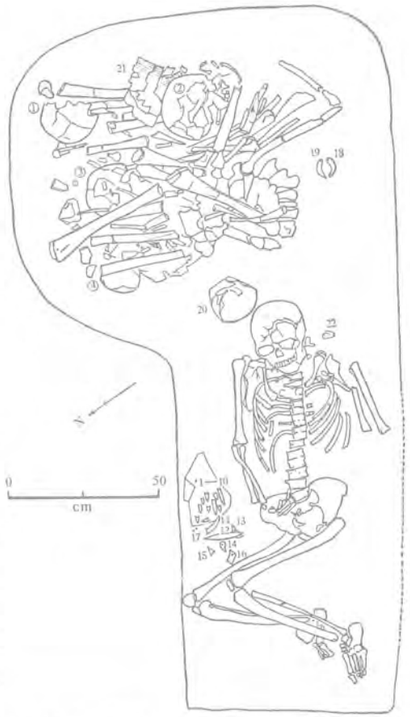
fishing gear. The stone implements, described as pressure-flaked, were mostly arrowheads, lanceheads, and scrapers. Pottery was characteristically sandy, grayish brown, apparently coiled, and again distinguished by flat-based urns. The surface treatment, however, differs markedly from Hsin-lo (fig. 146). Comb was again the principal instrument; it was used to incise and impress, but not to rocker-stamp. Two striking designs are the so-called fish-scale design and the net-pattern: both incorporate several varieties and appear to be produced by stamps. The fish-storage pits (filled with fish skeletons and scales), the scale and net designs, and bone fishing gear (harpoons, lures, and hooks) all point to the extraordinary importance of fishing to the inhabitants at Hsin-k'ai-liu. In fact, there is no evidence of agriculture here.

Mention should be made of a newly reported—and still very inadequately known—Neolithic site at Hsing-lung-wa, in Ao-han Banner, about 150 kilometers to the west of Hsin-lo. A single C-14 date places the site to the late sixth millennium B.C., and its cultural inventory—including semisubterranean houses and rocker-stamped, flat-based pottery—suggests affiliation with all the Mongolian-Manchurian sites that have just been described.[148]

THE HUNG-SHAN CULTURE

The site at Hung-shan-hou (literally, Back of the red cliff) near the city of Ch'ih-feng on the Lao-ha River was discovered by Torii Ryūzō in 1908 and excavated by a succession of Japanese archaeologists in 1924, 1930, and 1935.[149] Two phases of occupation were distinguished here, the Painted Ware and the Red Ware. The latter contained bronze artifacts and other Eastern Chou affinities, and the Painted Ware phase was placed into the same period as the Yang-shao Culture of North China, although it was clear that it had a "northern base" as indicated by microliths and brownish coarse pottery with loop and lug handles and combed, dentated, and rocker-stamped designs.

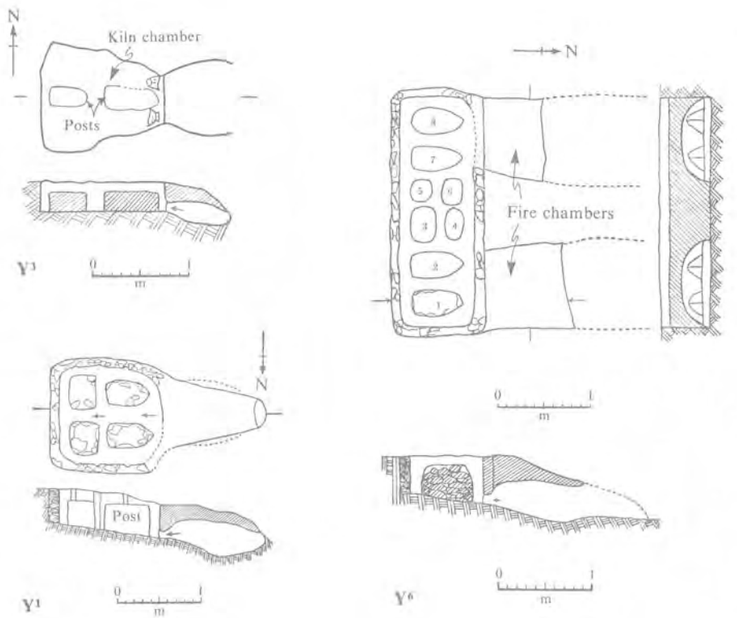
In the 1950s and 1960s more Hung-shan Culture (Painted Ware phase) sites were investigated,[150] but not until the 1970s, when important and stratified sites were excavated, did significant new information about the Hung-shan come to light. Excavations at Chih-chu-shan in Ch'ih-feng have clarified the stratigraphic relationship among four cultural phases in the area: Hung-shan, earliest, followed by Lower Hsia-chia-tien, Upper Hsia-chia-tien, and Warring-States-Early.



145. Human burials M-7 at Hsin-k'ai-liu on Lake Khanka. (*1–10, 15*: stone arrowheads; *11, 13, 19*: tooth-knives; *12*: antler knife; *14, 16, 18*: tooth ornaments; *17*: stone bead; *20, 21*: pottery; *22*: scraper; bones on top are four skeletons that were buried together with the apparent tomb master below.) (From *KKHP* 1979, no. 4, p. 494.)

148. *KK* 1985 (10), 865–74.
149. Hamada Kosaku and Mizuno Seiichi, *Ch'ih-feng Hung-shan-hou*, Archaeologia Orientalia, ser. A, 6 (1938).
150. *KKHP* 1958 (3), 25–40; for the term Hung-shan Culture, see Yin Ta, *Chung-kuo hsin-shih-ch'i shih-tai* (The Neolithic period of China), Peking: San-tien, 1955, pp. 143–46.

146. Pottery types at Hsin-k'ai-liu. (From *KKHP* 1979, no. 4, p. 503.)

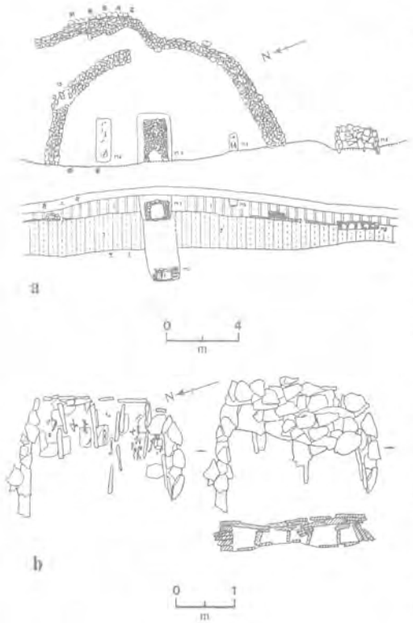


147. Plans and cross-sections of three pottery kilns unearthed at Ssu-leng-shan, Hsiao-ho-yen, Ao-han Banner. (From *WW* 1977, no. 12, p. 3.)

Han,[151] a sequence that supersedes the earlier Painted Ware-Red Ware succession. Investigations in the Hsiao-ho-yen area of Ao-han Banner disclosed a Hsiao-ho-yen phase placed between Hung-shan and Lower Hsia-chia-tien.[152]

Hung-shan Culture is now known throughout the upper and middle Liao-ho River valley and the Ta-ling-ho River valley in the highlands of southeastern Inner Mongolia and western Liaoning.[153] The major sites, besides Hung-shan-hou itself, include Hsi-shui-ch'üan in Ch'ih-feng,[154] Hsiao-ho-yen in Ao-han Banner,[155] Tung-shan-tsui in K'o-tso,[156] Hu-t'ou-kou in Fu-hsin,[157] and a few

151. *KKHP* 1979 (2), 215–42.
152. *WW* 1977 (12), 1–15.
153. K. M. Liu and K. C. Hsu, *CKHNL* 1 (1980), p. 73; S. T. Sun and T. S. Kuo, *WW* 1984 (6), 11–17, 20.
154. *KKHP* 1982 (2), 183–97.
155. *WW* 1977 (12), 1–15.
156. T. S. Kuo and K. C. Chang, *WW* 1984 (11), 1–21.
157. T. C. Fang and P. H. Liu, *WW* 1984 (6), 1–5.



148. Hung-shan Culture cemetery and tomb M-3 at Hu-t'ou-kou, in Fu-hsin, Liaoning. (*a*: plan and cross-section of cemetery; *b*: top view and cross-section at right, top view with cover removed at left.) (From *WW* 1984, no. 6, pp. 1, 3.)

others.[158] Tung-shan-tsui yielded a C-14 date calibrated to 3500 B.C., but Hsi-shui-ch'üan's C-14 date is just a bit over 2000 B.C. (see fig. 139). If this culture stretches over two millennia and is spread over a large area, we have at our disposal only a tiny sample of what may lie ahead from new finds, and the few sites that are available have produced some really remarkable and unexpected riches. We can only touch here upon some of the highlights.

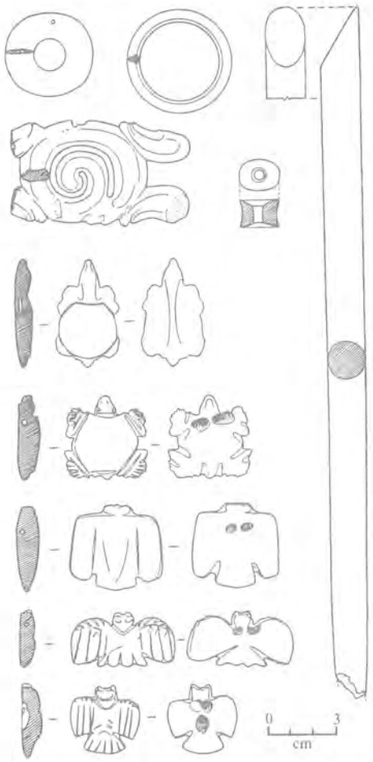
Three semisubterranean house floors were unearthed at Hsi-shui-ch'üan, all rectangular, 12 by 9 meters in one case and about 4 meters to a side in the others. A hearth and storage pits appear in the floor. At the site of Ssu-leng-shan in Hsiao-ho-yen were found six pottery kilns, some having double firing chambers and sophisticated chimney structures (fig. 147). Tombs of the Hung-shan Culture are known at several sites in the Lao-ha and Ta-ling River valleys. The cemetery at Hu-t'ou-kou in Fu-hsin, Liaoning, is of particular interest. Here on a hill rocks and flakes were piled up to form a rough circle about 13.5 meters across; the western half of the circle was flooded away by the river and only the eastern half remained. Under the stone circle, along its entire circumference, were buried painted pottery sherds, and at one section along the outside was buried, vertically, a row of eleven painted pottery cylinders (fig. 148, l; for the cylinders, see fig. 155). Two tombs were found, one at the center of the circle, the other outside. Both were constructed with slabs, the one outside the circle partitioned into five chambers, each used for an individual burial, except for one chamber, which may have contained two bodies (fig. 148, r). Both tombs were furnished with jade objects (fig. 149). Jade animal figures have now proven to be a significant item in the Hung-shan Culture inventory, having been unearthed from at least four archaeological loci from Lao-ha and Ta-ling River valleys and collected from an even wider area (fig. 150).[159]

As if the cemetery and the jades are not striking enough, the recently excavated ritual structures of Tung-shan-tsui are truly remarkable, especially for a relatively early Neolithic site dating to around 3500 B.C. These ritual sites, all built of rocks and slabs, consisted of a rectangular structure, flanked on both sides by stone walls, facing a round altar across a central plaza outlined by rocks and paved with pebbles, and a group of three round mounds of stones. Within the rectangular structure, 11.8 by 9.5 meters, were three piles of rocks and standing stones. A human burial was unearthed next to the round altar (fig. 151). Sherds of painted cylinders, similar to the ones at the Hu-t'ou-kou cemetery, were found around the

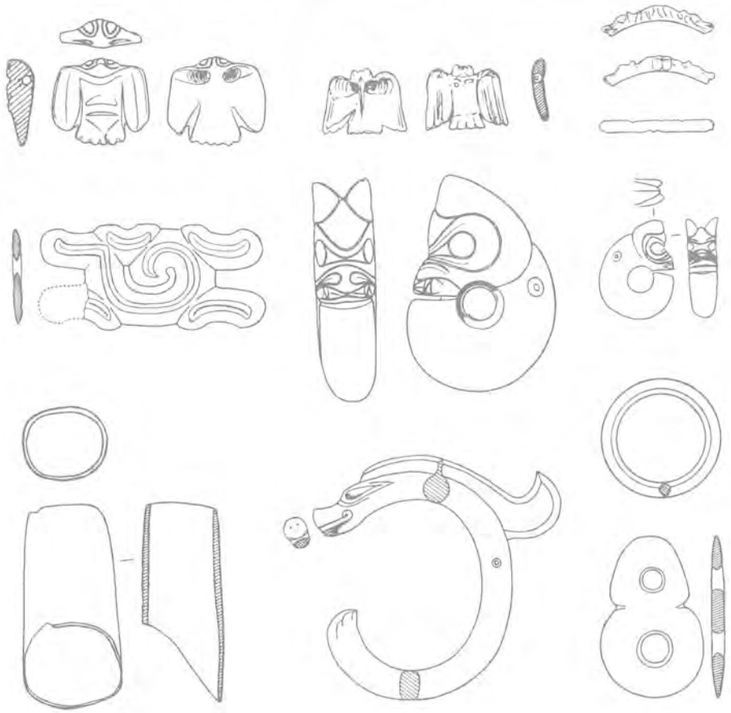
158. The site at Chih-chu-shan, in Ch'ih-feng (*KKHP* 1979, no. 2, 215–42), has a small Hung-shan component. Several sites are known near Chien-p'ing, Liaoning (*KKYWW* 1984, no. 2, 18–22, 31).
159. S. T. Sun and T. S. Kuo, *WW* 1984 (6), 12–13; S. T. Sun, *WW* 1984 (6), 7–10; *WW* 1984 (6), 6, 10.

large rectangular structure, and some two dozen fragments of clay human figures also came to light. Some are small, about 6 centimeters tall without the head, and seem to represent pregnant women; some are large, about half natural size. All the large ones are fragmented and represent sitting human figures (fig. 152). Jade animals came to light here also. The excavators' reading of this structural complex as of a ritual nature appears to be reasonable.

The Hung-shan Culture that buried jade rings and animal figurines and constructed elaborate cult structures involving clay "venus" figurines was apparently based on intensive agriculture, which is indicated by the many stone axes, hoes (some so large that they are referred to as plowshares), knives (sickles), mortars and pestles, and shell-knives (fig. 153), although actual remains of grains have not been reported. The abundant microliths, including numerous arrowheads, were



149. Jades from tomb M-1 at Hu-t'ou-kou. (From *WW* 1984, no. 6, pp. 3.)



150. Jades from Hung-shan Culture sites. (From *WW* 1984, no. 6, pp. 6, 13, 14.)

151. Overall view from southeast of Tung-shan-tsui site in Ch'ih-feng. (*1*: square platform; *2*: east wall base; *3*: west wall base; *4*: east rock pile; *5*: west rock pile; *6*: paved rocks on east; *7*: paved rocks on west; *8*: platform with stone circle; *9*: multicircular platform; *10*: human skeleton; *11*: house floor; *12*: unexcavated area; *13*: erected rocks in sets within square platform.) (From *WW* 1984, no. 11, p. 2.)

undoubtedly related to hunting and fishing, but zooarchaeological research has yet to be applied. In pottery inventory, the dominant wares are gray or red fine ware and sandy brown ware. All pottery was handmade, and most pottery surfaces are plain, but about one-third have decorations made by comb-impressions, comb-incisions, appliqués, or painting. Most of the combed patterns on flat-based urns were rocker-stamped (fig. 154). Painted designs appear only on fine red ware; the painting is in black or red. Black designs include parallel lines, whorls, diamonds, leaf-shapes, and so forth, and red designs are simpler, mostly triangles of parallel lines and fish-scale patterns (fig. 155). Among the painted designs some (such as the red-top bowl and parallel lines) are said to resemble Hou-kang phase designs, but most paintings are local and distinctive.

There can be no question, however, that the Yang-shao Culture and the Hung-shan Culture had touched each other directly. We saw earlier that the Yang-shao Culture had reached the northern part of Hopei. Recent investigations have convinced Hopei archaeologists that the Yang-shao Culture had reached as far as the Yung-ting River valley.[160] At the same time, archaeological finds identified as Hung-shan have been reported in Ch'ien-hsi, Pao-ti, and San-ho of northern Hopei.[161] Thus, the mountainous area of the Yen-shan Mountain east of Peking

160. S. T. Cheng, *WW* 1984 (11), 17.
161. Ibid.

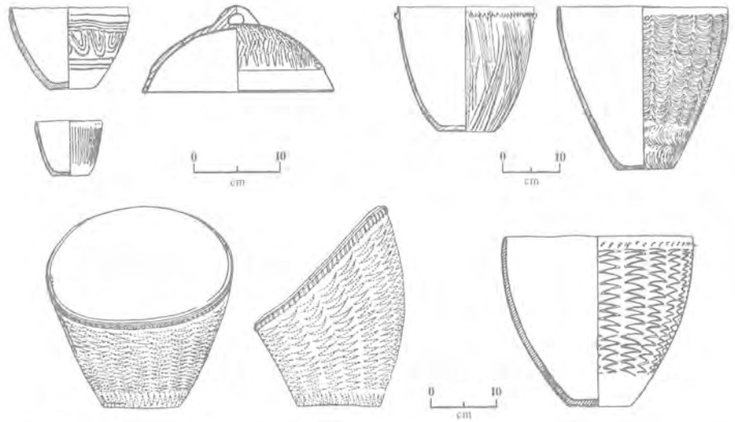
152. Clay human figurines from Tung-shan-tsui. Four on left are small figurines. Three on right are fragments of large figures. (From *WW* 1984, no. 11, pl. 2.)

was the area of direct contact between the two cultures. At the Meng-ko-chuang site in San-ho,[162] midway between Peking and Tientsin, two cultural phases are stratigraphically established: Meng-ko-chuang I, characterized by pottery and stones similar to Tz'u-shan to the southwest, on the one hand, and to the Hsin-lo phase to the northeast, on the other; Meng-ko-chuang II, whose pottery and stones resemble the Hou-kang phase of Yang-shao Culture, on the one hand, and the Hung-shan Culture, on the other.[163]

A final word about the Hsiao-ho-yen phase. Among the archaeological sites that yielded Hung-shan type remains, three of them, Nan-t'ai-ti in Hsiao-ho-yen, Ao-han Banner,[164] Shih-yang-shih-hu-shan, also in Ao-han Banner,[165] and

162. *KK* 1983 (5), 404–14.
163. C. K. Chin, *KK* 1983 (5), 446–51, 419.
164. *WW* 1977 (12), 1–15.
165. *KK* 1963 (10), 523–24.

153. Stone implements of the Hung-shan Culture at Hsi-shui-ch'üan, Ch'ih-feng. (From *KKHP* 1982, no. 2, pp. 187, 189.)



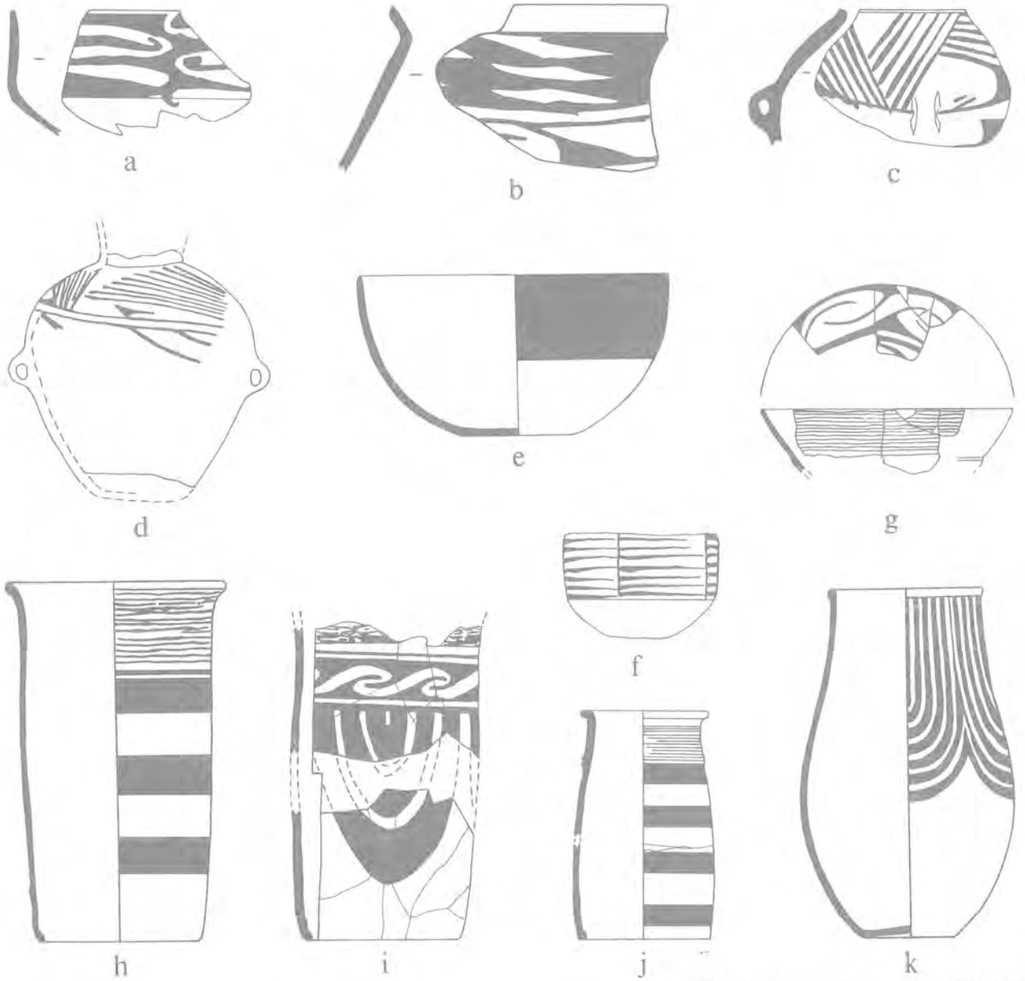
154. Pottery types at Hsi-shui-ch'üan. (*Left bottom* from *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, p. 174; others from *KKHP* 1982, no. 2, pp. 193–94.)

Shih-p'eng-shan, in Weng-niu-t'e Banner,[166] are sometimes singled out, because of the particular range of artifacts and mortuary customs, as a separate cultural phase, the Hsiao-ho-yen.[167] At the Shih-p'eng-shan cemetery, seventy-seven burials were unearthed in 1977. Four of them lacked skulls but an urn was placed where the head should be; four tombs had only furnishings but no skeletons; and three were double burials, the two bodies placed with their legs folded and touching and their heads in opposite directions. The painted designs on pottery were geometric combinations of triangles, parallel lines, semicircles, lozenges, and rectangular spirals. On the shoulders and bellies of some of the vessels were incised signs, mostly variations of a swastika. The single carbon-14 date from Shih-p'eng-shan shows it to be contemporaneous with Hsi-shui-ch'üan. Whether a separate phase is warranted must await fuller understanding of the Hung-shan Culture and its internal variations.

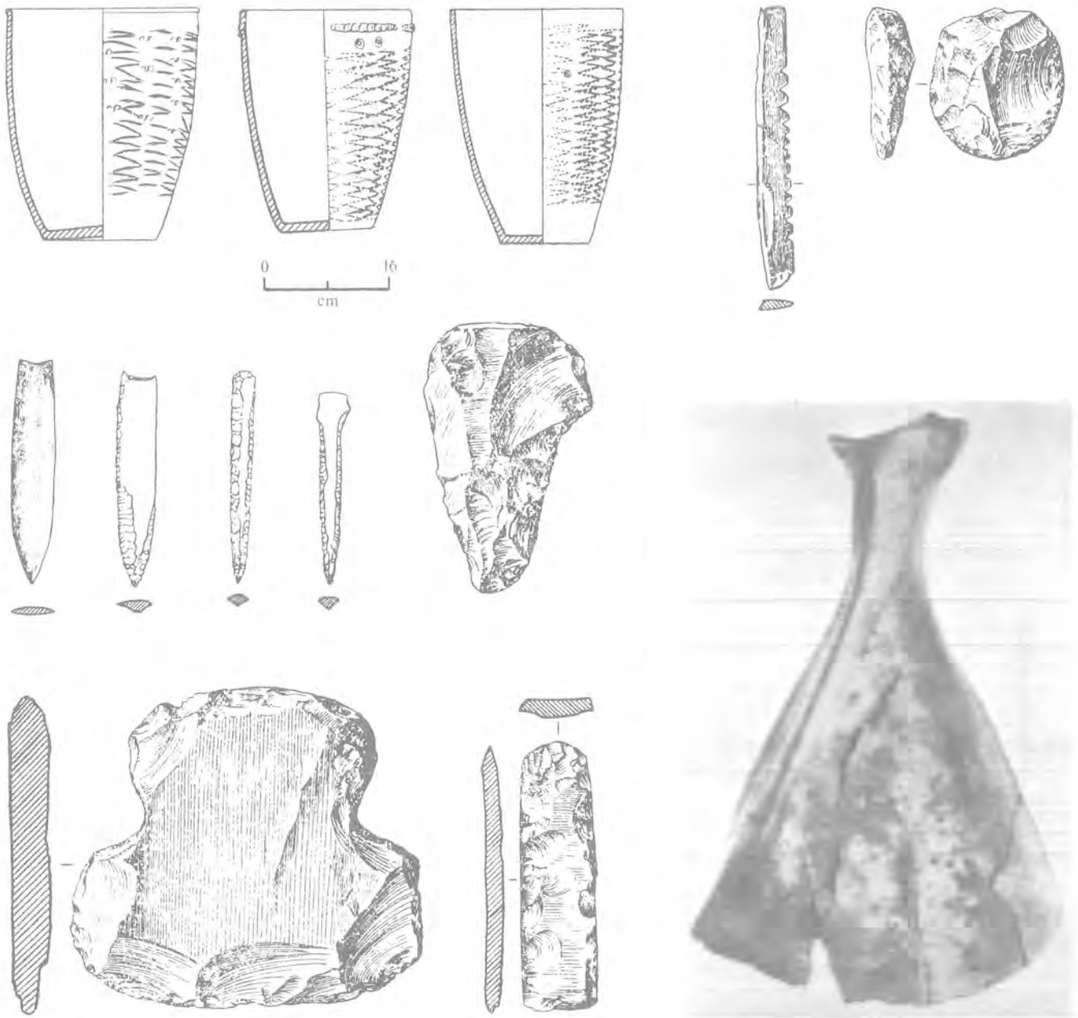
THE FU-HO-KOU-MEN PHASE

The Fu-ho-kou-men site in Pa-lin Left Banner, Chao-wu-ta League, Inner Mongolia, on the Wuerjimurun River, north of the Sharamurun River, was first investigated in 1957 and excavated in 1962.[168] In an area about 200 by more than 300 meters on the terrace of the river were found over 150 "ashy circles," arranged

166. K. T. Li, *WW* 1982 (3), 31–36.
167. K. T. Li and M. H. Kao, *CKHNL* 2 (1982), 144–52.
168. *KKHP* 1959 (2), 1–14; *KK* 1964 (1), 1–5.



155. Painted pottery of the Hung-shan Culture. *a–f*: from Hsi-shui-ch'üan, Ch'ih-feng, *KKHP* 1982, no. 2, pp. 192, 195; *h–i*: from Hu-t'ou-kou, Fu-hsin, *WW* 1984, no. 6, p. 3; *g, j*: from Tung-shan-tsui, Ch'ih-feng, *WW* 1981, no. 11, p. 7; *k* from Chih-chu-shan, Ch'ih-feng, *KKHP* 1979, no. 2, p. 218.)



156. Pottery, bone, and stone artifacts from Fu-ho-kou-men, Pa-lin Left Banner, Inner Mongolia, (From *KK* 1964, no. 1, pp. 2, 4, pl. 1.)

in orderly east-west rows. Upon excavation they turned out to be the surface manifestations of ancient house floors, and twelve of them were unearthed, bringing to light thirty-seven house floors. Most floors, cut into the terrace slopes shovel-fashion, were square, but some were round. Most were less than 5 meters across. Hearths and post-holes appeared in the floors.

The stone tools were mostly chipped, some large, others microlithic. Pottery was sandy coarse ware, light brown or grayish brown in color, handmade by coiling, with comb-incised or comb-impressed designs, mostly rocker-stamped. A few fine red sherds identical to the Hung-shan ware have also been found. Bone artifacts are numerous: awls, arrowheads, knife handles, needles, spatulas, fish-hooks, and so forth. A toothed bone stick is believed to be a tool for decorating pottery. Of particular interest are oracle bones—shoulder blades of deer and possibly sheep with burn marks (fig. 156). These are the earliest oracle bones found in China.

Significantly, the many animal bones found at the sites include only such forest species as the boar, deer, musk-deer, elaphure, wild sheep, badger, squirrel, and wolf. No steppe animals or domestic animals were found. The area now has a steppe vegetation, but the animals found at the site suggest a very different natural environment.[169]

Sites with Fu-ho-kou-men assemblages have been identified along the Wuerjimurun River and Sharamurun River valleys, and a single C-14 date places the phase in the early fourth millennium B.C., approximately contemporaneous with the Hung-shan Culture at Tung-shan-tsui.

169. K. M. Liu and K. C. Hsu, *CKHNL* 1 (1980), 74.

4

Regional Neolithic Developments In South China (5000–3000 B.C.)

The regional Neolithic developments that began around 5000 B.C. in the available archaeological record are described separately under "North China" and "South China" only for convenience, although because of the present North-South geographical division in terms of climate and vegetation we can reasonably expect that the prehistoric cultures in these regions are ecologically divisible. Indeed, all the Neolithic cultures described in the previous chapter were based on the cultivation of the millet, whereas rice figured predominantly in the cultures discussed here. Nevertheless, as I have emphasized, during early postglacial periods the entire region of China was characterized by climatic amelioration; North China was greener, wetter, and warmer, and its difference from South China was much less pronounced than at the present time. Common ecological manifestations may sometimes have been based upon topographical and other factors as well as climatic ones. Nowhere is this blur of North-South differences more baffling than among the eastern coastal cultures in prehistoric China. We begin our description of Southern Chinese events with the East Coast.

The Ma-chia-pang Culture of the Lake T'ai-hu Region

In the history of China no other place has been granted the supreme historiographic importance of the Chung-yüan, the Central Plains, at the river basins formed by the confluence of the Yellow River, the Wei-shui River, and the Fenho River, where the modern provinces of Honan, Shensi, and Shansi join together, as the cradle of Chinese civilization. It was in this region that the first Neolithic site, Yang-shao-ts'un, was brought to light, and that all subsequent archaeological investigations have concentrated. In the 1950s and 1960s, the rich archaeological resources unearthed in Chung-yüan confirmed its traditional historiographic significance, and the archaeological literature correspondingly emphasized this nuclear area as a fountainhead of the earliest civilizations.

In the 1970s the Chung-yüan model of Chinese civilization development was challenged on the basis of two new archaeological events. The first was the quantitative and qualitative increase in new archaeological cultures in regions outside the Chung-yüan that could not be attributed to Chung-yüan influence. The second, even more important, is the extensive application of the radiocarbon and to a much lesser extent other chronometric techniques to archaeological samples unearthed from both outside and inside the Central Plains, showing—tentatively at first and then conclusively in many instances—that many of these regional cultures had indigenous roots and their developments paralleled the

development in the Central Plains.[1] Indeed, it now appears that increasing interaction among the many parallel regional cultures was one of the major dynamic factors accounting for their development and for the eventual emergence of civilizations. This regional interaction model of Chinese prehistory and early history is discussed in chapter 5.

One major region whose significance contributed to the new view of Chinese prehistory is the Lake T'ai-hu region of the lower Yangtze, which is also a focal region in Chinese history, especially recent history. Marilyn and Shen Fu's *Studies in Connoisseurship* contains the following characterization of the region:

> *The geographic area centered around Lake T'ai, at the juncture of the modern provincial boundaries of Kiangsu, Chekiang, and Anhwei, was a key region from which the mainstream of important painters, calligraphers, and poets of China's Grand Tradition arose. On the map it is shaped like a human eye. . . . The "eye area" designation reflects the traditional association of famous people with specific places and illustrates the interaction of human energies and potentials with the social, cultural, and material foundations of the culture. One part of the area is well known in Chinese history as Chiang-nan, or the Yangtze Delta: since the middle of the tenth century it has been the most agriculturally fertile, economically rich, and culturally advanced region in China. . . . To continue the metaphor, Lake T'ai (T'ai-hu) . . . forms the "pupil" or focal area of the eye. The "lid" follows the Yangtze from its mouth as it winds westward and passes through Yang-chou, the northernmost city of the eye area, then Nanking, and on to Wu-hu and Hsüan-ch'eng, in Anhwei, where it terminates, for our purposes, near Mt. Lu (Lu-shan) in Kiangsi. From there the lower lid of the eye curves east toward the sea, passing south of Mt. Huang along the Hsin-an River, near the present-day cities of Hsiu-ning and She-hsien, northwest to Hang-chou in Chekiang, where it meets the Ch'ien-t'ang River and flows into the sea. The eye area thus follows three natural river boundaries, and it includes the major artery of the Grand Canal and the nearby cities which branch off from that system. Most of the area is wealthy, fertile, highly populated, and culturally stable; it includes the prefectures designated as modern Su-chou and Sung-chiang and their surrounding towns.*[2]

1. The most influential essay in this regard is Su Ping-ch'i and Yin Wei-chang, "On the Question of Regional Systems Types in the Archaeological Cultures," *WW* 1981 (5), 10–17; see the historical assessment of this essay and Su Ping-ch'i's earlier ideas in W. C. Yü and C. P. Chang, *WW* 1984 (1), 1–9. Some of the main theoretical concepts in the regional approach were anticipated by Judith Treitsman's "China at 1000 B.C.: A Cultural Mosaic," *Science* 160 (1968), 855–56, and her *The Prehistory of China*, New York: Natural History Press, 1972. Treitsman's cultural regions were based more on ecological presumptions than on archaeological facts, which were, of course, not as abundant in the 1960s as in the 1980s.

2. *Studies in Connoisseurship*, Princeton University Press, 1973, p. 4.

This passage may without much modification (except for the reference to the Grand Canal, which did not exist in prehistory) describe the area in the Neolithic period in terms of its natural environment, its wealth in resources, and its advanced culture. In fact, during the climatic optimum in the early postglacial period, the marine transgressions brought the coastline further inland in many places, there were even more lakes and marshes, and the vegetation cover was almost subtropical.[3] According to one palynological study, during the period of 7500–5000 B.P., the annual temperature in the Shanghai-Hang-chou area was 2–3 degrees Celsius higher than the present, and annual precipitation was 500–600 millimeters higher.[4] The area had the environmental potential to provide for an affluent society in prehistoric times as well as in the present. In the lacustrine and marshy environment around Lake T'ai-hu the freshwater vegetation was an obvious object of exploitation and cultivation. As Li Hui-lin pointed out, "aquaculture (farming of aquatic animals and plants, a term now coming into general use) has been practiced in China since Neolithic times." Besides *Trapa* and Phragmites, aquatic crops of the Yangtze basin that may have been cultivated in prehistoric times include the water-caltrop (*Trapa natans, T. bicornis*), fox nut (*Euryale ferox*), lotus seed and root (*Nelumbo nucifera*), arrowhead (*Sagittaria sagittifolia*), water chestnut (*Eleocharis tuberosa*), wild rice (*Zizania caduciflora*), water dropwort (*Oenanthe javanica*), water-shield (*Brasenia schreberi*), water spinach (*Ipomoea aquatica*), cattail (*Typha latifolia*), and rush (*Juncus effusus*). "These aquatic crops are annual or perennial heliophilous herbs that grow naturally in marshlands or lakes. As cultivated plants they are raised as annuals or biennials in ponds or paddy fields, frequently in rotation with rice." These Yangtze basin freshwater plant species, unlike most terrestrial plant species, "characteristically have wide geographical ranges . . . [and all of them] occur in countries and continents beyond China, but they are not cultivated anywhere but in China. It is only in the special ecospace of the Yangtze basin that these wide-ranging species of diverse botanical sources evolved coincidentally into a unique agricultural system."[5]

Despite its archaeological potential, the T'ai-hu area of Shanghai-Nanking was one of the later areas to be explored. The first stone axes were found in 1930 near Nanking by Wei Chü-hsien[6] and in 1935 a Han Dynasty site was found in Yen-ch'eng in Ch'ang-chou.[7] The interest generated by these and other finds led to the establishment of the Society for the Study of the History and Geography of Wu and Yüeh (Wu Yüeh Shih-ti Yen-chiu-huei), Wu and Yüeh being the Eastern Chou Dynasty states in southern Kiangsu and northern Chekiang. The society's efforts were responsible for the discovery in 1936 of the Neolithic sites at Ku-tang and Liang-chu in Hang-chou[8] and Ch'ien-shan-yang in Wu-hsing.[9] The Sino-Japanese War put a stop to further development. The Japanese scholar Matsumoto Nobuhiro, who was interested in the early history and ethnology of Indochina, wrote about the Lake T'ai-hu finds,[10] but no intensive study was made until after 1949.

After the establishment of the People's Republic of China, the Museum of Nanking inherited the building, facilities, and some of the collections of the National Central Museum and became an important center of archaeological research, headed by the respected archaeologists Tseng Chao-yüeh and Yin Huan-chang, and serious studies of the prehistory of Kiangsu were launched. The Nanking Museum's efforts were joined by the work done by Shanghai and Chekiang archaeologists, and the Yangtze Delta and Lake T'ai-hu area finally received the scholarly attention that it deserved. From the 1950s on research has continued apace, except during the Cultural Revolution. By 1962, Yin Huan-chang and Chang Cheng-hsiang[11] were able to enumerate forty-seven Neolithic sites in the T'ai-hu area and group them into three stages, Ch'ing-lien-kang, Liang-chu, and Hu-shu. Ch'ing-lien-kang was the newly identified Neolithic culture of northern Kiangsu, and its equivalent had been established in southern Kiangsu as well. Liang-chu was a later phase, represented by the type site mentioned earlier, found in 1936. Hu-shu was the name given to the latest prehistoric culture characterized by the so-called geometric pottery, pottery impressed with geometric designs, first found at Yen-ch'eng and later at many other sites dating from Chou and Han dynasties. Liang-chu and Hu-shu cultures are discussed in chapters 5 and 7 respectively.

The name of the earlier Neolithic culture, now carbon-14 dated to between

3. W. T. Wu, *AGS* 38 (1983), 113–27; S. C. Chu et al., *KHTP* 1983 (5), 296–99; T. H. Li et al., *SGS* 1980 (4), 322–30; K. F. Wang and Y. L. Chang, *Li-shih Ti-li* 1 (1981), 126–31.
4. K. F. Wang and Y. L. Chang, *Li-shi Ti-li* 1 (1981), 131.
5. Li Hui-lin, in *The Origins of Chinese Civilization*, David N. Keightley, ed., Berkeley: University of California Press, 1983, pp. 43–46.
6. J. H. Wei, *Chin-chan Yueh-k'an* (Peiping), 1, nos. 2–3 (1931), 59–79.
7. C. L. Ch'en, *Yen-ch'eng fang-ku ti* (Investigating antiquity at Yen-ch'eng), Society for the Study of Wu and Yüeh History and Geography, 1935.
8. C. H. Wei, *Hang-chou Ku-tang hsin-shih-ch'i-shih-tai yi-chih chih shih-t'an pao-kao* (Report of the preliminary investigation of the Neolithic site at Ku-tang in Hang-chou), Hang-chou, 1936; T. H. Ho, *Hang-hsien Liang-chu-chen chih shih-ch'i yü hei-t'ao* (Stone implements and black pottery at Liang-chu-chen, Hang-hsien), Society for the Study of Wu and Yüeh History and Geography, 1937; H. K. Shih, *Liang-chu*, Hang-chou: West Lake Museum, 1938; S. S. Beath, *China Journal* 31 (1939), 262–66
9. W. C. Shen, *Wu Yüeh wen-hua lun-ts'ung*, n.p., 1937, 217–232.
10. Matsumoto Nobuhiro, *Kōnan Tōsa*, Dept. Hist., Keio University, 1941.
11. *KK* 1962 (3), 147–57.

5000 and 3000 B.C., has been a major source of confusion. As mentioned in chapter 3, the site at Ch'ing-lien-kang in Huai-an, northern Kiangsu, was found in 1951, and from then on many other sites have been found throughout the province yielding similar ceramic types and modes such as brown and buff wares, painted pottery, *tou* bowls on high stands, *ting* tripods with angular, curved walls, slate knives, and so on. These sites, in both northern and southern Kiangsu, became designated as the Ch'ing-lien-kang Culture. By the beginning of the 1970's, however, it became clear that the Ch'ing-lien-kang Cultures in northern and southern Kiangsu were not quite identical. Wu Shan-ch'ing, in a 1973 essay, subdivided the Ch'ing-lien-kang Culture into a North-of-the-Yangtze type and a South-of-the-Yangtze type, pointing out that the Northern type and the Ta-wen-k'ou Culture of Shantung were the same.[12] In 1977, archaeologists from both Kiangsu and Shantung as well as from Shanghai, Chekiang, Anhwei, and other provinces met in Nanking to discuss the similarities and differences of the prehistoric cultures unearthed in their respective territories. Consensus was not apparent from a description of the meetings,[13] but clearly all agreed that the Ch'ing-lien-kang Culture of northern Kiangsu and the Ta-wen-k'ou Culture were identical, and that the Ch'ing-lien-kang Culture of southern Kiangsu could be subdivided into two phases, Ma-chia-pang and Sung-tse. No agreement was reached as to what these cultures should be called.

In this book, I refer to the earlier Neolithic culture of Shantung and northern Kiangsu as the Ta-wen-k'ou Culture (including the Ch'ing-lien-kang site) and the contemporary culture of southern Kiangsu (south fo the Huai-ho River) and northern Chekiang—that is, of the Lake T'ai-hu region—as the Ma-chia-pang Culture (not including the site of Ch'ing-lien-kang), which includes two principal phases, Ma-chia-pang and Sung-tse.[14] Unfortunately, this terminology eliminates the name Ch'ing-lien-kang despite the important historical role it played.

In a summary article read at the first annual meeting of the Chinese Archaeological Society in 1979, Wang Tsun-kuo of Nanking Museum stated that more than one hundred Neolithic sites were known in the Lake T'ai-hu region and more than twenty had been excavated.[15] Of those excavated, the following are the most important (from south to north): Lo-chia-chiao, in T'ung-hsiang,[16] and

12. *WW* 1973 (6), 45–61.
13. *WW* 1978 (3), 34–39.
14. Cf. Hsia Nai, *KK* 1977 (4), 225.
15. *CKHNL* 1 (1980), 111–23.
16. *Chekiang-sheng wen-wu k'ao-ku suo hsüeh-k'an* (J. Inst. Cultural Relics and Archaeol., Chekiang Province), 1981: 1–55.

Table 7: Correlation of Cultural Strata of Lake Ta'i-hu Sites

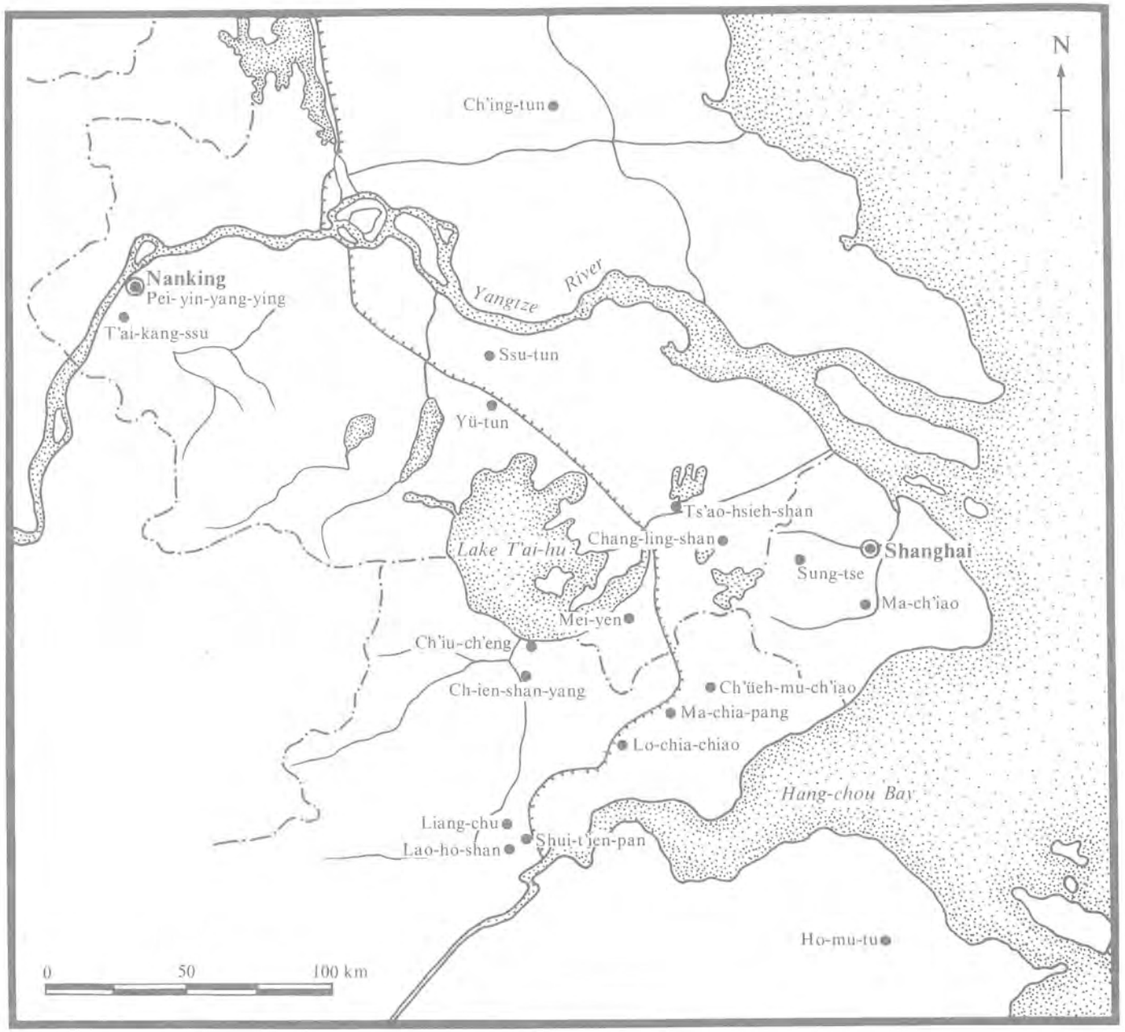
Liang-chu phase	Liang-chu Ch'üeh-mu-ch'iao	Chang-ling-shan (upper)	Ts'ao-hsieh-shan (layers 1–4)	Yüeh-ch'eng (middle)		
Sung-tse phase	Ch'iu-ch'eng (middle)	Chang-ling-shan (lower)	Ts'ao-hsieh-shan (layers 5–7)		Sung-tse (middle)	
Ma-chia-pang phase	Ch'iu-ch'eng (lower)	Ma-chia-pang Lo-chia-chiao	Ts'ao-hsieh-shan (layers 8–10)		Sung-tse (lower)	Yü-tun

Ma-chia-pang in Chia-hsing,[17] in northern Chekiang; Sung-tse, in Shanghai;[18] Chang-ling-shan[19] and Ts'ao-hsieh-shan[20] in Wu-hsien; Yü-tun[21] and Ssu-tun[22] in Ch'ang-chou; Pei-yin-yang-ying in Nanking;[23] and Ch'ing-tun in Hai-an;[24] all in southern Kiangsu (fig. 157). The last two sites are along the Yangtze River, to the north of the immediate Lake T'ai-hu neighborhood, and will be discussed separately.[25] For the Lake T'ai-hu sites, three phases are stratigraphically ascertainable: Ma-chia-pang, Sung-tse, and Liang-chu (table 7). The Liang-chu phase will be discussed in the next chapter. Ma-chia-pang and Sung-tse, as mentioned earlier, are radiocarbon-dated to ca. 5000–3000 B.C. (fig. 158).

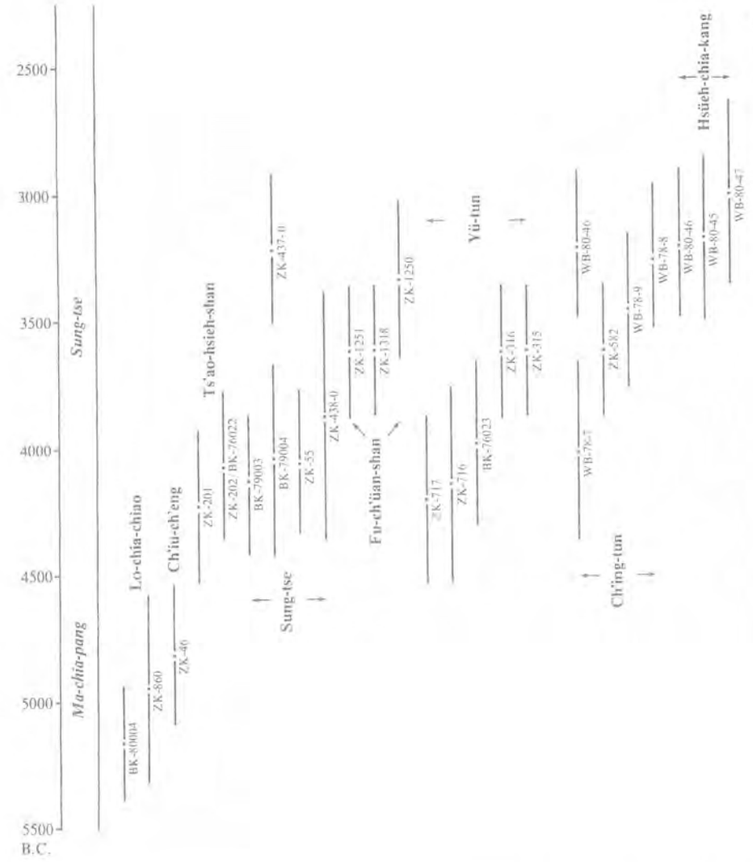
THE MA-CHIA-PANG PHASE

Archaeological sites of the Ma-chia-pang phase are found for the most part on higher grounds or mounds, natural or artifically built, near rivers and ponds. Houses were rectangular, constructed of timber, with mortise and tenon joints, on the ground level (fig. 159). Floors were in some cases paved with sand, molluskan shells, and clay. Reeds and clay constituted the walls, and the roof was covered with reeds, bamboo mats, and straw bundles. Storage pits were dug into the ground. Cemeteries were found at several sites; the one at Ma-chia-pang was

17. *KK* 1961 (7), 345–54.
18. *KKHP* 1962 (2), 1–28; H. C. Huang and K. C. Ts'ao, *VP* 16 (1978), 60–65; *KKHP* 1980 (1), 29–57; K. F. Wang et al., *KKHP* 1980 (1), 59–66.
19. *WWTLTK* 6 (1982), 25–36.
20. *WWTLTK* 3 (1980), 1–24.
21. *KK* 1974 (2), 109–15; 1978 (4), 223–43.
22. *KK* 1981 (3), 193–200; 1984 (2), 109–29; *WW* 1984 (2), 17–22, 5.
23. *KKHP* 1958 (1), 7–23.
24. *KKHP* 1983 (2), 147–90.
25. T. C. Chiang, *CKHNL* 1 (1980), 131–36; C. C. Wei, *KK* 1983 (9), 822–28; C. C. Chi, *CKHNL* 3 (1984), 34–43.



157. Major sites of the Ma-chia-pang Culture in the Lake T'ai-hu area.

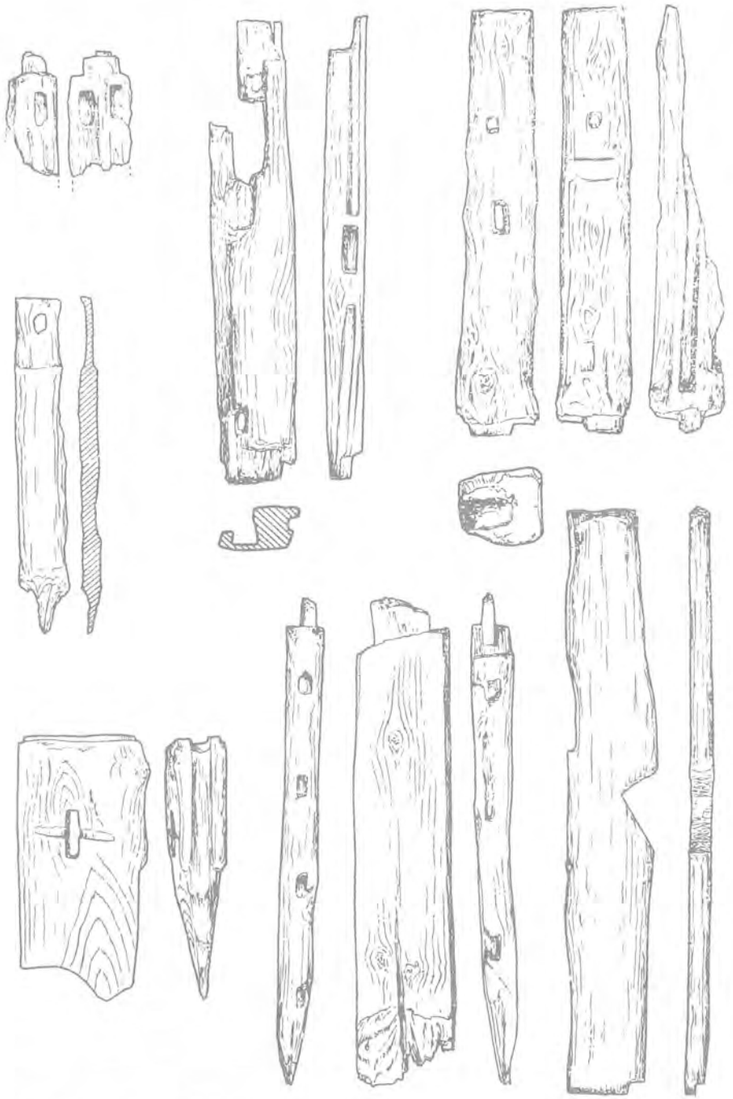


158. Radiocarbon profile of the Ma-chia-pang Culture.

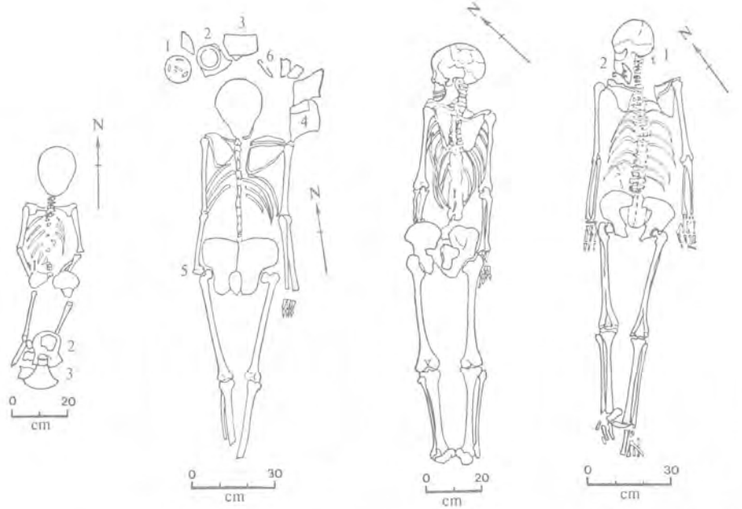
located in the western and northwestern part of the site. Burials were single, mostly prone and heading north. Very few of the graves were furnished and when they were only a few tools, ornaments, and vessels were used (fig. 160).

The inhabitants of the villages were farmers, hunters, fishers, and collectors. Carbonized grains of rice were found aplenty, and rice husks were used as pottery temper. Both *Oryza sativa japonica* and *O. sativa indica* have been identified. Other plant foods found include the water-caltrop and bottle gourd. Fabric

159. Remains of wooden structures at Lo-chia-chiao, T'ung-hsiang, Chekiang. (From *Chekiang-sheng Wen-wu K'ao-ku Suo Hsueh-k'an,* 1981, p. 25.)

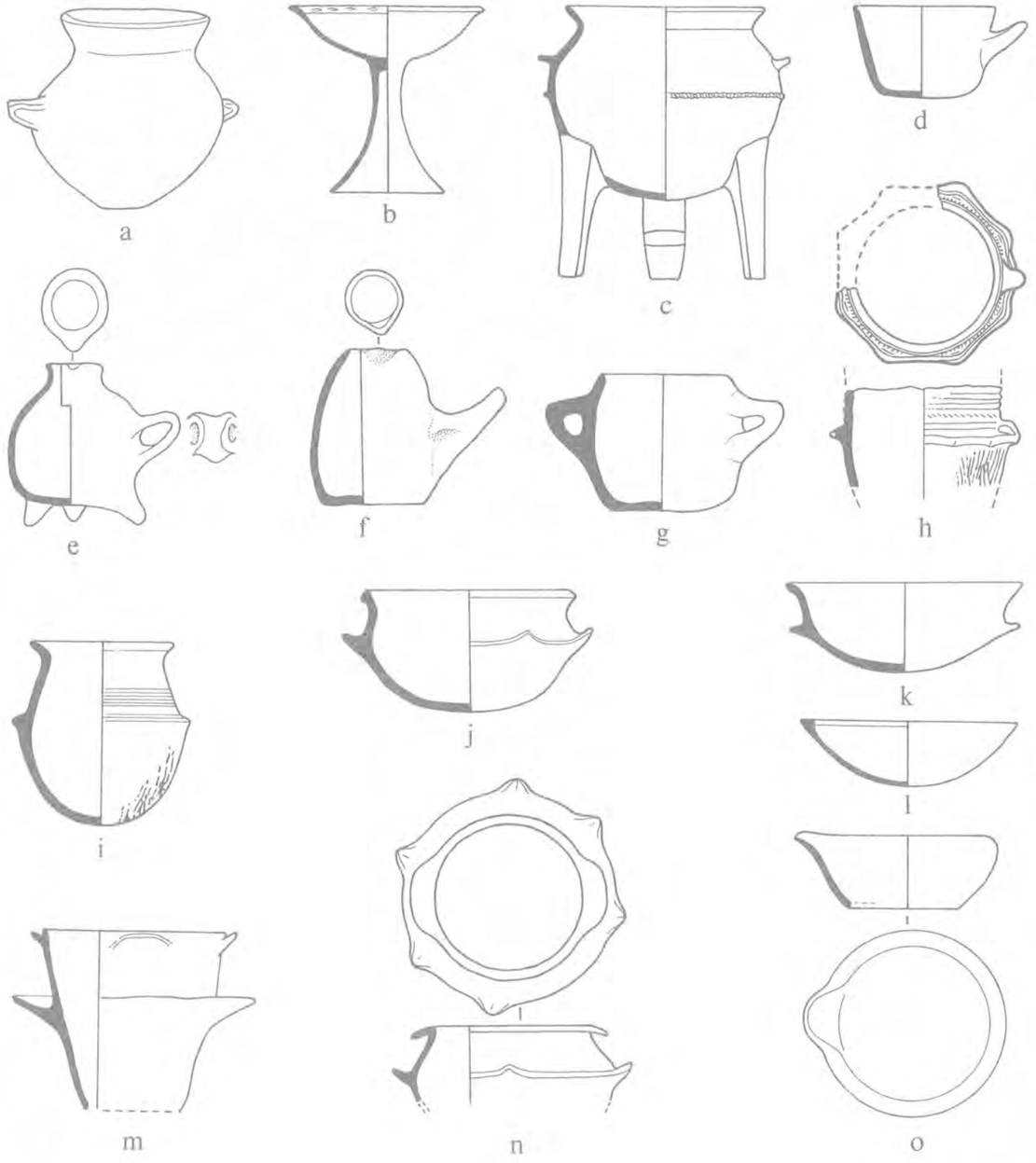


160. Human burials of the Ma-chia-pang phase at Yü-tun, Ch'ang-chou, Kiangsu. (From *KK* 1978, no. 4, p. 227.)

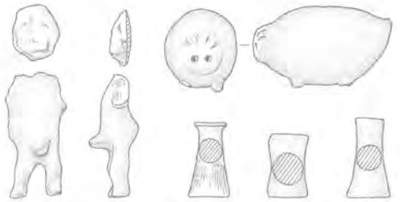


fragments found at Ts'ao-hsieh-shan could have been woven with the wild kudzu vine. Hunting of wild game was extraordinarily important: the amount of animal bones found at Ma-chia-pang was reported to be ten times the amount of pot-sherds. The species identified include such domestic animals as dog, pig, and water buffalo (*Bubalus* cf. *mephistopheles*), and such wild game as the boar (*Sus scrofa*), nycteutes (*Nycteutes procyonoides*), elephant (*E. maximus*), deer (*Cervus nippon*), water deer (*Hydropotes inermis*), elaphure (*Elaphurus davidianus*), possible whale (? *Balaenoptera* sp.), turtle (*Chinemys reevesi*), tortoises (*Amyda sinensis, Pelochelys bibroni*), fox (*Vulpes* sp.), alligator (*Alligator sinensis*), birds, fishes, and mollusks. The fauna indicated riverine and lacustrine plains and an environment more humid than today.

Wood, bamboo, stone, and bone-antler were among the conspicuous materials for manufacture. Other than house timber few wooden and bamboo artifacts remained, but wooden arrowheads, wooden trowels, bamboo points, wooden top-like objects, and so on have been recovered. Bone and antler were used to make arrowheads, handles, hook-like objects, awls, needles, spatulas, pendants, and so forth. A distinctive item was the hoe made of animal shoulder-blades. Stone hoes are rare, but stone was used for axes, adzes, chisels, knives, and grinding stones. Jade appeared in the inventory; the only types were rings with a slit and half-rings.



Ma-chia-pang pottery was characteristically reddish or reddish-gray and occasionally grayish black, especially in the earlier strata. The ware was sand- or shell-tempered, and some contained carbonized rice husks. The firing temperature, estimated at 800–850°C, was probably achieved with a fuel pile on the ground; no kilns have been found. In shape, round bottoms and flat bases predominated, and many vessels were placed on pedestals or tripods. The majority of the vessels were of a single type: the round-bottomed pot with a ring at the waist, presumably to support the pot over the rim of an oven, although no oven of this kind has been unearthed. Other distinctive types are the *ting* tripod with flat legs, the urn with "cattle-nostril" lugs, the *tou* bowl on pedestals, a shallow plate with carinated rim, and a flat-based *ho* water pot with short snout and low body (fig. 161). Clay pot supports were plentiful, and there were also paddles and animal and human figurines (fig. 162). Most pottery vessels are plain of surface, but occasionally there are red slips, hollow-outs, depressions, and incised designs.



162. Various clay objects at Lo-chia-chiao. (From *Chekiang-sheng Wen-wu K'ao-ku Suo Hsueh-k'an*, 1981, fig. 5.)

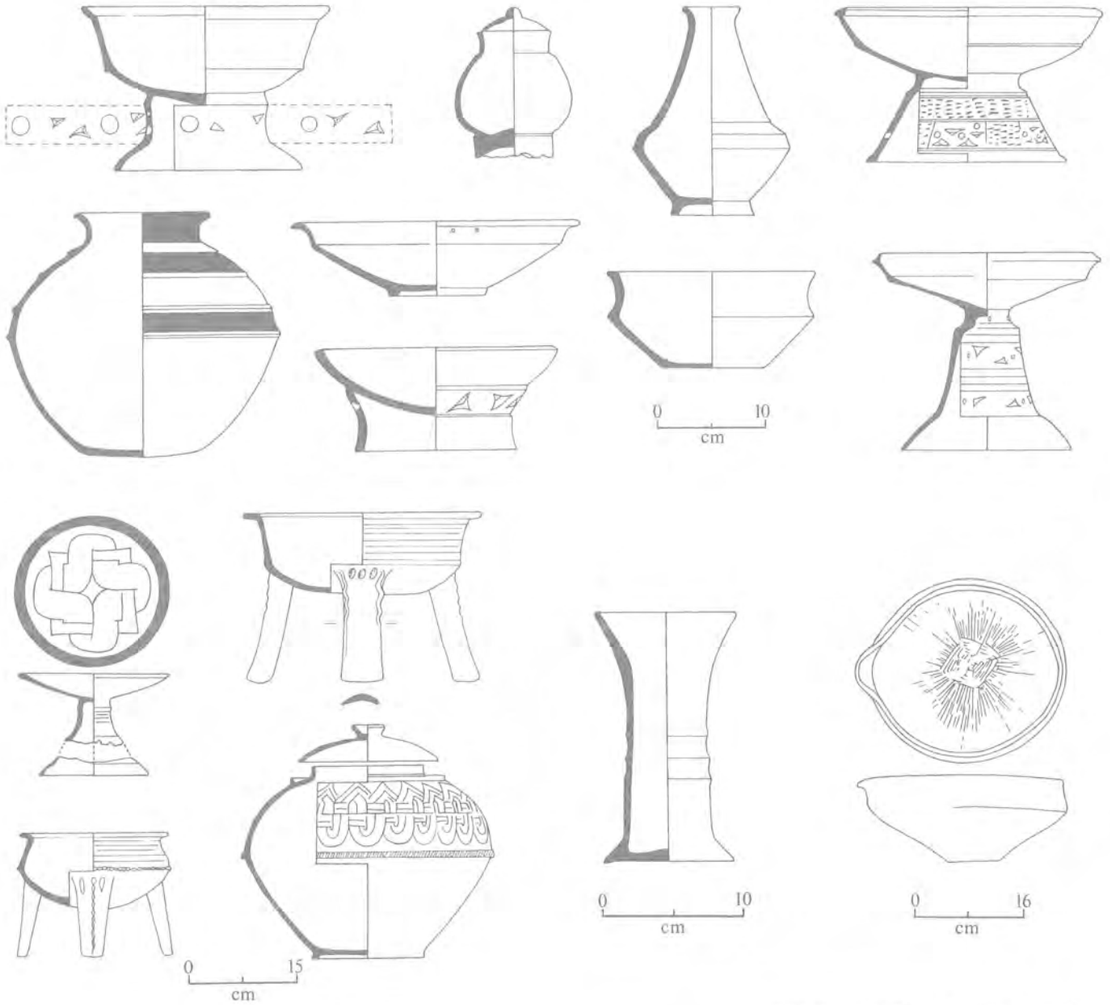
THE SUNG-TSE PHASE

In general cultural style and configuration, the Sung-tse phase was without doubt a development from the Ma-chia-pang phase, but the demarcation was clear. A comparison by Wang Jen-hsiang describes the following differences:[26]

1. Stone implements increased in number. At some Ma-chia-pang sites (such as the lower stratum of Yü-tun) stone implements are extremely rare, whereas in early Sung-tse sometimes a single burial was furnished with nine stone implements. The Ma-chia-pang stones were crude and heavy, and the Sung-tse ones thin and neat.
2. Sung-tse Culture had fewer bone artifacts than the Ma-chia-pang Culture.
3. In the Ma-chia-pang Culture the prevailing burial mode was the prone (face down) and stretched posture, the head was directed to the north, and the grave furnishings were few and lacked definite rules of type associations. In the Sung-tse Culture, the prevailing burial mode was lying face up and stretched, the head was often pointing to the southeast, and the burials were often arranged in regular rows. The grave furnishings were richer, and the basic associations of such types as *ting* tripod, *tou* bowl on stand, urn, and jar had begun.
4. Ma-chia-pang pottery was reddish brown, but Sung-tse pottery was brown and grayish black. The characteristic Ma-chia-pang pottery types—pot with waist ring, *ting* tripod with pot-type body, flat-based *ho*, red *tou* bowl on large pedestal, and urn with cattle-nostril lugs—completely gave way to new vessel types, among

161. Pottery types of the Ma-chia-pang phase at Lo-chia-chiao and other sites. *a:* from Mei-yen, *CKHNL* 1, 1980, p. 113; *b, c:* from Ts'ao-hsieh-shan, *WWTLTK* 3, 1980, p. 22; *d–o:* from Lo-chia-chiao, *Chekiang-sheng Wen-wu K'ao-ku Suo Hsueh-k'an*, 1981, pp. 11, 31–34.)

26. *KKHCK* 4 (1984), 278–306; cf. H. P. Huang, *CKHNL* 3 (1984), 28–29.

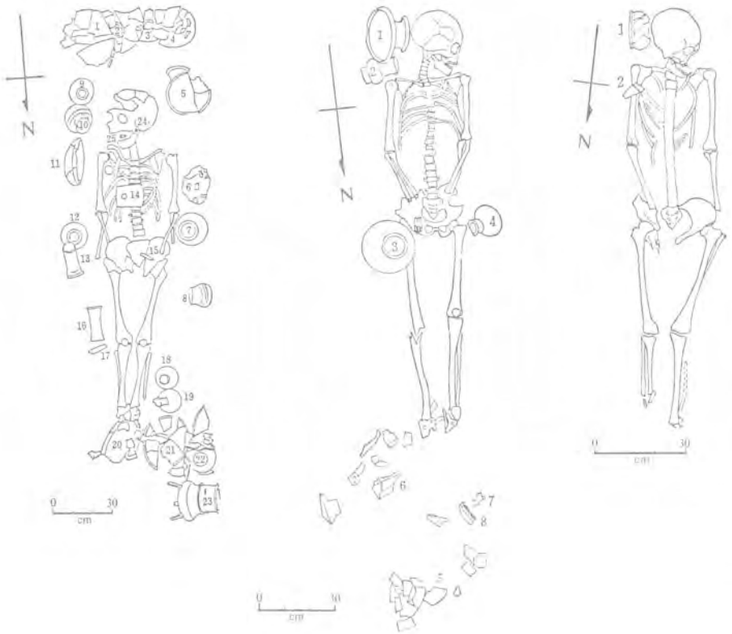


163. Pottery types of the Sung-tse phase at Sung-tse, Shanghai. (From *KKHP* 1980, no. 1.)

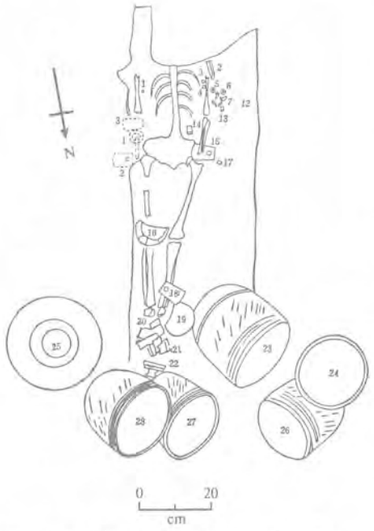
them the *ting* tripod with flat legs and basin- or pot-type body, round-bottomed pot of urn type, *tou* with pedestal with hollow-out circle bands, jar with tile-like bands around the waist, urn with angularly curved body, and vessel on flower-petal pedestal. The most important distinctions are that the *ting* tripod replaced the pot as the basic cooking vessel, and that jars and urns as storage vessels greatly increased in number. The Sung-tse phase is regarded as the peak of ceramic complexity and decorative sophistication in the T'ai-hu sequence (fig. 163).

These new features of the Sung-tse phase are best manifested in the remains of the Sung-tse site itself, at the site of Ts'ao-hsieh-shan in strata 5 to 7, and in the lower stratum at Chang-ling-shan. All of these are primarily burial sites. Ninety-seven burials were uncovered at Sung-tse in two long seasons of excavation. Among the cultural remains found in the burials the pottery vessels were the most striking in their complexity and elegance of form and decoration. Some of the pottery was incised with signs (fig. 164). At Ts'ao-hsieh-shan, eighty-nine burials

164. Incised symbols on pottery at Sung-tse. (From *KKHP* 1962, no. 2, p. 7.)



165. Human burials of the Sung-tse phase at Ts'ao-hsieh-shan, Wu-hsien, Kiangsu. (From *WWTLTK* 3, 1980, pp. 7–8.)



166. Human burial of the Sung-tse phase at Chang-ling-shan, Wu-hsien, Kiangsu. (From *WWTLTK* 6, 1982, p. 26.)

were found in stratum 6, divided into a northern and a southern section. The furnishings in the graves show plainly that the members of the community were divided by wealth. The poor ones, for example, M-51, were furnished with mere sherds, whereas the rich ones, for example, M-96 and M-203, were equipped with two lower jaws of pigs as well as other items (M-96) and with twenty-five stone implements and pottery vessels (M-203) (fig. 165). At Chang-ling-shan, remains of wooden planks used as burial caskets were found in a Sung-tse phase tomb, which also yielded large pottery urns (fig. 166).

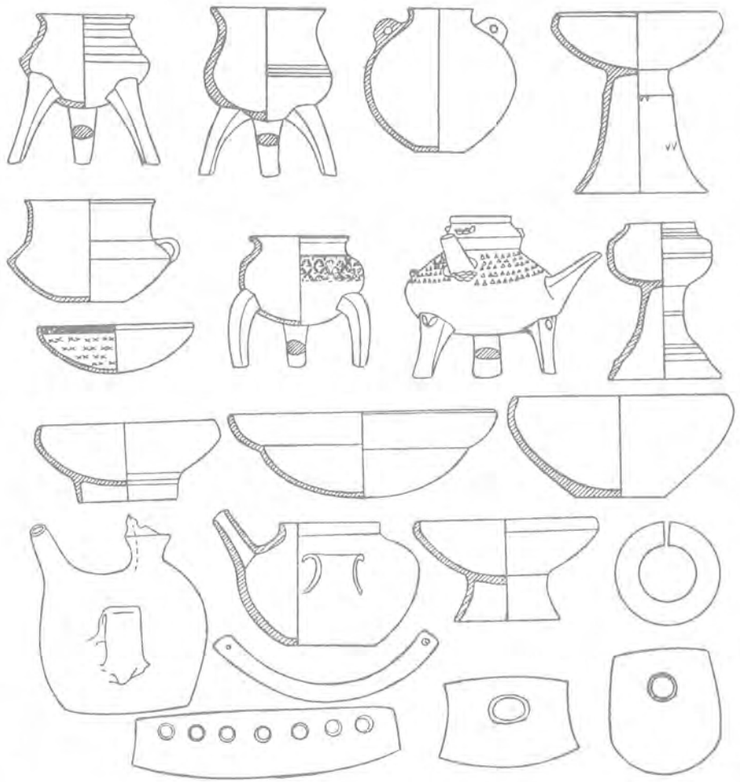
CULTURAL PHASES IN THE NANKING AREA PARALLEL TO MA-CHIA-PANG AND SUNG-TSE

Less than a hundred kilometers northwest of Ch'ang-chou, one of the northernmost type sites of the Ma-chia-pang Culture, lies Nanking on the bank of the Yangtze River, the former imperial capital of many historical dynasties and national capital of Nationalist China. In the area of Nanking there were several important Neolithic sites, the best known being Pei-yin-yang-ying, excavated in 1955 and 1956.[27] A dwelling area was found, disclosing segments of floors and fragments of building materials, hearths, and storage pits, but it is apparently dated to the Bronze Age. The major finds at the site came from a cemetery area, in which 225 human skeletons were unearthed. No burial pits or caskets were found, and most of the dead were accompanied by some implements or vessels. Most of the dead were buried singly, stretched, with the head pointing to the northeast.

Stone implements found at the cemetery at Pei-yin-yang-ying were well polished and consisted of axes, adzes, chisels, hoes, knives, spindle whorls, and rings. The axes and knives were often ground flat and perforated. The pottery was red or gray, of sandy or finer ware, handmade or wheel-made. The types include the potbody *ting* tripod with cylindrical or flat legs, *tou* bowl on pedestal with hollow-outs, round-bottomed *ho* vessel on three feet, and round-bottomed basin and bowl. Red and black painted designs were frequently seen (fig. 167). Ornaments of jade and agate were numerous, including such types as the ring with a slit, half-circle, tube, bead, and pendant. Deer teeth and lower jaws of pigs were also found buried.

Many of the ceramic types and modes, the use of jades and pig mandibles, and the flat stone axes of Pei-yin-yang-ying clearly align the site with the Ma-chia-pang Culture, perhaps closer to Sung-tse than to Ma-chia-pang. Some archaeologists would place the site within the T'ai-hu orbit,[28] but others point to minor

27. *KKHP* 1958 (1), 7–23.
28. C. C. Chi, *CKHNL* 3 (1984), 34–41.

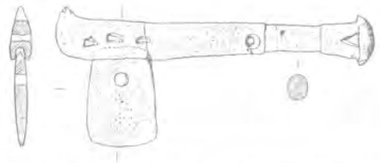


167. Artifacts found at Pei-yin-yang-ying, Nanking. (From *CKHNL* 1, 1980, p. 37.)

local variations (for example, the stone knife with multiple perforations, the handle on the *ho* vessel, the abundance of *tou* vessels) and insist on seeing the Nanking and Chen-chiang area as the possible center of a separate region that may include other sites up and down the Yangtze River.[29]

Some of these other sites include Ch'ing-tun, in Hai-an, Kiangsu, down the Yangtze[30] and Hsüeh-chia-kang in Ch'ien-shan, Anhwei, upstream.[31] On the

29. N. Hsia, *KK* 1977 (4), 225; T. C. Chiang, *CKHNL* 1 (1980), 132; *KK* 1983 (9), 825.
30. *KKHP* 1983 (2), 147–90.
31. *KKHP* 1982 (3), 283–324.



168. Clay imitation of a stone ax mounted on a wooden handle, from Ch'ing-tun, Hai-an, Kiangsu. (From *KKHP* 1983, no. 2, p. 155.)

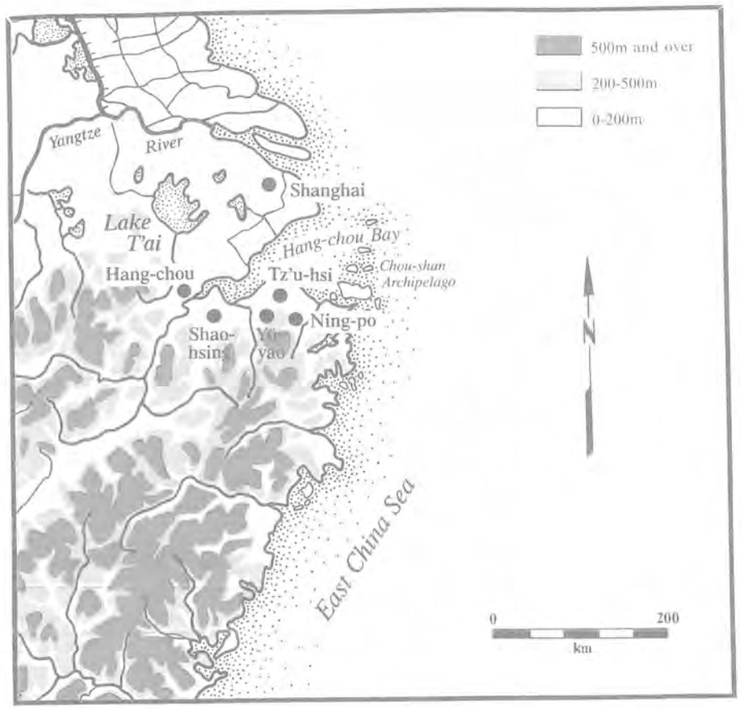
whole, the Ch'ing-tun inventory is very close to the Sung-tse phase, suggesting that the Ma-chia-pang Culture was distributed to the north of the Yangtze and that the boundary between Ma-chia-pang and Ta-wen-k'ou was probably along the Huai River. Among the interesting finds at Ch'ing-tun was a pottery model of an ax (fig. 168), which illustrates very well the mounting device of a stone ax. As for the Hsüeh-chia-kang assemblage, its similarities to the T'ai-hu phases are obvious.[32] We await future studies of the prehistory of Anhwei before we can properly assess the cultural history of that region.

The Ho-mu-tu Culture South of Hang-chou Bay

Across the Ch'ien-t'ang River and the Hang-chou Bay from the Ma-chia-pang Culture and more or less contemporary with it (or at least with its earlier facies) was the Ho-mu-tu Culture, first brought to light as recently as 1973.[33] Now known from some two dozen sites along the southern coastal plains of the Hang-chou Bay, from Hsiao-shan to Ning-po and on out to the Chou-shan Archipelago (fig. 169), the Ho-mu-tu Culture has been placed by a long series of radiocarbon dates to most of the fifth and fourth millennia B.C. (fig. 170). For up to two thousand years the Ho-mu-tu and Ma-chia-pang Cultures apparently coexisted across the Bay and essentially maintained their separate identities, although clearly they shared many features and exerted profound influence upon each other.

The only site of this important culture that has been excavated (in 1973–74 and 1977–78) and reported on is Ho-mu-tu, at the village of that name in Yü-yao county, northern Chekiang.[34] On a plain drained by the Yao-chiang River, which flows immediately to the west and south of the site, the Ho-mu-tu village faced flatlands to the north and the Ssu-ming Mountains to the south across the river. The plain on which the site lies has vast areas of peats beneath the surface, suggesting that the prehistoric village was surrounded by forests and ponds as well as rivers, in which a vast, abundant variety of natural resources, on land, in the trees, and in the water, were easily accessible. The cultural debris was almost four meters thick and divisible into four natural layers. From all layers came abundant remains, all left by the same culture, which continued at the site for more than a thousand years. From the fourth layer from the top the remains of a pile-dwelling village were found (fig. 171). Wooden posts and planks were found

32. T. P. Yang, *CKHNL* 3 (1984), 44–49.
33. Y. H. Mou, *CKHNL* 1 (1980), 97–110; C. Liu, *CKHNL* 3 (1984), 15–20.
34. *WW* 1976 (8), 6–13; *KKHP* 1978 (1), 39–93; *WW* 1980 (5), 1–15.

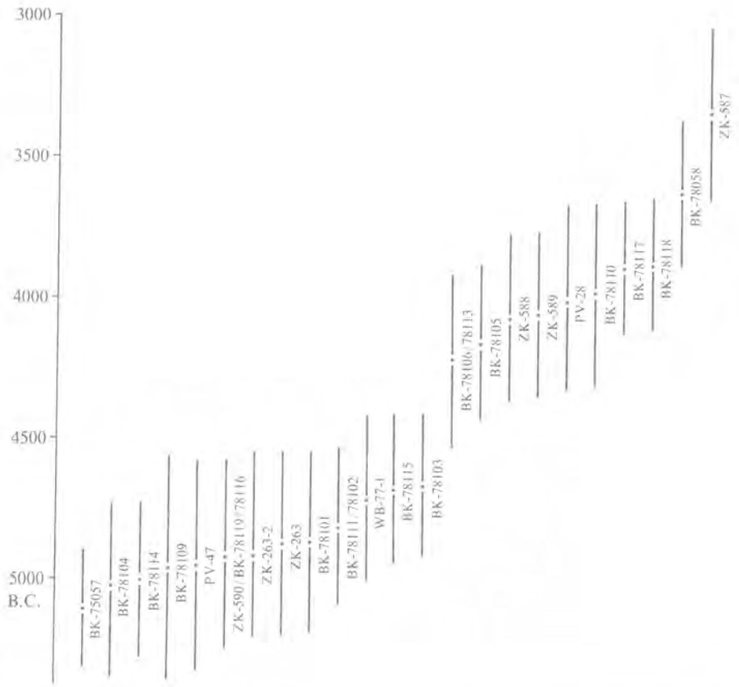


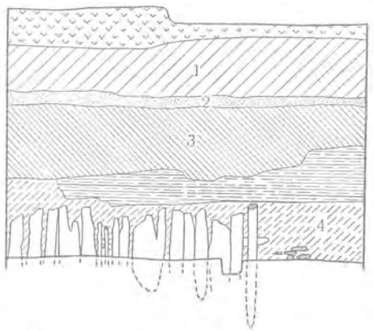
169. Sites of the Ho-mu-tu Culture.

from a concentrated area (fig. 172), and in the same layer were unearthed huge quantities of animal and plant remains, potsherds, and food residues. At least three buildings were reconstructable in the excavated area. They were built on piles; their length was over 23 meters and the depth about 7 meters. A frontal bay ran along the length of the houses, about 1.3 meters wide. The floors, constructed of planks and probably paved with mats, were 0.8–1 meter above the ground. The garbage was dumped directly under the floors, probably into the water of a pond or river, along the shore of which the houses were built. The timbers are still well preserved, showing rather advanced joinery in the construction of the houses (fig. 173).

From the garbage debris throughout the site, vast amounts of plant and animal

170. Radiocarbon profile of the Ho-mu-tu site.

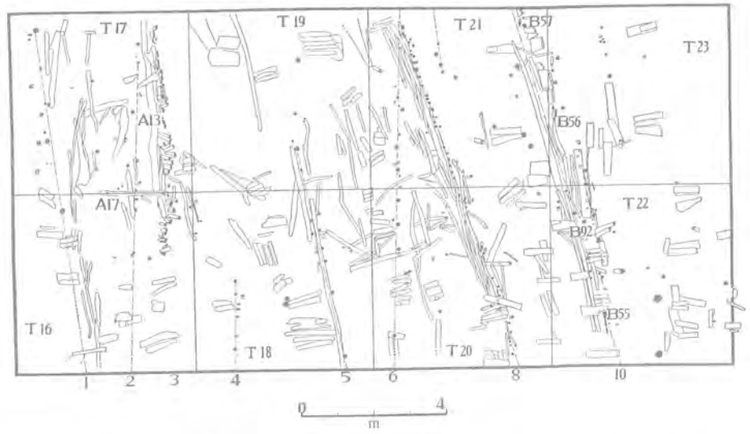




171. Underground profile of the Ho-mu-tu site. 1–4 are the four strata of the cultural deposits. Layer between 3 and 4 consists of rice husks. Timber posts are shown planted under layer 4. (From *KKHP* 1978, no. 1, p. 42.)

remains were collected and many identified.[35] Among the plants, remains of rice (straws, ears, and husks) were everywhere; these have been identified as domesticated rice of the *hsien* variety, or *Oryza sativa indica*. In addition, the bottle gourd (*Lagenaria siceraria*), acorns (*Quercus* sp.), water-caltrop (*Trapa* sp.), the sour date (*Choerospondias axillaris*), and possibly fox nut (? *Euryale ferox*) have been identified among the seeds. From tree leaves a number of trees of a subtropical broad-leaf deciduous forest can be seen, including *Quercus gilva, Q.* sp., *Castanopsis selerophylla, Ficus heekeyana, Cinnamomum chingii, Litzea cubeba,* and *Lindera chienii*. Pollen grains and spores from the fourth layer also point to species indica-

35. *KKHP* 1978 (1), 95–106; H. L. Yu, *WW* 1976 (8), 20–23. In a general book on the history of weaving in China (Ch'en Wei-chi, ed., *Chung-kuo fang-chih k'o-hsüeh chi-shu shih,* Peking: Science Press, 1984), the cordage found at Ho-mu-tu is said to have been made of the fibers of the ramie. It identifies the worm designs on an ivory bowl at the same site as representing silkworms (pp. 9–10).

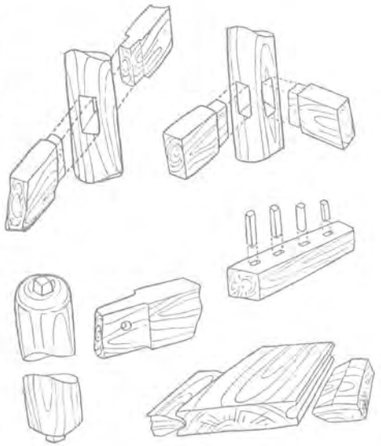


172. Partial plan of a timber building at Ho-mu-tu. (From *KKHP* 1978, no. 1, p. 45.)

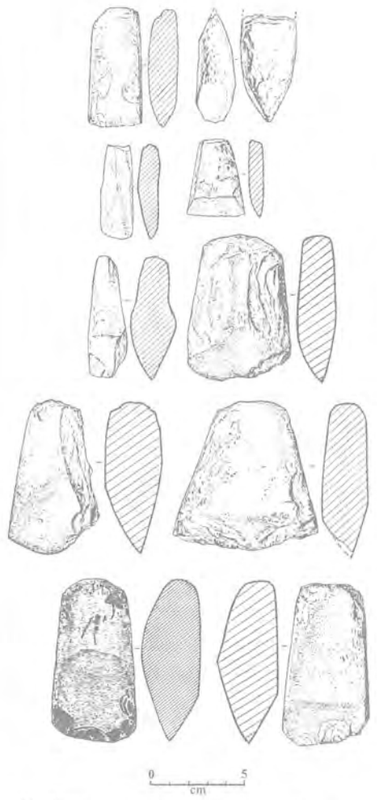
tive of warmer and moister climate and lacustrine landscape. The animal species identified from the bones are again consistent with such environmental characteristics: mammals such as monkeys (*Macaca speciosa, M. mulatta*), sheep (*Naemorhedus* sp.), deer (*Cervus nippon*), elaphure (*Elaphurus davidianus*), red deer (*Rusa unicolor*), muntjak (*Muntiacus muntjak, M. reevesi*), water deer (*Hydropotes inermis*), rhinoceros (*Rhinoceros* sp.), elephant (*Elephas maximus*), tiger (*Ponthera tigris*), bear (*Selenactos thibetanus*), and smaller mammals; many kinds of fowls and birds (*Pelecanus* sp., *Phalacrocorax* sp., *Ardea* sp., *Grus* sp., *Anas* sp., *Anser* sp., Corvidae, and Accipitridae); reptiles such as the alligator (*Alligator sinensis*), turtle (*Chinemys reevesi*), and tortoise (*Amyda sinensis*); and various fishes, mostly species of freshwater carp but also the estuarian mugil and the marine fish *Gymno cranius* sp. These animals suggest an environment of "an interface between plains and lakes and hills and mountains."[36] Among the animal bones are also those of the dog (*Canis familiaris*), pig (*Sus domestica*), and water-buffalo (*Bubalus bubalis*), which were all likely domesticated.

The artifact inventory reflects, on one hand, the subsistence of the villages upon a mixture of farming, hunting, and fishing, and, on the other hand, a life of some opulence as expressed in the workmanship of the crafts and in the arts. The stone implements were not numerous, especially in comparison with the abundant wooden and bone artifacts, and were mostly axes and chisels (fig. 174) but also include ornaments and a kind of butterfly-like object (fig. 175). The latter, made of

36. *KKHP* 1978 (1), 102.



173. Major types of joinery in the remains of wooden structures at Ho-mu-tu. (From *KKHP* 1978, no. 1, p. 47.)



174. Stone implements at Ho-mu-tu. (From *KKHP* 1978, no. 1, p. 52.)

stone, bone, or wood, has been compared with the Eskimo "winged object" and is believed to be some kind of guidance device mounted on the end of spears.[37]

Most of the artifacts recovered were of bone. The most striking and characteristic type was the hoe made of the shoulder-blades of mammals (fig. 176). Some of the wooden handles of the hoes have been found, enabling the whole hoe to be reconstructed (fig. 177). Other bone objects include the arrowhead, whistle, chisel, awl, needle, spatula, weaving shuttle (apparently the earliest archaeological specimen), the butterfly-like object, and ornaments (fig. 178). Also numerous were wooden artifacts, including the hoe, paddle, spear, spatula, spindle whorl, mallet, handles, weaving tools, and sticks (fig. 179). A particularly noteworthy object was a red lacquered wooden bowl unearthed in 1977–78, the earliest lacquerware found in China thus far.

The pottery of Ho-mu-tu is distinctive: the ware was black, tempered with charcoal powder, thick and porous, and handmade. The charcoal powder in the paste was undoubtedly left from temper of plant stems and leaves and rice husks. The firing temperature is estimated at 800–850°C in the lower layers and 950–1000°C in the upper layers. The surface of the vessels was often burnished, but it was also commonly decorated with cord-impressions and incisions. Appliquéd animals and paintings were occasionally found. The cord-marks were probably impressed over the round bottom of the pots and the exterior body of the urns with a cord-wrapped paddle. The incised designs were often animal or plant patterns (fig. 180). In shape, the most common was the cooking pot, sometimes equipped with a waist ring like Ma-chia-pang's. Other types were the urn, bowl, shallow plate, basin, vessel lid, support, and pedestal. Flat and round bottoms were common, but there were only a few tripods (figs. 181, 182). Clay figurines include humans, sheep, and pigs (fig. 183). In addition to the incised animals and plants on pottery, Ho-mu-tu art objects include also ivory and woodcarvings (fig. 184). The prominence of birds or the double-bird motif is noteworthy.

Very few Ho-mu-tu sites outside the type site have been reported.[38] This was a rich culture that lasted a long time. Its precise spatial scope will depend upon future discoveries.

The Ta-hsi and Ch'ü-chia-ling Cultures of the Middle Yangtze Basin

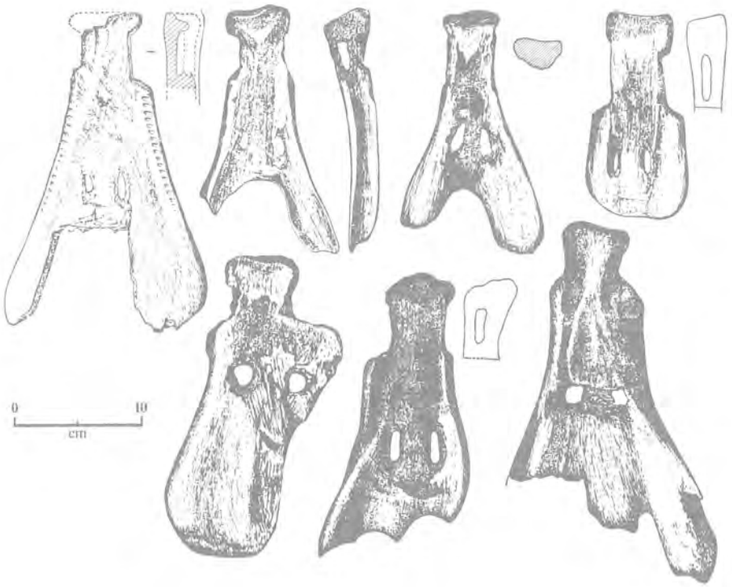
The middle Yangtze basin is drained by two major rivers of central China. The principal river is, of course, the Yangtze, which, after snaking through the three

37. J. H. Wang and C. Yuan, *KKYWW* 1984 (5), 64–69.
38. *KK* 1979 (6), 560–61; 1983 (1), 4–9.

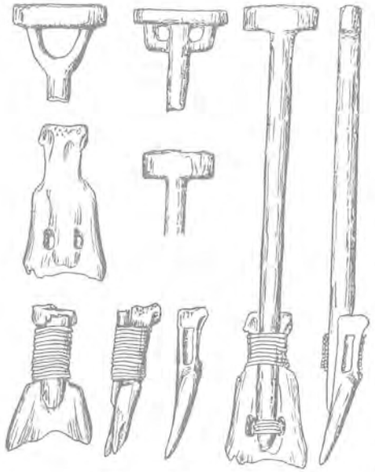
gorges in the Wu-shan Mountains between the provinces of Szechwan and Hupei, opens into the Hupei basin at the city of Yi-ch'ang and flows down to join the remnants of the ancient Lake Yun-meng. The other river is Han-shui, which originates in the Tsinling Mountains and comes down through Shensi, southwestern Honan, to drain the northern part of the Hupei basin and joins the Yangtze at the city of Wu-han. This basin is another lakescape, and prehistoric rice-farming villages have been found along the large and small river valleys throughout the basin, in the modern provinces of Hupei, easternmost Szechwan, northernmost Hunan, and northernmost Kiangsi (fig. 185).

This fertile basin was undiscovered as a prehistoric cultural site until the 1950s. As early as late 1925, Nels C. Nelson of the American Museum of Natural History undertook a preliminary archaeological survey in the Three Gorges region from Yi-ch'ang westward, and among the sites he discovered was a Tai-hsi, where stone

175. Stone "butterfly" (*left*) and ornaments at Ho-mu-tu. (From *KKHP* 1978, no. 1, p. 53.)



176. Bone hoes at Ho-mu-tu. (From *KKHP* 1978, no. 1, p. 55.)



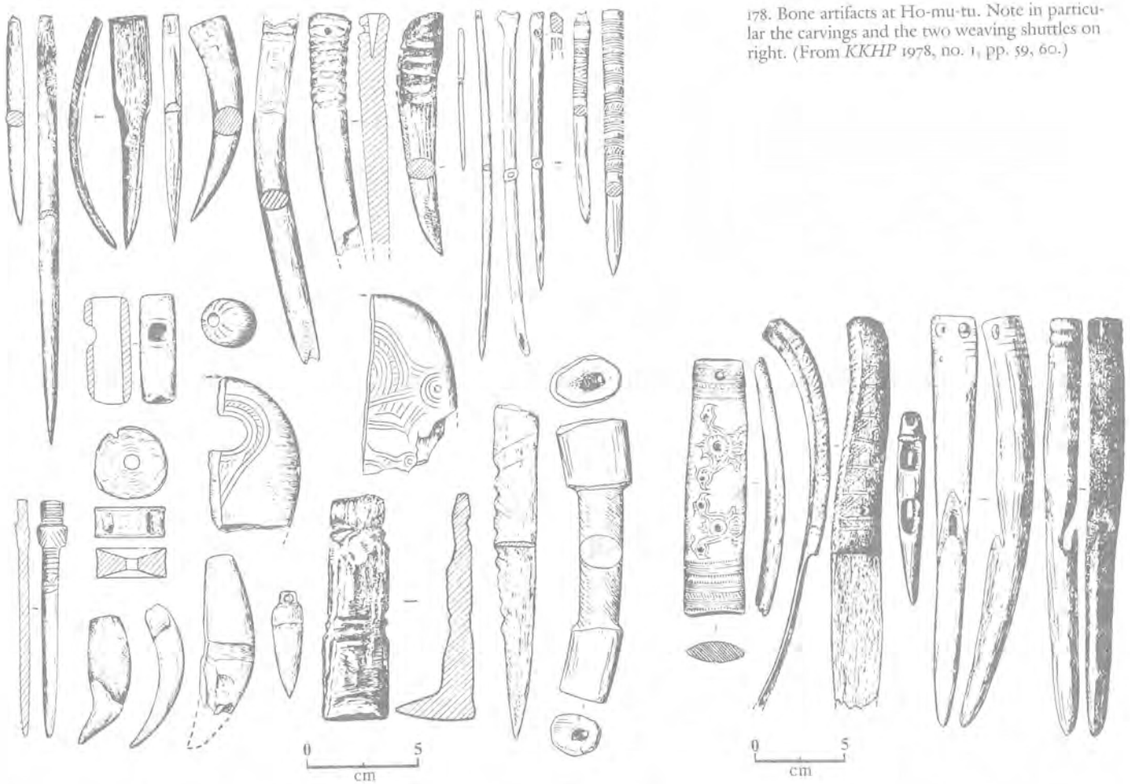
177. Reconstruction of bone hoes hafted to wooden handles. (From Mou Yung-hang, *CKHNL* 1, 1980, p. 99.)

implements and potsherds were collected, but it was never investigated.[39] In 1955–57, the site of Ch'ü-chia-ling in Ching-shan, Hupei, was excavated, yielding the beginning of a new Neolithic culture in the annals of Chinese archaeology, the Ch'ü-chia-ling Culture.[40] In the late 1950s, the site of Ta-hsi, in Wu-shan, easternmost Szechwan, and a series of other sites along the Yangtze gorges began to be investigated,[41] resulting in the unearthing of another archaeological entity, the Ta-hsi Culture. The interrelationship of these two cultures was not understood until the 1970s, with the excavation of a series of important and often stratified sites where both Ta-hsi and Ch'ü-chia-ling Cultures were identified. These include—from south and east to north and west—San-yuan-kung, in Li-hsien,[42] and Hua-ch'eng-kang[43] and T'ang-chia-kang[44] in An-hsiang, all in northwestern Hunan; Wang-chia-kang in Kung-an,[45] Mao-chia-shan in Chiang-ling,[46] Kuei-hua-shu in Sung-tzu,[47] Kuan-miao-shan in Chih-chiang,[48] Hung-hua-t'ao in Yi-tu,[49] and Ch'ing-shui-t'an in Yi-ch'ang,[50] all in western Hupei, and Ta-hsi in Wu-shan, easternmost Szechwan.[51] Among these sites, at least San-yuan-kung, Hua-ch'eng-kang, and Kuan-miao-shan (fig. 186) had stratigraphical evidence to show that Ch'ü-chia-ling Culture was later than, and in fact grew out of, the Ta-hsi Culture. The available radiocarbon dates are consistent with this chronological order of the two cultures (fig. 187), and so are the thermoluminescence dates.[52]

THE TA-HSI CULTURE

The archaeological remains of the Ta-hsi Culture have been reported from across the entire middle Yangtze basin, from Wu-shan of Szechwan in the west to Huang-kang of eastern Hupei in the east, north to Chiang-ling or possibly even Ching-shan and south to the northern shores of Lake Tung-t'ing and the Li River valley of northern Hunan.[53] However, not many sites have been thoroughly

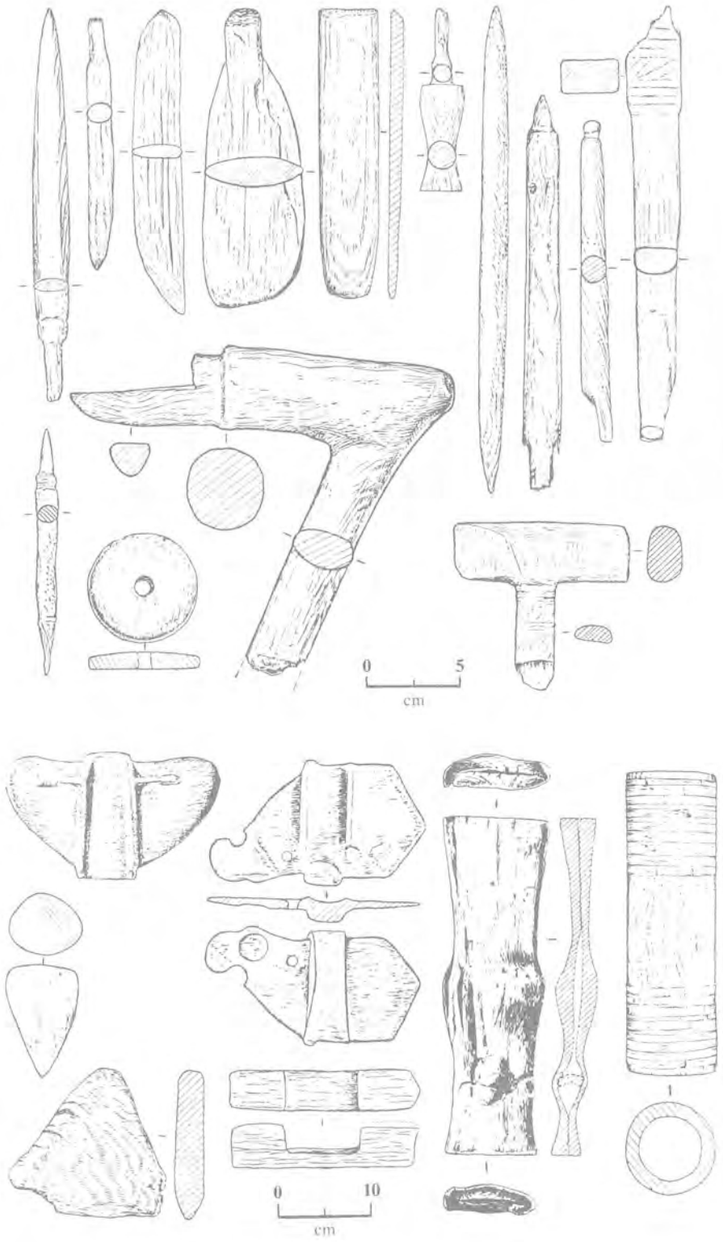
39. N. C. Nelson, *Natural History of Central Asia* 1 (1927).
40. *Ching-shan Ch'ü-chia-ling*, Peking: Science Press, 1965; *WWTKTL* 1956 (10), 80; *KKTH* 1956 (3), 11–21.
41. *KK* 1959 (8), 393–403; 1961 (5), 231–36; *WW* 1961 (11), 15–21.
42. *KKHP* 1979 (4), 461–88; *WW* 1972 (2), 31–38.
43. *KKHP* 1983 (4), 427–70.
44. *KK* 1982 (4), 341–54.
45. *KKHP* 1984 (2), 193–220.
46. *KK* 1977 (3), 158–65, 209.
47. *KK* 1976 (3), 187–96, 160.
48. *KK* 1981 (4), 289–97; *KK* 1983 (1), 17–29.
49. *KK* 1965 (1), 41–42.
50. *KKYWW* 1983 (2), 1–17.
51. *KKHP* 1981 (4), 461–90.
52. *KK* 1982 (4), 417, 416.
53. C. C. Ho, *CKHNL* 2 (1982), 116.



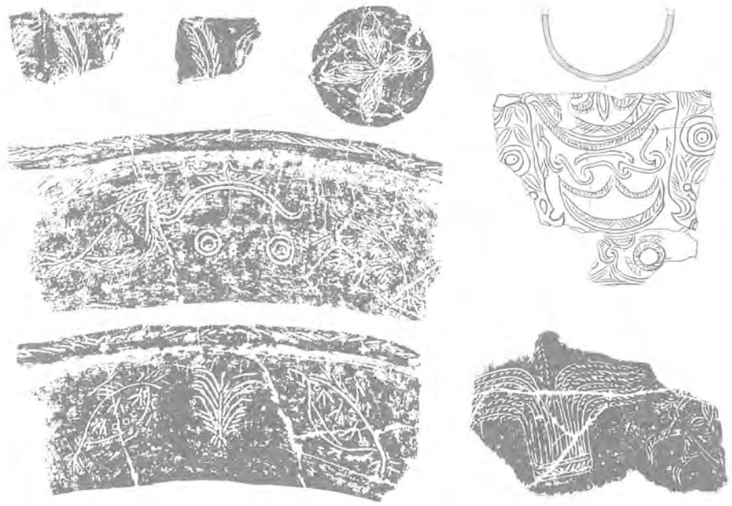
178. Bone artifacts at Ho-mu-tu. Note in particular the carvings and the two weaving shuttles on right. (From *KKHP* 1978, no. 1, pp. 59, 60.)

excavated and reported. Our knowledge of this culture remains at an infantile stage.

Sites of the Ta-hsi Culture are often located on low terraces that extend from the hills into the valley or basin floor, and both dwelling areas and cemeteries have been encountered. At many sites, fragments of burnt clay were found, mixed with bamboo and wooden sticks, reeds, and burnt rice grains and rice husks—probably ruins of house floors and walls, but very few houses have been excavated. At Kuan-miao-shan, two house floors were found. One, given as an example in the report of the site, was square, about 6 meters to a side. The walls, about 30 centimeters thick, were built into foundation troughs 10–30 centimeters deep.



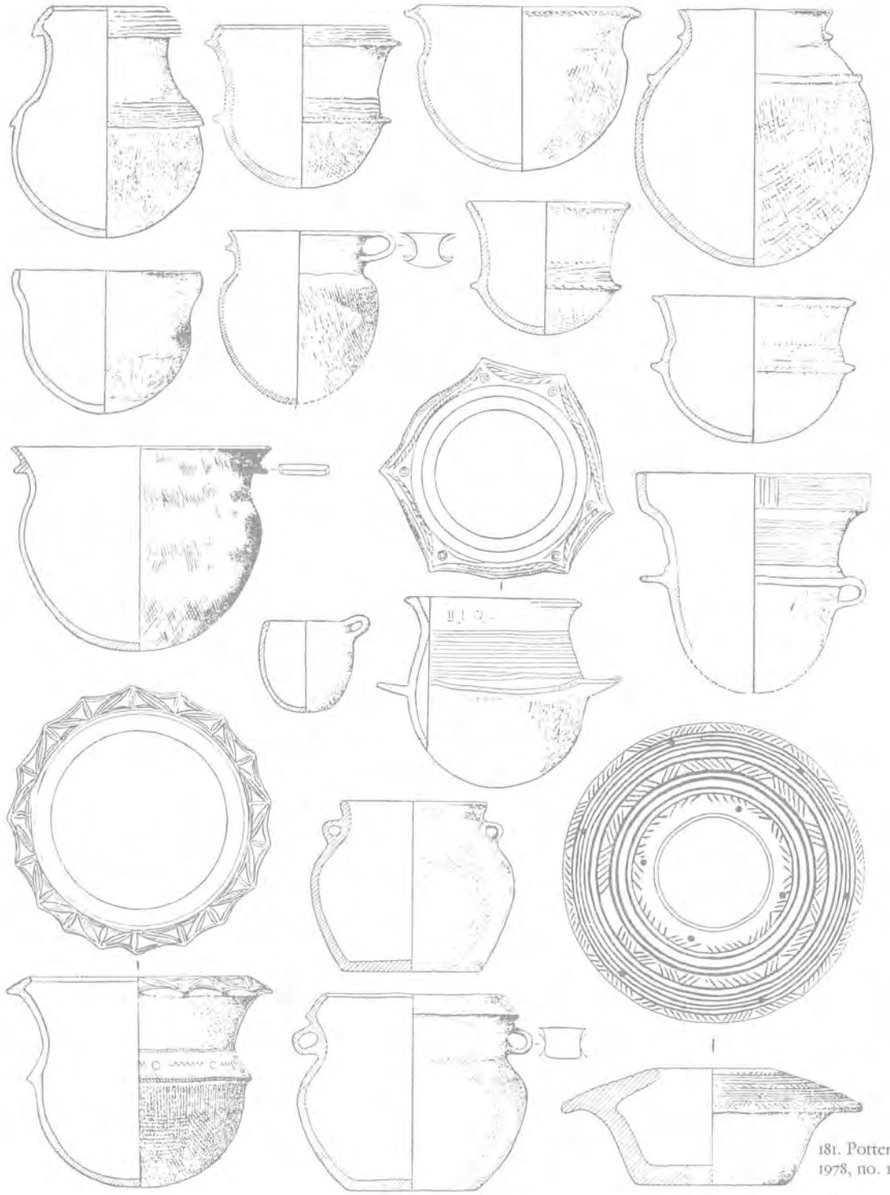
179. Wooden artifacts at Ho-mu-tu. (From *KKHP* 1978, no. 1, pp. 61, 63.)



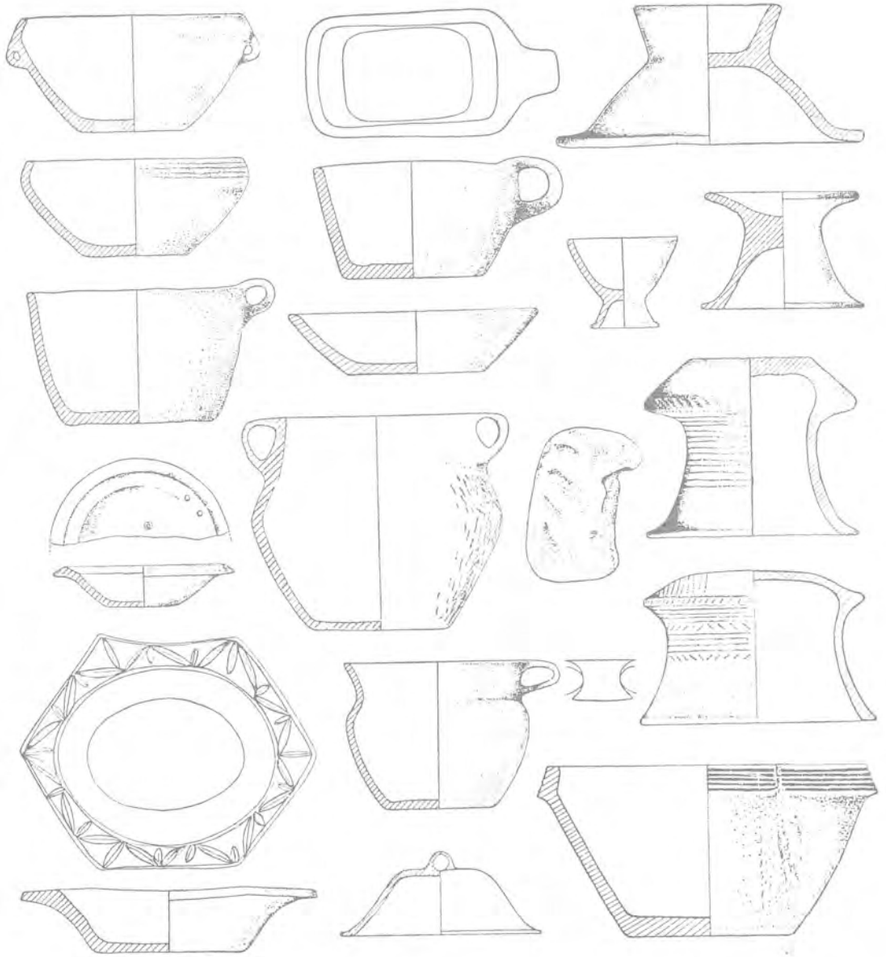
180. Incised designs on pottery at Ho-mu-tu. (From *KKHP* 1978, no. 1, pp. 64, 70; and *WW* 1980, no. 5, p. 9.)

They were built of gray clay mixed with burned clay fragments and some potsherds. The exterior surface of the walls was plastered with clay mixed with some rice husks and rice straws and the interior surface was washed with yellow clay; the walls were then burned or baked to a gray or reddish color. From the postholes it appears that the posts were of wood and bamboo. The door was in the west wall. A hearth of three layers was placed at the center. The floor was plastered with clay tempered with fine sands (fig. 188). In addition to the houses there were many storage pits in the dwelling area. At the San-yuan-kung site, bones of pigs, sheep, and cattle are said to have been identified in the storage pits. A single pottery kiln was found at Hua-ch'eng-kang; it was built with burnt clay fragments (fig. 189).

Human burials occurred at most sites. Grave pits were usually not identifiable, and no caskets were found. The orientation and posture of the dead varied from site to site and within the same cemetery. At Ta-hsi, for example, where 208 burials were unearthed, most of the bodies had their heads pointing to the south, but many pointed to the north or west. Stretched and flexed postures occurred, and some lay face up, others face down. The amount of grave goods also varied from nothing at all to more than thirty items, mostly tools, vessels, and ornaments (fig. 190).



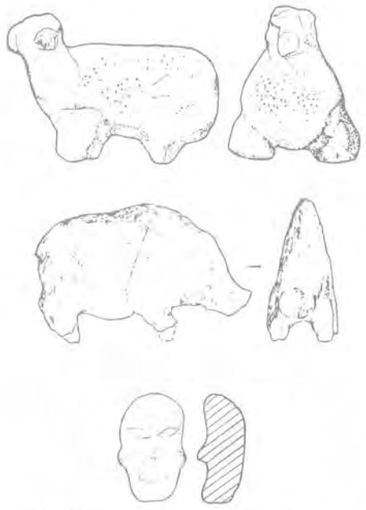
181. Pottery types at Ho-mu-tu. (From *KKHP* 1978, no. 1, p. 67.)



182. More pottery types at Ho-mu-tu. (From *KKHP* 1978, no. 1, p. 69.)

Stone and bone artifacts and pottery characterized the Ta-hsi Culture in terms of its style. The following summary of the culture at Ta-hsi may apply to the whole culture (fig. 191):[54]

54. *KKHP* 1981 (4), 485.



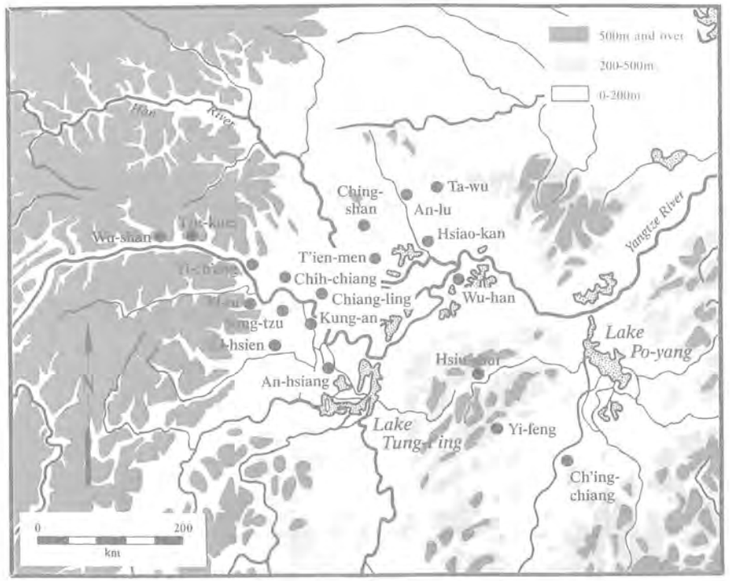
183. Clay figurines of a sheep, a pig, and a human at Ho-mu-tu. (From *KKHP* 1978, no. 1, pp. 71, 85.)

1. Tools and implements were made of stone, bone, clay, and shell. The stones were mostly polished, and their types include the ax, adz, chisel, pestle, sickle, and spindle whorl. Perforations were effected by the tubular technique.

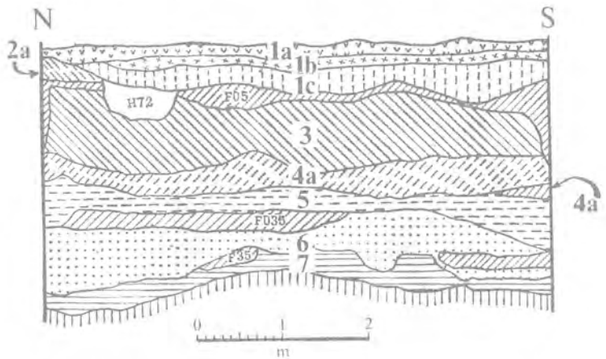
2. The pottery was mostly of red ware, followed by black and gray wares. Handmaking was the rule, but some rims appear to have been touched up on the slow wheel, and occasionally (as with the black pottery cup with a curved wall) a fast wheel may have been used. There was a preponderance of vessels on ring feet or pedestals. Flat and round bottoms were present, but tripods were extremely rare. Vessel types included the *tou* bowl on a pedestal, cup with curved wall, the bowl, urn, plate, pot, bottle, and basin. Among these the types most diagnostic of the Ta-hsi Culture are the cylindrical bottle, the *tou* with a deep bowl and high pedestal, and the cup with a curved wall.

The surface of the pottery was mostly plain, sometimes highly polished, and on a few a red slip was applied. Painted pottery was rare; the painting was black on red, and the designs were the cord pattern, the sideways chevron, lines, curved

184. Samples of Ho-mu-tu art. (From *WW* 1980, no. 5, p. 10.)

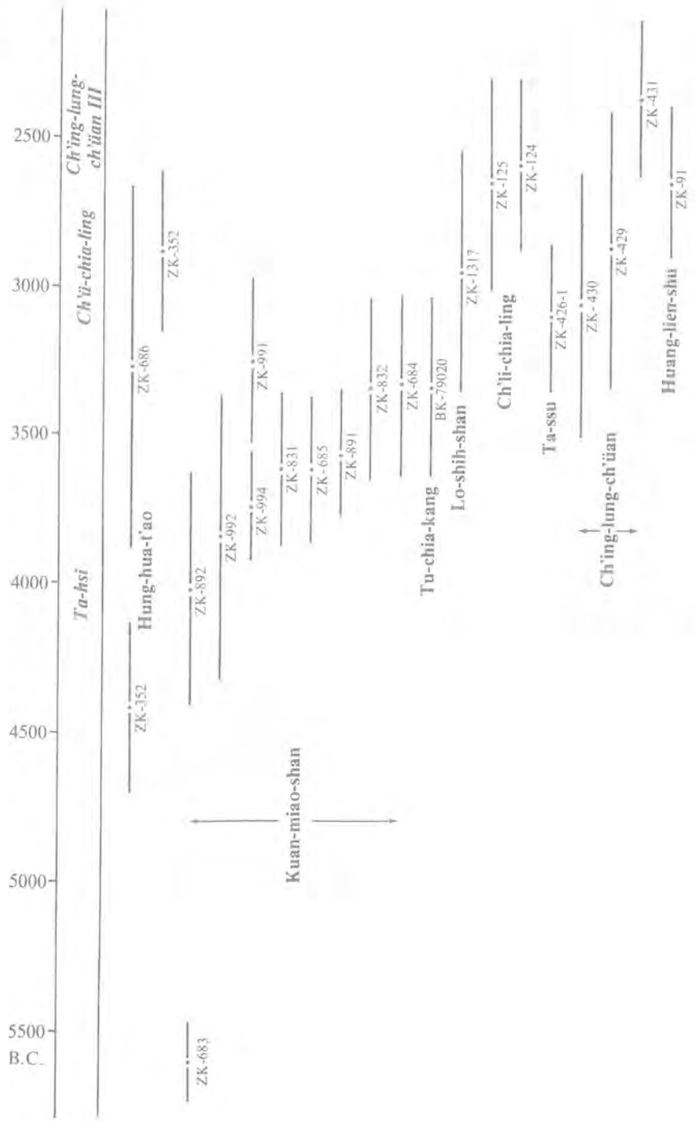


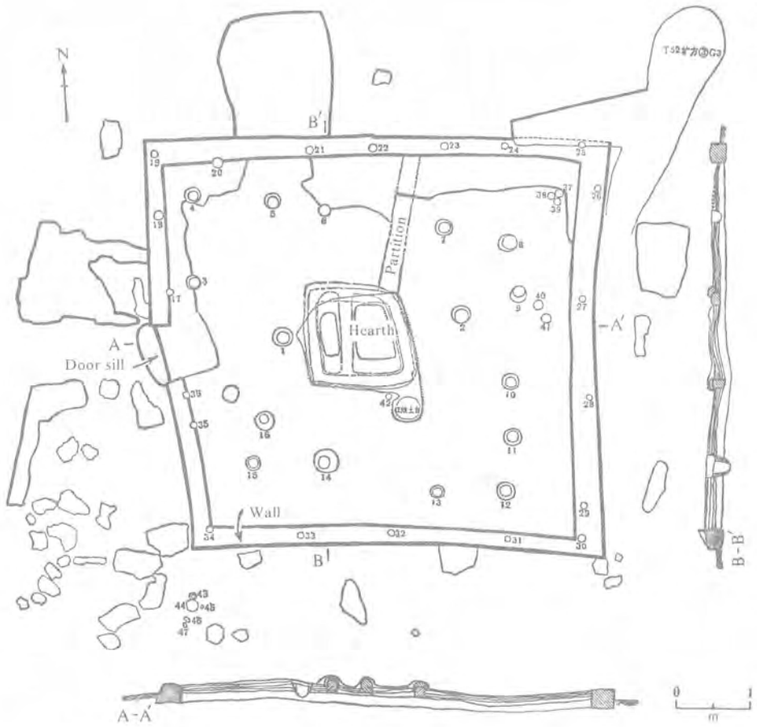
185. Major sites of the Ta-hsi and Ch'ü-chia-ling cultures in the middle Yangtze basin.



186. Stratigraphy at Kuan-miao-shan, Chih-chiang, Hupei. (*1a–c:* Hupei Lung-shan or Ch'ing-lung-ch'üan Culture; *2:* Ch'ü-chia-ling Culture; *3–7:* Ta-hsi Culture.) (From *KK* 1983, no. 1, p. 18.)

187. Radiocarbon profile of the Ta-hsi and Ch'ü-chia-ling cultures.



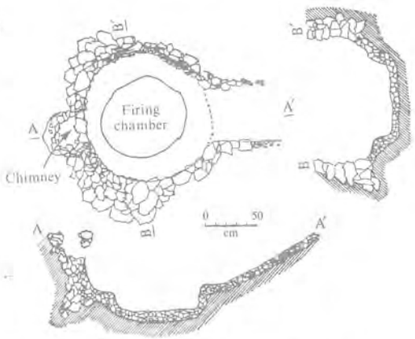


188. House floor at the Ta-hsi Culture site at Kuan-miao-shan. (From *KK* 1983, no. 1, p. 22.)

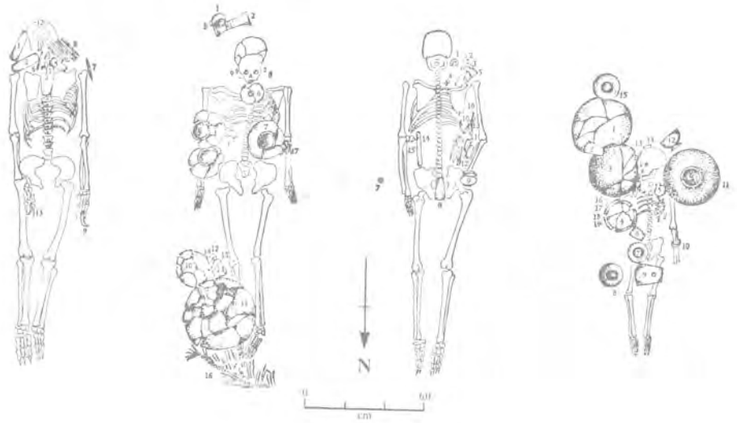
lines, and grass-leaf patterns. A rare find is black pottery painted with red designs after firing; this occurred late in the sequence. Other surface treatments included stamping, bow-strings, incisions, cord-patterns, appliqués, and hollow-outs. Both the painted and the stamped designs were highly distinctive.

3. Ornaments were made of jade, stone, bone, ivory, and animal teeth, and included such types as ear ornaments (pendants and rings of turquoise, stone, and jade), necklaces (of jade rings, jade half-rings, and shell-beads), armlets, and bracelets.

Although the above are the common features, considerable changes occurred within the Ta-hsi Culture itself. Several sites of long and stratified deposits (for example, Kuan-miao-shan) provide fundamental data for further research. In a recent preliminary assessment, Ho Chieh-chün subdivided the Ta-hsi Culture



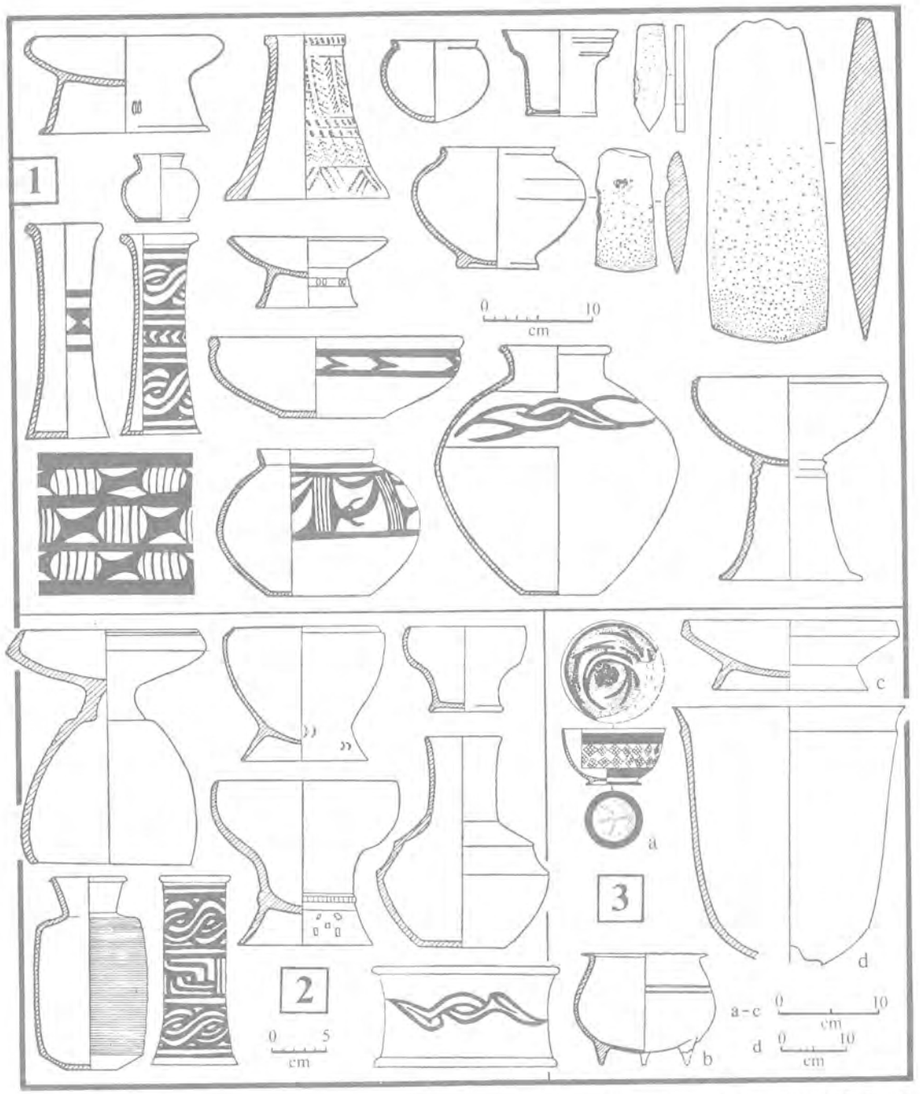
189. Pottery kiln of the Ta-hsi Culture at Hua-ch'eng-kang, in An-hsiang, Hunan. (From *KKHP* 1983, no. 4, p. 430.)



190. Human burials at Ta-hsi, Wu-shan, Szechwan. (From *KKHP* 1981, no. 4, pp. 464, 465.)

into four phases: (I) represented by the T'ang-chia-kang lower stratum; (II) Kuan-miao-shan layers 6 and 7 and the San-yuan-kung lower stratum; (III) Mao-chia-shan, Kuan-miao-shan layers 4 and 5, the San-yuan-kung middle stratum; and (IV) Ta-hsi itself. "As of now, the area where Ta-hsi I sites are found is restricted to the northwestern shores of Lake Tung-t'ing and the southwestern portions of the Yangtze-Han-shui plain. At Kuan-miao-shan some remnants of Phase I are visible, but Phase II sites are found so far only to the east of the Three Gorges. Sites within the Three Gorges can be pushed back only as far as Phase III, whereas Ta-hsi in Wu-shan is even later. Can it be inferred from this that the Ta-hsi Culture began in the southwestern Yangtze–Han-shui plain and the northwestern shores of Lake Tung-t'ing, and that it subsequently expanded toward the east, the west, and the north? Because of the limited data available this can only be a tentative hypothesis."[55] Recent reports of the discovery of a new, early culture—apparently intermediate between the earliest known Ta-hsi Culture and the earlier Lao-kuan-t'ai and Li-chia-ts'un phases in neighboring Shensi—in the areas of Yi-tu, Tzu-kuei, and the shores of Lake Tung-t'ing in Hunan are consistent with this hypothesis.[56]

55. C. C. Ho, *CKHNL* 2 (1982), 119–20.
56. *Chung-kuo k'ao-ku nien-chien 1984* (Yearbook of Chinese archaeology, 1984), Peking: Wen-wu Press, pp. 12–13.



191. Pottery types and stone axes of the Ta-hsi Culture. (From *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, fig. 41.)

THE CH'Ü-CHIA-LING CULTURE

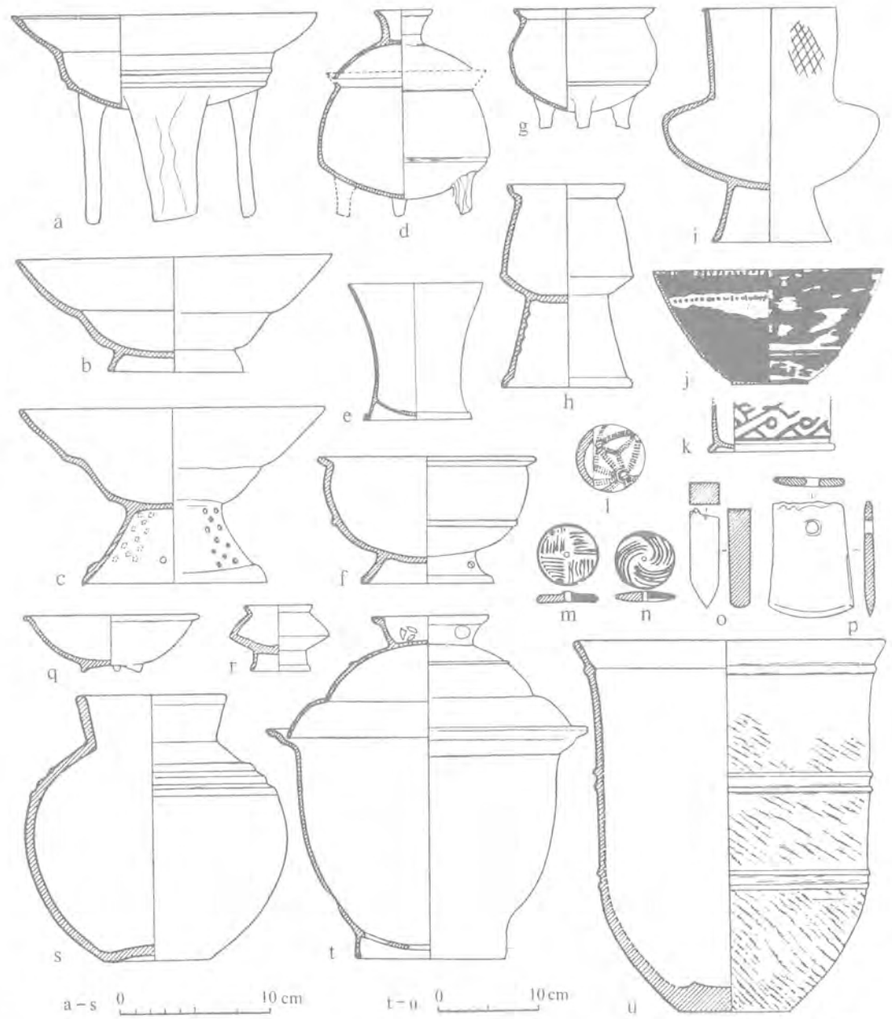
When the Ch'ü-chia-ling Culture was first discovered it was concentrated in the area of Wu-han, Ching-shan, and T'ien-men, that is, the area around the confluence of the Han-shui River and the Yangtze. New excavations in the 1970s found that Ch'ü-chia-ling remains routinely occur in layers above the Ta-hsi Culture layers in the southwestern portion of the middle Yangtze basin. It is now commonly believed that the new culture grew out of Ta-hsi in the latter's area of distribution, but that in its later phases the Ch'ü-chia-ling Culture expanded its sphere of distribution northward to northern Hupei and southern Honan, primarily upstream along the Han-shui and its tributaries.[57]

Continuing the Ta-hsi way of life, the Ch'ü-chia-ling was a rice-growing culture. Rice straws and husks were found widely in burnt clay fragments, and they have been identified by the late Ting Yi, leading rice geneticist, as *Oryza sativa japonica*.[58] Some clay animal figurines have been identified as chicken and sheep, although the identification is by no means clear-cut. Bones of dogs and pigs have been unearthed. As with the Ta-hsi Culture, the large number of clay spindle whorls found indicates a highly developed fabrics industry, although nothing remains to tell us what kinds of fabrics were spun. The spindle whorls were highly decorated with painted or fine-point impressed designs.

No well-excavated houses are reported, but again burnt clay fragments tempered with rice straw and rice husks were everywhere, indicating the same architectural technology as the Ta-hsi Culture's. From the Ch'ü-chia-ling layers at the Hua-ch'eng-kang site, ninety-six burials were reported. Most were rectangular pit-graves, well furnished with pottery vessels. Eighteen of the burials used large urns, covered with basins or bowls. Smaller vessels were placed inside or outside the burial urns, but no bones remained.

The most characteristic features separating the Ch'ü-chia-ling Culture from Ta-hsi were found in its ceramics. Vessels on ring feet continued, but *ting* tripods became prominent members of the Ch'ü-chia-ling assemblage. Many of the bowls had a curved wall so that the rim makes an angular turn outward to produce a two-level effect; the same shape was used for the bodies of *tou* on pedestals and *ting* on tripods. Other diagnostic features include the pedestaled jar with a sharp bulge at the waist, painted "egg-shell" bowls and cups, and the cup with straight walls on a pedestal (fig. 192).

57. C. C. Ho, *CKHNL* 2 (1982), p. 122; P. K. Lo, *CYWW* 1983 (3), 11–18.
58. *KKHP* 1959 (4), 31–34.



192. Pottery types and stone objects of the Ch'ü-chia-ling Culture. (From *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, fig. 43.)

CONTEMPORARY CULTURE IN NORTHWESTERN KIANGSI

Going down the Yangtze from Huang-kang, the easternmost city in Hupei where Ch'ü-chia-ling sites are known, in a little more than a hundred kilometers one reaches the city of Chiu-chiang and Lake Po-yang of northernmost Kiangsi and enters a whole new drainage system featuring the Kan-chiang River, which comes up from the southern hills. The Kan-chiang provided the only riverine communication route between the middle Lower Yangtze valley and the Southern Coastal areas, and future studies of Neolithic prehistory of the area may furnish some keys to the networking of the Neolithic cultures involved. At this time, a very few Neolithic sites are known, and only those at Shan-pei[59] and Chu-wei-ch'eng (lower stratum)[60] have yielded prehistoric remains that may touch the upper limits of the time period dealt with in this chapter. Some of the Ch'ü-chia-ling characteristics, such as the *ting* tripod with flat legs and the pedestaled jar with bulging waist, find their counterparts here, but the Shan-pei assemblage shares the distinctive features of the Southeast Coast, especially as it is manifested in Shih-hsia, such as the many stepped adzes, the semilunar slate knives, and the *ting* with shallow plates and the distinctive *kuei* tripods.[61]

The Ta-p'en-k'eng and Related Cultures of the Southeast Coast

The southeastern coastal areas of China are distinctive in cultural history for their heterogeneity and complexity. Most of South China consists of hills and mountains, and many small, short rivers flow from these hills and mountains directly into the sea. These rivers are separated from one another by hills and mountains, so each of the many river valleys perpendicular to the sea coast formed a small world by itself, and communication and contact among them are possible primarily via the coast.[62] Very few of these river valleys have been systematically investigated by archaeologists, and an overall categorization of the prehistoric cultures along the whole southeast coast from the Chou-shan Islands—domain of the Ho-mu-tu Culture—to Hainan Island during the period 5000–3000 B.C. is not possible at this time.

In the last twenty or twenty-five years a number of archaeological sites with a

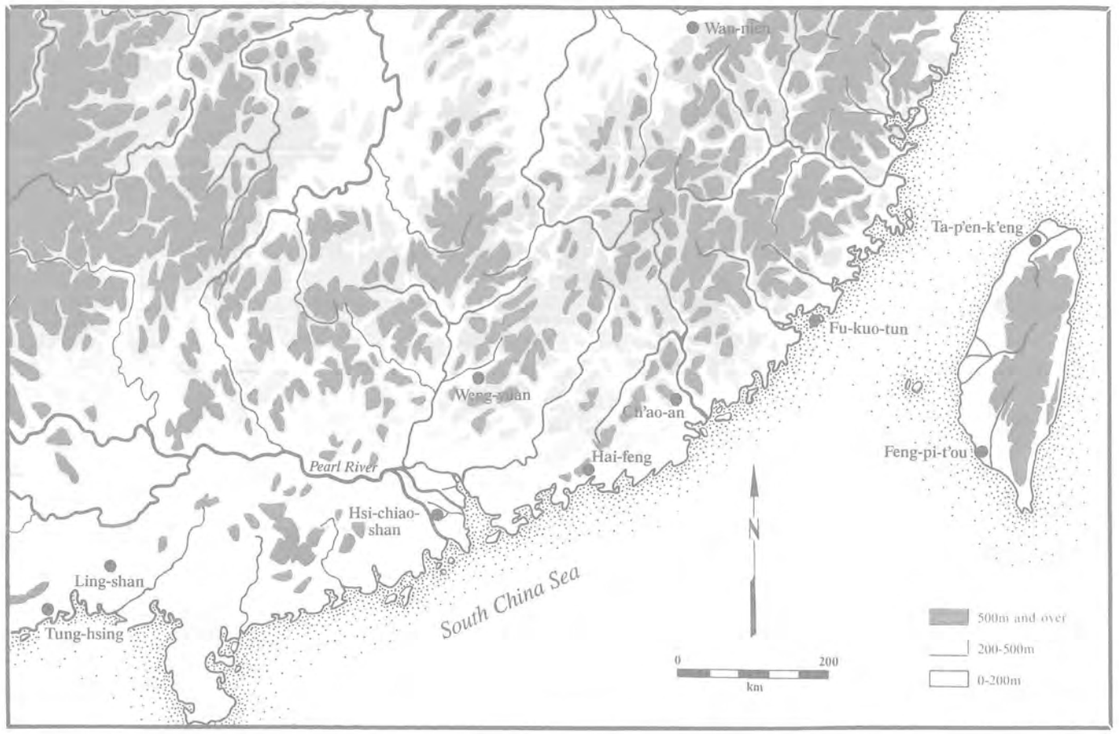
59. *KK* 1962 (7), 353–67. A major but controversial find reported from the P'ao-ma-ling site at Shan-pei consists of four peanut seeds.
60. *KK* 1982 (2), 130–38.
61. S. F. P'eng, *KK* 1982 (1), 40–47.
62. F. Tseng, in *KKHP* 1980 (3), describes the prehistory of Fukien province under five regional headings.

193. Cord-impressed and incised potsherds from the sites of Ta-p'en-k'eng and Feng-pi-t'ou, Taiwan. (Collection, National Taiwan University.)

characteristic cord-marked pottery have been found in several of the coastal areas, from a time horizon best placed at the early third millennium B.C. and before. The best-studied sites are in Taiwan, especially the site at Ta-p'en-k'eng, in T'ai-pei County, northern Taiwan.[63] Other Taiwanese sites are found intermittently along the entire circumference of the island. Only one radiocarbon date is available for this culture (5480 ± 55 B.P., calibratable to 4450–4350 B.C.),[64] but the dating could be pushed back much further.

The most conspicuous feature of this culture is its distinctive pottery (fig. 193).[65] Fragile and often heavily eroded, potsherds of the Ta-p'en-k'eng culture are usually fragmentary, thick, and gritty. The color ranges from creamy buff to dark brown, and the principal shapes are large, globular jars and bowls. Low and perforated ring feet are found attached to the bottoms of some jars. The rims have medium flare, and many have a circumferential ridge ("carinated") below the lip. The entire body of the vessel is invariably impressed with cord marks, probably applied with a cord-wrapped stick (rouletting) or paddle (impressing), but the rim is never so impressed. The rim surfaces and, frequently, the upper part of the shoulder are decorated with incised designs composed of wavy lines and short, parallel strokes applied with two (or occasionally three) sticks bundled together.

63. K. C. Chang et al., *Fengpitou, Tapenkeng, and the Prehistory of Taiwan*, Yale University Publications Anthropol., no. 73 (1969).
64. S. C. Huang, *Bull. Dept. Arch. Anthropol.* 35–36 (1974), 66.
65. K. C. Chang, *Asian Perspective* 13 (1970), 62–64.



194. Major sites of Ta-p'en-k'eng and related cultures.

Only a small number of stone tool types are known from this culture, including worked pebbles (perhaps net-sinkers), bark beaters with a polished and grooved surface, polished adzes (with asymmetrical edges and rectangular cross sections), and small, triangular, perforated slate points. The stone and ceramic inventory indicates a culture of considerable complexity, and although there is as yet no direct evidence of agriculture, they undoubtedly relied significantly on plants, and this point must be viewed in the context of the continuing cultural tradition as manifested by such earlier cave sites as Hsien-jen-tung and Tseng-p'i-yen, discussed in chapter 2.

The tropical region of Asia that scholars see as a nuclear agricultural area includes all of monsoon Asia, from southeastern India to mainland and insular

195. Potsherds from the Fu-kuo-tun shell-mound, Quemoy, Fukien. (Collection, National Taiwan University.)

Southeast Asia. The archaeological material from the Ta-p'en-k'eng culture of Taiwan, as well as that from the earlier cave sites, has proved illuminating with regard to the problem of agricultural origins, and it merits consideration in this context. The great variety of cord-marks on the pottery demonstrates the existence of highly sophisticated cordage techniques, and fibers for the cord must have been obtained from plants among the abundant local flora. The sites of this culture were near bodies of water from which the inhabitants obtained fish and shellfish, and the stone net-sinkers and carpenter's tools (adzes and chisels of various kinds) suggest the construction of canoes and deep-sea fishing, for which fibers and cordage were probably needed for calking, fish lines, and nets. Stone bark beaters are known and barking was probably one of the means for obtaining fiber from wild plants. All this contextual information at the cord-marked pottery sites agrees with the conditions proposed by ethnobotanists as necessary for early horticulture. The evidence shows beyond question that the inhabitants' principal mode of subsistence remained hunting, fishing, and collecting, but the probability of some form of gardening is also very strongly indicated.

Taiwan, of course, was not the sole habitat of the ancient people who made the corded ware so characteristic of the Ta-p'en-k'eng Culture, for cord-marked

196. Earliest potsherds from Hai-feng, Kwangtung. (From R. Maglioni, *Archaeological Discovery in Eastern Kwangtung*, 1975, p. 32.)

pottery is widespread throughout South China (fig. 194) and the Indo-Chinese peninsula. In Fukien, directly facing Taiwan across the Formosa Strait, the only known site containing very early pottery is the Fu-kuo-tun shell-mound on Quemoy (Chin-men) Island. Here the potsherds again show incised straight and wavy lines, but, in addition to cord-marking, they exhibit impressions made by molluscan shells and fingernails (fig. 195).[66] A series of radiocarbon dates places this site in the fifth millennium B.C.

Many early cord-marked pottery sites are known in Kwangtung and coastal Kwangsi (see chapter 2). Ta-p'en-k'eng of Taiwan may be regarded as the continuation of the earlier cord-marked pottery cultures into the period of 5000–3000 B.C. Sites of this nature and from the same time period have been reported from Ch'ao-an,[67] Hai-feng (fig. 196),[68] the delta area,[69] and Tung-hsing.[70] The site in Hai-feng yielded a rim sherd with incised wavy lines closely resembling Ta-p'en-k'eng rims, and at the Hsi-chiao-shan site in Nan-hai, on the delta, cord-

66. C. C. Lin, *Bull. Dept. Arch. Anthropol.* 33–34 (1973), 36–38.
67. C. Mo, *KK* 1961 (11), 577–84.
68. This was determined by my examination of Father Maglioni's collection in the Fung Ping Shan Museum at the University of Hong Kong, in 1966. For Maglioni's interpretation of Hai-feng's earliest ceramic phase, see his *Archaeological Discovery in Eastern Kwangtung*, Hong Kong Archaeological Society reprint, 1975.
69. C. Mo, *KKHP* 1959 (4), 1–5; C. Mo and S. W. Li, *KKHP* 1960 (2), 107–19.
70. C. Mo and C. L. Ch'en, *KK* 1961 (12), 644–49, 688.

marked pottery goes back a lot further, and the associated stone industry even longer (see chapter 2).

The apparent long continuum of the coastal cultures, derived from the cave Neolithic described in chapter 2 and manifested in the Ta-p'en-k'eng Culture of Taiwan in 5000–3000 B.C., will in the future undoubtedly prove to be an illusion. The area may turn out to be as diverse and as dynamic as the other regions I have described and in this area we know from the available data that several well-defined Neolithic cultures, each with its distinctive regional or local flavor, became established in the archaeological record during the third millennium B.C. These include the T'an-shih-shan[71] and Hsi-t'ou[72] assemblages of Fukien; the Yuan-shan and the Feng-pi-t'ou Cultures of western Taiwan;[73] and the Shih-hsia and Sham Wan Cultures of Kwangtung.[74] It appears likely that these cultures formed on the basis of the Ta-p'en-k'eng and related cultures of the previous millennia in the same area. Their formation will be discussed in chapter 5, along with the interrelated changes that took place in each of the regional Neolithic systems.

The Southwest

The only Neolithic site in the Southwest that can be radiocarbon dated to 5000–3000 B.C. is the open-air site at Ta-lung-t'an, Lung-an, western Kwangsi.[75] Here three radiocarbon dates are available: 5745 ± 105, 4615 ± 100, and 4600 ± 120 B.P., which are calibratable to 4925–4420, 3655–3050, and 3650–3035 B.C.[76] Only a single small pottery urn was found here. It was so fragile that it disintegrated upon touch and we have no description. Most of the finds here are those of finely polished flat spades or hoes with a tang and square shoulders. Some of the shoulders have teeth. These spades were found in various arrangements in round, oval, or pocket-shaped pits. The site has been regarded as either a spade workshop or some kind of ritual area. Many more sites will have to be studied before we know more. But Ta-lung-t'an shows that things were happening in the Southwest during this period. Instead of a pocket of cultural stagnation, where the old cord-marked pottery and pebble tool culture continued without real change, the Southwest may have been another regional center of cultural development and innovation.

71. *KKHP* 10 (1955), 53–68; *KK* 1961 (12), 669–72; 1964 (12), 601; 1976 (1), 83–118; 1983 (12), 1076–84.
72. *KK* 1980 (4), 289–95; *KKHP* 1984 (4), 459–500.
73. K. C. Chang, *Prehistory of Taiwan;* K. C. Li, *Bull. Dept. Arch. Anthropol.* 43 (1983), 86–116.
74. *WW* 1978 (7), 1–14; P. C. Su, *WW* 1978 (7), 16–22; W. Meacham, ed., *Sham Wan, Lamma Island,* Hong Kong Archaeol. Soc., 1978.
75. *KK* 1982 (1), 9–17.
76. *WW* 1980 (2), 84; *KK* 1982 (6), 660.

5

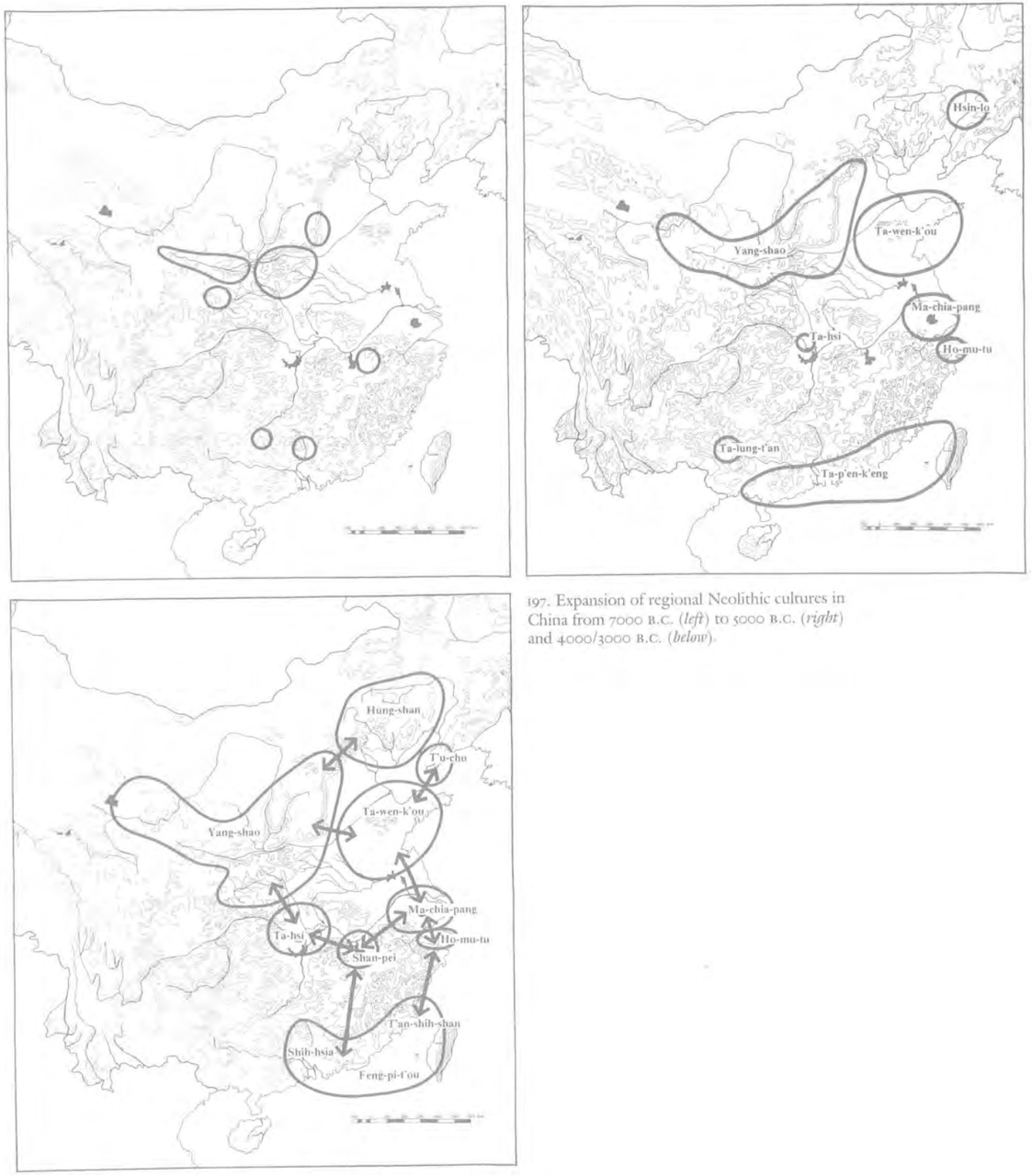
The Chinese Interaction Sphere and the Foundation of Civilization

In chapters 3 and 4 I summarized the available data pertaining to the development of Neolithic cultures in several regions of China. Archaeological advances during the last ten years have taught us that new data are sure to emerge in the near future and the hypotheses based upon the old data are sure to crumble. But the known regional prehistories show two developmental trends very clearly. The first is that all regional cultures in time became more extensively distributed and interaction between them was intensified, resulting, during the fourth millennium B.C., in a sphere of interaction that set the geographic stage for the first historical Chinese civilizations. The second trend is that each region's Neolithic cultures became increasingly complex, diversified, and stratified, socially and culturally, and this trend led to the foundation of the civilizations in these regions. The two trends were probably not unrelated. In this chapter, we first retrace the regional developments outlined earlier and point to the fundamental evidence of their interlinkage during the period of 4000–3000 B.C. Then, we move on from 3000 B.C. to examine the transition to civilization in each region that was manifested in one of a series of new archaeological cultures: Shantung Lung-shan, Eastern Honan Lung-shan, Northern Honan Lung-shan, Western Honan Lung-shan, Shansi Lung-shan, Shensi Lung-shan (K'o-hsing-chuang II), Ch'i-chia, Liang-chu, and Ch'ing-lung-ch'üan III (Hupei Lung-shan) cultures. Finally, we take a brief look at some pertinent archaeological data outside these cultures.

Formation of the Chinese Interaction Sphere

If we compare the Neolithic cultures and their geographical distribution at approximately 7000–6000 B.C., at 5000 B.C., and at 4000–3000/2000 B.C. (the reason for the irregular time slots will become clear presently), we find an interesting thing (fig. 197). At first, there were several isolated clusters of Neolithic cultures, and there is no particular reason why these clusters are discussed together—they are discussed together because of what happened later, but one does not know this at 7000 B.C. Then, at 5000 B.C., new cultures appear and older cultures continue to expand. By about 4000 B.C., we see the beginning of a powerful process that was to continue for the next millennium or more—namely, these cultures became closely linked, and they share common archaeological elements that bring them into a vast network within which the cultural similarities are qualitatively greater than without. By this time we see why these cultures are described together: not just because they are located within the borders of the present-day China, but because they were the initial China. But more on this later.

In the millennia following the initial appearance of ceramics in the available archaeological record, there were four closely related clusters of sites in North



197. Expansion of regional Neolithic cultures in China from 7000 B.C. (*left*) to 5000 B.C. (*right*) and 4000/3000 B.C. (*below*).

China and isolated finds (mostly in limestone caves) in South China. The North Chinese sites have yielded evidence of millet agriculture and related implements—sickle, mortar, and pestle. Pottery vessels featured three often tiny and conical legs attached to the base—these are the earliest characteristic Chinese container, the *ting* tripod. Most of the pottery was plain, but some vessels were cord-impressed, and a significant number had comb-impressed and rocker-stamped designs. The common North Chinese living arrangements in semisubterranean, wattle-and-daub houses and storage pits were already common at this time. Meanwhile, the South Chinese cave dwellers produced a quite different artifactual inventory: pebble choppers and cord-marked pottery, massive evidence of hunting and fishing in the form of animal bones and hunting and fishing gear. It is likely that some farming was done; rice, roots, and tubers would have been the main crops.

By 5000 B.C., the number of archaeological cultures increased, their regions of occupation expanded, and the definition of the various cultures became clearer. In the area formerly occupied by the four earlier Neolithic clusters—Tz'u-shan, P'ei-li-kang, Wei-shui River, and Li-chia-ts'un—there was now a single Yang-shao Culture, with many well-defined local phases. Some of these phases are easily seen as local continuations of the earlier clusters, but the overall area of distribution of Yang-shao was much larger, now including much of the middle Yellow River basin from Hopei to Chinghai. A new culture, Ta-wen-k'ou, emerged in Shantung and northern Kiangsu, separated from Yang-shao by the now-narrowing wetlands in east Honan and southwestern Shantung. This culture may have been derived from the Pei-hsin phase, which seems to have served as the Shantung beachhead of the Tz'u-shang and P'ei-li-kang phases' movement across the wetlands. Further to the north, in the lower Liao-ho valley, was the newly discovered Hsin-lo Culture, with its characteristic flat-based and comb-impressed pottery vessels that suggested affinities with Northeast Asian cultures, although in comb-impression and rocker-stamping the Hsin-lo Culture may claim affinity with the earlier Tz'u-shan phase of Hopei. Yang-shao, Ta-wen-k'ou, and Hsin-lo were all millet-growing cultures. Despite that, and despite their possible affinity, these were three distinctive cultures.

In South China, the scene again showed several distinct regional cultures, this time all rice-growing. In the lower Yangtze and Lake T'ai area was the Ma-chia-pang Culture with its red pottery, and south of it across Hang-chou Bay was the Ho-mu-tu Culture with its black pottery. Upstream along the Yangtze a very early Neolithic culture in the middle Yangtze basin has recently been discovered, and by 5000 B.C. there was the Ta-hsi Culture. Further to the south, along the southeastern coastal areas, there are scattered sites featuring cord-marked or

comb-impressed pottery, possibly continuing from the earlier substratum known through the limestone cave assemblages at Hsien-jen-tung and Tseng-p'i-yen, but sites are too few and far between to be classified with any degree of firmness. The only well-excavated sites are those of the Ta-p'en-k'eng Culture of Taiwan, and this culture may in fact be pushed back by future investigations to an earlier time horizon contemporary with Hsien-jen-tung and Tseng-p'-i-yen. The cord-marked pottery culture of that period may be ancestral to all of the South Chinese rice-growing cultures: Ta-p'en-k'eng, Ho-mu-tu, and early Ma-chia-pang all had cord-marked pottery, although Ta-hsi had less of it. But by 5000 B.C. the regional cultures are again distinctive and individual.

Around 4000 B.C., these distinctive cultures of both North and South China begin to yield unmistakable evidence of a process of linkage that intensified during the following millennium in North China and one-and-a-half to two millennia in the South. The regional cultures reached out to touch each other physically, interacted culturally, and show tangible and growing evidence of sustained and significant interaction. This process of interaction undoubtedly began several millennia earlier, but by 4000 B.C. its manifestations in the archaeological record become clear and strong. These manifestations may be described in two parts: those among the North Chinese cultures, and those between North China and the South Chinese cultures.

Within North China, interrelationships evolved among the Yang-shao, Ta-wen-k'ou, Hung-shan, and T'u-chu-shan (the Ch'ang-shan Islands) phases. By 4000 B.C., the lower Yellow River alluvium had been largely formed, and communication by land between Yang-shao and Ta-wen-k'ou must have been facilitated by the narrowing and final disappearance of this gap. Whole assemblages of Ta-wen-k'ou pottery have been reported from several sites in Honan, the westernmost in Yen-shih, and typical Ta-wen-k'ou vessels (such as the back-carried bottle, *kuei* tripod with baggy legs, *tou* on hollowed-out pedestal, and cup on high stem) occurred in Yang-shao assemblages of the western Honan phase.[1] Yang-shao influence on Ta-wen-k'ou pottery, especially painted pottery, is also conspicuous.[2] The list of stone, bone, and ceramic types shared by Yang-shao and Ta-wen-k'ou is a long one, and the interaction and mutual influence between the two cannot be denied.

Hung-shan and T'u-chu-shan, the former in the middle and upper Liao-ho valley and the Ta-ling-ho valley and the latter at the tip of Liaotung Peninsula, were unquestionably within the same orbit, sharing the northern characteristics

1. C. Y. Wu, *KK* 1981 (3), 261–65.
2. Louisa Huber, *BMFEA* 53 (1981).

of microliths and comb-impressed and flat-based vessels. T'u-chu-shan and Ta-wen-k'ou touched each other through the chain of islands between Shantung and Liaotung peninsulas, as shown by the archaeological contents of the Pei-chuang site in Ch'ang-tao county, north of P'eng-lai in Shantung, where both comb-impressed wares and Ta-wen-k'ou types occurred.[3] As to Hung-shan and Yang-shao, their physical contact in the northern Hopei and Peking area is discussed in chapter 3. In earlier stages of Chinese archaeology, when Hung-shan Culture was first discovered, because it had black decorative designs painted on red ware archaeologists often jumped to the conclusion that it was a northern branch of the Yang-shao Culture. Now, with much better information about the culture itself, the prevailing view is that the Hung-shan Culture was an indigenous development in the Liao-ho valley, probably based on the Hsin-lo Culture, but that in its development it had been influenced from the outside, including Yang-shao.[4] This is suggested by "the red-rim bowl and the designs composed of parallel lines and triangles of parallel lines, which are similar to the Hou-kang phase, and the round-bellied urn with ornamental projections, which resembles those of the Pan-p'o phase."[5]

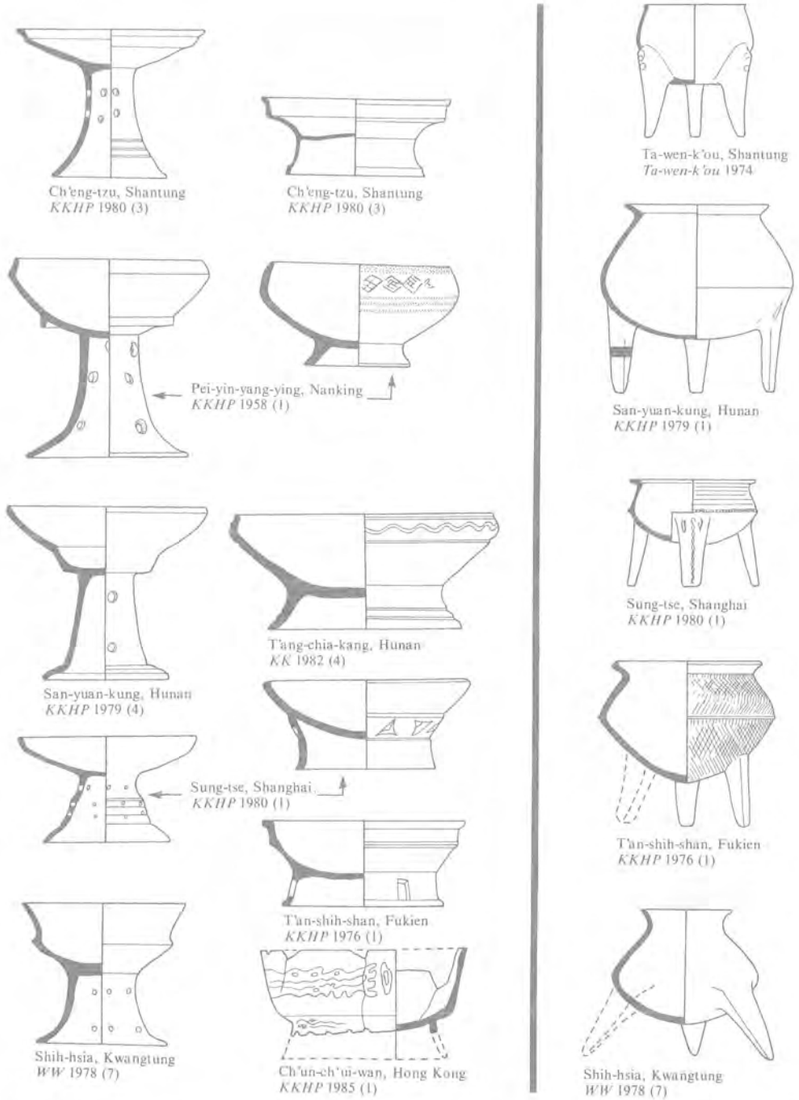
The archaeological evidence for the interlinkage of the Ta-wen-k'ou culture of North China with the Yangtze valley and eastern coastal cultures is the formation of the Lungshanoid horizon, which began in the north and the Yangtze valley by the middle of the fourth millennium B.C. and continued along the eastern coast all the way to Taiwan and the Pearl River delta up to the middle of the third millennium B.C. The concept of the Lungshanoid horizon as a spatial integrating device crosscutting a number of regional sequences was first proposed in 1959 to account for the many similarities in stone and ceramic modes and types throughout eastern coastal China during a continuous time horizon.[6] To explain the rapid and extensive spread of the Lungshanoid horizon, it was thought reasonable to see it as a cultural expansion from a single nuclear area, namely, the Central Plains of North China, the area where the Fen-ho and the Wei-shui rivers join the Yellow River. The basis for this hypothesis was the existence of a complete sequence of Neolithic development in the Central Plains and the lack of such a developmental sequence in the east and on the southeastern coasts, where similar cultures were presumed to have been derived from a precedent in the Central Plains. Now this basis is no longer valid, for complete or nearly complete developmental sequences have been demonstrated in several regions. Therefore, the concept of the "Lungshanoid expansion" as an interpretive schema for a Lungshanoid horizon must now be rejected. This, however, does not invalidate the concept of the Lungshanoid horizon. We must not throw away the baby with the bathwater, for the baby—the Lungshanoid horizon—is real.

3. *SCYC* 1983 (1), 114–30.
4. K. M. Liu and K. C. Hsu, *CKHNL* 1 (1980), 78–79.
5. *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, Peking: Wen-wu Press, p. 175.
6. K. C. Chang, *Harvard J. Asiatic Studies* 20 (1959), 100–49; *Bull. Inst. History and Philology, Academia Sinica*, 30 (1959), 259–309.

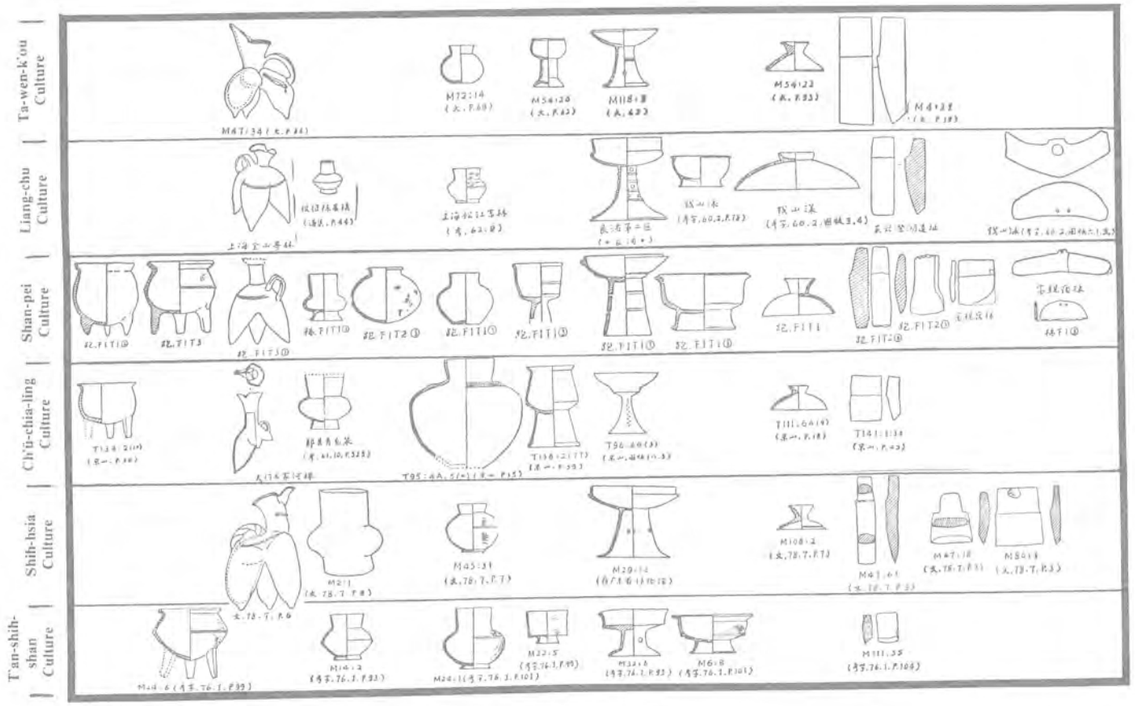
Following the routes of prehistoric interaction and moving among the several regional cultures, let us begin with Ta-wen-k'ou. We move down the coastal plain into the area of the Ma-chia-pang Culture. From here we may move in either of two directions: south across Hang-chou Bay into the Ho-mu-tu domain and further into the southeastern coast, where later we encounter the T'an-shih-shan and Hsi-t'ou Cultures of Fukien and the Feng-pi-t'ou Culture of Taiwan. Or, from Ma-chia-pang we may turn west and follow the Yangtze River upstream. First we meet the culture of Hsüch-chia-kang in Anhwei, and then in Kiangsi we encounter the culture of P'ao-ma-ling (or the so-called Shan-pei Culture). From here we may go upstream further to meet the Ta-hsi and Ch'ü-chia-ling Cultures of Hupei, or we may go upstream along the Kan-chiang River southward to northern Kwangtung and the Shih-hsia Culture. The known cultures and sites in all of these regions are not all contemporary, but they had parallel traditions, most of which are still hidden archaeologically. In general, there is a chronological slant in favor of the north being earlier (fourth millennium B.C.) and the south later (early third millennium B.C.), but this could be an illusion based on incomplete facts and in any event all regions at least overlapped.

Undertaking an imaginary journey crisscrossing the various archaeological regions along the east coast and along the Yangtze River, we see many similarities in the material culture of the peoples we encounter. Polished stone axes, adzes, knives, and many bone, antler, and shell artifacts are practically universal within the area, although in their general forms they exist among all comparable cultures. But striking similarities—markers of horizons in the archaeological sense—are found in both the form and decoration of ceramics. The most convincing are what I call the diagnostic Lungshanoid types, the *tou* on high and low pedestals with hollow-out decorations and the *ting* cooking pot on three solid feet (fig. 198). Both of these types occur predominantly at Lungshanoid sites. There are other similarities, some more general but others more specific. P'eng Shih-fan, in a recent paper on the Shan-pei Culture,[7] attempts to show that this Kiangsi culture, strategically located in the Kan-chiang River valley, served as a pivot for cultural interactions with the east (lower Yangtze), the west (middle Yangtze), and the south (Kwangtung). He has drawn up a comparative chart of some

7. *KK* 1982 (1), 44.



198. *Tou* and *ting* as markers of the Lungshanoid horizon.



199. Regional occurrences of important Lungshanoid markers. (From P'eng Shih-fan, *KK* 1982, no. 1, p. 44.)

ceramic types across the width and length of the area of our concern (fig. 199). Although the cultures he compares are all dated to the third millennium B.C., the ceramic horizon disclosed is a long-lived one.

Thus, for both North China and South China a convincing case can be made that beginning around 4000 B.C. the several regional cultures, which had indigenous origins and distinctive styles, became interlinked in a larger sphere of interaction. The concept of the *interaction sphere* is borrowed from Joseph R. Caldwell. In his discussion of the Hopewellian materials of eastern North America, Caldwell had to come to grips with two salient features: striking differences in the secular, domestic, and nonmortuary aspects of the widespread Hopewellian remains; and an interesting, if short, list of exact similarities in funerary usages and mortuary artifacts over great distances. In coining the term Caldwell referred principally to interactions among the various regions of a mortuary-ceremonial or

religious kind.[8] But he also made clear, at least by implication, that interaction spheres may be based upon other kinds of interregional activities. The Chinese interaction sphere appears to involve activities of a much wider scope. Another concept we could borrow to describe our situation is that of the *area cotradition*, which was applied by Wendell C. Bennett to Peru. It is an "over-all unit of cultural history . . . within which the component cultures have been interrelated over a period of time."[9] I prefer Caldwell's term, because it is more descriptive and self-explanatory.

What do we name the interaction sphere that by 4000 B.C. had begun to form from the Liao-ho Valley in the north to Taiwan and the Pearl River delta in the south, from the coastal areas in the east to Kansu, Chinghai, and Szechwan in the west? We could choose a neutral name and call it Interaction Sphere X; or we could, as we do, call it the Chinese or proto-Chinese sphere of interaction—because this prehistoric sphere formed the spatial core of the historical China and because all the regional cultures must have played a part in forming the historical Chinese civilization that was unified under the Ch'in and Han dynasties.

A note of caution about the word *Chinese* is in order. The English word *Chinese* has both a geographical-cultural sense and a linguistic sense. In the latter sense Chinese means the language spoken by the Han Chinese only. In terms of that interpretation one may question the use of the word to describe the prehistoric interaction sphere, because the Han Chinese language and its speakers were in all likelihood a regional, not a spheric, phenomenon. I use the word here for the interaction sphere in the geographical-cultural sense. To use a European analogy, we may wish at some point in European archaeology to refer to a European sphere of interaction, in which the culture or cultures of the Indo-European speakers were only a part. There can be no ambiguity here, for we have available two different terms. I suggest that a similar distinction be made in the Chinese case also: *Chinese* is the geographical-cultural label, and *Han Chinese* is the linguistic label.

Lung-shan and Related Cultures: The Transition to Civilization

The regional and local cultures within a sphere of interaction manifest similarities that result from interactions between them. Archaeologists formulate *horizons* or *horizon-styles* to characterize such similarities. A sphere of interaction may also

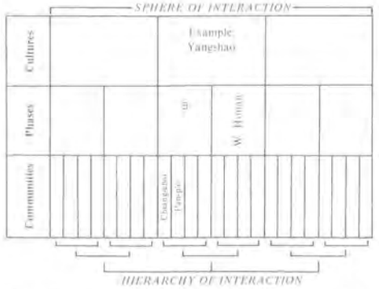
8. "Interaction Spheres in Prehistory," in *Hopewellian Studies*, J. R. Caldwell and R. L. Hall, eds., Illinois State Museum Scientific Papers 12 (1964), no. 6, pp. 135–43.
9. "The Peruvian Co-tradition," in *A Reappraisal of Peruvian Archaeology*, W. C. Bennett, ed., Memoirs, Soc. Am. Archaeol. 1948, p. 1.

play a role within individual regions. A regional culture's sustained interaction with other regions is linked to its internal development. Thus, the formation of the Chinese sphere of interaction in the fourth millennium B.C. and the transition to civilization in each of several constituent regions are two facets of the same development.

In describing the Neolithic prehistory of China I have organized the material into cultures and phases.[10] These categories are the building blocks of the culture histories of any area of the world and allow us to present archaeological assemblages in economic language. But before discussing cultural interaction and its social consequences, a few words are necessary to clarify my view about the specific units in which interactions are conducted.

One approach to the archaeological investigation of human prehistory and history is to look at these people in terms of local communities, which are for the most part identifiable with the archaeological ruins of individual settlements. This is especially true in Neolithic archaeology, which deals with the stage in human history where self-sufficient communities were the primary living units. The site of Chiang-chai or Pan-p'o, described in connection with Yang-shao Culture of the middle Yellow River valley, can be seen as the ruins of such a community. We can also group communities together, according to various criteria, to form larger classificatory units of various kinds to serve various purposes. An individual community may be grouped into one larger unit under one classification, but into another larger unit under another classification. Some of the criteria and the resultant classificatory units include the ecological, exploitory, marriage, political, military, religious, and stylistic. Only when communities are classified according to the stylistic criterion are they grouped into phases and cultures. This is the criterion most often used for description of data because the nature of the data (form and decoration) lend itself to this kind of classification.[11] So, an interaction sphere is not the interaction of cultures as behavioral units. It is in fact the interaction (contact, exchange of information and goods, and conflict) among communities in a vast hierarchy of interaction levels. We assume that communities within a phase interact more intensely or frequently than communities in separate phases, and that those within a culture do so more intensely or frequently than those in separate cultures. We use the degree of phases' or cultures' stylistic similarity as an index of intensity or frequency of contact (fig. 200).

10. For common definitions of *culture* and *phase* in American archaeology, see G. R. Willey and P. Phillips, *Method and Theory in American Archaeology*, Chicago: University of Chicago Press, 1956.
11. For fundamental principles of the archaeological classification of sites and assemblages, see K. C. Chang, *Rethinking Archaeology*, New York: Random House, 1967.

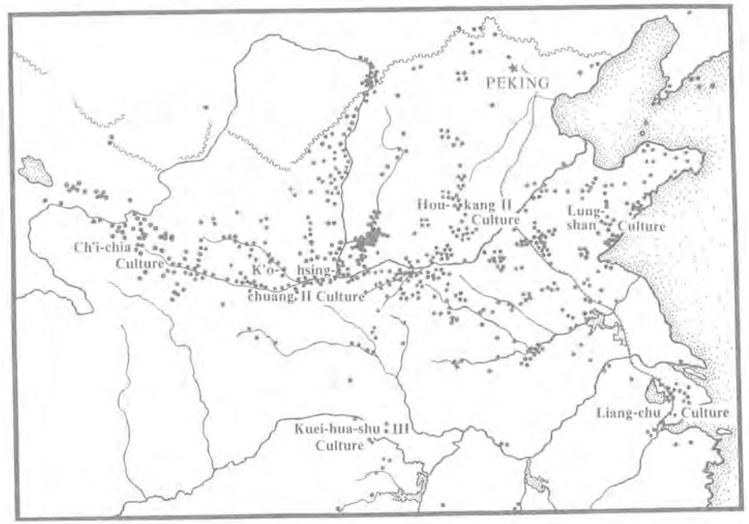


200 Hierarchy of interactive units within the Chinese interaction sphere.

Increased external interaction and internal complexity must have gone hand in hand. Recently students of early state formations have repeatedly pointed out that multipolity networks were a prerequisite for the transformation of individual members into states. In her analysis of the early states in Central Mexico, Barbara Price presented a *cluster-interaction model:* "Within the cluster, similar processes of cause and effect are operating to produce similar, parallel or convergent effects in each member: there is thus a basic similarity in adaptive process. This similarity is enhanced by the fact that cluster components are in regular, at least sporadic, interaction with each other. Such interaction takes two principal forms—exchange and competition/warfare—which disseminate innovations and accelerate the overall processes of cultural evolution."[12] Discussing the formation of states in general but drawing his specifics primarily from the Near East, Henry Wright pointed out that complex chiefdoms "may exist on favored islands, but they do not seem to develop into states until they are drawn into a larger system."[13] As I have pointed out in connection with the rise of the civilizations of the Three Dynasties in ancient China, "the economic interacting relationship among three—or more—states of comparable levels of development would enable a degree of circulation of raw materials and products North and Central China-wide that would not have been possible within single states or between a state and more primitive societies. Such circulation of goods would provide favorable conditions for the concentration of wealth and for the production of surplus within each of the interacting states. In addition, threat of external violence would tend to promote internal integration, or at least such claims have been a favorite political technique throughout human history."[14]

Obviously the state threshold was not yet reached upon the formation of the Chinese interaction sphere during the fourth millennium B.C., but similar mechanisms of external-internal interplay must have been working in the earlier networks as well, for during the subsequent millennium or so we see in each and every region in the interaction sphere a similar process of cultural and social change moving toward a sufficiently complex and ranked society by the end of the third millennium B.C. to warrant the label of civilization. Here we take a brief look at the sequences of cultural change in selected regions where archaeological data are available: (1) Shantung, where the Ta-wen-k'ou Culture gave way to the Lung-shan Culture; (2) lower Yangtze valley, the region of the Liang-chu Culture, which grew out of and replaced the earlier Ma-chia-pang; (3) the middle

12. "Shifts in Production and Organization: A Cluster-Interaction Model," *Current Anthropol.* 18 (1977), 210.
13. "Recent Researches on the Origin of the State," *Annual Review in Anthropol.* 6 (1977), 382.
14. K. C. Chang, *Shang Civilization,* New Haven: Yale University Press, 1980, pp. 366–67.



201. Archaeological sites of Lung-shan and related cultures. (From Yen Wen-ming, *WW* 1981, no. 6, p. 42.)

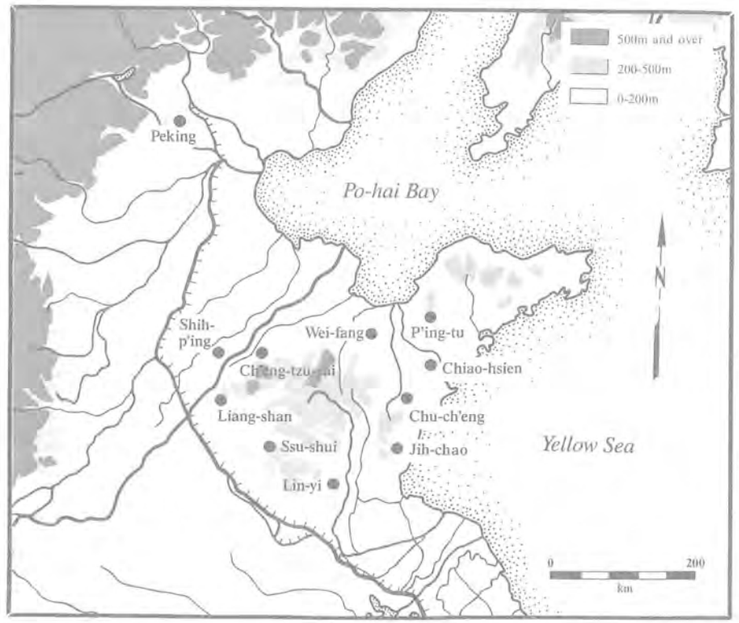
Yellow River valley, the area of the Yang-shao Culture, whose various regional phases developed into the several regional Lung-shan cultures (Honan, Shensi, and Shansi) through an intermediate phase, the Miao-ti-kou II; (4) Kansu, where the Ch'i-chia Culture emerged at this time; and, finally, (5) the middle Yangtze valley, the region of the Ch'ing-lung-ch'üan III Culture (fig. 201). As Yen Wen-ming has pointed out,[15] these Lung-shan and related cultures are similar in many ways and they appeared on the scene at approximately the same time. These facts are sufficient indication that the Lung-shan progressions are interrelated. Highlights of each of these Lung-shan and related cultures follow.

Shantung Lung-shan Culture

The excavation in 1930–31 of the Ch'eng-tzu-yai site that led to the first formulation of the Lung-shan Culture was mentioned in connection with the discovery of the Ta-wen-k'ou Culture in Shantung. Another important Lung-shan site was excavated in 1936 at Liang-ch'eng-chen in Jih-chao, in southeastern coastal Shan-

15. *WW* 1981 (6), 41–48.

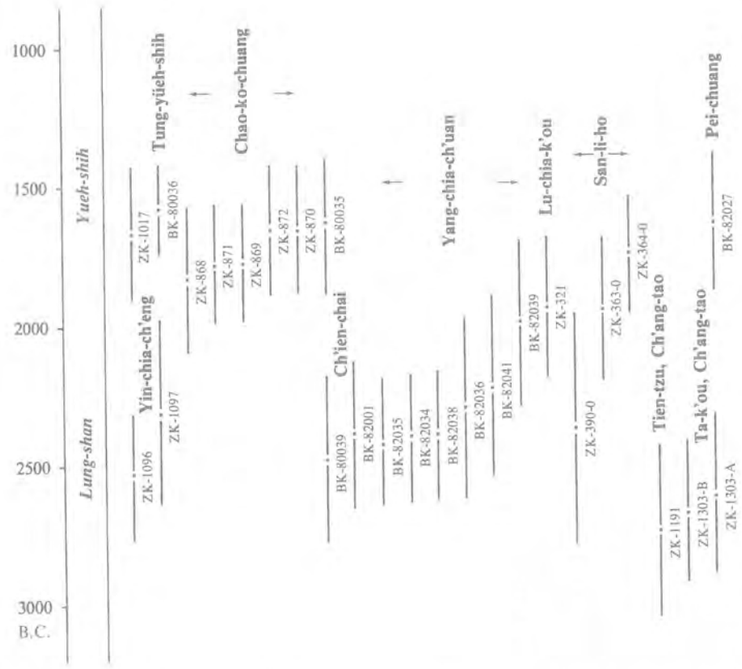
202. Major sites of the Shantung Lung-shan Culture.



tung, yielding a black pottery assemblage more refined than Ch'eng-tzu-yai's.[16] In his synthesis of the archaeological data on the Lung-shan Culture read before the Sixth Pacific Science Congress, Liang Ssu-yung grouped the available Lung-shan sites into three phases: coastal Shantung (as represented by Liang-ch'eng-chen), Northern Honan, and Hang-chou Bay. In this classification, Ch'eng-tzu-yai was regarded as of an intermediate group between Liang-ch'eng-chen and Northern Honan.[17] With the excavation of Ta-wen-k'ou in 1959, the study of the Lung-shan Culture in Shantung became centered in its relationship with the new Ta-wen-k'ou Culture. In the meantime, with the discovery and excavation of many new Lung-shan Culture sites (including many where both Lung-shan and Ta-wen-k'ou Culture remains occurred) in the 1960s and 1970s—such as Shang-

16. The Liang-ch'eng-chen report exists in manuscript form in the archives of the Institute of History and Philology, Academia Sinica, at Taipei. Brief references to the collection appear in S. Y. Liang, "The Lungshan Culture," *Proc. 6th Pacific Sci. Congr.* 4 (1939), 69–79; and Yin Ta, *Chung-kuo hsin-shih-ch'i-shih-tai,* Peking: San-lien, 1955.
17. S. Y. Liang, "The Lungshan Culture."

203. Radiocarbon profile of the Shantung Lung-shan Culture.



chuang in Shih-p'ing,[18] Ch'ing-ku-tuei in Liang-shan,[19] Yin-chia-ch'eng in Ssu-shui,[20] Yao-kuan-chuang in Wei-fang,[21] Yüeh-shih-ts'un in P'ing-tu,[22] San-li-ho in Chiao-hsien,[23] Ch'eng-tzu in Chu-ch'eng,[24] and Tung-hai-yü in Jih-chao[25] (fig. 202)—we are now much better informed about the general characteristics and the internal divisions of the Lung-shan Culture in Shantung. Stratigraphical information and radiocarbon dates (fig. 203) have provided some control over the chronological issues involved.

18. *WW* 1978 (4), 35–45.
19. *KK* 1962 (1), 28–30.
20. *KK* 1980 (1), 11–17, 31; *Wen-shih-che* 1981 (1); *KK* 1985 (7), 595–601, 632.
21. *KK* 1963 (7), 347–50; *WWTLTK* 5 (1981), 1–83.
22. *KK* 1962 (10), 509–18.
23. *KK* 1977 (4), 262–67.
24. *KKHP* 1980 (3), 329–84 (supplemented by personal communication with Tu Tsai-chung of the Wei-fang City Museum).
25. *KK* 1976 (6), 377–82.

Still, thoroughly excavated sites are few. The first Lung-shan Culture site at Ch'eng tzu-yai is still the only one with an enclosure built of hard layers of stamped earth, although a preliminary report tells of another recent discovery of a Lung-shan town wall.[26] The Ch'eng-tzu-yai enclosure was rectangular, about 450 by 390 meters with the longer side north to south, and was built by means of the so-called *hang-t'u* ("stamped earth") technique:

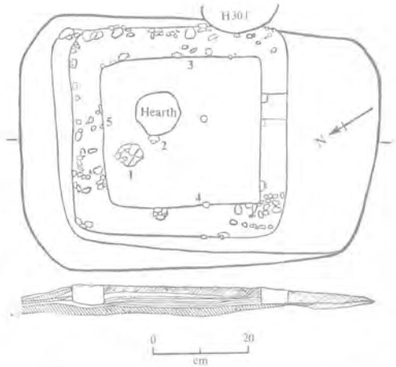
> *First, on the surface there was scooped out a round-bottomed foundation trench about 13.8 meters wide and 1.5 meters deep. Then, using sterile loess, the workers packed the ditch full, layer by layer, forming a firm foundation for the wall. . . . In the sterile loess that was used were mixed "dry ginger stones" to increase its cohesive strength. The layers of earth that were formed were very regular in thickness, being between 0.12–0.14 meters, and they were very even and in good order. If one bored into the packed earth he could see traces of the tamping preserved between the layers of earth, small circular convexities and irregularities about 3.0–4.0 centimeters in diameter. The main body of the wall was then built on top of this foundation and it, too, was formed by repeated layers of earth about 0.12–0.14 meters thick. Each layer upward, measuring from the wall face inward, was narrowed 3.0 centimeters, and this formed the batter of the face of the wall.*[27]

The original wall (fig. 204) had long since collapsed, but the excavators estimated that the average width of the top section of the wall was 9 meters and the original height of the wall was probably about 6 meters. This is the first town wall of this magnitude that we have encountered in our exploration of Chinese prehistory. Surely this massive town wall hints at two new characteristic features at least of the Lung-shan Culture: the first construction of a public nature to have required enormous labor force, and the first erection of a defensive wall by a prehistoric settlement. When we go on to describe the rest of the Lung-shan Culture in Shantung (and elsewhere) we find a level of society consistent with the above observation.

At the settlements there were the usual house floors, storage pits, and cemeteries. Some house floors were still semisubterranean, such as those found at Ch'eng-tzu, about 4.5–5 meters in diameter, but at other sites such as Tung-hai-yü the houses were square, about 6 meters to a side, and built on low platforms (30 centimeters high) constructed in thin, solid layers (fig. 205). Particularly illuminating about the new social order are the cemeteries, in which the late Ta-wen-k'ou trend of tombs sharply differentiated in their furnishings became intensified. From the Lung-shan layers at Ch'eng-tzu, eighty-seven burials were unearthed in 1976–77. They are all single burials in rectangular pit graves, with the head pointing to the southeast. Eleven of them had the second-level ledge formed by refilling the space between the pit wall and the casket with dirt, and most of the graves were refurnished with pottery vessels, ornaments, or pig mandibles (fig. 206). According to the construction style and the amount of furnishings, the burials are grouped into four classes: (1) large graves, with second-level ledge, wooden caskets, and many grave goods, including invariably the thin cup on high stem and pig mandible; (2) smaller pits, with second-level ledge, some caskets, and a significant number of goods, sometimes including the thin cup on high stem and pig mandible; (3) small pits, with no second-level ledge or caskets, and very few goods; and (4) very narrow pits, barely large enough to place the body inside, with no furnishings and no caskets. There are altogether only five first-class graves, eleven second-class graves, seventeen third-class graves, and fifty-four fourth-class graves. Significantly, the burials were clustered in three well-defined areas of the cemetery, but each cluster had all four classes of graves (fig. 207). This is the earliest example of a burial pattern associated with the stratified lineage society of ancient China that is seen often hereafter.

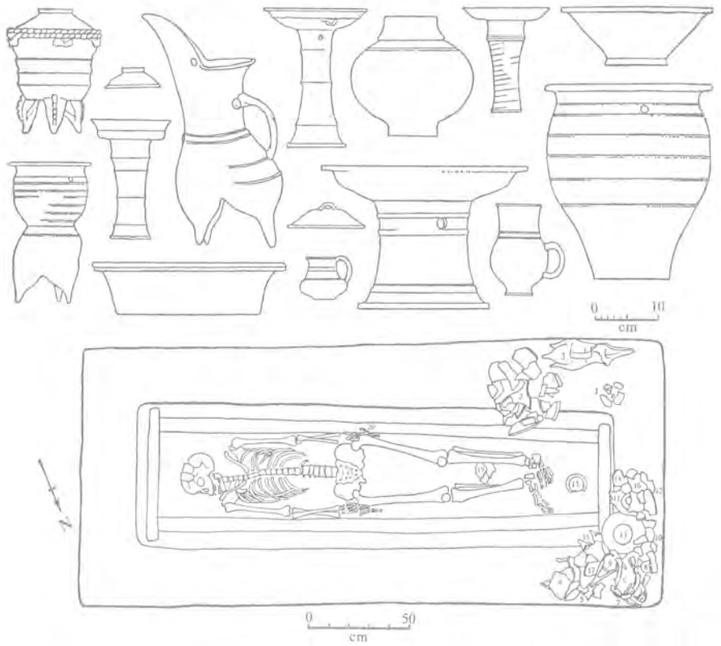
26. *Ch'eng-tzu-yai* (K. M. Starr, trans.), Yale University Publications in Anthropology, no. 52 (1956), 62–68.
27. Ibid., 62–63.

204. Stamped-earth town wall of the Ch'eng-tzu-yai site, Shantung. (From Li Chi et al., *Ch'eng-tzu-yai*, 1934, pl. 5:2.)



205. House floor of the Lung-shan Culture site at Tung-hai-yü, Jih-chao, Shantung. (From *KK* 1976, no. 6, p. 382.)

206. Lung-shan Culture burial no. M-32 and its pottery vessels at Ch'eng-tzu, Chu-ch'eng, Shantung. (From *KKHP* 1980, no. 3, p. 351.)

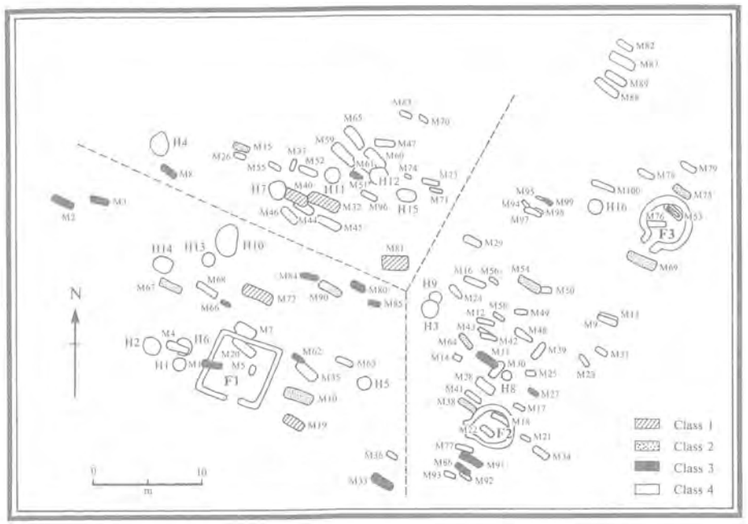


Lung-shan implements were still made of stone, bone, and shell (fig. 208). One thing about these implements stands out: the number of spearheads and arrowheads is extraordinarily large, especially considering the presumed high level of agricultural productivity by this time. At Ch'eng-tzu, out of 116 stone implements, 28 are classified as arrowheads; and out of 53 bone implements, 29 are arrowheads. At Yao-kuan-chuang, out of the 194 stone implements collected, 64 are arrowheads and 7 are spearheads; and out of 50 bone and antler implements, 23 are antler arrowheads. These are strong indications that the bow and arrow (and spear) were not only hunting implements but also weapons. The defensive wall was there to defend against someone.

At San-li-ho, two metal awls were unearthed. These have turned out to be copper alloyed with zinc and containing some lead and tin.[28] They are the earliest copper alloys found in Shantung.

28. *KK* 1977 (4), 267; W. M. Yen, *WW* 1981 (6), 47.

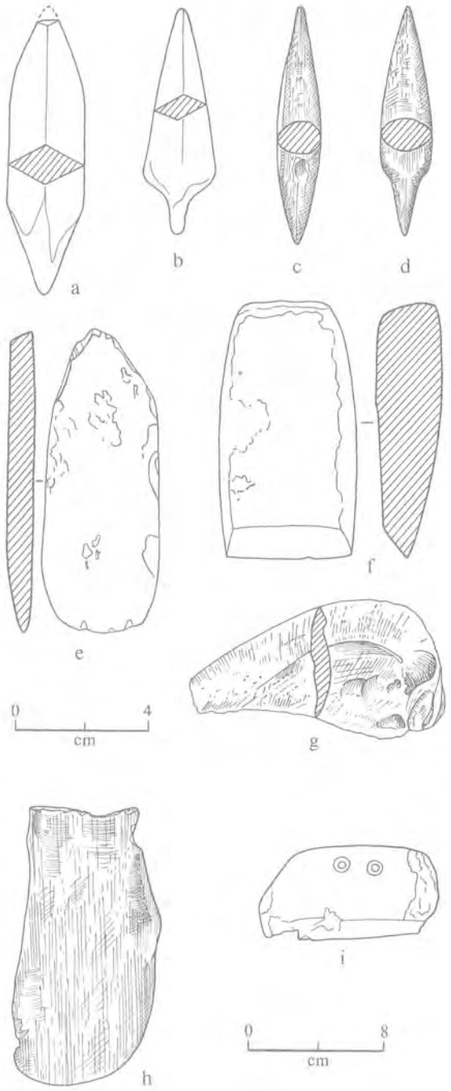
207. Plan of the Lung-shan Culture cemetery at Ch'eng-tzu. (From *KKHP* 1980, no. 3, p. 332.)

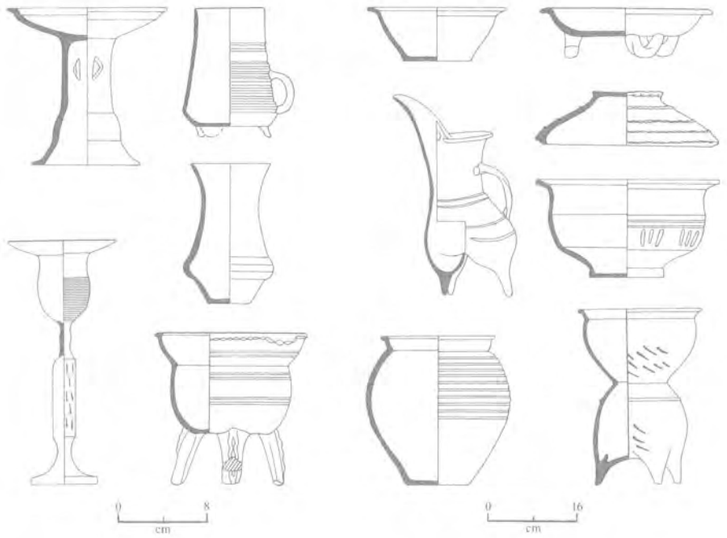


The Lung-shan pottery, in contrast to both Ta-wen-k'ou and Yang-shao, is predominantly gray and black, with a small percentage of brown, red and white pastes. The pottery was wheel-made and hard-fired. Often the vessels are plain, but decorations such as bow-strings, incisions, appliqués, and hollow-outs are also common. The types include the *ting* tripod, *hsien* steamer, *kuei* pitcher, *tou* on pedestals, cup with a handle, and lidded vessel (fig. 209). A conspicuous component of the Lung-shan wares is the very thin, black, and lustrous cup, box, and jar (fig. 210), which are presumably ritual vessels. Another common Lung-shan ritual item is the oracle bone—deer or other mammalian scapulae burned to produce cracks. The egg-shell black pottery, scapulimancy, and the animal mask decorations on jade axes and black pottery all suggest a ritual life at a level previously unattained (fig. 211). The incised animal motifs and the occasional clay art objects (fig. 212) only hint at the activities of the Lung-shan artisan, who undoubtedly made use of other, perishable media.[29]

29. For general discussions of the Shantung Lung-shan Culture, see S. Y. Liang, "The Lungshan Culture"; W. M. Yen, *WW* 1981 (6), 41–48; C. F. Li and K. J. Kao, *WW* 1979 (11), 56–62; J. T. Wu and T. C. Tu, *KKHP* 1984 (1), 1–21.

208. Stone (*a–f, h*), shell (*g*), and bone (*i*) implements at Ch'eng-tzu. (From *KKHP* 1980, no. 3, pp. 371, 373.)





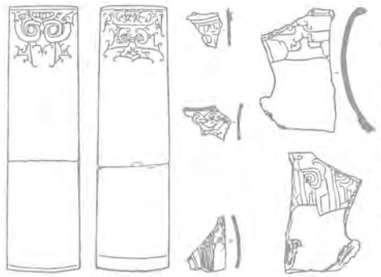
209. Pottery types at Ch'eng-tzu. (From *KKHP* 1980, no. 3, pp. 360–67.)

Liang-chu Culture

First discovered at Liang-chu in Hang-chou[30] and Ch'ien-shan-yang in Hu-chou,[31] in the mid-1930s, the Liang-chu Culture is now well established, by both stratigraphy and radiocarbon dates (fig. 213), to be later than and an outgrowth of the Ma-chia-pang Culture of the same geographic area (see chapter 4; fig. 157). The major sites of this culture include, in addition to Liang-chu[32] and Ch'ien-shan-yang,[33] Ch'üeh-mu-ch'iao in Chia-hsing, Chekiang;[34] Ma-ch'iao[35] and Fu-ch'üan-shan[36] in Shanghai; Chang-ling-shan[37] and Ts'ao-hsieh-shan[38] in Wu-

210. Black pottery vessels from San-li-ho. (From *KK* 1977, no. 4, pl. 12.)

30. T. H. Ho, *Hang-hsien Liang-chu-chen chih shih-ch'i yü hei-t'ao* (Stone implements and black pottery at Liang-chu-chen, Hang-hsien), Society for the Study of Wu and Yüeh History and Geography, 1937; H. K. Shih, *Liang-chu,* 1938; S. S. Beath, *China Journal* 31 (1939), 262–66.
31. W. C. Shen, *Wu Yüeh wen-hua lun-ts'ung,* n.p., 1937, 217–32.
32. *WWTKTL* 1956 (2), 25–28; 1956 (3), 84.
33. *KKHP* 1960 (2), 73–91; *KK* 1980 (4), 353–58, 360.
34. *KK* 1974 (4), 249–50.
35. *KKHP* 1978 (1), 109–36.
36. *WW* 1984 (2), 1–5.
37. *WWTLTK* 6 (1982), 25–36.
38. *WWTLTK* 3 (1980), 1–24.



211. Incised designs on jade axes and pottery from Liang-ch'eng-chen, Jih-chao. (From *WW* 1979, no. 11, p. 62.)

212. Clay figurines of humans and birds at Yao-kuan-chuang, Wei-fang. (From *WWTLTK* 5, 1981, p. 34.)

hsien, Yueh-ch'eng in Su-chou,[39] and Ssu-tun in Ch'ang-chou,[40] all in Kiangsu. The sites "often consist of a number of neighboring habitation loci, which were quite small in area, in general only several hundred square meters."[41] Remains of houses have been found at Ch'ien-shan-yang and Shui-t'ien-pan.[42] These were built on flat ground and are rectangular in shape, ranging in size from 5 to 20 square meters. Walls were built from wattle-and-daub on timber posts. The roof was probably gabled. Agriculture of advanced levels was in evidence. At Ch'ien-shan-yang, remains of rice grains (of the *japonica* and *indica* varieties) were found, alongside remains of certain species of peach (*Prunus persica*), melon (*Cucumis melo*), and water-caltrop (*Trapa natans, T. bispinosa*).[43] Of the agricultural implements, the flat and perforated spades, the so-called "winged implements of cultivation," rectangular and semilunar knives with holes, and sickles are common (fig. 214). A large, coarse-paste, point-bottomed jar was found together with a wooden pestle, possibly a grain-pounding apparatus. Among the bones of domestic animals, water buffalo, pig, dog, and sheep are recognized. Remains of net-sinkers, wooden floats, and wooden paddles indicate considerable familiarity with water crafts and fishing.

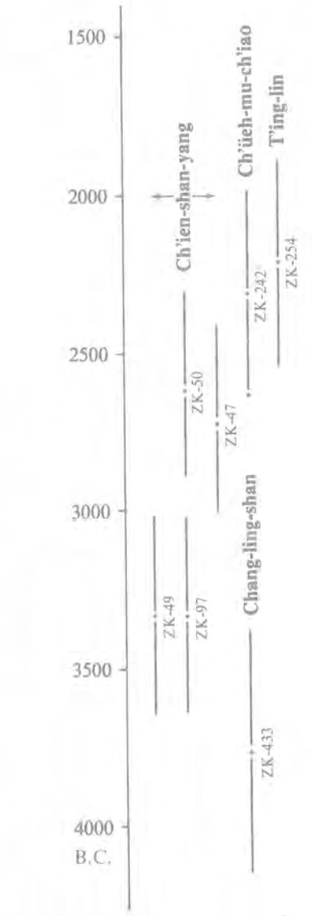
By chance of preservation, the wooden artifacts of Liang-chu Culture are well known: they include remains of house structures, boats, tools, and utensils. Stone and bone artifacts are also highly developed, including the characteristic stepped adz. Black pottery of fine, soft paste is highly characteristic of the Liang-chu Culture. The finer vessels were constructed on the wheel. High luster on the surface was produced by polishing. The types include jars with double lugs, *tou* vessel on high pedestals, *ting* tripods, shallow plates, and *kuei* tripods (fig. 215). Most of the ring feet found have hollow-out designs and are further decorated by bamboo-like circumferential ridges. In addition, red and gray wares of a variety of pastes (including sand- and shell-tempered), both handmade and wheel-made, are also seen here. Many of the sandy wares are decorated with cord and basket impressions. Occasional painted pieces occur. Some pottery and potsherds bear incised signs, and a large plate had incised on its rim several undecipherable characters (fig. 216).

In recent years a large number of Liang-chu Culture burials have come to light.

39. *KK* 1982 (5), 463–73.
40. *KK* 1981 (3), 193–200; 1984 (2), 109–29; *WW* 1984 (2), 17–22, 5.
41. H. P. Huang, *CKHNL* 1 (1980), 126.
42. *KKHP* 1960 (2), 93–106.
43. The original report lists, in addition, the peanut (*Arachis hypogaea*), sesame (*Sesamum indicum* or *S. orientale*), and beans (*Vicia faba*). The provenance of these finds, as well as the remains of silk, has been questioned; see C. M. An, *KK* 1972 (6), 41; *KK* 1979 (5), 400–01, and the rejoinder of the original reporter, *KK* 1980 (4), 353–58, 360. On silk, see N. Hsia, *KK* 1972 (2), 13–14.

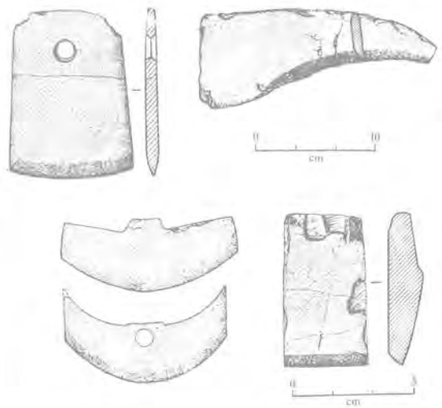
The mortuary customs were basically identical with those of the Sung-tse phase: single, stretched, on the ground, and covered with dirt, although grave pits and caskets were not unknown. The grave furnishings, however, show significant innovation and religiosity. At Ssu-tun, the grave of a young adult male was unearthed with 4 pottery vessels, 14 stone and jade implements, 49 jade ornaments, and—in particular—24 jade rings and 33 jade *ts'ung* tubes (fig. 217). Some of these jades, as well as the femurs, show burn marks. Undoubtedly this was the burial of an important person, possibly a religious figure. At Chang-ling-shan, two Liang-chu tombs show unusual features: One (M-4) had more than 40 items of grave goods as well as three additional skulls planted in the central and northern parts of the tomb; the other (M-5) had yielded two skulls and a pile of limb bones in addition to the skeleton of the tomb master. The additional bones in M-5 are regarded as secondary burial by some scholars,[44] but both graves are seen as evidence of human sacrifice by others.[45] A Liang-chu tomb at Ts'ao-hsieh-shan consisted of a male burial accompanied by two female skeletons; the latter could have been buried secondarily.

Among the ritual objects the jade *ts'ung*, which has now been unearthed in large numbers in Liang-chu burials, is of the utmost significance.[46] The Liang-chu jades are of several varieties, including tremolite, actinolite, chrysotile, and agate; other than agate, which occurs near Nanking, all the jades are said to have been mined in the Lake T'ai area.[47] The manufacture of these stones was an extremely laborious process, and the Ssu-tun man buried with fifty-seven finely made jade rings and tubes must have been an extremely powerful person. The *ts'ung* tube, with its round interior and square exterior, has long been an enigmatic object in Chinese antiquarianism.[48] Some of the *ts'ung* from Ssu-tun (fig. 218), Ts'ao-hsieh-shan, and other sites were decorated with what appear to be animal masks, consisting of two eyes and a mouth. These are reminiscent of the animal masks on the Liang-ch'eng-chen jade axes and of the *t'ao-t'ieh* masks on Shang and Chou bronzes. Moreover, many Liang-chu jades were carved with bird designs (fig. 219), which on the *ts'ung* tubes from Fu-ch'üan-shan were combined with animal masks (fig. 220). The significance of the Liang-chu animal masks and birds—especially depicted on the surface of the *ts'ung* tube—will become clear when we consider all the Lung-shan Cultures together with the art of the Three Dynasties.



213. Radiocarbon profile of the Liang-chu Culture.

44. *WWTLTK* 6 (1982), 27.
45. T. K. Wang, *CKHNL* 1 (1980), 120–21.
46. T. K. Wang, *WW* 1984 (2), 23–36.
47. *WWTLTK* 6 (1982), 35; C. Cheng, *KKHCK* 3 (1983), 217–24; *KK* 1984 (2), 34, 129.
48. N. Hsia, *KK* 1983 (5), 459–60.



214. Stone implements of the Liang-chu Culture found in Yueh-ch'eng, Kiangsu. (From *KK* 1982, no. 5, p. 467.)

The Middle Yellow River Valley Lung-shan Cultures

Most of the cultures grouped under this rubric are found in the middle Yellow River valley and its tributaries such as the Wei-shui, the Fen-ho, and the Lo-ho, but some of them are in other drainage systems such as the tributaries of the Huai-ho River and the Wei-ho River that flows into the Grand Canal. These cultures are grouped together for two reasons. The first is that the ceramics of all these cultures are strikingly similar: they are mostly gray and they bear impressed designs, such as cord-marks, basket-marks, and check-marks. Shih Chang-ju had referred to these ceramics as remnants of the third Neolithic culture of North China, after the Painted Pottery Culture and the Black Pottery Culture, and he called it the Beaten Marks Pottery Culture, because the impressed marks were mostly produced by a paddle or a beater with cord, basket, or check-mark designs.[49] This classification is no longer valid, however, because this pottery does not represent a culture contemporary with Yang-shao. The second reason for these cultures to be described together is that they all appear to have descended from the Yang-shao Culture (the Painted Pottery Culture) or from its various regional phases.

Toward the end of the fourth millennium B.C., except for Kansu and Chinghai, where the Yang-shao Culture continued in several later phases (see chapter 3), the whole Yang-shao Culture, in its several regional phases, underwent an extensive transformation into the so-called Miao-ti-kou II Culture in southern Shansi, eastern Shensi, and western Honan. This culture was found in 1956 and 1957 with the excavation of the site at Miao-ti-kou in Shan-hsien (now San-men-hsia), Honan.[50] The lower cultural stratum at the site is the type assemblage of the Miao-ti-kou phase of the Yang-shao Culture. In the upper stratum (Miao-ti-kou II) an assemblage was found that appeared to contain both Yang-shao and Lung-shan types; it was thus identified as a transitional phase. The identification of this Miao-ti-kou II transitional phase was a key to the new view (which prevailed in the early 1960s) of the Yang-shao and Lung-shan as two successive cultures in the middle Yellow River valley, the two previously having been regarded as contemporary and contending cultures.[51] Similar assemblages have been found widely, important sites including Wang-wan in Lo-yang, Honan,[52] P'an-nan-ts'un in

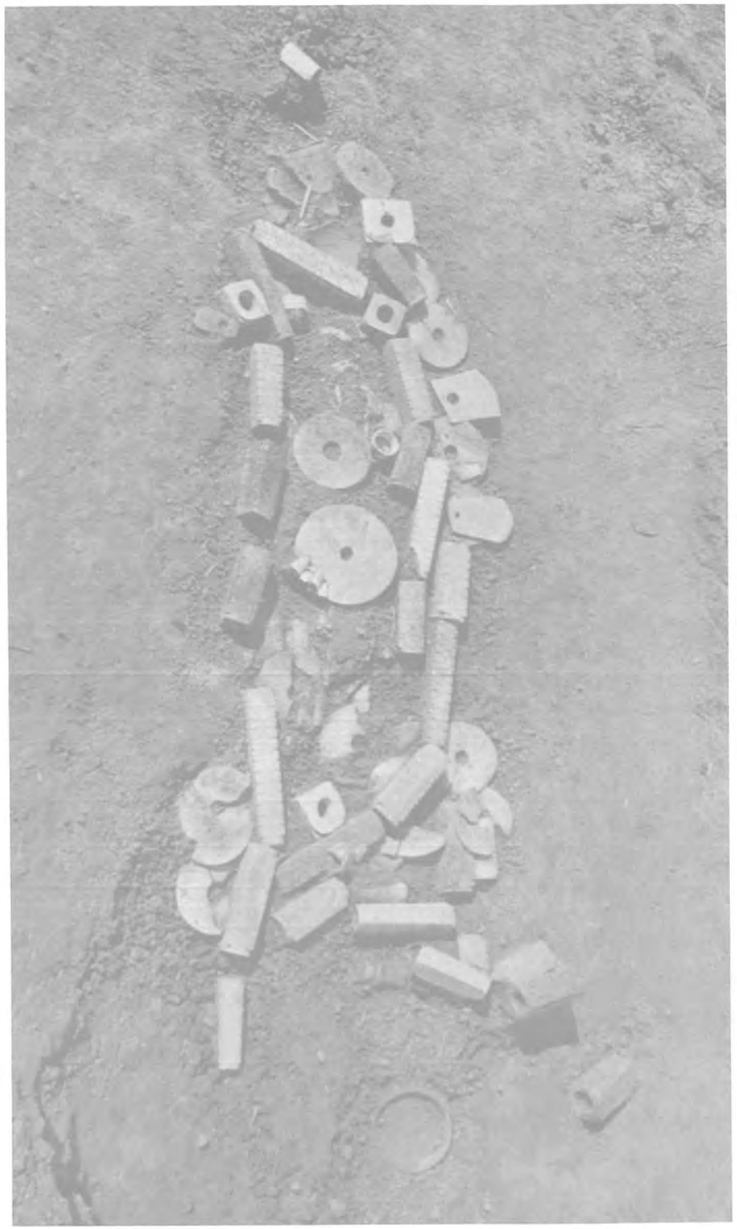
49. Shih Chang-ju, "Hsin-shih-ch'i shih-tai ti Chung-yuan" (The Central Plains in the Neolithic), *Ta-lu Tsa-chih* 4, no. 3 (1952), 65–73.
50. *Miao-ti-kou yü San-li-ch'iao*, Peking: Science Press, 1959.
51. C. M. An, *KK* 1959 (10), 559–65; H. P. Shih, *KK* 1959 (10), 566–70; K. C. Chang, *Bull. Inst. Hist. Philol., Academia Sinica*, 30 (1959), 259–309.
52. *KK* 1961 (4), 175–78.

215. Artifacts of the Liang-chu Culture. (From Wang Tsun-kuo, *CKHNL* 1, 1980, p. 117.)

216. Black pottery plate with incised (?) inscriptions from Liang-chu, Hang-hsien, Chekiang. (From Ho T'ien-hsing, *Hang-hsien Liang-chu-chen chih shih-ch'i yü hei-t'ao,* 1937, pl. 1 and p. 8.)

P'ing-lu,[53] Hsi-wang-ts'un in Jui-ch'eng,[54] and the lower stratum of T'ao-ssu in Hsiang-fen,[55] all in southern Shansi, and Ch'üan-hu-ts'un in Hua-hsien[56] and Heng-chen-ts'un in Hua-yin,[57] in eastern Shensi. There is a lone radiocarbon

53. *KK* 1960 (8), 5–7.
54. *KKHP* 1973 (1), 58–60.
55. *KK* 1980 (1), 19–23.
56. *KK* 1959 (2), 71–75.
57. *KK* 1960 (9), 5–9; *KKHCK* 4 (1984), 20–27.



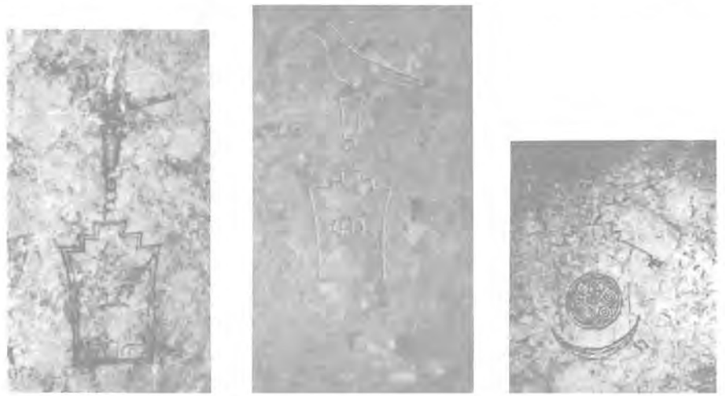
217. Burial no. M-3 with jades at Ssu-tun in Ch'ang-chou. (From *KK* 1984, no. 2, pl. 2.)

218. Liang-chu Culture jade *ts'ung* tubes from Chang-ling-shan (*lower right*) and Ssu-tun. (From *KK* 1984, no. 2, pl. 3; and *WW* 1984, no. 2, pl. 3.)

date from Miao-ti-kou itself (ZK 111), which dates from ca. 2415–3015 B.C. after calibration.

In addition to the chipped stone knives with side notches common at Yang-shao sites, there appeared in this phase polished semilunar and sickle-shaped knives and shell knives, indicating a more advanced agriculture. Double-pronged wooden cultivating implements (*lei*) are known from their impressions in the earth. Bones of domestic chickens are found alongside those of dogs and pigs. Stone net-sinkers and stone and bone arrowheads are found widely.

Pottery was manufactured mainly by the coiling technique. Occasional wheel-

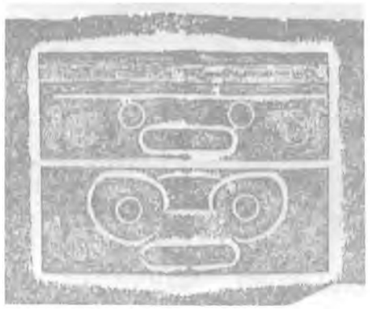


219. Bird symbols on jade rings. (From the collection of the Freer Gallery of Art, Washington, D.C.; reproduced with permission of the Freer Gallery.)

made pieces are reported; the technique of polishing and retouching pottery by rotation was apparently known then, though it is doubtful that the true potter's wheel existed at this time. The pottery paste is usually coarse and gray, fired to around 840°C in a much improved kiln, in which the firing chamber (with walls sloping inward to form a smaller top opening) was placed directly on top of the furnace instead of beside it as in the Yang-shao kilns (fig. 221).[58] Decoration was most often done by impression—basket, cord, and check-marks occurred— and secondarily by appliqué and incision. Painted pottery still occurred widely, the major type being a large, deep, reddish bowl painted in black on the upper portions. A small amount of thin, hard, lustrous black pottery was found. Aside from bowls, jars, and pots, pottery shapes included tripods and some ring-footed vessels. The tripods included *ting* and *chia* but not *li* (fig. 222).

The transitional nature of the Miao-ti-kou II pottery is of particular significance; it has caused many scholars to embrace the view that the Honan Lung-shan pottery could have been derived from the Yang-shao:

Many pottery forms seem to have evolved out of the Yang-shao forms, particularly the cup, pot, pointed-bottomed jar, and the ting *tripod. The pointed-bottomed jars are typical of the Yang-shao culture; this type of jar, similar to the finds at Miao-ti-kou II, is also found in Yang-shao-ts'un, Mien-ch'ih Hsien, and at Heng-chen-ts'un in Hua-yin Hsien, Shensi, all closely related to but different from the Yang-shao forms. The small cups slipped in red pigments are typical of this site but possibly related to the coarse small cups of the Yang-shao stage. . . . In short, the ceramics of Miao-ti-kou II exhibit features transitional from the Yang-shao to the Lung-shan.*[59]

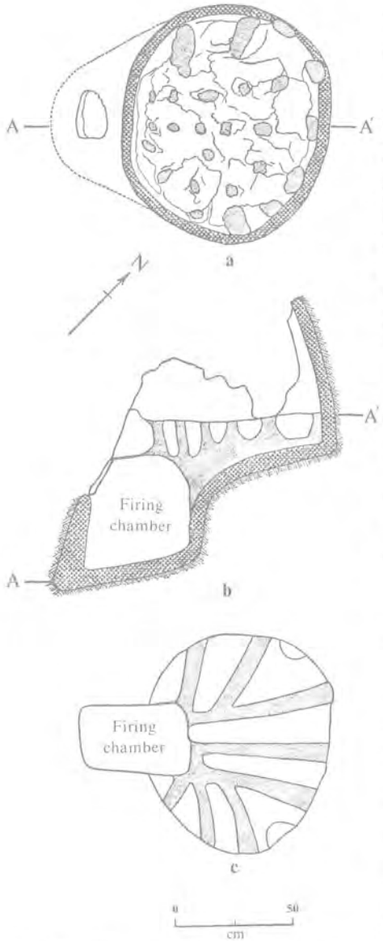


220. Animal face and bird designs on Liang-chu Culture *ts'ung* from Fu-ch'üan-shan, Shanghai. (From *WW* 1984, no. 2, p. 2.)

At the Miao-ti-kou site 145 human burials, mostly single, were found; the bodies had been arranged in regular rows and were in a stretched, supine position with the head to the south. Grave furnishings were minimal. At the Wang-wan site near Lo-yang, 2 out of 39 burials were prone rather than supine, and one showed evidence of having both hands bound at the time of burial.

The geographical scope and precise temporal duration of the Miao-ti-kou II Culture are still under active investigation.[60] The situation is not simple, for before long several regional Lung-shan Culture phases emerged in the archaeological record and it is not likely that all of them were derived from the Miao-ti-kou II Culture in the narrow sense. The detailed history of transition from the

58. *Chung-kuo t'ao-tz'u shih* (History of Chinese ceramics and porcelain), Peking: Wen-wu Press, 1982, pp. 12–13.
59. *Miao-ti-kou yü San-li-ch'iao,* pp. 110–11.
60. For a recent summary, see *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu* pp. 69–73.



221. Pottery kiln of the early Lung-shan Culture site at Miao-ti-kou, Shen-hsien, Honan. (*a:* Plan of kiln at grill level; *b:* cross-section of kiln; *c:* plan of fire channels.) (From *Miao-ti-kou yü San-li-ch'iao,* 1959, p. 21.)

Yang-shao to the Lung-shan phases throughout the middle Yellow River basin remains to be worked out.

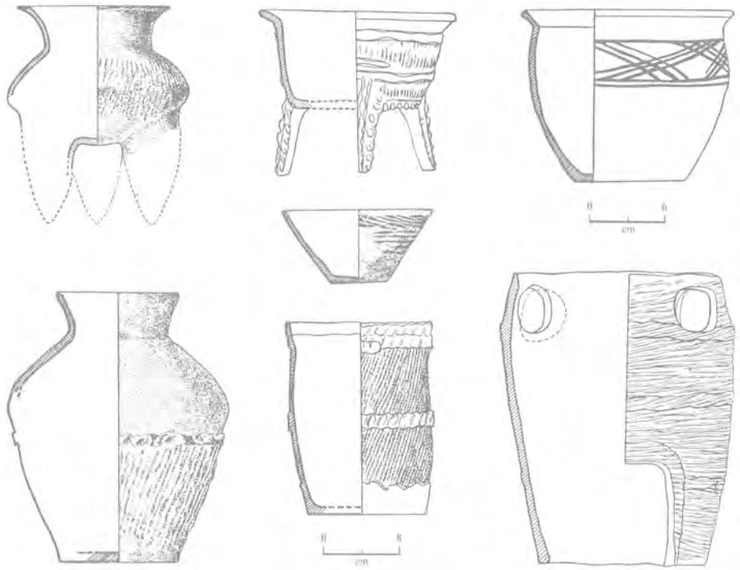
As of now, the following regional phases of the Lung-shan Culture are well defined: the east Honan phase, the north Honan phase, the west and central Honan phase (which extended across the Yellow River into southwestern Shansi), the Lin-fen basin phase of southern Shansi, and the K'o-hsing-chuang II phase of the Wei-shui basin of Shensi (fig. 223).[61] Both stratigraphic and chronometric evidence points to the fact that all of these phases occupy a comparable chronological position (fig. 224). In addition, Lung-shan-like assemblages occurred in central Shansi around the city of T'ai-yuan[62] and in southwestern Honan in the upper Han-shui valley,[63] but information pertaining to them is as yet sketchy. The better known Lung-shan phases are highlighted below.

EAST HONAN PHASE

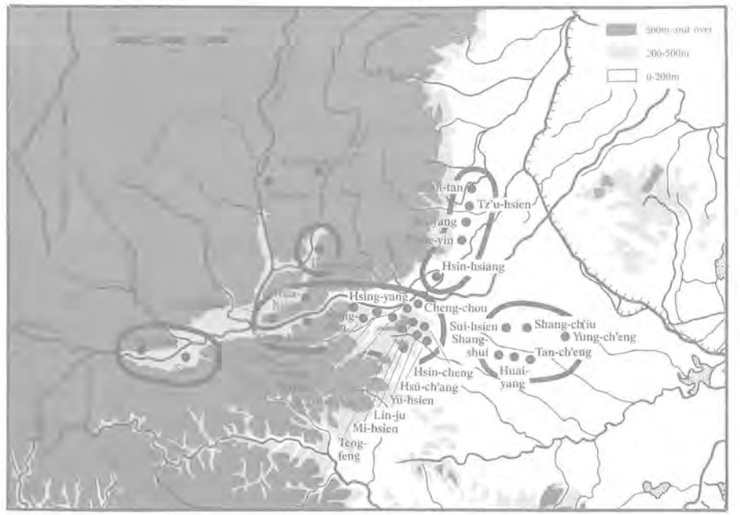
The East Honan phase (also called the Wang-yu-fang or Tsao-lü-t'ai phase) of the middle Yellow River valley Lung-shan Culture is actually located in the Huai River valley of easternmost Honan, but its ceramics, though distinctive, are a part of the middle Yellow River valley Lung-shan system. "The pottery is mainly of fine gray ware, followed by sandy gray, brown, red, and black wares. It is mostly wheel-made, but also handmade. The most frequently seen decoration is check-impression, followed by basket- and cord-impression; bow-strings, hollow-outs, incisions, finger-impressions and appliqués also occur. In types, the most often seen are the deep jar with flare mouth and the bowl with flare rims, followed by *ting* tripods, *hsien* tripod steamers, plates, *tseng* steamers, cups, and lids" (fig. 225).[64] The major sites with available information are P'ing-liang-t'ai in Huai-yang,[65] Tuan-chai in Tan-ch'eng,[66] Wu-ch'iang in Shang-ch'iu,[67] and Hei-ku-tui[68] and Wang-yu-fang[69] in Yung-ch'eng, all in Honan.

The most important of the sites of this phase is the walled town at P'ing-liang-t'ai, in Huai-yang, excavated in 1979 and 1980. Located on an elevated flat mound over 50,000 square meters in area and some 3–5 meters above the surrounding plain, the town enclosure is square and about 185 meters to a side, oriented

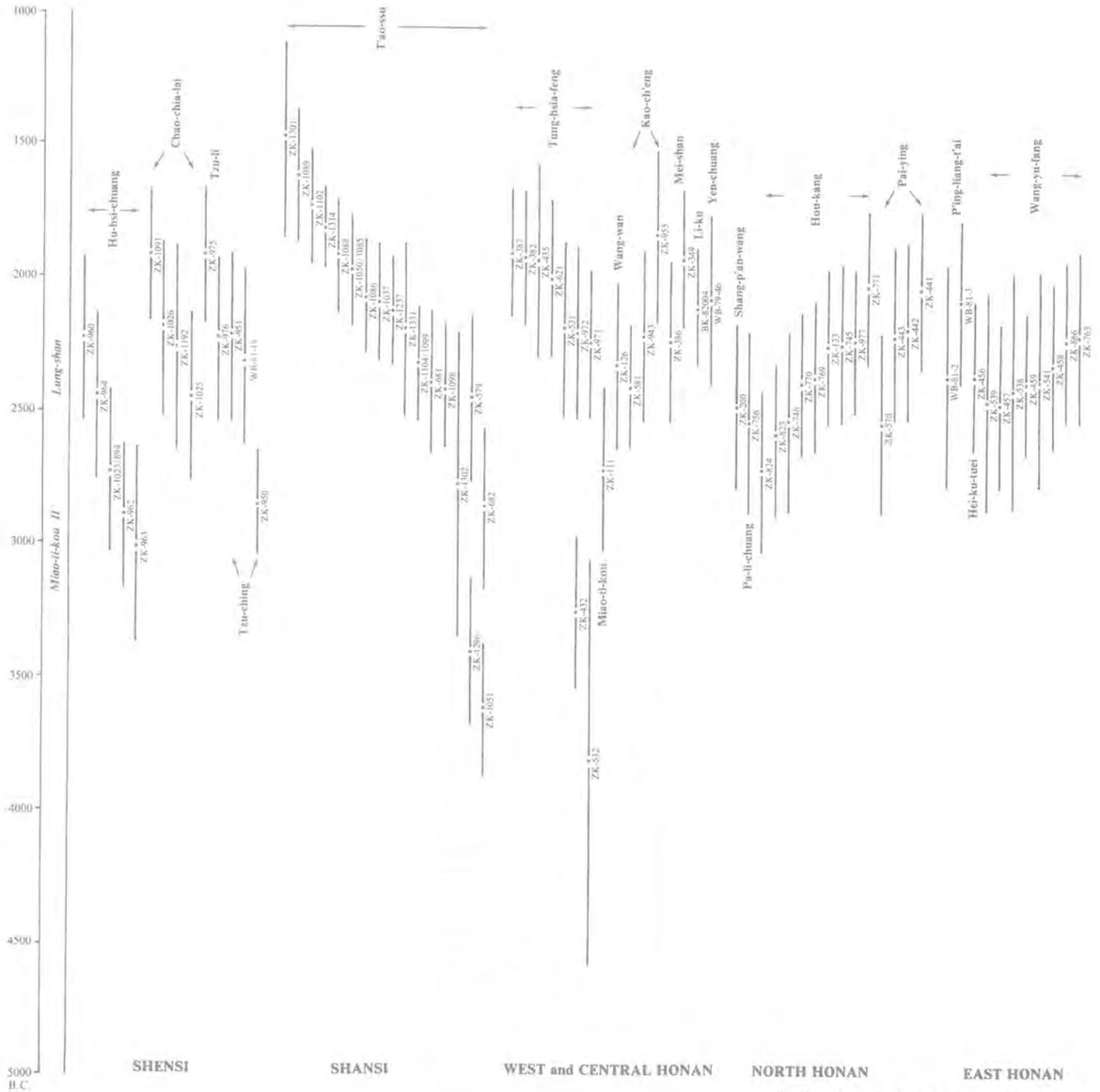
61. On the formulation of regional Lung-shan phases, see Y. S. Li, *CKHNL* 1 (1980), 32–49; T. K. Hsu, *CYWW* 1982 (2), 20–25; K. L. Wang, *CKHNL* 3 (1984), 195–97; *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu.*
62. K. L. Wang, *CKHNL* 3 (1984), 195–97.
63. *WW* 1972 (10), 11–12.
64. Y. S. Li, *CKHNL* 1 (1980), 36–37; see also P. C. Li, *WW* 1983 (4), 50–59.
65. *WW* 1983 (3), 21–36.
66. K. T. Ts'ao, *CYWW* 1981 (3), 4–8.
67. *KK* 1983 (2), 116–21, 132.
68. C. T. Li, *KKHP* 2 (1947), 83–120; *KK* 1981 (5), 385–97.
69. *KK* 1978 (1), 35–40, 64.



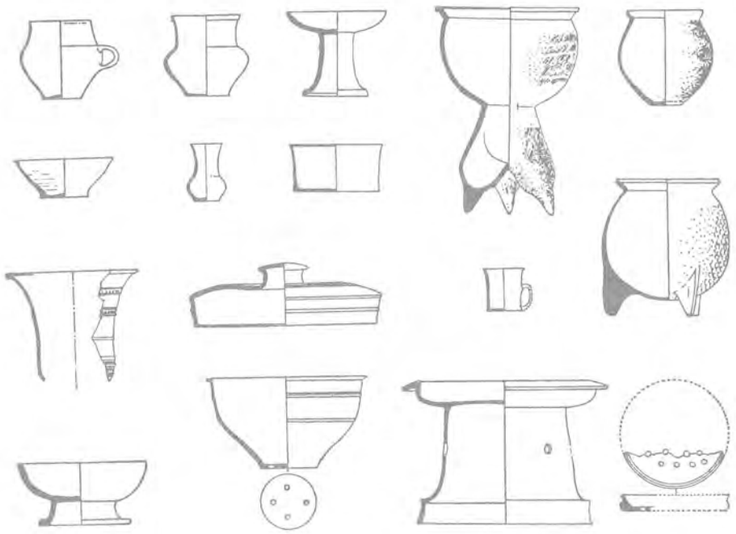
222. Pottery types of the early Lung-shan Culture site at Miao-ti-kou. (From *Miao-ti-kou yü San-li-ch'iao,* 1959.)



223. Regional phases and principal sites of the middle Yellow River valley Lung-shan Culture.



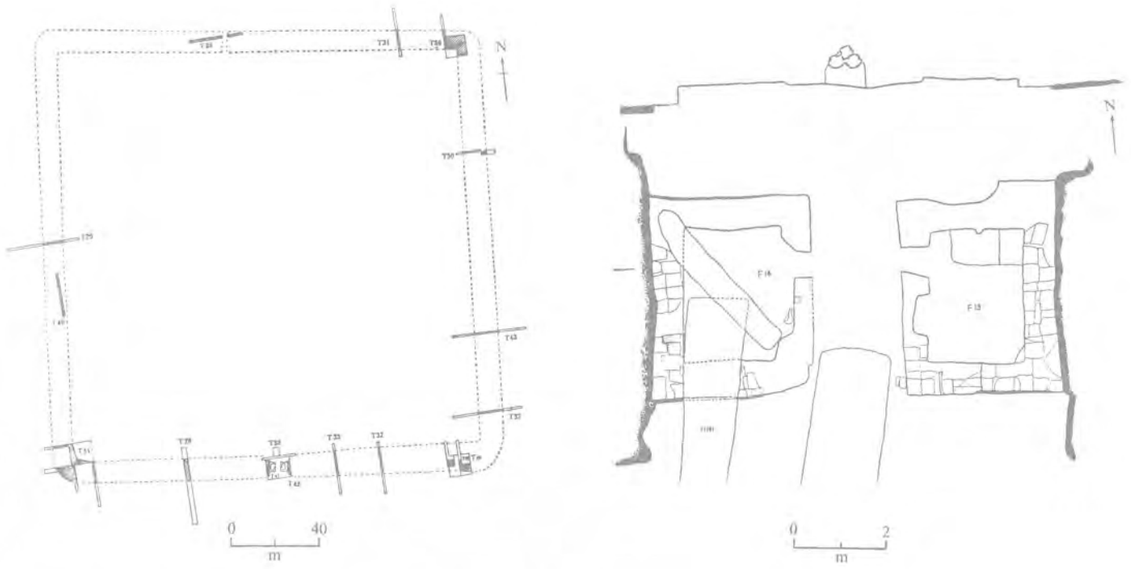
224. Radiocarbon profile of the middle Yellow River valley Lung-shan Culture.



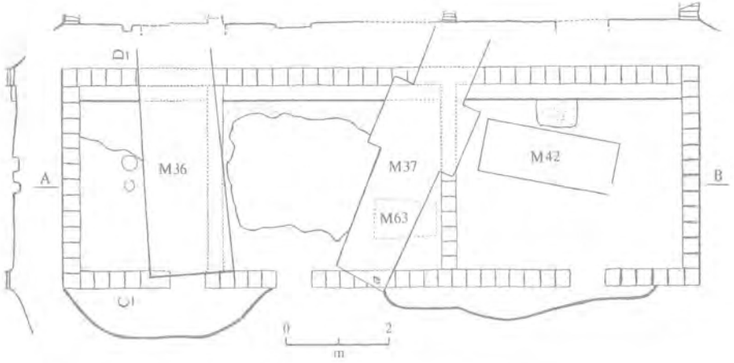
225. Pottery types of the eastern Honan phase of Lung-shan Culture. (From Li Yang-sung, *CKHNL* 1, 1980, p. 37.)

according to the four cardinal directions with a 6-degree incline toward the west (fig. 226, l). The standing wall is only a little over 3 meters tall but is 13 meters wide at the base and about 8–10 meters wide at the top. The construction was like that of the wall at Ch'eng-tzu-yai, but the stamped blocks were smaller. Brown clay mixed with burnt clay fragments was used to build a base about 80–85 centimeters wide and 1.2 meters tall in stamped layers only 15–20 centimeters thick. The layered block served as the interior wall, against which earth was placed on the outside and then stamped tight layer by layer until the height of the interior block was reached. Then another block was built on top, and so on until the wall was completed. The stamping tools were round-ended, oval-ended, or four wooden sticks tied together. Gaps—presumably the locations of town gates—were found at the center of both the north and south walls. The south gate was flanked by two houses built of clay blocks or big sun-dried bricks, presumably guardhouses (fig. 226 r).

The walled town on top of the P'ing-liang-t'ai mound is still under active investigation. So far, more than a dozen rectangular houses, arranged in contiguous rows and built of sun-dried clay bricks or blocks, have been found. Some were built on the ground level, others on low platforms. House no. 1 (fig. 227) is



226. Plan of walled town at P'ing-liang-t'ai, Huai-yang, Honan (*left*) and plan of South Gate and its guardhouse (*right*). (From *WW* 1983, no. 3, pp. 27–28.)



227. House floor no. 1 at P'ing-liang-t'ai. (From *WW* 1983, no. 3, p. 30.)

an example of the former. About 13 by 4.5 meters in size, the house was outlined by sun-dried brick walls about 34 centimeters thick. Each brick is about 32 centimeters long, 27–29 centimeters wide, and 8–10 centimeters thick. The house was partitioned into three rooms, and inside the north wall a sun-dried brick ledge was built, about 30 centimeters wide and 8 centimeters tall. Hearths were found in platforms in two of the rooms. These sun-dried brick houses have also been unearthed at the Wang-yu-fang site.

Under the South Gate was a section of underground water-drainage over 5 meters long, consisting of pottery pipes, each 35–45 centimeters long, interconnected with the smaller end inside the larger end of the next pipe. The pipes were buried underground, covered with small rocks and earth, and then paved over by the road surface. Other features include three pottery kilns, sixteen infant burials (in urns or pit graves), and two storage pits. In one of the storage pits were found verdigris-like dusts, possibly remains of copper metallurgy. Under this layer were two whole cattle skeletons.

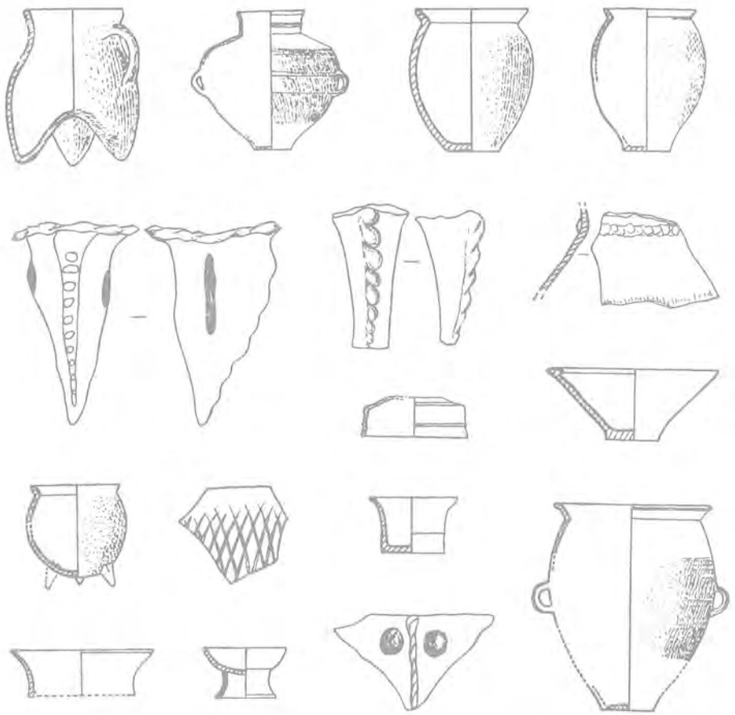
Preliminary findings at P'ing-liang-t'ai point to a level of society comparable with that of the Shantung Lung-shan Culture, with town life and possible metallurgy. Oracle bones of cattle shoulder-blades have been found widely at sites of this phase, but no writing has been reported so far.

NORTH HONAN–SOUTH HOPEI PHASE

The North Honan phase of the middle Yellow River Lung-shan Culture is also referred to in the literature as the Hou-kang or Hou-kang II phase, after the name of the first site, Hou-kang in An-yang, Honan, where the phase was brought to light in 1931.[70] Since then, more than a hundred sites of this Lung-shan phase have been counted, mostly in the Wei-ho and Chang-ho valleys and especially along their tributaries, the Huan-shui and Ch'i-shui Rivers of northern Honan and southern Hopei.[71] Among the best reported are the several sites in An-yang,[72] especially Hou-kang,[73] and Pai-ying in T'ang-yin[74] in Honan, and Hsia-p'an-wang in Tz'u-hsien[75] and Chien-kou in Han-tan[76] in southern Hopei. The distinguishing characteristics of this phase are described by Li Yang-sung as follows: "The pottery wares are principally fine gray, followed by sandy gray; fine

70. S. Y. Liang, *An-yang fa-chüeh pao-kao* 4 (1933), 609–25.
71. *KKHP* 1985 (1), 84.
72. In *An-yang fa-chüeh pao-kao* 1–4 (1929–33); *KKHP* 1 (1936).
73. *KK* 1972 (5), 8–19; 1982 (6), 565–83; *KKHP* 1985 (1), 33–87.
74. *KK* 1980 (3), 193–202; *KKHCK* 3 (1983), 1–50.
75. *KKHP* 1975 (1), 73–115.
76. *KK* 1959 (10), 531–36; 1961 (4), 197–202.

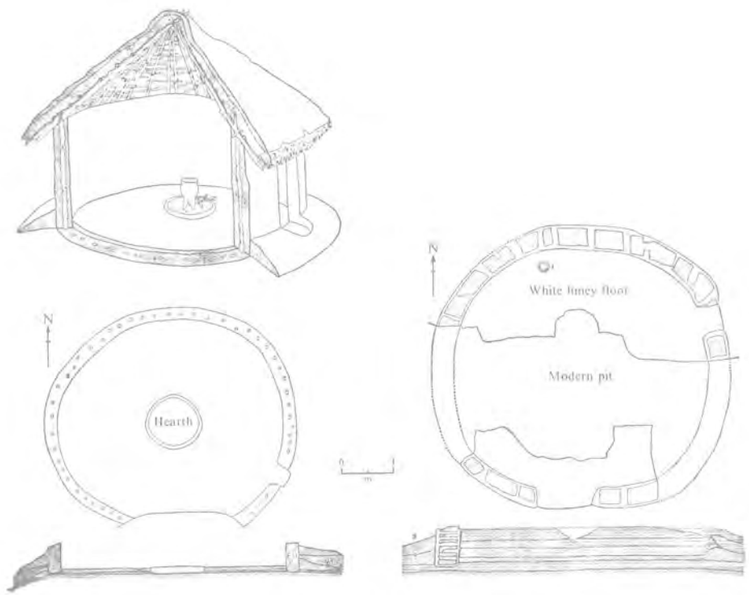
228. Pottery types of the northern Honan phase of the Lung-shan Culture. (From Li Yang-sung, *CKHNL* 1, 1980, p. 36.)



black and red wares are rare. Most are wheel-made. The surface is often plain and polished, and among those decorated most are cord-impressed, and the rest basket- and check-impressed. Appliqués and incisions are rare. . . . The types include the cord-marked *li* tripod with a single handle, *hsien* steamer, *kuei* tripod, and urn with small mouth and high collar. Also seen are a jar with deep body and small base, basin with angularly curved wall, large plate, cylindrical cup, bowl with wide mouth, and vessel lids. Very conspicuous are *ting* tripods with so-called ghost-face legs, that is, solid legs with a median appliquéd ridge which is flanked on both sides by two clay disks or vertical furrows that look like eyes on both sides of a nose" (fig. 228).[77]

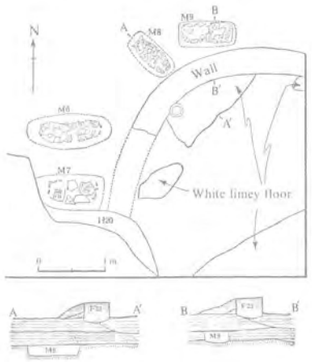
77. Y. S. Li, *CKHNL* 1 (1980), 35.

229. House floors and reconstructed house of the Lung-shan Culture site at Hou-kang, An-yang, Honan. (From *KKHP* 1985, no. 1, pp. 43, 45.)



Sites of the Hou-kang phase are rather densely strewn along the banks of the small rivers in the area. No fewer than nine Lung-shan villages have been located along the banks of the Huan-shui River within the limits of Yin-hsü, separated from each other only by distances of one-half to one kilometer, and their deposits are rather deep, indicating considerable length of occupation.[78] The Hou-kang site itself, located on a natural mound 400 by 250 meters in area, was found to have been surrounded by a stamped-earth enclosure; only a 70-meter section of the southern and western walls remained, with a width of 2–4 meters.[79] Inside the wall, several dozen house floors have been unearthed; they are mostly round in plan and range in diameter from 2.5 to 5.5 meters, averaging 3.6–5. All were built on the ground level, with stamped and lime-plastered floors and walls built with wattle-and-daub or clay slabs. The slabs, 20–52 centimeters long, 15–38 centimeters wide, and 4–9 centimeters thick, were cut from dark brown clay mixed

78. *KKHP* 1985 (1), 84.
79. C. J. Shih, *Bull. Inst. Hist. Philol., Academia Sinica*, 13 (1948), 23; *KKHP* 1985 (1), 33.



230. Relationships of house floors and burials at Hou-kang. (From *KKHP* 1985, no. 1, p. 54.)

with some burnt clay fragments and were laid sideways, one layer upon another, while the clay was half dry (fig. 229). Burials of infants in urns or in pit graves were often associated with house-building activities: some were buried under the house foundations, some under the wooden posts, some under the wall foundations or even in the walls, and others nearby under garbage or under the water-drainage surface area (fig. 230). The infants are considered victims of rituals associated with house-building. Similar house constructions are reported from Pai-ying, but not the infant burials.

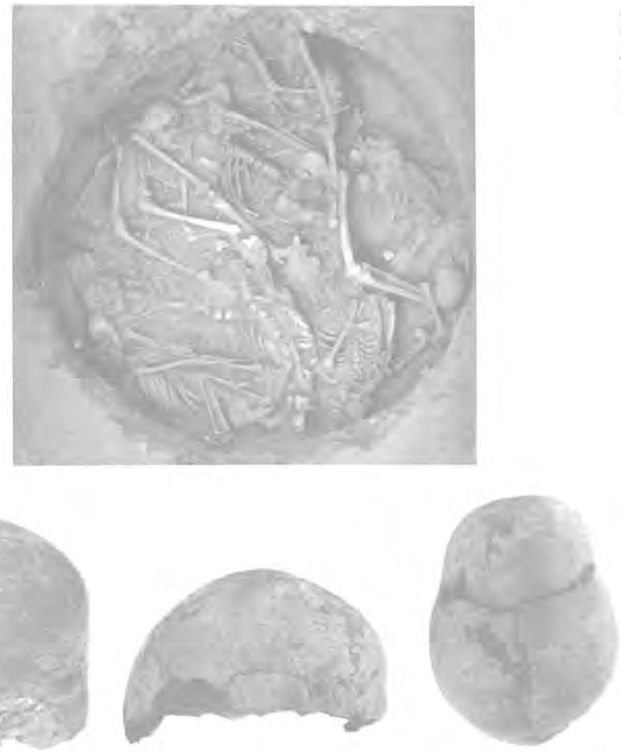
At Chien-kou, there is the earliest direct evidence of violence against people in Chinese prehistory. Here in the Lung-shan layer were found a house foundation and two dry wells. "Within the house foundation were found [six] human skulls with signs of blows and scalpings, apparently indicating that these victims were scalped after having been killed. . . . The water wells were abandoned and then five layers of human skeletons were buried in them, males and females, old and young. Some had been decapitated and some showed evidence of struggling. From these one postulates that some of the dead were murdered or were buried alive" (fig. 231).[80] Yen Wen-ming speculates that the skulls were probably cut from the heads of enemy chiefs or warriors for use as drinking cups.[81] With activities such as these there was ample reason for the stamped-earth wall circling and defending the villages. Arrowheads and spear points were among the stone artifacts recovered.

Remains of millets were unearthed in storage pits and urns. Domestic animals include the pig, cattle, and dog, with pig bones making up over 90 percent of the bones of domestic animals found at Hou-kang. Pig and deer shoulder-blades, used for oracles, have been found.

WEST AND CENTRAL HONAN PHASE

Also called the Wang-wan or Mei-shan phase, this is the largest middle Yellow River Lung-shan phase in area of distribution and in number of sites reported. The sites are seen on both sides of the Yellow River between Shansi and Honan, in the Lo-ho River valley of Honan, and in the Mt. Sung-shan area extending toward the east along the Ying-ho River (a tributary of the Huai-ho River) to Yü-hsien and beyond. The characteristic features of this phase are described as follows: "The pottery wares are principally fine or sandy gray or black; brown

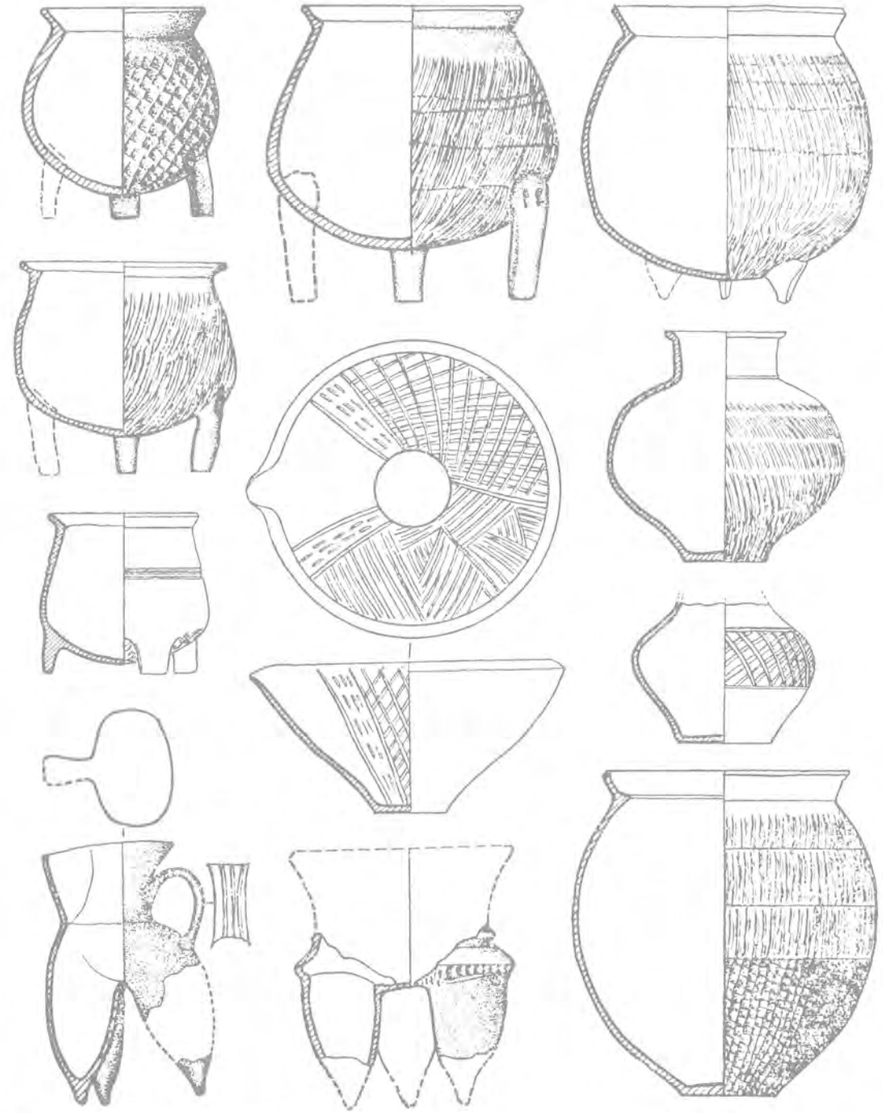
80. *KK* 1959 (10), 531–32. In the original report, the number of human skulls at the house was given as three. In a later article, Yen Wen-ming, one of the excavators, said that there were actually four whole ones and two incomplete ones; see his article in *KKYWW* 1982 (2), 38–41.
81. W. M. Yen, *KKYWW* 1982 (2).



231. Evidence of violence at the Lung-shan Culture site at Chien-kou, in Han-tan, Hopei. *Above:* a water well filled with human skeletons. *Below:* three skulls with signs of scalping. (Photographs courtesy of Peking University.)

pottery decreased, and red pottery was absent. The pottery was wheel-made mainly, but some was handmade. The main decorations are stamped checker and vertical-basket-marks, followed by cord-marks. There are some incisions and fingernail impressions. The major types are the jar with flare mouth, urn with high collar, basin with angularly curved wall, *chia* tripod, *tseng* steamer, cup with single handle, bowl with sloping wall, and large basin on ring feet. In addition, the *ting* tripod with nipple legs, *kuei* tripods, *li* tripod, *ho* pitcher, *tou* on pedestal, bottle, 'squeezer,' and lids are seen" (fig. 232).[82] The major reported sites of this

82. Y. S. Li, *CKHNL* 1 (1980), 34; see also T. L. Kao and F. J. Meng, *CYWW* 1983 (2), 15–21.

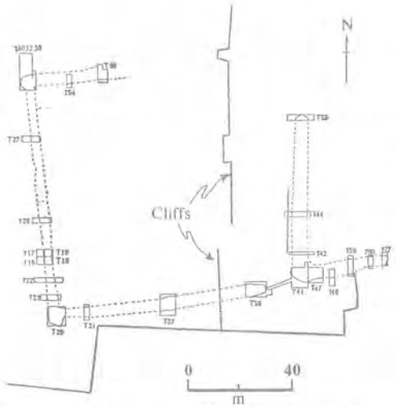


232. Pottery types of the west-central Honan phase of Lung-shan Culture from Mei-shan, Lin-ju, Honan. (From *KK* 1975, no. 5, p. 288.)

phase are: several in Lo-yang, including the Wang-wan site,[83] Hsiao-p'an-kou in Meng-chin,[84] several sites in the Cheng-chou area,[85] Tien-chün-t'ai in Hsing-yang,[86] Wang-ch'eng-kang in Teng-feng,[87] several sites in Yü-hsien,[88] Mei-shan in Lin-ju,[89] San-li-ch'iao in Shan-hsien,[90] and Tung-hsia-feng in Hsia-hsien.[91] (All of the above sites are in Honan, except for Tung-hsia-feng, which is in the southwestern corner of Shansi.)

A town wall built of stamped earth was unearthed at Wang-ch'eng-kang in Teng-feng in 1977–81. It consisted of two enclosures, but most of the eastern enclosure had been eroded and only its southwestern corner is left. The western enclosure, which shared its eastern wall with the eastern enclosure, is close to square, about 92 meters north–south and 82.4 meters east–west. The western wall runs north–south, slanting toward the west by 5 degrees. The south wall has a gap, probably the location of a gate (fig. 233). The walls were constructed by means of the stamped-earth technique. Most layers are 10 centimeters thick, although some are only 6–8 centimeters. Over the top surface of each was placed a thin layer of fine sands, and then the layer was ramped tight with river pebbles, whose impressions are seen on the top surface of each layer. On the elevated grounds at the center and in the southwestern parts of the western enclosure were found fragments of stamped-earth foundations, which are, however, too poorly preserved to be reconstructed. Amidst these are round underground pits, which were often filled with layered stamped earth. In between the stamped-earth layers were found burials of from two to seven skeletons of both adults and children. These have reasonably been regarded as relating to the laying of house foundations in a ritual manner. One example is Pit no. 1 (fig. 234), in which are twenty layers of stamped earth, each 8–24 centimeters thick. Seven skeletons were found beneath the third to the sixth layers.

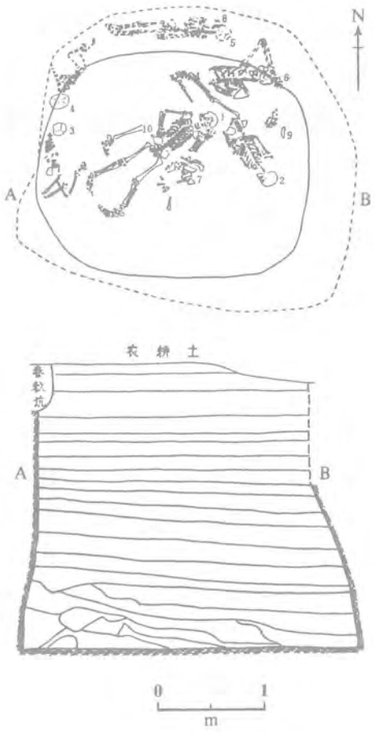
At Mei-shan, seventeen house floors were unearthed; they were all built on floors slightly sunken from the ground level, lined by wattle-and-daub walls and partitions. The floors were plastered with several thin layers of lime. The size of one of the houses was about 3.5 by 5 meters (fig. 235). Tung-hsia-feng has yielded a number of tombs. They are all single pit graves, equipped with the second-level



233. Plan of town wall at Wang-ch'eng-kang, in Teng-feng, Honan. (From *WW* 1983, no. 3, p. 14.)

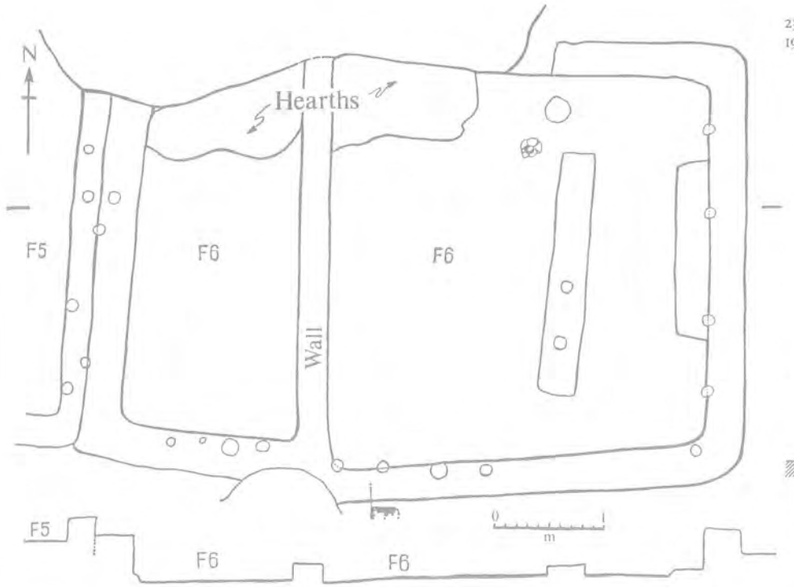
83. *KK* 1961 (4), 175–78; (1), 5–17; 1983 (2), 101–15; *WW* 1981 (7), 39–51; *CYWW* 1982 (3), 2–7.
84. *KK* 1978 (4), 244–55, 240; *KK* 1982 (2), 186–91.
85. *KKHP* 1958 (3), 41–92; 1958 (4), 19–26; 1979 (3), 301–74; *CYWW* 1982 (4), 22–29; 1983 (4), 1–8.
86. *CYWW* 1982 (4), 1–21.
87. *WW* 1983 (3), 8–20.
88. *KK* 1978 (1), 23–34; 1979 (4), 300–07; *WW* 1983 (3), 37–43.
89. *KK* 1975 (5), 283–94; *KKHP* 1982 (4), 427–75.
90. *Miao-ti-kou yü San-li-ch'iao.*
91. *KK* 1980 (2), 97–107; *KKHP* 1983 (1), 55–91.

234. "Human sacrificial pit" at Wang-ch'eng-kang. (From *WW* 1983, no. 3, p. 15 and pl. 1.)



platform on undisturbed earth but including very few grave furnishings. One tomb, no. 313, is a round pit, in which the skeleton of an adolescent was buried with the feet neatly chopped off (fig. 236).

Although many sites of this phase of Lung-shan Culture are known, our information about it is still inadequate. In Wang-ch'eng-kang we can see housing for the nobility, which was also associated with possible human sacrifice. The Mei-shan houses and remains of houses found elsewhere, with no stamped-earth foundations, represent a class at least one notch down on the scale, and the Tung-hsia-feng burials were obviously those of even lower classes. There are a lot of missing pieces to be filled in. It should also be noted that a fragment of a bronze vessel (fig. 237) was uncovered in a storage pit at Wang-ch'eng-kang; it has been



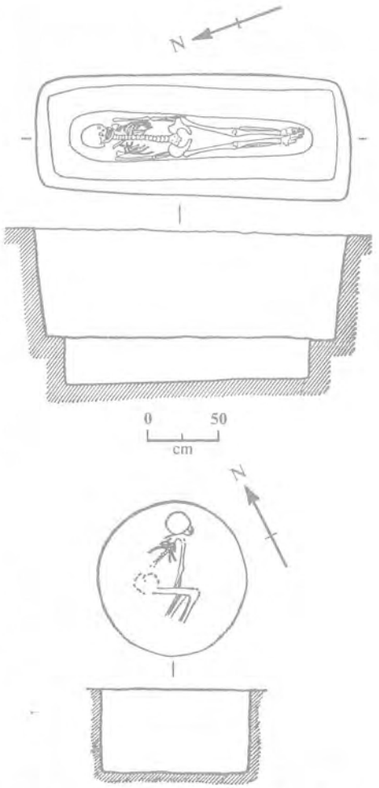
235. House floor F-6 at Mei-shan. (From *KKHP* 1982, no. 4, p. 431.)

found to be a copper-tin-lead alloy.[92] At Mei-shan, fragments of pottery crucibles were unearthed from two storage pits, some with metal residues adhering to the interior. One piece has been found to contain 95 percent copper. Finally, as with other Lung-shan phases, remains of scapulimancy are widely found.

THE SOUTHERN SHANSI PHASE

This phase, also called the T'ao-ssu Phase, was recognized only recently, following the excavation of the T'ao-ssu site in Hsiang-fen, southern Shansi. Now more than seventy sites are known on the slopes of the Lin-fen basin,[93] but the only site that has been reported on remains T'ao-ssu itself.[94] This is a very large site, its remains and features stretching over an area one-and-a-half by two kilometers in size, but only a small portion has been unearthed. Except for some houses, storage pits, and kilns, the major find at the site is a gigantic cemetery. Several thousand burials are believed to exist there, and over a thousand have

92. H. T. Li, in *Shih-hsüeh Yüeh-k'an* 1984 (1), 2, claims that it is a fragment of a *kuei* tripod.
93. T. K. Hsu, *CYWW* 1982 (2), 20–25.
94. *KK* 1980 (1), 18–31; 1983 (1), 30–42; 1983 (6), 531–36; 1984 (12), 1068–71.



236. Human burials of the Lung-shan Culture at Tung-hsia-feng, Hsia-hsien, Shansi. (From *KKHP* 1983, no. 1, p. 66.)

237. Fragment of a copper vessel (possibly a *kuei* tripod) at Wang-ch'eng-kang. (From *WW* 1983, no. 3, pl. 1.)

been excavated. The pottery found here is similar to that of the central and Western Honan phase, but includes several distinctive types such as "the *li* tripod with straight mouth and squat legs, check-impressed *li* tripod with a handle or lug, *li* tripod with flat mouth, urn on pedestal, low-bodied bottle, *chia* tripod, and *kuei* container" which are not seen in central and western Honan (fig. 238).[95]

The most striking finds at T'ao-ssu pertaining to the variation of the graves within the cemetery are the remarkable objects found in some of the graves. The tombs, all single pit graves with the head pointing to the southeast, appear to be arranged in two or more clusters, and within each cluster the graves are again grouped according to some order. This is reminiscent of the Ch'eng-tzu cemetery in Shantung, but the T'ao-ssu data are as yet incomplete and largely unreported. What is clear, however, is the division of the over one thousand graves that have been excavated into three classes: large, medium, and small.

Large graves. Nine large graves have been counted so far. The pit is about 3 meters long and 2–2.75 meters wide. All skeletons that can be sexed are male. Wooden coffins were used, and cinnabar powder was spread inside them. The graves were richly furnished with one hundred to two hundred items, including a red pottery plate painted with dragon design, wooden drum covered with crocodile skin, music stone (*ch'ing*), drum-like pottery, wooden table, stand, vessels, and other objects painted in bright colors, jade and stone rings and axes, and whole pig skeletons (fig. 239). Four of the large graves lack the musical set of crocodile-skin drum, music stone, and drum-like pottery.

Medium graves. About eighty of these have been identified. The pits are shallow and wide or deep. The shallow and wide ones are 2.5 meters long by 1.5 meters wide and are no deeper than the large graves nearby. The deep ones, which cluster in a different area of the cemetery, are 2.2–2.5 meters long, 0.8–1.0 meters wide, and 2–3.5 meters deep. Most of the shallow graves are near the large graves, and their skeletons again appear to be male. Wooden coffins were used, some had cinnabar. Grave furnishings include whole sets of pottery vessels, some painted wooden objects, jade *ts'ung* tubes, axes, rings, ornaments, and pig mandibles. Some of the shallow graves that flank some of the large graves appear to be the graves of females. Painted wooden coffins were used, and cinnabars were found inside. The dead wore elaborate headdresses and armlets and were furnished with painted pottery bottles. Some shallow graves and most deep graves were not furnished with pottery or wooden objects; found in these were wooden coffins, elaborate shrouds, stone and jade axes, rings, *ts'ung* tubes, combs, hairpins, and

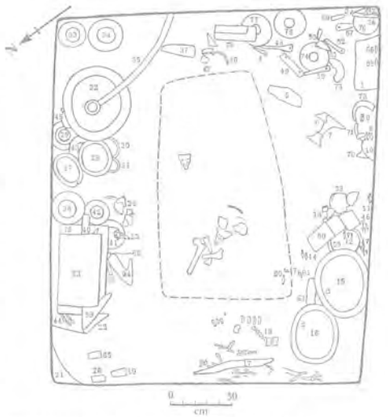
238. Pottery types at the Lung-shan Culture site at T'ao-ssu, in Hsiang-fen, Shansi. (From *KK* 1983, no. 1, p. 36.)

95 *KK* 1980 (1), 30.

pig mandibles. A few of the medium graves, of both the shallow and the deep kind, were sparsely furnished.

Small graves. More than 610 have been excavated. The size is usually 2 meters by 0.4–0.6 meters by 0.5–1.0 meters. Most were not furnished.

The above description points to a significant concentration of wealth in the large graves, less than 1.3 percent of the total, and the medium graves, 11.4 percent of the total. This is concentration in greater degree than in any of the other Lung-shan cemeteries we have examined so far. The large-grave-flanked-by-two-medium-graves set suggests a male head of the house and his two consorts. The crocodile-skin drum and music *ch'ing* stone set was recorded in later texts as part of the royal symbol, and the dragon-plate (fig. 240), the jades (fig. 241), and the wooden vessels (fig. 242) are all remarkable finds for this period. In 1983, a bronze bell-like object, originally wrapped in fabrics, was excavated from a tomb under the pelvis. Chemical analysis has disclosed its composition as 97.86 percent copper, 1.5 percent lead, and 0.16 percent zinc (fig. 243).



239. Large tomb at T'ao-ssu. (From *KK* 1983, no. 1, p. 34.)

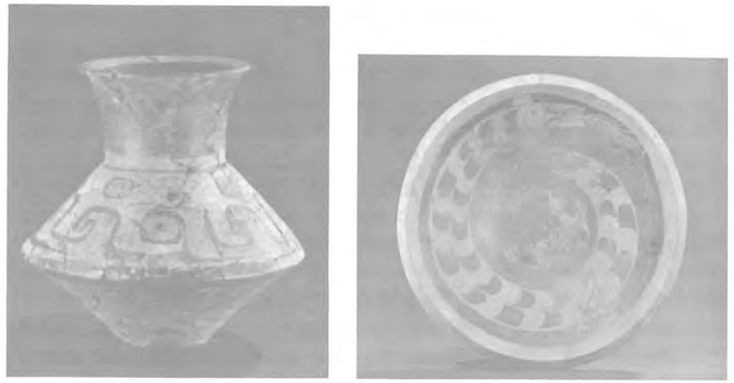
THE SHENSI PHASE

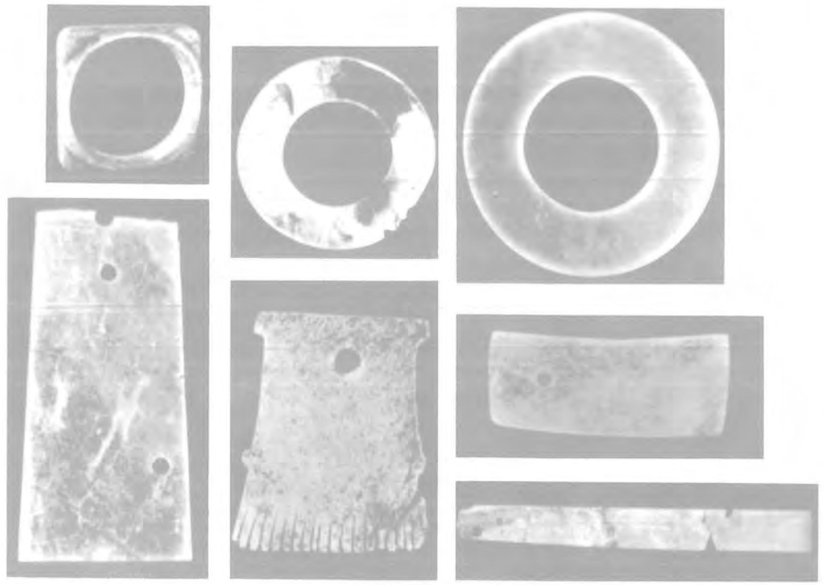
Generally referred to as K'o-hsing-chuang II,[96] the Shensi Lung-shan Culture phase is best known from K'o-hsing-chuang in Sian,[97] Chiang-chai in Lin-t'ung,[98] Heng-chen-ts'un in Hua-hsien,[99] and other sites along the Wei-shui River. At Chiang-chai, remains of this phase were found above the Late Pan-p'o or Hsi-wang-ts'un phase. At Heng-chen-ts'un, its remains were found above the Miao-ti-kou II layer; and at Chang-chia-p'o, also near Sian, the culture is shown to antedate the remains of Western Chou. Largely contemporary with the other Lung-shan phases, the Shensi Lung-shan's relationship with the Western Chou and its chronological position relative to the Shang will be explored in connection with the emergence of the Chou civilization.

Remains of ten semisubterranean houses were found at K'o-hsing-chuang. The houses have a single room or two adjoining rooms. The double houses, with two rectangular rooms or an interior round room and exterior square room, are particularly distinctive. The floor inside the house was paved with habitation debris and compacted from use. Pocket-shaped storage pits, each with a bot-

96. C. P. Chang, *KKTWW* 1980 (4), 78–84, 90.
97. P. C. Su and J. T. Wu, *KKTH* 1956 (2), 32–38; *Feng-hsi fa-chüeh pao-kao* (Report of excavations west of River Feng), Peking: Wen-wu Press, 1963.
98. *KKTWW* 1980 (3), 1–13.
99. *KKHCK* 4 (1984), 1–39.

240. Painted pottery vessels at T'ao-ssu. (From *KK* 1983, no. 1, pl. 4.)

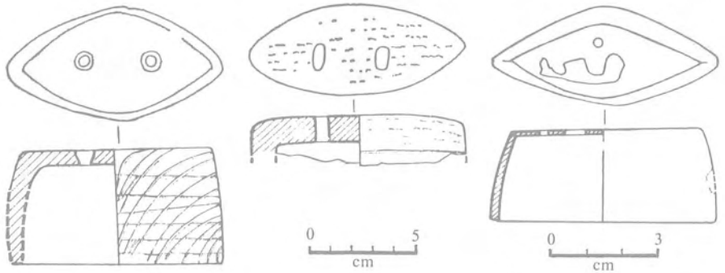


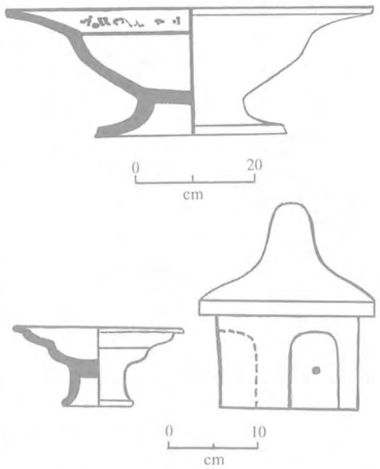


241. Jades at T'ao-ssu. (From *KK* 1980, no. 1, pl. 6.)

tleneck opening and an enlarged chamber about four meters in diameter, are also characteristic.

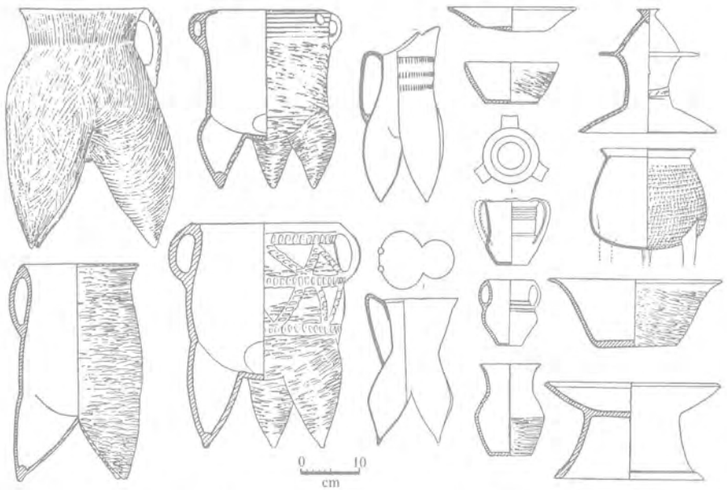
Of the implements found at the sites, most are for agriculture, but hunting and fishing gear still occurred. These included knives, adzes, axes, spearheads of stone; fishhooks, arrowheads, and spatula-like artifacts of bone, and spindle whorls of clay. Shell objects are absent. Bones of dog, pig, cattle (*Bos* sp.), water-buffalo (*Bubalus* sp.), sheep (*Ovis* sp.), rabbit, and water deer were identified. All but the deer and rabbit were domesticated, showing considerable progress from the Yang-shao. About 80 percent of the pottery is gray in color. Black sherds like





242. Wooden artifacts at T'ao-ssu. (From *KK* 1983, no. 1, pp. 37–38.)

243. Bells at T'ao-ssu (*photo and upper right:* copper bell found in grave; *left:* copper bell collected on the surface; *center:* clay bell.) (From *KK* 1984, no. 12, p. 1069 and pl. 1.)



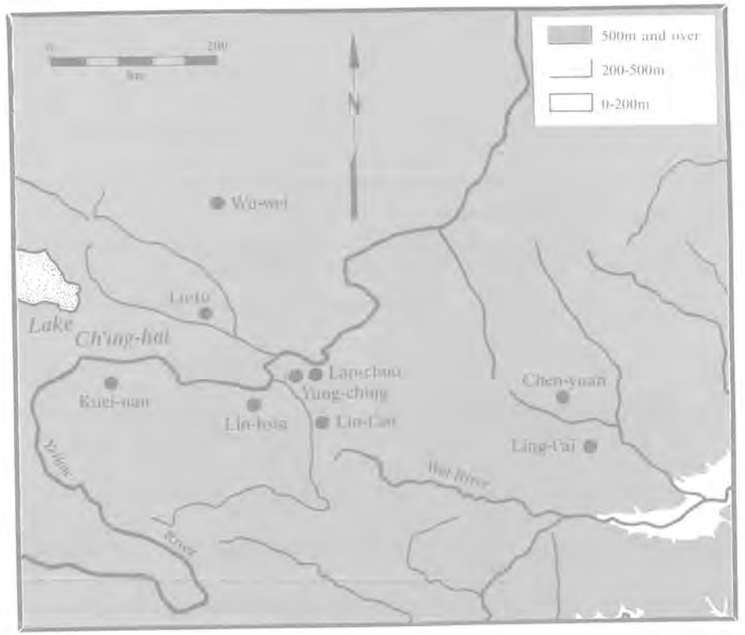
244. Pottery types of the K'o-hsing-chuang II Culture. (From *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, fig. 26.)

the coastal Lung-shan pieces make up no more than 1 percent. Most of the impressed decorations were cord or basket-marked; check-stamped pieces are rare. There are occasional painted sherds (dark red on red slip). In shape, *li* tripods with single handles, cord-marked *kuan* jars, and cord-marked *chia* tripods are most common. *Ting* tripods are extremely rare. Most of the vessels were built by hand from coils, and some of the *li* tripods were apparently molded. A very few sherds exhibit evidence of the wheel (fig. 244).

A double burial of a man and a woman was found at Heng-chen-ts'un; it has six pots. At the site of K'o-hsing-chuang, bodies were sometimes buried in abandoned storage pits, each pit containing up to five skeletons. Another important trait of the culture is the use of sheep scapulae for divination; burned shoulder-blades of sheep were found.

The Ch'-i-chia Culture

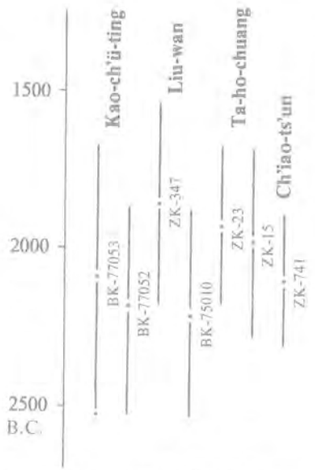
The Ch'i-chia Culture, named after its type site at Ch'i-chia-p'ing in Kuang-ho county in the T'ao Ho valley of eastern Kansu, was discovered in 1923 by J. G. Andersson, who regarded it as the earliest Neolithic culture in Kansu, from which



245. Major sites of the Ch'i-chia Culture.

the Yang-shao Culture in Kansu and Honan was ultimately derived.[100] This thesis has proved to be completely fallacious. Stratigraphical evidence in the entire area of its distribution has shown that the Ch'i-chia Culture followed the Yang-shao Culture but preceded the Chou strata in the upper Wei-shui as well as several other contemporary local Aeneolithic cultures to the west.[101] Its area of distribution reached the upper Wei-shui valley in the east, the Huang-shui valley of Chinghai in the west, the upper Hsi-han-shui valley in the south, and Ninghsia and westernmost Inner Mongolia in the north (fig. 245).[102] More than three

100. J. G. Andersson, *Memoirs GSuC*, ser. A, 5 (1925); *Children of the Yellow Earth*, London: Kegan Paul, Trench, Trübner, 1934; *BMFEA* 15 (1943).
101. The stratigraphical position of the Ch'i-chia Culture over the Yang-shao Culture layers has been observed in a number of sites in the T'ao-ho valley and the upper Wei-shui; see Hsia Nai, *KKHP* 3 (1948), 101–17; *KKTH* 1956 (6), 9–19; 1958 (5), 1–5; 1958 (7), 6–16; 1958 (9), 36–49; *KK* 1959 (3), 138–42, 146.
102. For general summaries of the Ch'i-chia Culture, see T. C. Hsieh, *KKYWW* 1981 (3), 76–83; C. Y. Hu, *KKYWW* 1980 (3), 77–82, 33.



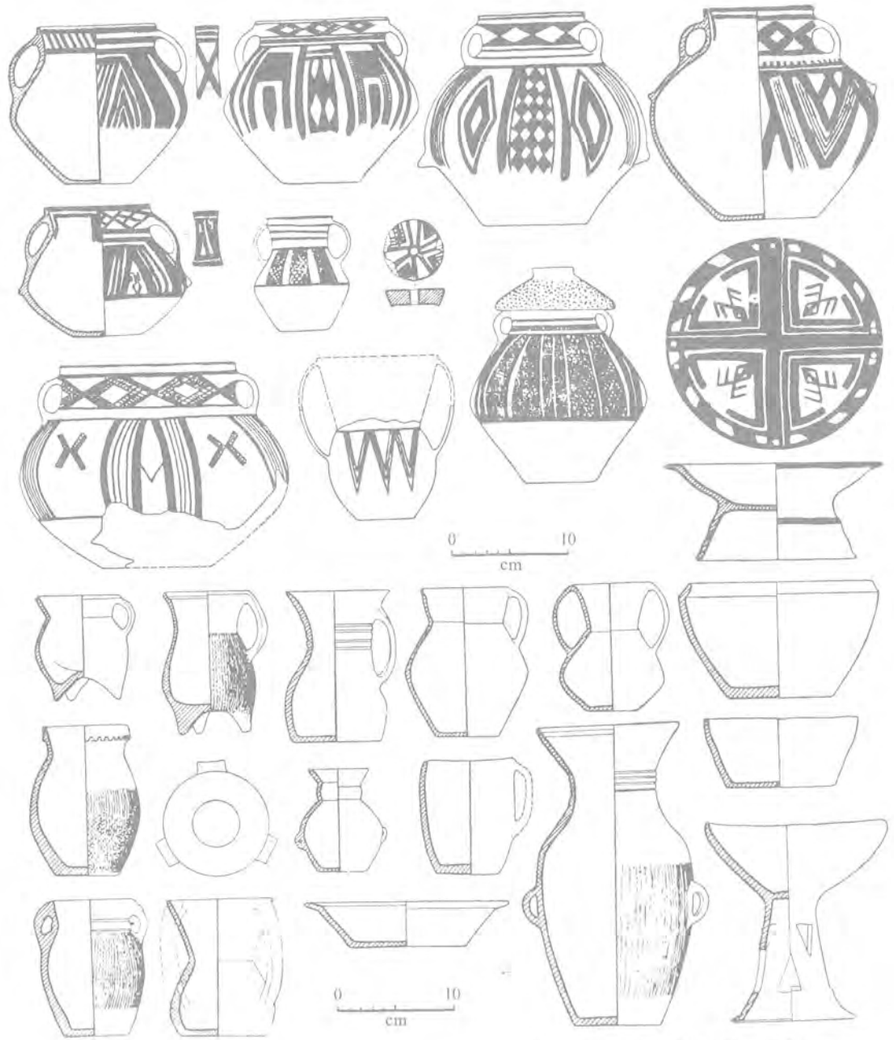
246. Radiocarbon profile of the Ch'i-chia Culture.

hundred Ch'i-chia Culture sites are now identified, the best known including (in addition to Ch'i-chia-p'ing)[103] Ta-ho-chuang[104] and Ch'in-wei-chia[105] in Yung-ching and Huang-niang-niang-t'ai in Wu-wei,[106] in Kansu, and Liu-wan in Lo-tu, Chinghai.[107] A small series of radiocarbon dates places the Ch'i-chia Culture into the latter part of the third millennium B.C. (fig. 246), approximately contemporary with the latter half of the Lung-shan Cultures to the east.

The Ch'i-chia pottery is characterized by yellow and buff ware with combed or incised decorative designs and especially by a kind of flat-bottomed jar with a constricted neck, flared mouth, and two large vertical loop handles on the shoulder. Painted pots are seen occasionally, and cord-marks are another surface feature (fig. 247). Remains of millet and fabric impressions on pottery were found at the Ta-ho-chuang site in Yüng-ching Hsien (fig. 248); oracle bones of pig and sheep at Ch'iao-ts'un in Ling-t'ai;[108] oracle bones of sheep scapulae at Ta-ho-chuang, and Ch'in-wei-chia in Yüng-ching; oracle bones of cattle, sheep, and pig scapulae at Huang-niang-niang-t'ai in Wu-wei Hsien; and copper ornaments and small objects at all three sites. Bones of dogs, pigs, cattle, horses, and sheep and remains of hemp have also been found. All these go to show that Ch'i-chia was a culture of advanced farmers, among whom domesticated animals were apparently of greater importance than they were in much of the rest of North China.[109]

At the Ta-ho-chuang site in Yüng-ching, rectangular house floors plastered with white limy clay were uncovered; near or within the houses round or square hearths had been built (fig. 249). Surrounding the houses were storage pits of various shapes. From the houses and storage pits twenty-three copper implements and copper slugs were recovered, including knives, awls, chisels, and rings. An analysis of a knife and an awl disclosed that copper accounts for over 99 percent of the metal used in their manufacture, with impurities (lead, tin, and so on) making up less than 0.4 percent. A copper mirror, 89 millemeters across, 3 millimeters thick, and decorated on the back with units of parallel lines in between two concentric circles, was found at the Ch'i-chia site of Nai-ma-t'ai in Kuei-nan, Chinghai (fig. 250). A neutron-activation analysis disclosed a copper-tin ratio of 1:0.096.[110]

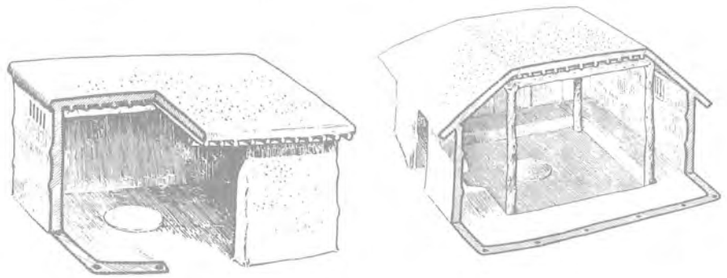
103. Margit Bylin-Althin, *BMFEA* 18 (1946), 457–58.
104. *KKHP* 1974 (2), 29–61.
105. *KKHP* 1975 (2), 57–95.
106. *KKHP* 1960 (2), 53–70; 1978 (4), 421–47.
107. *Ch'ing-hai Liu-wan*, Peking, Wen-wu Press, 1984.
108. *KKTWW* 1980 (3), 22–24.
109. For an argument about the relative importance of agriculture and animal husbandry in the Ch'i-chia Culture, see *KK* 1961 (1), 3–11; 1961 (7), 338–89; *KKTWW* 1981 (3), 76–83.
110. H. H. Li, *KK* 1980 (4), 365–68.



247. Pottery types of the Ch'i-chia Culture. (From *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, fig. 38.)

248. Fabric impressions on pottery (*left*) and remains of millet (*right*) at the Ch'i-chia Culture site at Ta-ho-chuang, Yung-ching, Kansu. (From *KKHP* 1974, no. 2, pl. 6.)

Villages of the Ch'i-chia Culture incorporate their own burial areas. Two cemeteries have been found at Ch'in-wei-chia, one in the southwestern part of the site and one in the northeastern part. Twenty-nine burials were located in 1960 in the northeastern cemetery in an area about one hundred meters square, arranged in three north-south rows, all with heads to the west. Twenty-four of the tombs are single burials, but the other five contained two adults each, a male and a female. The male skeleton lies stretched, and the female, at his left, is flexed (fig. 251). All the tombs contained stone and pottery artifacts and from one to fifteen lower jaws of pigs. The southwestern cemetery yielded eight burials from a lower stratum and ninety-nine burials from an upper stratum, the latter arranged in six rows running northeast-southwest, with the head invariably pointing toward the northwest. The overwhelming majority of the tombs are again single, and they were all furnished with grave goods—pottery vessels, stone and bone tools, ornaments, oracle bones, and pigs' jaws. The significance of these burial patterns



249. Reconstructions of Ch'i-chia Culture houses at Ta-ho-chuang. (From *KKHP* 1974, no. 2, pp. 36–37.)

for an understanding of the Ch'i-chia social organization is obvious. At the Ta-ho-chuang site, rings of small rocks were discovered on the ground—possibly a religious construction—near which were the burials of sacrificial animals.

There is diverse opinion concerning the origin of the Ch'i-chia Culture. Its millet agriculture was undoubtedly introduced from the Yang-shao Culture, but there is plenty of room for dispute about its cultural affiliations. Its similarities to the Yang-shao and the Lung-shan cultures in the Wei-shui area and to the Western Chou civilizations have been noted,[111] but these could be accounted for by cultural contacts during various time periods. It is possible that in this area, which is adjacent to the dry steppes of northwest China and Inner Mongolia and where present climatic conditions tend to be on the arid side, the Yang-shao farming culture was not well adapted and was replaced by indigenously based cultural phases which nevertheless received considerable cultural influence from the Yang-shao farmers. The nature of its contemporary cultural phases and the many local cultural traditions which followed the Ch'i-chia seem to indicate this possibility, although the indigenous base remains to be identified. On the other hand, with the recent excavation of the Ch'ang-shan site in Chen-yuan in easternmost Kansu,[112] the suggestion has been made that the Ch'i-chia Culture had developed out of the Lower Ch'ang-shan Culture, which served to link the Ch'i-chia with Yang-shao of the Wei-shui River valley.[113] We will continue to note the future developments in this area with interest.

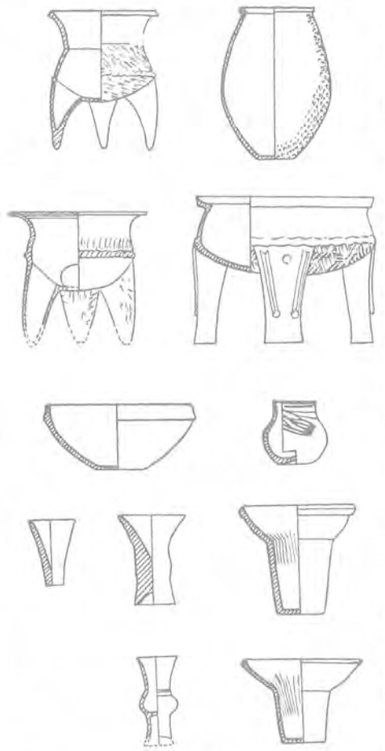
250. Copper mirror from Nai-ma-t'ai, Chinghai. (From Lin Yun, in *Studies of Shang Archaeology*, 1986.)

The Ch'ing-lung-ch'üan III Culture

Also referred to as the Hupei Lung-shan Culture, the Ch'ing-lung-ch'üan III Culture was first identified at the site bearing its name, in Yün-hsien, northwestern Hupei, in the Han-shui River valley, excavated in 1958–61.[114] At the site, cultural assemblages of Yang-shao, Ch'ü-chia-ling, and Ch'ing-lung-ch'üan III Cultures were found in stratified relationship. The last assemblage has been characterized as follows: "The pottery ware is mainly gray, and black and lustrous pottery is rare. In general, the pottery was handmade, although individual pieces were wheel-made. Basket-impression predominates, usually cross-stamped. Painted pieces are extremely rare. Characteristic types include the *ting* tripod with

251. A double burial at Ch'in-wei-chia, Lin-hsia, Kansu. (From *KK* 1964, no. 6, pl. 1.)

111. *KK* 1959 (3), 138–42; 1959 (7), 323–25, 345; 1959 (10), 517; 1961 (1), 10; 1976 (6), 352–55; *WW* 1979 (10), 60–69.
112. *KK* 1981 (3), 201–10; 1982 (4), 392–97, 406.
113. C. Y. Hu, *KKTYWW* 1980 (3), 77–82, 33.
114. *KK* 1961 (10), 519–30.



252. Pottery types of the Ch'ing-lung-ch'üan III Culture. (From Li Wen-chieh, *CKHNL* 2, 1982, p. 15.)

basin vessel, trumpet-like cup with thick wall, 'red-top bowl,' *kuei* tripod, and *chia* tripod. *Li* and *hsien* tripods are absent" (fig. 252).[115]

According to Li Wen-chieh's summary in 1980, the Ch'ing-lung-ch'üan III Culture has been found in fewer than twenty sites in Hupei, southern Honan and northern Hunan, more or less coinciding with the Ch'ü-chia-ling Culture.[116] Most of these sites have not, however, been reported on in archaeological publications.[117] Ch'ü-chia-ling, the older of the two cultures according to both stratigraphic and chronometric evidence, was evidently the indigenous predecessor of Ch'ing-lung-ch'üan III, but the latter indeed evolved into a Lung-shan-like form, with its wheel-made pottery, its gray ware, its basket and check-impressions, and its new vessel types mentioned above. There is also unmistakable indication of social divisions in terms of mortuary wealth.[118] The available data are insufficient for further characterization, but the presence of this widespread Lung-shan Culture suggests the strong likelihood of a precivilizational substratum in Hupei comparable with the Lung-shan or Lung-shan-like cultures to the north and to the east. The fact that the middle Yangtze basin of Hupei and its environs was home to the all-important Ch'u civilization in the late second and the first millennium B.C. makes this likelihood even more tantalizing.

The third millennium B.C. was the millennium of the Lung-shan Cultures, which continued to maintain the Chinese cotradition that had begun a millennium previously, as we discussed at the beginning of this chapter. The cultures that have been briefly described—the Shantung Lung-shan Culture, the Liang-chu Culture, the middle Yellow River valley Lung-shan Cultures, the Ch'i-chia Culture, and the Ch'ing-lung-ch'üan III Culture—are well defined ecologically and archaeologically, although the amount and depth of archaeological work on them have been uneven and we so far face more tantalizing clues and questions than solid solutions.

Nevertheless, the integrity of the interaction sphere had by the Lung-shan period obviously been strengthened, and not only stylistic similarities in material culture but also comparable evolutionary trends in social organization and ideology are now very much visible throughout the sphere of interaction. This must

115. W. C. Li, *CKHNL* 2 (1982), 11; see also Y. S. Fang, *CHKK* 1985 (1), 76–81, for another general discussion of the Hupei Lung-shan Culture.
116. W. C. Li, *CKHNL* 2 (1982).
117. Published material, other than from Ch'ing-lung-ch'üan, is available in *KK* 1976 (3), 187–96, 160; 1983 (1), 17–29; *KKHP* 1983 (4), 427–70; *CHKK* 1980 (2), 77–90.
118. *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, p. 136.

mean that communication had become constant and intensive and that it spurred on interrelated changes in culture and society across regional borders. Let us take a quick look at the kind of innovations that sprouted everywhere and that, because of the similarities of style, must be interrelated:

1. Archaeologically acceptable evidence of copper objects, mostly trinkets and small tools of no agricultural value, has been unearthed in Shantung, western Honan, southern Shansi, and Ch'i-chia from archaeological horizons comparable in age. The finds do not suffice to point to a major metal industry as yet, but in light of what happened later on one must regard the Lung-shan metallurgy as worthy of note. The bronze vessel fragment from Wang-ch'eng-kang is of special significance.

2. Industrially much more important is the extremely widespread use of potter's wheels for the manufacture of ceramics. There was tremendous variation in the pottery wares of the various Lung-shan Cultures, but the overwhelming change from red to gray and the general decline of painted decoration must have been the result of a conscious choice on the part of the potters, who, armed with improved kilns and the wheel, must have represented a specialized profession in the Lung-shan society.

3. The stamped-earth construction technology and the construction of town walls using that technology are separate issues, but the town walls in Shantung, east Honan, north Honan, and west Honan indicate both the transmission of a technology and the rise of the necessity for defensive public works.

4. Related to the rise of defensive ramparts is the archaeological evidence of institutionalized violence. This takes two forms—evidence of raids or wars, such as the Chien-kou-ts'un finds of skulls and bodies in the water well; and burials of possible ritual victims relating to the construction of chiefly or royal monuments.

5. There are several manifestations of rituals, especially ones closely tied to persons of high political status. The first is the role of some animals and birds in ritual art, such as those found or identified recently in Liang-ch'eng, Shantung; the Liang-chu sites, in Kiangsu and Chekiang; and T'ao-ssu, Shansi.

6. The *ts'ung* tube, especially if associated with animals and birds, is a very distinctive ritual object manifesting a unique cosmology. Its discovery in Liang-chu on the coast and T'ao-ssu in the interior cannot be accidental; it indicates without question an interregional transmission of cosmology or even a spherewide substratum featuring that cosmology. If we include jade rings (*pi*) in this cosmological bag, the Ch'i-chia Culture also becomes involved.

7. The virtually universal occurrence of scapulimancy among the Lung-shan Cultures is another manifestation of the spherewide communication or substratum of cosmology.

8. The archaeological evidence for violence and for ritual on an institutional basis almost inevitably means a society featuring sharp political and economic divisions, and that is exactly what we find in the mortuary remains of many of the Lung-shan Cultures. We have already seen archaeological indications of social ranking in the mortuary remains of the Neolithic sites of the fifth and fourth centuries B.C. (see chapters 3–4). These trends accelerated and further intensified in the Lung-shan cemeteries. Furthermore, as the Ch'eng-tzu (Shantung) and T'ao-ssu (Shansi) cemeteries show, the economic and political polarization appears to have taken place within the framework of the unilinear clans and lineages.

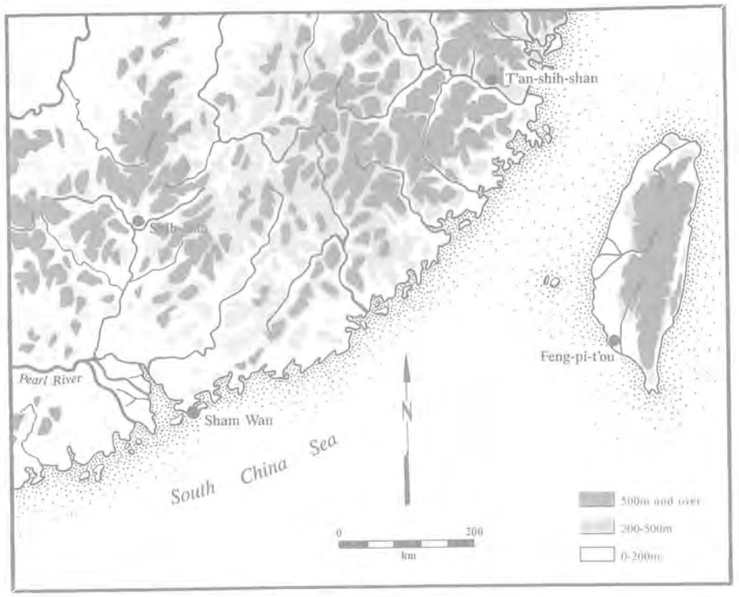
All of the above happenings are plainly indicated by archaeological evidence, but they do not point to a single Lung-shan Culture. Instead, they indicate a series of interrelated changes in culture and society that took place within each of the regional cultures in the Chinese interaction sphere. From the point of view of each of the regional sequences, both the external interaction network and internal changes during a period of two thousand years were essential for its readiness, toward the end of the third millennium B.C., to step over the next threshold into the state society, urbanism, and civilization.

How far to the north and south did this series of changes push geographically? Archaeological evidence has enabled us to include both the middle and the lower Yellow River valleys and the middle and the lower Yangtze River valleys in our discussion so far, but the immediate areas beyond have also yielded suggestive clues.

In the north, the Hung-shan Culture of the upper and middle Liao-ho valley continued into the third millennium B.C., but evidence suggests that Lung-shan-like influence had reached northern Hopei[119] and the Liao-tung Peninsula. When lustrous black pottery remains were found at the tip of the Liao-tung peninsula at such sites as Yang-t'ou-wa,[120] it was originally thought that a local Lung-shan Culture had replaced the indigenous stratum, which was represented by the combed brown pottery at such sites as Shang-ma-shih on the Ch'ang-shan Islands. Recent, more intensive excavations at such Neolithic sites as Kuo-chia-ts'un in Ta-lien[121] and Yü-chia-ts'un in Lü-shun[122] have shown that the earlier culture (described in chapter 3) continued, although it was apparently subjected to a massive influx of new cultural items from the Lung-shan Culture, presumably from Shantung across the Po-hai Bay.

In the south, Lungshanoid characteristics occurred beyond the Yangtze valley

119. *KKHP* 1959 (3), 17–35.
120. Kanaseki Takeo et al., *Yang-t'ou-wa*, Soc. Oriental Archaeol., ser. B, 3 (1943), 1–81.
121. *KKHP* 1984 (3), 287–328.
122. *KKHCK* 1 (1981), 88–103.



253. Lungshanoid sites in southeast China.

and, in concentrated doses, reached the whole southeast coast during the third millennium B.C., but the series of interrelated changes in society, politics, and economics does not appear to have followed. Some of these changes began to occur in these southern regions, but their full consequences were not felt until perhaps a few hundred to a thousand years later, during the second and early first millennium B.C., depending on the region in question.

Insofar as the third-millennium Lungshanoid cultures are concerned, the best-known sites are T'an-shih-shan in Fukien, Feng-pi-t'ou in Taiwan, Sham Wan in Hong Kong, and Shih-hsia in Kwangtung. A brief sketch of each of these sites and its culture follows (fig. 253).

T'AN-SHIH-SHAN

More than a thousand prehistoric sites are said to have been identified in the province of Fukien,[123] but T'an-shih-shan, twenty-two kilometers upstream from Foochow, is the best known, having been excavated in seven seasons since

123. F. Tseng, *KKHP* 1980 (3), 263–84.

1954.[124] The deposits are divisible into three strata: the uppermost is characterized by the so-called "geometric pottery" of the Bronze Age level of the eastern and southeastern coast, and the lower and middle strata are Neolithic. The two shell samples from the middle stratum have yielded dates of 3090 ± 90 and 3005 ± 90 B.P., placing that layer to the middle of the second millennium,[125] but two thermoluminescence dates (4240 ± 190 B.P., 4310 ± 190 B.P.) from the upper stratum of Hsi-t'ou, a closely related site whose lower stratum corresponds typologically to T'an-shih-shan's middle stratum, suggest that the upper (later) limits of the middle stratum of T'an-shih-shan are earlier than 2000 B.C., and the lower stratum earlier still.[126]

In the lower stratum, the pottery is of fine or sandy ware, gray, black, buff, or red. It was handmade with coils. The surface was often decorated with cord-marks, incised designs, hollow-outs, and paintings. The main types are the *ting* tripod, cooking pot with neck, flare rim, and roundish base, jar with extended belly on pedestal, painted jar with a single protruding handle, bowl, and *tou* vessel on pedestal. Most of these features continued into the middle stratum, but more wheel retouches are seen at the rim and the pottery in general is better made and more elaborate. A number of human burials occur in both levels. They are all single burials in pit graves. Many of them were furnished with food and drink utensils, the amount varying from a couple of items to sixteen. To Tseng Fan, this suggests that there was differentiation in wealth.[127] This differentiation, however, does not compare in scope or kind with the Lung-shan or Liang-chu burials involving ritual objects of wood and jade.

A conspicuous feature of the T'an-shih-shan site was its shell-mounds, dominated by marine genera such as *Cordicula, Arca, Ostrea,* and *Auricula.* The site is now sixty-five kilometers inland on a twenty-meter terrace by the Min-chiang River, but presumably when it was occupied by prehistoric people the coast was nearby, as a result of marine transgression. From the shell-mounds a large number of animal bones came to light, including dog, pig, bear, tiger, deer, and elephant.[128]

On the whole, this was a farming village that also made use of marine, riverine, and forest resources. In ceramic style, a Ta-p'en-k'eng-like substratum and a Lungshanoid membership satisfactorily account for its wares, surface features, and vessel types.

124. *KKHP* 10 (1955), 53–68; *KK* 1961 (12), 669–72; 1964 (5), 173–205; *KKHP* 1976 (1), 83–118; *KK* 1983 (12), 1076–84.
125. *KK* 1974 (5), 337.
126. *KKHP* 1984 (4), 499.
127. *CKHNL* 1 (1980), 137–41.
128. K. C. Ch'i, *VP* 15 (1977), 301–06.

FENG-PI-T'OU

Several hundred prehistoric sites are known in Taiwan, but Ta-p'en-k'eng and Feng-pi-t'ou are among the few that have been intensively excavated and fully reported.[129] Prehistoric remains on the Feng-pi-t'ou hills, at the southern end of the Feng-shan tableland southeast of the city of Kao-hsiung in southwestern Taiwan, about one kilometer from the coast, were known toward the end of World War II, but the site was not extensively excavated until early 1965. The earliest assemblage at the site, characterized by cord-marked pottery, belongs to the Ta-p'en-k'eng Culture of southern coastal China (see chapter 4). From about 2500 to 400 B.C., the site was a settlement of considerable magnitude, occupied by people engaged in farming, hunting, fishing, and shellfish collecting. The pottery at the site has two main phases of development: an earlier phase characterized by cord-impressed red pottery of fine paste in a variety of shapes, including *ting* tripods and *tou* with high pedestals and hollow-outs; and a later phase characterized by coarse-paste pottery with impressed, incised, and painted decorative patterns. The latter phase also contained a considerable number of thin, hard, lustrous, wheel-made black potsherds. Shell-mounds constitute a large part of the deposits of the later phase; in one of these was found a single burial, stretched, supine, head to the south.

The two Feng-pi-t'ou phases correspond chronologically to the two phases at T'an-shih-shan, and they also share a number of ceramic types and modes as well as their way of life near an estuarine environment. We need more intensive investigations throughout the Taiwan Strait region to work out a regionwide chronology, although there is already considerable material for an initial attempt.

SHAM WAN

The archaeology of the Kwangtung coast began in the 1930s,[130] and by 1985 several hundred sites were known. In a recent article, Yang Shih-t'ing undertook a thoughtful first synthesis, referring to the regional culture represented by the coastal prehistoric sites as the Hsi-chiao-shan Culture and dividing it into three stages: Early, preceramic; Middle, characterized by cord-marked and incised coarse pottery and the "shouldered ax," dating from 5,000–6,000 years ago; and Late, "soft geometric," approximately 4,000–5,000 years ago.[131] One is tempt-

129. K. C. Chang et al., *Fengpitou, Tapenkeng, and the Prehistory of Taiwan,* Yale University Publications in Anthropology, no. 73, 1969.
130. D. J. Finn, *Hongkong Naturalist* 3–7 (1932–36), 13 parts; W. Schofield, *Proc. 3rd Far Eastern Prehist. Congr.,* 1940, pp. 236–84; R. Maglioni, *Hongkong Naturalist* 8 (1938), 208–44; *J. East Asiatic Studies* (Manila), 2 (1952), 1–20.
131. S. T. Yang, *KKHP* 1985 (1), 9–32.

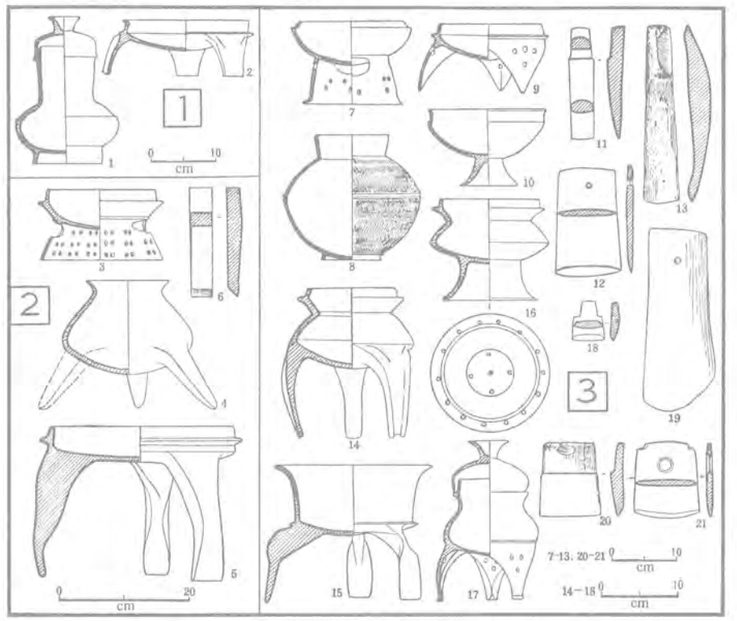
ed, on the basis of Yang's scheme, to make two further inferences. The first is the likelihood that the Middle Hsi-chiao-shan may be subdivided into an earlier and a later phase, leaving room in the earlier phase for the Ta-p'en-k'eng Culture. The second is the possibility of correlating the late Middle Hsi-chiao-shan with both Lower T'an-shih-shan and Lower Feng-pi-t'ou and the Late Hsi-chiao-shan (pre-hard-geometric) with both Middle T'an-shih-shan and Upper Feng-pi-t'ou. But, again, this should be left to a synthesis incorporating the whole southeastern coast, which will depend on many more excavations in southern coastal Fukien and eastern coastal Kwangtung.

Among the sites listed by Yang for the Middle Hsi-chiao-shan is the "*F*" assemblage at Sham Wan (Shen-wan in Mandarin) on Lamma Island in Hong Kong. The site, located in a flat, elevated sand bank behind the present sandy beach on the southern coast of Lamma Island, was apparently known since the 1930s, but it was not excavated until 1971–77 in five intermittent seasons by the Hong Kong Archaeological Society, which mobilized an interdisciplinary team and produced a handsome monograph.[132] An integrated chronological sequence at the site consists of assemblages *A, B, C,* and *F,* with *A* being modern, *B* estimated to 1300–400 B.C., *C* the "geometric" culture of about 2200–1200 B.C., and *F* the Middle Neolithic, mainly between 3500 and 2200 B.C. The *F* assemblage includes (1) coarse cord-marked pottery, mainly of the round-bottomed-urn type, very similar to the cord-marked "cooking pot" in the lower stratum of T'an-shih-shan and Hsi-t'ou in Fukien; and (2) chalky ware—dull white or light gray, sometimes pinkish or reddish, its surface cord-impressed with a paddle or incised with a single point tool or a comb, and its pedestals often hollowed out; the *tou* vessel on pedestals is the major type. This chalky ware with corded or incised marks is comparable with the red corded ware found throughout the southern part of Taiwan, including lower Feng-pi-t'ou. Among the stone artifacts of assemblage *F,* the polished shouldered ax and the *chüeh* or slit ring are conspicuous.

SHIH-HSIA

Differing from the coastal sites of Kwangtung, such as Sham Wan, Shih-hsia is located almost three hundred kilometers inland in the hilly region of northern Kwangtung, an area that has direct access to southern Kiangsi and the Kan-shui River valley—which connects with the Yangtze River—through passes in the Ta-yü-ling Mountains upstream on the Chen-shui River past Shih-hsing and Nan-hsiung. As I mentioned, northern Kwangtung is a pivotal area in prehistory that

132. W. Meacham, ed., *Sham Wan, Lamma Island,* 1978. Hong Kong: Hong Kong Archaeol. Soc.



254. Artifacts of the Shih-hsia Culture. (From *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu,* 1984, fig. 51.)

could have connected several regions of the Yangtze valley with the southeastern coast through river traffic. The archaeological Shih-hsia reflects this.[133]

Shih-hsia, on a small hill southwest of the city of Ch'ü-chiang, was discovered in 1972 and excavated in 1973–76. Three cultural strata were recognized: hard geometric on top, soft geometric in the middle, and Shih-hsia Culture in the lower stratum,[134] a stratigraphy not unlike that at Sham Wan or T'an-shih-shan, suggesting that the tripartite division of Southern Chinese post-Palaeolithic prehistory into the Corded Ware stratum (now including Ta-p'en-k'eng), the Lungshanoid (the horizon that crosscuts the several regions in this area, including the T'an-shih-shan lower and middle strata, Feng-pi-t'ou lower stratum, Sham Wan assemblage *F,* Hsi-chiao-shan middle phase, and Shih-hsia lower stratum), and the Geometric[135] has indeed stood the test of time, even though the cultural continuity of each region needs renewed emphasis.

133. P. C. Su, *WW* 1978 (7), 16–22.
134. *WW* 1978 (7), 1–15.
135. K. C. Chang, *Current Anthropol.* 5 (1964), 359, 368–375; see William Meacham, *Current Anthropol.* 18 (1977), 419–40, for a more recent survey of South Chinese Neolithic.

By the end of 1976, some remains of dwellings, kilns, and 108 human burials had come to light from the lower stratum at Shih-hsia; most cultural remains had been unearthed from the burials. Numerous rice grains were found in storage pits or hearths and as residues of food offerings in the graves. These have been identified as *Oryza sativa indica*.[136] Among the many types of finely polished stone implements found in the graves are the elongated hoe, stepped adz, shouldered ax, flat ax, arrowhead, and chisel. Pottery was made by wheel, mold, or hand, of fine or sandy ware, and ranging from gray to brown in color. Seventy percent of the vessels are plain, the rest decorated with cord-marks, hollow-outs, appliqués, and some incisions, bow-strings, punctates, and check-impressions. The major types among the cooking vessels are *ting* tripods (most with shallow plate-like bodies), urns (called "cooking pots" in the report), *tseng* steamers, and *kuei* tripods, and among food and drink vessels are shallow plates on three legs, shallow plates on pedestals, *tou* vessels on pedestals, jars, storage urns, and lids (fig. 254). Another group of noteworthy objects consists of a variety of jade types, including the *ts'ung*-tube, ring, half-ring, slit ring, beads, and pendents. The six *ts'ung* tubes are particularly striking, recalling the Liang-chu *ts'ung* of the third millennium B.C.

In the preliminary reports of the site the archaeologists emphasized that in the later tombs evidence became stronger for significant differentiation among the graves in the furnishings provided. "In the large deep pit graves were found sets of pottery vessels and stone implements and finely made ornaments. Cinnabar is found on the bones, and carbonized rice grains were among the offerings. In the smaller graves, only two or three stone implements and a few utilitarian pottery vessels were found. . . . Large grave pits had all been dried by fire, producing complete and well-preserved burned pit walls, whereas in the small pits the firing was uneven and the walls fragmented."[137] Such differences are significant, but they are in the order of the later Ta-wen-k'ou tombs and not quite in the order of the Lung-shan tombs. The Shih-hsia Culture—yielding artifact assemblages identical to those found in the lower Kan-chiang River sites of northern Kiangsi, as Su Ping-ch'i has pointed out[138]—is a Lungshanoid assemblage stylistically comparable with the Lungshanoid regional phases of the fourth millennium B.C. It is, however, itself dateable to the period of the Lung-shan Cultures of the third millennium B.C. This is highly significant, suggesting that the Lungshanoid style moved slowly from the Yellow and Yangtze River valleys southward along the inland river routes and along the southeastern coast.

136. S. T. Yang, *WW* 1978 (7), 23–28
137. F. S. Chu, *CKHNL* 3 (1984), 92.
138. P. C. Su, *WW* 1978 (7), 17–18.

6
The First Civilizations: The Three Dynasties

As we have noted in the previous chapter, the period of the Lung-shan and Lung-shan-like cultures in Chinese prehistory, from approximately 3000 to 2000 B.C., was a period of significant transformation in several areas of Chinese society: there was increasing differentiation among the populace in economic wealth and political power, the role of ritual became increasingly conspicuous in the archaeological record, and evidence was mounting to show that violence was employed in both external relations and internal control. Somewhere in the early part of the second millennium B.C., or at places possibly several centuries earlier, such transformations had reached such a point that the archaeological record indicates a qualitatively new stage of Chinese history. In this stage, several things made simultaneous—and interrelated—appearances: a new type of settlement that can be called urban, a new form of government that can be called the state, and a new quality of life that can be called the civilization. It should be clear from the way these terms are introduced that they are simply convenient labels for new realities in Chinese history; they are not considered prefabricated universals that are destined to emerge here and everywhere. As we shall see, urbanism, the state, and civilization in the Chinese historic context all have their peculiar as well as general characteristics.

One other thing also occurred at this time: the use of writing. Prior to the use of writing by the ancient people to tell their own story, as it were, we have only the archaeological record at our disposal to reconstruct their prehistory. This is not because there is a discipline called archaeology that can only operate within its own perimeters, but because there is nothing else to operate with. When written documents begin to appear in the record, however, they also can be used. As Christopher Hawkes points out, when texts become available, the scholar must be responsible to them as well as to the archaeological data.[1] Written records are not the archaeologists' additional burden. They are their blessing; now their building blocks can use powerful adhesives. At the same time, the written history is not necessarily the history as we see it. The written history is data, just as archaeological data are our historical data.

Early Writing and Legendary History

We have seen in the available record the use of signs and symbols on Chinese Neolithic pottery as early as 5000 B.C., and these must have been an important source of written characters when the ancient people began to use them. But these Neolithic signs and symbols occur singly and did not constitute a written lan-

1. *American Anthropologist* 56 (1954), 155–68.

guage. People in China began to use writing to make records of their actions probably sometime early in the second millennium B.C. Most of these records have perished; the earliest extant written records date from a later segment of the Shang dynasty, no earlier than the fourteenth century B.C. and possibly later. These are undoubtedly only a small part of the total record, for from the middle of the first millennium B.C. a considerable number of texts are known to us which record many historical events allegedly from the second millennium B.C., or earlier, that must have been transmitted in writing as well as orally for at least a thousand years. Obviously, during the long period of transmission many changes may have occurred, and the first millennium B.C. record of second millennium B.C. and earlier history can only be regarded as legendary. But changes were probably more the result of corruption and modification than of invention, and we are confident that the written record of the second millennium B.C. must have been rich and varied.

Let us take a look first at the extant written record of the second millennium and the early first millennium B.C., and then at the known late first millennium B.C. record and see what the latter may have said about the earlier events. For convenience, we refer to the former as the ancient writings and the latter as the early texts.

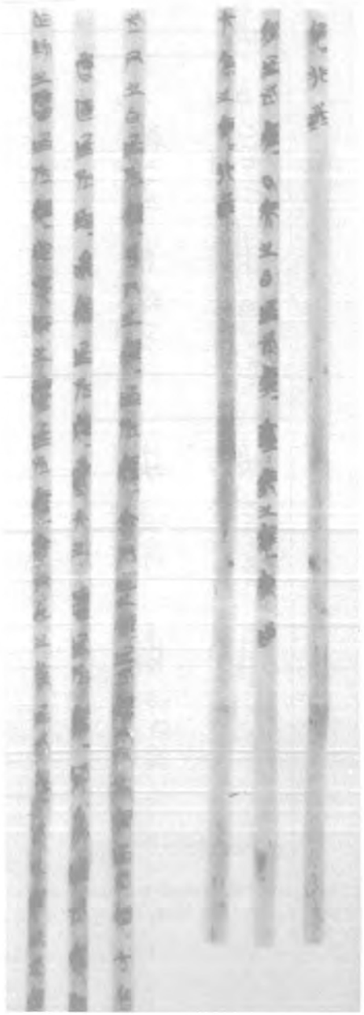
The bulk of the ancient writings were unquestionably written on bamboo or wooden tablets or on silk fabrics, as the title of T. H. Tsien's excellent book on ancient Chinese books and inscriptions, *Written on Bamboo and Silk,* makes clear.[2] This title was derived from a quote from *Mo Tzu,* a collection of the philosophical essays of Mo Tzu from the fifth century B.C., in which we find the following statement: "The sources of our knowledge lie in what is written on bamboo and silk, what is engraved on metal and stone, and what is cut on vessels to be handed down to posterity." Unfortunately, as far as being physically handed down to posterity goes, bamboo and silk were very poor materials for the purpose, since no writings on these materials are known today from the second millennium and the first half of the first millennium B.C. We do know that in the royal court of the Shang Dynasty (ca. 1700–1100 B.C.) there were archivists and scribes who recorded important events of the state. With brush and ink, they transcribed characters onto slips of bamboo or wood and bound them together into book form (the so-called *ts'e*). We know of these books, however, only through the existence of the character *ts'e* (a pictograph of slips bound together with strings) in Shang inscriptions (fig. 255) and also from references to them in later texts, for the *ts'e* themselves have not yet been found in Shang sites.[3] In fact, the earliest bamboo tablets that were found in an archaeological context are the inventories of mortuary goods found in a Tseng state tomb in Sui-hsien, Hupei, dated to 433 B.C. or thereabouts (fig. 256).[4] From several tombs in the state of Ch'u (the Tseng state was under its influence) dated to a little later a number of bamboo tablets have been unearthed, including mortuary inventories, records of rituals, and the earliest extant book of essays with a seemingly Confucian bent.[5] By the Ch'in (221–206 B.C.) and Han (206 B.C.–A.D. 220) dynasties, the full range of bamboo/wooden tablet inscriptions began to emerge. In a tomb of the Ch'in Dynasty at Shui-hu-ti, in Yun-meng, Hupei, a number of bamboo tablets came to light, including several legal codebooks, a book of annals, a proclamation of the local magistrate, an official's handbook, and two versions of a daily almanac.[6] As for silk writing, the earliest extant piece is a ritual manual found in another Ch'u tomb—dating from perhaps the third century B.C.—in Ch'ang-sha, Hunan (fig. 257).[7]

As to "what is engraved on metal and stone and what is cut on vessels," we have from the Shang (ca. 1700–1100 B.C.) and the Western Chou (ca. 1100–770 B.C.) dynasties a large number of inscriptions cast on bronze ritual vessels, musical instruments, weapons, and a few other objects. These inscriptions "contain an average of from 20 to 50 characters, with a few having less than ten or over two hundred. The longest one, of about 500 characters, was cast on a tripod."[8] The inscriptions are of two types. The first consists of simple, straightforward symbols. There are usually one or more emblems, often realistic ideographs that probably designated clans, lineages, and/or clan or lineage-based settlements. The second type consists of messages, mostly brief but occasionally long (fig. 258). These may or may not include an emblem. Sometimes they describe an event of importance in the context of which the bronze object was made, such as a military campaign, covenant, treaty, appointment, reward, or ceremony.[9] But the most essential line in these messages is: "So-and-so made (or had made) this Father

2. Chicago: University of Chicago Press, 1962. A new, updated edition in Chinese was published by the Chinese University of Hong Kong in 1975.

3. Some inscribed turtle carapaces bore holes, and some scholars have speculated that they were strung together into *ts'e*. See *WWTKTL* 1954 (5), 25; Y. L. Liu, *Soochow University J. of Chinese Art History* (Taipei), 2 (1973), 11–38.
4. *WW* 1979 (7), 11–12.
5. H. C. Li, *Tung Chou yü Ch'in-tai wen-ming* (Eastern Chou and Ch'in Civilizations), Peking: Wen-wu Press, 1984, pp. 338–42.
6. *Shui-hu-ti Ch'in mu chu-chien* (Bamboo slips from a Ch'in tomb at Shui-hu-ti), Peking: Wen-wu Press, 1978.
7. Noel Barnard, *The Ch'u Silk Manuscript,* Monographs, Far Eastern Hist., 5, Canberra: Australian National University, 1973.
8. Tsien, *Bamboo and Silk,* p. 41
9. Ibid., p. 44.

255. The character *ts'e* in oracle bone and bronze inscriptions. (From Kao Ming, *Ku wen-tzu lei pien,* 1980, p. 486.)



256. Inscribed bamboo slips from Lei-ku-tun, Sui-hsien, Hupei. (From *Sui-hsien Tseng-hou Yi mu*, 1980, fig. 108.)

257. Silk with paintings and inscriptions from a Ch'u tomb in Ch'ang-sha. (From *The Ch'u Silk in the Sackler Collections*, New York: International Arts Press. Reprinted by permission of the Sackler Foundation.)

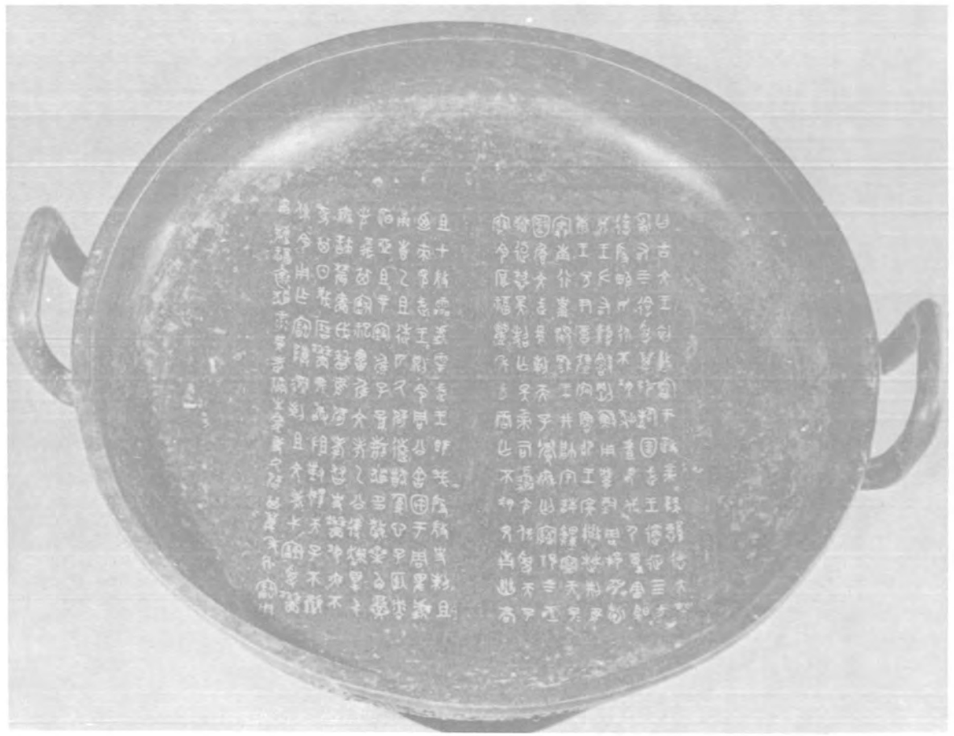
Chia (or Mother Yi, etc.) vessel."[10] Because these messages contain information on historical events, the bronze inscriptions were one of the two major pillars of the ancient Chinese writing that are available.

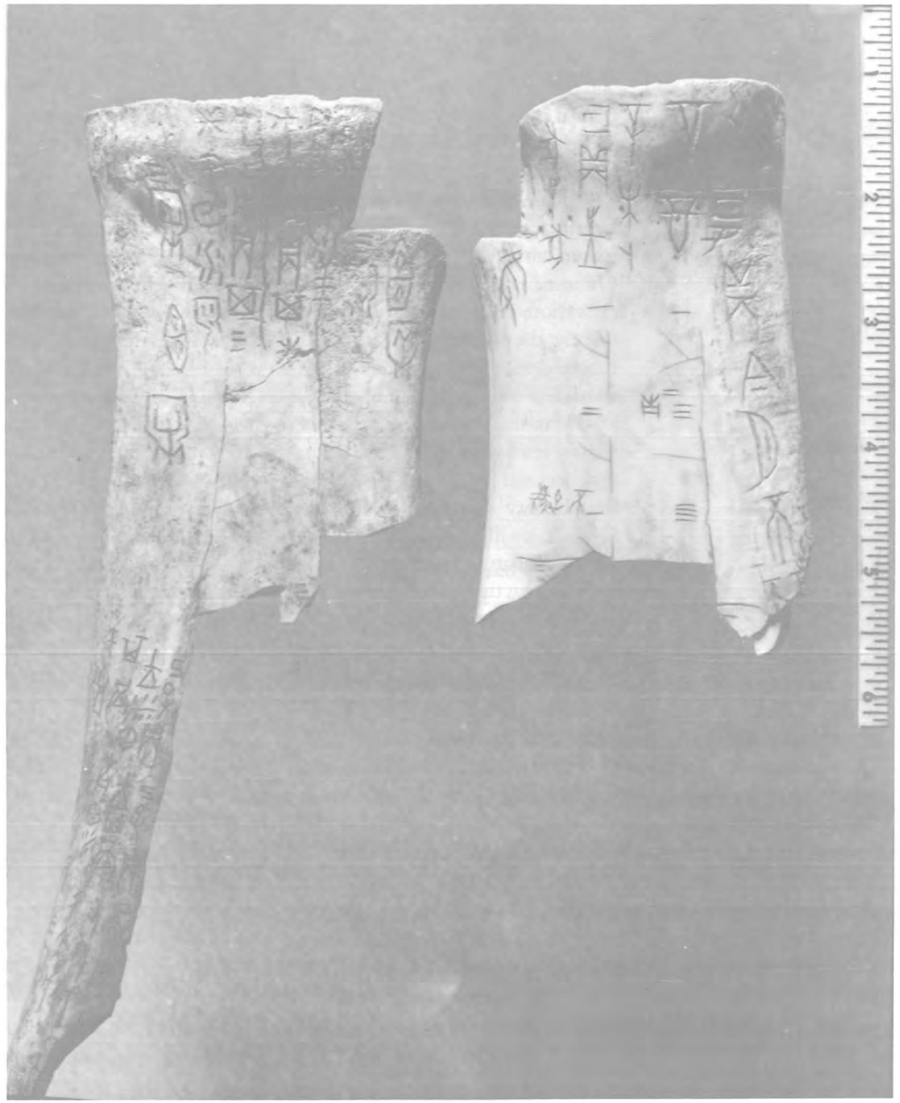
The only known ancient writing of importance engraved on stone was engraved on ten "stone drums" by a duke of the state of Ch'in in Shensi, perhaps in the seventh or sixth century B.C. to commemorate an event in the court.[11] There are, however, a number of jade tablets that have been unearthed in recent years in the state of Chin in Shansi and western Honan, on which solemn words of allegiance were written, allegiance between various noble factions of the state of Chin in the fifth century B.C.[12]

The most important ancient writing—as measured by the amount of scholarly literature of a historiographic nature written on it—was, ironically, not mentioned by Mo Tzu, who might not even have known about its existence. This—the other pillar of ancient Chinese writing—is the inscriptions on oracle bones of the late Shang and early Chou dynasties.[13] By the Lung-shan Culture periods scapulimancy was widely practiced; by the Shang and Chou periods it was also applied on turtle shells. On many shoulder blades and turtle shells of the late Shang and early Western Chou that had been burned to produce cracks for divinitory purposes are found inscriptions that record the inquiries that were made and, sometimes, the answers given (fig. 259). Since all these inscriptions came from the royal archives, and since the divinitory inquiries made at the royal court pertained to a whole range of topics of concern to the king and his court, they furnish invaluable information for the study of Shang and early Western Chou history.

Ancient writings are seen on other materials, such as pottery, stone vessels, jade weapons, lacquerware, and so forth, but the above—bamboo and wooden tablets, silk fabrics, bronzes, and oracle bones—are the main sources of writing from the second and early first millennium B.C. These writings include, principally, records of the activities at the court, records of rituals and divinations, records of mortuary goods, records of events that led to the giving of royal or nobility gifts,

10. K. C. Chang, in: *Ancient China: Studies in Early Civilization*, David T. Roy and T. H. Tsien, eds., Hong Kong: Chinese University of Hong Kong, 1978, p. 22.
11. C. L. Na, *Shih-ku T'ung-k'ao* (A general study of the stone drums), Taipei: Chung-hua Ts'ung-shu, 1958.
12. *Hou-ma meng-shu* (The tablets of allegiance at Hou-ma), Peking: Wen-wu Press, 1976.
13. For Shang, see David N. Keightley, *The Sources of Shang History*, Berkeley: University of California Press, 1978; Y. P. Yen, *Chia-ku-hsüeh*, Taipei: Yi-wen, 1978. For Western Chou, see Y. H. Wang, *Hsi Chou chia-ku t'an-lun* (Exploratory study of the shells and bones of Western Chou), Peking: Chinese Academy of Social Sciences Press, 1984; and Hsu Chung-shu and Ch'en Ch'üan-fang in *Ku-wen-tze yen-chiu lun-wen-chi*, Szechwan University, 1982.





258. Ch'iang *p'an,* an inscribed Western Chou bronze vessel from Fu-feng, Shensi. (From *Shen-si ch'u-t'u Shang Chou ch'ing-t'ung-ch'i,* 1980, vol. 2, fig. 24.)

259. Inscribed oracle bone of the Shang Dynasty, excavated from An-yang. (Collection of Academia Sinica; photo courtesy of *Life* magazine.)

and the affiliations of the users of ritual or utilitarian objects in terms of kinship, official edicts, and the like. Writing, it appears, was closely related to the political and ritual activities of the upper class. It is, at the same time, conspicuous in its lack of association with economic or mercantile activities.

Because of the heavy use of writing for political purposes, in ancient China a large amount of writings pertained to the affairs of the state, which is one major reason why historiography had an early beginning and an amazing longevity in Chinese history. We would very much like to have native historical accounts of the various regional and local powers at the threshold of the ancient civilizations, namely, the period of the Lung-shan Cultures and immediately afterward. Unfortunately, the most important media on which this kind of document was written were the wooden and bamboo books and the silk fabrics, and very few of these are known to us. First of all, they were made of perishable materials whose remains are not available until the end of the first millennium B.C., and then only in small numbers and fragmentary form. Also—and far more important—we know from later history that Ch'in Shih Huang Ti, the founding emperor of the Ch'in Dynasty, on his unification of the ancient states of China ordered that all books of a political nature be burned. According to *Shih Chi,* a general history of China compiled by the Han Dynasty historian Ssu-ma Ch'ien around 100 B.C., in the thirty-fourth year of his reign Ch'in Shih Huang Ti's prime minister, Li Ssu, recommended "that all historical records but those of Ch'in be burned. If anyone who is not a court scholar dares to keep the ancient songs, historical records or writings of the hundred schools, these should be confiscated and burned by the provincial governor and army commander. . . . The only books which need not be destroyed are those dealing with medicine, divination and agriculture." The emperor adopted this proposal and book-burning was carried out throughout the empire.[14] Some books did survive the Ch'in holocaust, but they are few and their condition often corrupted and fragmentary. The main early texts that ancient historians of China have to use for the study of Chinese history before the Ch'in dynasty include:

Shih or *Shih Ching* (Book of Poetry)
Shu or *Shu Ching* or *Shang Shu* (Book of History)
Yi or *Yi Ching* or *Chou Yi* (Book of Changes)
Chou Li, Yi Li, and *Li Chi,* or *The San Li* (The Three Books of Ritual)
Ch'un Ch'iu (The Spring-and-Autumn Annals, the annals of the state of Lu)

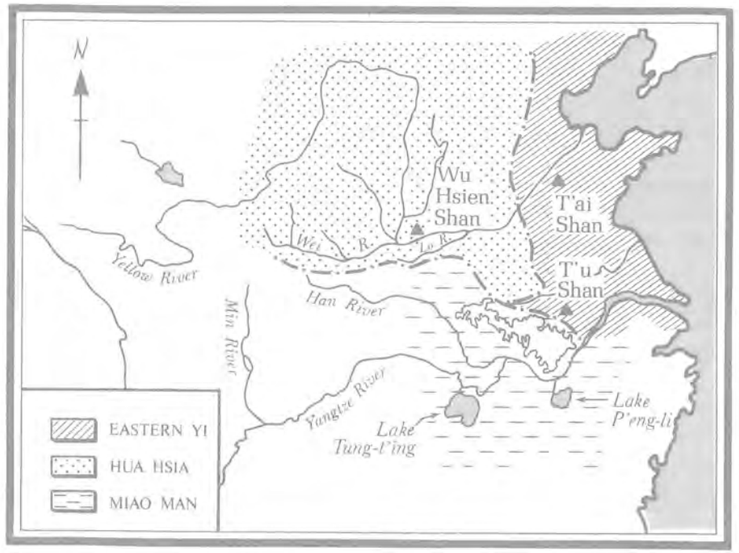
14. *Records of the Historian,* H. Y. Yang and Gladys Yang, trans., Hong Kong: Commercial Press, 1975, p. 178.

The San Chuan of Ch'un Ch'iu, or *Ch'un Ch'iu*'s three commentaries, *Tso Chuan, Kung-yang Chuan,* and *Ku-liang Chuan*
Chi Nien or *Chu Shu Chi Nien* (The Bamboo Books, the annals of the state of Wei)
Kuo Yü (The Narrative of the States)
Chou Shu or *Yi Chou Shu* (The Lost Book of Chou)
Chan Kuo Ts'e (The Intrigues of the Warring States)
Shih Pen (The Roots of the Generations)
Mu T'ien Tzu Chuan (The Story of King Mu)
Shan Hai Ching (The Mountain and Sea Classics)
Ch'u Tz'u (The Elegies of the Ch'u)
Various collections of the essays and analects of the late Chou Dynasty philosophers, including Confucius (his book *Lun Yü*), Mencius (*Meng Tzu*), Lao Tzu (his book *Tao Te Ching*), Chuang Tzu, Mo Tzu, Kuan Tzu, Shang Yang (*Shang Chün Shu*), and Han Fei Tzu.
Other pre-Ch'in texts, mostly of limited historic use.

A number of these texts were available to Ssu-ma Ch'ien and had been consulted by him in compiling the *Shih Chi,* which was thus a systematized synthesis of ancient Chinese history as seen at the beginning of the first century B.C. Problems and questions concerning the dating, authorship, and authenticity of each of these texts are, of course, enormous. This is not the place even to begin to go into them.[15] But these texts, all of which date from the first millennium B.C., together tell a consistent story about ancient China insofar as the essential outlines are concerned. Even these essential outlines must be left to volumes specializing in textual history, but for our purposes a few significant features of that story will be helpful in presenting the rest of the archaeological data.[16]

The fundamental units of ancient Chinese political activities were the *yi,* or walled towns. The hierarchies of the walled towns, in large or small numbers, constituted the *kuo,* or states. A *kuo* was a basic interacting polity with a name, the *shih.* The rulers of a *kuo* were members of a *hsing,* or agnatic clan, ruling over members of their own clans and members of other clans who came under their sovereignty. The ancient Chinese landscape, according to these early texts, was dotted with at least several hundred of these states, each with a principal town as

15. For a general text on the early texts, see Ch'ü Wan-li, *Hsien Ch'in wen-shih tzu-liao k'ao pien,* Taipei: Lien-ching, 1983.
16. The following synthesis is based on textual pieces too numerous to be documented in detail. For principal references, see my *Early Chinese Civilization,* Cambridge: Harvard University Press, 1976; *Chung-kuo ch'ing-t'ung shih-tai,* Hong Kong, Peking, and Taipei, 1982–83.



260. The three major ethnic groups of ancient China according to Hsü Ping-ch'ang. (Based on Hsü, *Chung-kuo ku-shih ti ch'uan-shuo shih-tai*, 1960, p. 65.)

its capital. In the texts we read the names of many of these states, and many of the names of their rulers are given as the names of ancient heroes and sages.

The hundreds of the contemporary states interacted in two ways that are significant for our purposes. First, neighboring states often shared a common legendary ancestor and a common culture. Ancient historians, according to the numerous fragmentary descriptions of the material culture and the manners and customs of the various states, often grouped these states into a number of contemporary cultures or ethnic groups. One of the best known of such efforts was Fu Ssu-nien's contrast of the east and the west in ancient North Chinese history, the east referring to the various ethnic groups under the common name Yi or Eastern Yi in the alluvial plains of the Yellow River and the Huai River and the eastern coast, and the west corresponding to the various groups of Hsia in the highlands of Shansi, western Honan, and Shensi.[17] Meng Wen-t'ung saw the same east-west contrast, preferring to name the easterners the Hai Tai (Maritime and Mount T'ai) people and the westerners the Ho Lo (Yellow and Lo-ho rivers)

17. Fu Ssu-nien, in *Papers Presented to Mr. Ts'ai Yuan P'ei on His Sixty-fifth Birthday*, Nanking: Inst. Hist. and Philol., Academia Sinica, 1935, pp. 1093–1134.

people, but he added a third group, the Chiang Han (Yangtze and Han-shui Rivers) people in the south. Essentially the same classification was designed by Hsü Ping-ch'ang, who referred to the groups as the Eastern Yi, the Hua Hsia, and the Miao Man respectively (fig. 260).[18] It goes without saying that the cultural classifications of ethnic groups based upon the textual data are not inconsistent with the archaeological classifications of the Shantung region, the middle Yellow River region, and the middle Yangtze region (see chapters 3–5).

The various contemporary states incessantly competed, and warfare often resulted in the subjugation of one state by another. Consequently, there were large and powerful states that constantly attempted to become even larger and more powerful, and there were small and weak states. At no time do the textual records tell of a single state emerging to subjugate all other states until the Ch'in Dynasty in 221 B.C. But during the previous two thousand years or more some of the states sporadically attempted to engage in wide-ranging expeditions and conquests, claiming or given the credit of a hegemonic status contemporarily or in retrospect. In the early texts we see historiographic attempts to piece the episodic influences together into a dynastic sequence, prefaced by a predynastic series of sage kings and cultural heroes. In much later times, these sequential efforts were schematized into three cycles (fig. 261):

1. San Huang, or the Three Sovereigns—Fu Hsi, the common ancestor, often partnered with Nü Wa; Shen Nung, the cultural hero, the first planter of crops; and Chu Jung or Sui Jen, the inventor of fire.
2. Wu Ti, or the Five Emperors—Huang Ti, the celebrated Yellow Emperor, the creator of civilized rule; Chuan Hsü, the separator of Heaven from Earth; Ti Ku; Ti Yao; and Ti Shun.
3. The Three Dynasties—Hsia Dynasty, founded by Yü, the hero who conquered the flood; Shang Dynasty, founded by T'ang; and Chou Dynasty, founded by Wu Wang.

By the latter part of the Chou Dynasty, early texts proliferated and enough of them survived to support the historicity of the Chou Dynasty, although throughout the Chou the many states supposedly ruled by the Chou House continued to contend for wealth and power. In 771 B.C., the royal capital of the Chou Dynasty had moved from Shensi to Lo-yang, Honan, thereby subdividing the Chou Dynasty into a Western Chou (to 771 B.C.) and an Eastern Chou (771–256 B.C.). During the Western Chou there was a period of regency, when the king's power

18. *Ku-shih chen-wei*, Shanghai: Commercial Press, 1933; Hsü Hsü-sheng, *Chung-kuo ku-shih ti ch'uan-shuo shih-tai*, rev. ed., Peking: Science Press, 1960.

261. Eastern Han Dynasty pictorial carving at Wu Liang tz'u, in Chia-hsiang, Shantung, showing (from right to left) the succession of the Three Sovereigns and the Five Emperors in legendary history. (From Jung Keng, *Han Wu Liang tz'u hua hsiang lu*, 1936.)

was temporarily passed onto a regent. Ssu-ma Ch'ien's *Shih Chi* relates by year ancient historical events that occurred after the first year of the Regency (841 B.C.), but he was not certain of the years of the kings before then and had to calculate time elapsed in terms of generations rather than years. There are various chronological schemes to date the earlier dynasties; those commonly adopted—generally regarded as unreliable—place the Hsia Dynasty between approximately 2200 and 1750 B.C., the Shang Dynasty between 1750 and 1100 B.C., and the Western Chou Dynasty to begin around 1100 B.C.[19]

The Three Dynasties were probably not more than episodic hegemonies of

19. On ancient chronology, see Chou Fa-kao, *Ta-lu Tsa-chih* 68 (1984), 195–226.

some of the states among many, though perhaps some of the episodes were long. But each of these three states in its time was probably ahead of the others in terms of civilizational development, and there was probably a tendency during the two millennia of contending states toward the formation of increasingly larger states and thus toward the reduction of the total number of states. According to the masterful synthesis of Ku Tsu-yü (1624–1680), the ancient history of Chinese states may be summarized as follows:

It is traditionally stated that when Yü [of Hsia dynasty] assembled the lords at T'u-shan there were ten thousand states that came carrying jades and silks. At the time when Ch'eng T'ang [of the Shang dynasty] received the mandate, more than three thousand states remained. When Wu Wang [of the Chou dynasty] viewed the troops, there were eighteen hundred states. At the beginning of the move [of the Chou capital] to the east [that is, to Lo-yang], there were still twelve hundred states. During the 242 years to the end of [the Spring-and-Autumn period], the lords further engaged in subjugating one another, and only more than a hundred states are seen in the Ch'un Ch'iu *and its commentaries. [Among these], clear records of leagues and conquests are available for fourteen lords: Lu, Wei, Ch'i, Chin, Sung, Cheng, Ch'en, Ts'ai, Ts'ao, Hsü, Ch'in, Ch'u, Wu, and Yueh. Another one hundred and thirteen states were the subordinates of the large lords and they placed their wealth and their soldiers at the large lords' disposal. . . . Finally, the descendants of the barbarians of the nine provinces, living in some eighteen states, were found in between the various lords listed above.*[20]

The situation summarized here for the Three Dynasties period could certainly be pushed back before the Hsia Dynasty. If the Hsia Dynasty began around 2000 B.C., then the legendary sages and heroes could be dated to the period of the Lung-shan Cultures. We have seen that the Lung-shan Cultures had walled towns and that their society was characterized by ranking, rituals, and war. These walled towns were probably the antecedents of the many states of the Three Dynasties period. By the beginning of this period, we see in Chinese history a convergence of archaeology and textual history.

The Erh-li-t'ou Culture and the Question of the Hsia Dynasty

Modern archaeology and textual history converged in 1928 at Yin-hsü, the Ruins of Yin, the last traditional capital of the Shang dynasty, when archaeological excavations were begun at the site, known since the turn of the century when its inscribed oracle bones became known to the scholarly world (see below). Ever

20. Ku Tsu-yü, *Tu Shih fang-yü chi-yao*, vol. 1, 1600s.

since then, one of the pressing tasks facing the archaeologists has been to do to the Hsia Dynasty what they had done to the Shang, that is, to settle the question of the historicity of the textual records concerning these legendary dynasties. The discoveries at Yin-hsü, especially the information concerning the royal house extracted from the oracle bone inscriptions, have lent strong support to the textual history pertaining to the Shang, as synthesized in *Shih Chi*. Ancient historians and archaeologists were thus encouraged to believe that the textual history of the Hsia, also systematically synthesized in *Shih Chi*, might also be essentially reliable, and they hoped for archaeological confirmation to the same degree.

Despite the mythological tint of many of the textual stories concerning some of the Hsia kings,[21] especially the dynasty's founder, Yü, the textual record of the Hsia is regarded by Chinese historians as basically believable primarily because of the many historiographic and folkloric traditions concerning the towns and cities that served as the political centers and cells of the Hsia. Historical geography has been a particularly important component of traditional Chinese historiography, and the oral and literary traditions concerning individual towns often persisted for centuries or even millennia and must be taken seriously—this is an article of faith for any scholar who has made profitable use of such classic historio-geographic encyclopedias as *Shui Ching Chu* (ca. A.D. 500) and *T'ai-p'ing Huan-yü Chi* (ca. A.D. 1000), the many local gazeteers, and such contemporary classics as Ch'en P'an's *Ch'un Ch'iu ta-shih-piao kuo chueh hsing ts'un-mie piao chuan-yi* (1969).[22]

Thus, in 1959, when Hsü Hsü-sheng of the Institute of Archaeology and his team members set out to look for Hsia-hsü, the Ruins of Hsia, they headed toward the geographical area of the largest concentration of traditional Hsia dynasty towns.

If we are to look for the area of the activities of the Hsia clan or tribe, we must look among the traditions left from antiquity. . . . Because the Hsia dynasty is so remote from us now, the historical data are not that rich, especially data concerning place names. By a rough estimate, there are about eighty references to Hsia Dynasty and its place names in the texts before the Ch'in dynasty. . . . Of these, fewer than thirty references can be found to Hsia town names. . . . On the basis of a study of these names, we believe that two regions in particular are worthy of special note. The first is the Lo-yang plain and the environs of central Honan, especially the districts of Teng-feng and Yü-hsien in the upper course of the Ying-shui River. The second is the lower Fen-ho River valley in southwestern Shansi approximately south of the Huo-shan Mountains.[23]

21. The mythological nature of the Hsia—as myths of the Shang and Chou peoples—has been a favorable theme since Ku Chieh-kang, *Ku shih pien*, Peking: P'u-she, 1927. See Sarah Allan, "The Myth of the Xia Dynasty," *J. Royal Asiatic Soc.* 1984 (2), 242–56.
22. Monographs, Inst. Hist. Philol., Academia Sinica, no. 52, 1969.

The Hsü Hsü-sheng party spent more than a month in the central Honan region. Among the sites they visited was Erh-li-t'ou, first discovered in 1957, south of the village of that name, 9 kilometers west-south-west of Yen-shih on the Lo-ho River. Here in an area 3–3.5 by 1.5 kilometers in size they collected potsherds "that are similar to the remains found at Lo-ta-miao in Cheng-chou and Tung-kan-kou in Lo-yang and that probably belonged to Early Shang." Lo-ta-miao[24] and Tung-kan-kou[25] were sites previously found to contain pottery typologically as well as stratigraphically intermediate between Lung-shan and the Shang phase represented by the Cheng-chou site of Erh-li-kang found in the early 1950s. Because this pottery showed unmistakable affinity with that of Shang, Lo-ta-miao was regarded as the type site of Early Shang. Now, in 1959, the same pottery was found at Erh-li-t'ou. Later, in the 1970s, it became clear that Lo-ta-miao, Tung-kan-kou, and Erh-li-t'ou were all members of the Erh-li-t'ou Culture, which was actually first brought to light as early as 1953 at Yü-ts'un, in Teng-feng.[26] Was the Erh-li-t'ou Culture Early Shang? We will discuss that issue presently.

As the result of Hsü Hsü-sheng's special attention, Erh-li-t'ou became a focus of archaeological excavations by the Institute of Archaeology. Reported excavations took place there in 1959,[27] 1960–64,[28] 1972–73,[29] 1975,[30] 1980,[31] and 1981.[32] Work here is ongoing, and no definitive reports have been published. However, a summary of the available materials suffices to characterize the Erh-li-t'ou Culture as a distinctive and significant phase at the very beginning of Chinese civilization.

Cultural remains at the Erh-li-t'ou site are scattered in an area 1.5 by 2.5 kilometers in size, which is on somewhat higher ground than the surrounding land. The deposits are in general quite deep, reaching 3 meters at places. Four strata are generally distinguished, all considered as belonging to a single cultural phase. Stratum 2 has very rich deposits and has yielded stamped-earth house founda-

23. H. S. Hsu, *KK* 1959 (11), 593.
24. *WWTKTL* 1957 (10), 48–51.
25. *KK* 1959 (10), 537–40.
26. *WWTKTL* 1954 (6), 18–24.
27. *KK* 1961 (2), 28–35.
28. *KK* 1965 (5), 215–24.
29. *KK* 1974 (4), 234–48; 1975 (5), 302–09, 294.
30. *KK* 1976 (4), 259–63; 1978 (4), 270.
31. *KK* 1983 (3), 199–205, 219.
32. *KK* 1984 (1), 37–40; 1984 (7), 582–90.

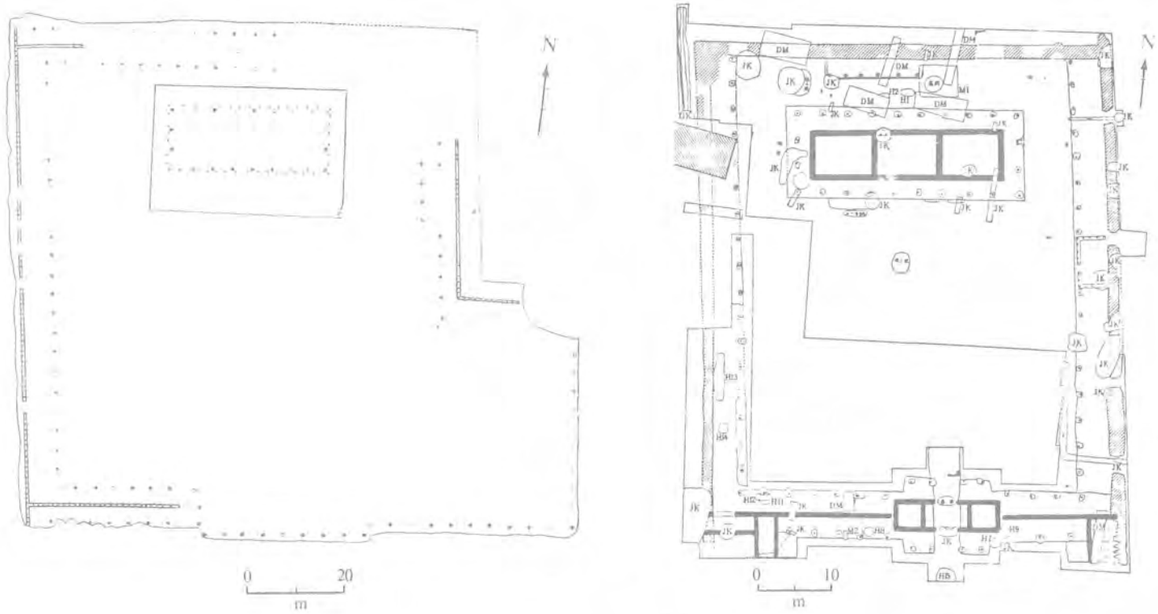
tions. Stratum 3 has remains of large buildings and tombs with cinnabars, but no abrupt break separates 2 and 3. Stratum 4 contains a large number of storage pits, indicating no sharp decrease of population. This fourth stratum corresponds with the Lower Erh-li-kang stratum of the Shang Culture site at Cheng-chou.[33] This preliminary stratigraphic information will become pertinent later with regard to the issue of whether Erh-li-t'ou was Hsia or Shang.

Within the area of the site have been found the foundations of two houses of palatial proportions, small house foundations and floors, storage pits, pottery kilns, roads paved with gravel or compacted earth, water wells, remains of bronze foundry, and human burials. No walled enclosures have been reported.

The two palatial foundations are the most commanding features at the site. Both are rectangular, oriented north-south, and built of stamped earth (fig. 262). Palace no. 1, excavated in 1960, was 108 by 100 meters in size. The foundation, from over 1 to over 2 meters thick, was built on sterile loessic ground of layers about 4.5 centimeters thick to a height of about 80 centimeters above the surrounding ground. At the northern center of the foundation was built a rectangular platform 36 by 25 meters in size. On top of this low platform are post-holes forming the rectangular outline of a hall measuring 30.4 by 1..4 meters. The walls and the roof of the hall were long gone, but enough remains are left to suggest timber framework, wattle-and-daub walls, and gabled roof. Some of the posts rested upon foundation boulders. Along the rims of the whole foundation were found fragments of stamped-earth walls about 45–60 centimeters wide. These and the pattern of post-holes along the perimeter of the foundation indicate that a continuous corridor was built around the entire structure. A large gate faced the south. Near this large foundation were patches of additional stamped-earth house foundations, some of which may have been accessory structures. On top of the foundation itself were found ten human burials. The palace is dated to stratum 3 of the site, but the burials to stratum 4; thus, the burials were not made at the time of construction. But some of them do show signs of ritual significance. One tomb, M-55, had a skeleton whose hands appeared to have been bound. Another, M-60, was a shallow round pit right outside one of the posts, and the burial pit had been filled with stamped earth.

Palace no. 2, which is 150 meters northeast of no. 1, is smaller but better preserved. It is about 58 meters east-west and about 73 meters north-south. It also had a hall in its north central part built on a square platform some 33 meters to a side, and the hall was partitioned into three rooms and extended on the outside by verandas. Along the eastern and western rims of the foundation were single

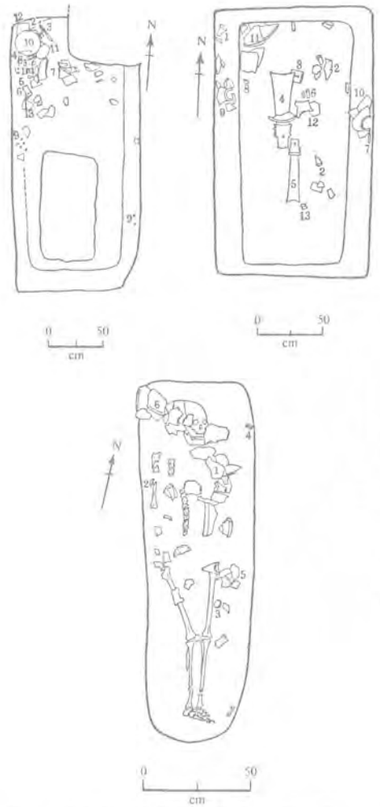
33. *KK* 1984 (7), 589.



202. Two palatial foundations (*left:* no. 1; *right:* no. 2) at Erh-li-t'ou, Yen-shih, Honan. (From *KK* 1974, no. 4, p. 235; *KK* 1983, no. 3, p. 207.)

corridors, and along the southern side was a double corridor. A verandaed gate faced the south. Under the courtyard thus formed by the hall and the corridors was a drainage system consisting of pottery pipes. North of the hall was a large tomb of the pit-grave type, over 5 meters long and 4 meters wide. Around the pit walls was a second-level platform formed by excavating a small pit in the lower part of the grave pit. The fill of the pit was stamped in layers. The tomb, which according to stratigraphy was constructed at the same time as the hall, was plundered clean, but remaining fragments of lacquer and cinnabar and a dog skeleton suggest that the tomb was well furnished.

Other than the two palaces, many smaller houses were also found, although no ground plan is available. Most of the houses were built on rectangular foundations of various sizes. Many were elongated and contained multiple rooms. Some were semisubterranean. The contrast in wealth is also seen in the burials that have been reported. Some of the tombs were furnished, and these often yield remains of lacquered coffins and cinnabar fragments (fig. 263); others were not furnished. A few of the tombs, like the ones associated with palace no. 1, show signs of



263. Human burials at Erh-li-t'ou. (From *KK* 1983, no. 3, p. 202.)

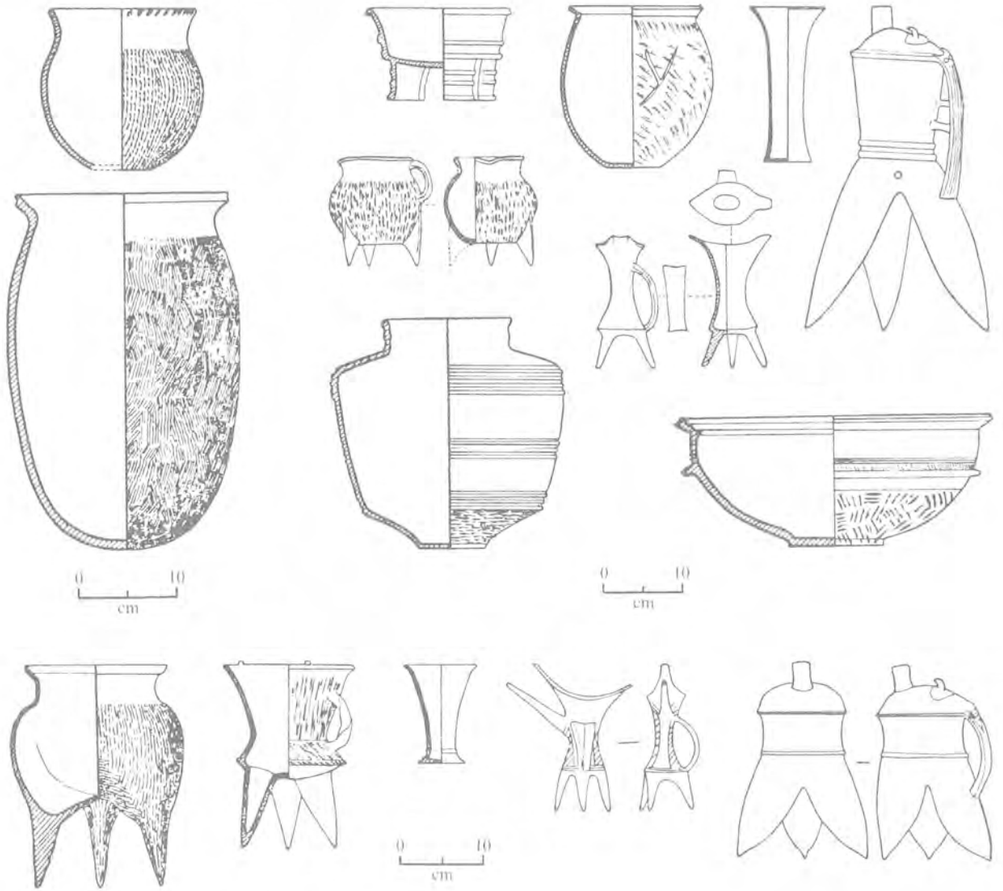
violence: the skeleton in M-205 has a twisted posture, with hands tied above the head, and was apparently buried alive. M-24 was buried prone, one hand underneath the body and the other on the back. There is as yet no report on the overall layout of the tombs in relation to the houses and the palaces. A site plan, when available, should be most interesting.

Stone, shell, and bone implements and pottery constitute the bulk of the artifacts found at the site. The pottery was mostly gray, of sandy or fine paste, made by coils, molding, hand, or wheel. Red, black, and buff wares also occasionally occur. The surface was predominantly impressed with cord-marks, but basket-impressions (especially at the earliest level), check-impressions, and bowstrings also occurred. In the later strata the pitting of the interior surface was characteristic. In type, the common utilitarian vessels were the urn, large-mouth beaker, *ting* tripod, plate on three flat legs, flat-based basin, *kuei* tripod, squeezer (bowl or cup with grooved interior), jar with shoulder-lugs, and (later in the sequence) *tseng* steamer and *li* tripod. In addition, there was an assemblage of wine vessels, including the characteristic *ho* pot, *chüeh* cup, *chia* cup, and *ku* cup. These are identical to the bronze vessel types bearing the same names, some found contemporaneously and others later. Another distinctive vessel type found here was the four-legged pottery *ting* (fig. 264).

Stone, shell, and bone remained the only materials for agricultural implements: stone and shell knives and sickles and stone, shell, and bone hoes. Stone was also the primary material for the ax, adz, chisel, and arrowhead, but a few bronze tools have been found—knife, awl, chisel, and adz. (The adz turned out to be 98 percent copper and only 1 percent tin.) There were also bronze arrowheads, a bronze fishhook, and bronze disks, probably ornaments on wooden or fabric products. But the major categories of bronzes in terms of quantity and size are ritual vessels, weapons, and musical instruments. Although there is a full range of wine vessel types in pottery—suggesting the parallel existence of such types in bronze—the only bronze vessel type unearthed so far is the *chüeh* cup, seven of which have been reported (fig. 265). These cups were fully bronze (92 percent copper, 7 percent tin, in one analysis) and were cast by (perhaps four) piece-molds.[34] Among the bronze weapons found so far are the halberds and the knife (fig. 266). The only bronze musical instruments that have been found are small bells, but a stone *ch'ing* has also been brought to light.

Other valuable objects are abundant. These include jades, especially the *ts'ung* tubes and the long ceremonial knives and axes (fig. 267), cowries, turquoise and

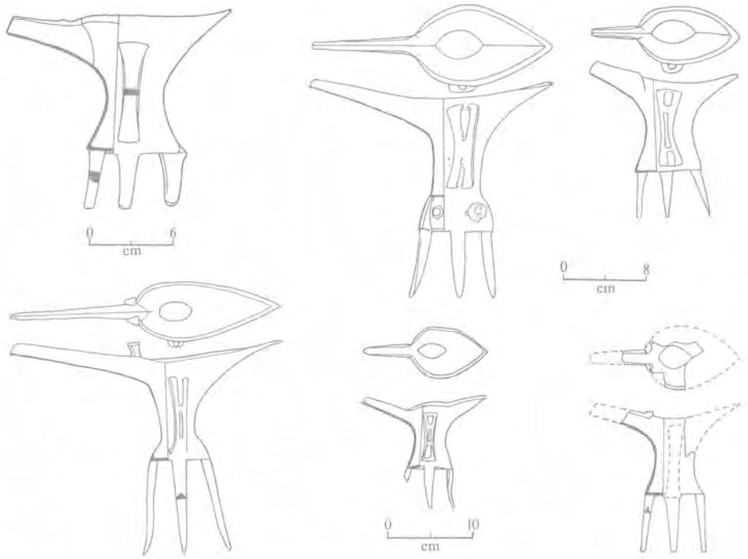
34. For piece-mold technology, distinctive of Chinese bronzes, see Noel Barnard, *Bronze Casting and Bronze Alloys in Ancient China*, Monumenta Serica monograph 14, 1961.

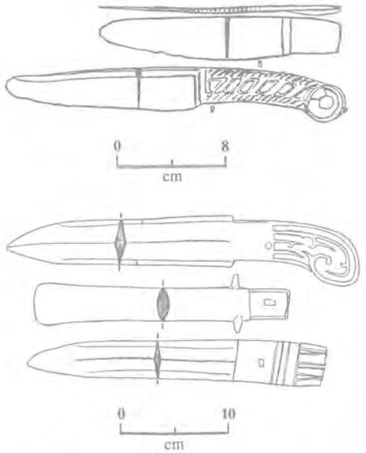


264. Pottery types at Erh-li-t'ou. (From *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, fig. 57.)

turquoise inlays (fig. 268), and lacquer with wooden core, of such types as the case, *tou*, cylinder, bowl, *ku* cup, and drum (fig. 269). The turquoise-inlaid plate, the lacquer piece, and many engraved pottery designs (fig. 270) point to the dominance of the animal motif in Erh-li-t'ou art design. Shoulder blades of the pig, cattle, and sheep were found to have been used for divination, and an incised

265. Bronze *chüeh* cups from Erh-li-t'ou. (From *KK* 1975, no. 5, p. 305; 1976, no. 4, p. 260; 1978, no. 4, p. 270; 1983, no. 3, p. 203.)





266. Bronze tools and weapons from Erh-li-t'ou. (From *KK* 1975, no. 5, p. 305; 1976, no. 4, p. 260.)

fish appears on a piece of bone, but no oracle bone inscriptions are found. A number of signs and symbols occur on pottery vessels.

Despite the preliminary nature of the reports of the ongoing excavation, it is clear that Erh-li-t'ou has yielded a whole range of remains indicative of a stage of cultural and social development qualitatively different from the Lung-shan Culture, a stage that is characterized by palatial architecture, tombs of royal proportions on the An-yang scale furnished with scarce goods, bronze ritual vessels and weapons, sets of specialized wine vessels, possible human sacrifice at rituals, and a hint of writing. These new features point to the existence in Erh-li-t'ou society of a powerful and wealthy elite that was decidedly a level higher than the chiefly aristocracy of the Lung-shan Culture sites.

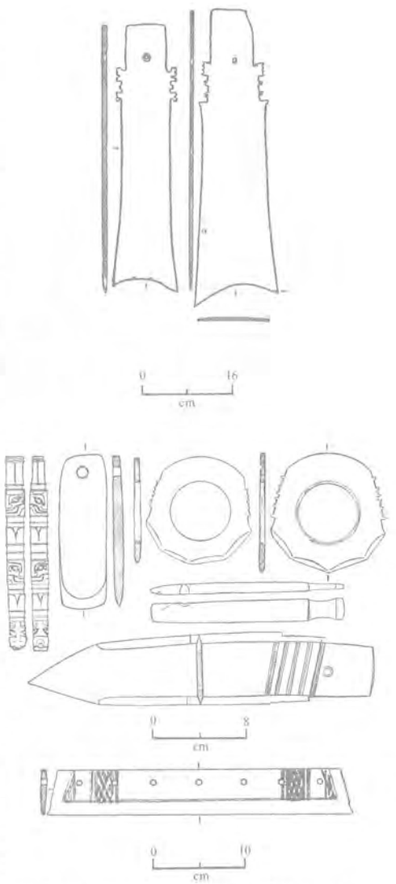
Dozens of sites of this new culture have been found. They have been reported from a number of counties in central and western Honan,[35] concentrating in the Lo-ho and Ying-shui and Ju-shui river valleys, and southwestern Shansi,[36] centering in the Fen-ho, Su-shui, and K'uai-shui river valleys—precisely the area of

35. *KK* 1965 (5), 233; *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu,* Peking: Wen-wu Press, 1984, p. 212.
36. P. C. Li, *CYWW* 1981 (1), 25.

distribution of the west and central Honan phase of the Lung-shan Culture (fig. 272). Within this area, the sites in southwestern Shansi, prominently the one at Tung-hsia-feng,[37] are believed to constitute a local phase. But the whole Erh-li-t'ou Culture is quite decidedly derived from the Lung-shan Culture of the same region. In fact, at several stratified sites such as Ts'o-li in Lo-yang[38] and Hsin-chai in Mi-hsien,[39] the stylistic development from Lung-shan to Erh-li-t'ou through intermediate strata is well established.[40]

On the other hand, the historical identity of the Erh-li-t'ou Culture has been the subject of a prolonged national debate since the late 1970s. As stated earlier, even though the Erh-li-t'ou site was identified as the result of a hunting expedition for the Ruins of Hsia, it was from the first regarded as an Early Shang site because its pottery was similar to the Early Shang pottery identified earlier in Cheng-chou and Lo-yang. Another powerful reason for the Early Shang identification was the fact that Yen-shih, the city in which Erh-li-t'ou is located, is traditionally believed to be the location of one of T'ang's capital cities, Hsi Po, or Western Po. If Erh-li-t'ou was Early Shang, Cheng-chou Middle Shang, and An-yang late Shang, then the whole developmental history of the Shang civilization is complete. This sequence is completely possible in terms of the archaeological development of the Lung-shan, Early Shang, Middle Shang, and Late Shang assemblages.

However, in the 1970s a number of archaeologists became skeptical of the Early Shang identification. As T'ung Chu-ch'en pointed out in 1975, the geographical area of distribution of the Erh-li-t'ou Culture coincided remarkably with the traditional geographic distribution of the Hsia people,[41] and the newly published radiocarbon dates (ca. 1800–2100 B.C.) of the Erh-li-t'ou Culture were appropriate for the Hsia Dynasty but a little too early for the Shang (fig. 271). Additionally, in 1976 I brought attention to the traditional belief that the Shang originated in the east, and also to the archaeological fact that the Shang and the eastern coastal Neolithic cultures shared many characteristics.[42] In the meantime, the Wang-ch'eng-kang site, with its stamped-earth enclosure, was excavated in 1977, and the idea that it might be identified with the traditional town of Yang-



267. Jades from Erh-li-t'ou. (From *KK* 1976, no. 4, p. 260; 1978, no. 4, p. 270; 1983, no. 3, p. 204.)

37. *KK* 1980 (2), 97–107.
38. *KK* 1978 (1), 5–17.
39. *KK* 1981 (5), 398–408.
40. Y. S. Li, *CKHNL* 1 (1980), 32–49; C. H. An, *CKHNL* 2 (1982), 153–60; Y. S. Fang, *KKYWW* 1984 (3), 53–57.
41. *WW* 1975 (6), 29–33, 84.
42. K. C. Chang, in: *Papers Presented to Mr. Shen Kang-po on His Eightieth Birthday,* Taipei: Lien-ching, 1976, pp. 151–69.

268. Bronze plaque inlaid with turquoise at Erh-li-t'ou. (From *KK* 1984, no. 1, pl. 4.)

269. Fragment of lacquerware with engraved designs at Erh-li-t'ou. (From *KK* 1983, no. 3, p. 203.)

ch'eng, one of King Yü's capitals, was seriously considered.[43] In November, 1977, a symposium was held at the site to discuss the whole issue of Hsia civilization and the relevance of the Wang-ch'eng-kang site to it, and it was attended by 110 archaeologists.[44] The importance of this issue to Chinese archaeology may be shown by the fact that the Fourth Annual Meeting of the Archaeological Society of China, held in Cheng-chou, which is next door to Wang-ch'eng-kang, was devoted exclusively to the Chinese Bronze Age and to the investigations of the Hsia and Shang civilizations.[45] Opinions at these meetings were divided. Some regarded Erh-li-t'ou as the culture of the Hsia people and the four strata at Erh-li-t'ou as all of Hsia Dynasty, but others regarded only strata 1 and 2 as Hsia Dynasty and strata 3 and 4 as Shang Dynasty. Among those who hold the latter opinion are some who would push the Hsia Dynasty back into the Lung-shan Culture.[46]

Insofar as Erh-li-t'ou site is concerned, we should withhold a final assessment until the definitive reports are available. In the preliminary reports and discussion there are conflicts of opinion that cannot be reconciled on the basis of sketchy descriptions in the preliminary notes about the site. For example, some reports emphasize the break between strata 2 and 3—arguing for a major cultural disconformity as the result of Shang's conquest of Hsia—but others talk about the continuity and gradual change from 2 to 3.[47] The recent discovery of a Shang town with wall enclosures in Yen-shih, a more logical candidate for the traditional town of Hsi Po, may remove some of the grounds for the argument for Early Shang at Erh-li-t'ou. But as far as Erh-li-t'ou Culture goes, the exact coincidence of its geographic area with the area of distribution of the traditional Hsia Dynasty capital cities cannot be purely accidental (fig. 272).[48] Until writing is found from the Erh-li-t'ou Culture that identifies it with one or another of the textual dynasties and ethnic groups, the issue of Erh-li-t'ou and Hsia cannot be resolved. But this author bets on Hsia, not on Early Shang.[49]

43. *Ho-nan Wen-po T'ung-hsun* 1978 (1), 30–31.
44. Ibid., 1978 (1), 22–24, 32–33.
45. *CYWW* 1983 (2), 113–14; *WW* 1983 (3), 1–7; *KK* 1983 (8), 767–68.
46. The major authors and their principal publications on this Hsia issue are: Tsou Heng, in *Hsia Shang Chou k'ao-ku-hsüeh lun-wen-chi,* Peking: Wen-wu Press, 1980; *Ho-nan wen-po t'ung-hsun* 1978 (1), 34–35, 64; 1980 (2), 9–11; *WW* 1979 (3), 64–69; *Yin Wei-chang,* in *KK* 1978 (1), 1–4; 1984 (4), 352–56; *WW* 1984 (2), 55–62; *Wu Ju-tso,* in *WW* 1978 (9), 70–73; *Chung-kuo-shih Yen-chiu* 1979 (2), 132–41; *An Chin-huai,* in *Chung-kuo Li-shih Po-wu-kuan Kuan-k'an* 1 (1979), 24–28; *WW* 1983 (3), 1–7; *Fang Yu-sheng* in *Ho-nan wen-po t'ung-hsun* 1980 (1), 17–19, 24; *KKYWW* 1984 (3), 53–57.
47. *KK* 1984 (4), 352–56; 1984 (7), 589.
48. Yen Keng-wan, *Ta-lu Tsa-chih* 61, no. 5 (1980), 1–17.
49. K. C. Chang, "The Origin of Shang and the Problem of Xia in Chinese Archaeology," in: *The Great Bronze Age of China: A Symposium,* George Kuwayama, ed., Los Angeles County Museum of Art, 1983, pp. 10–15.

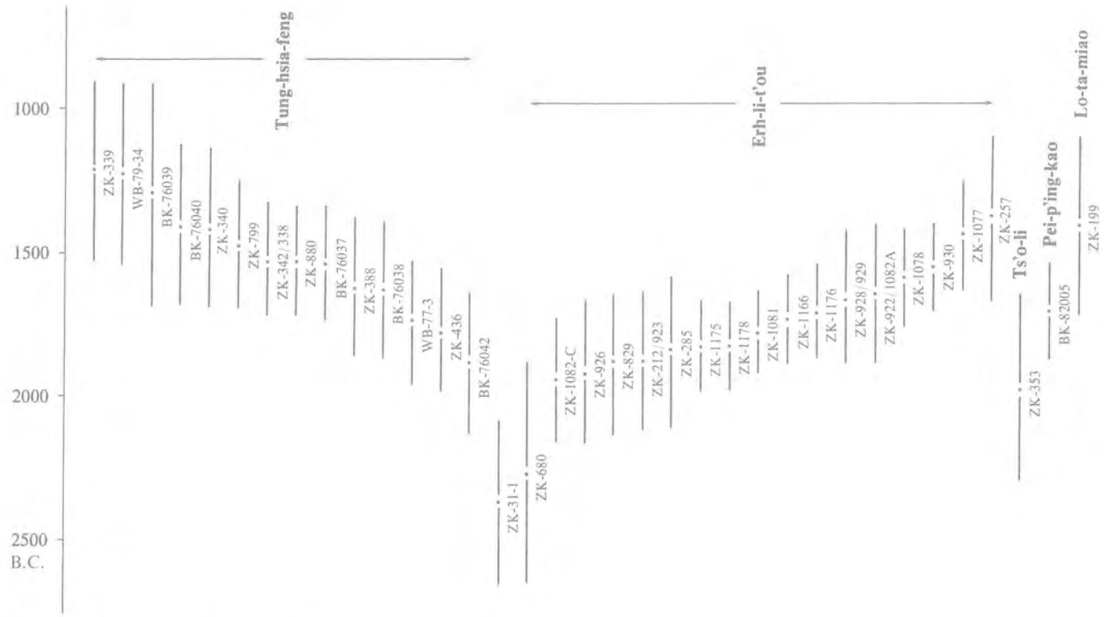
The Beginning of Shang Civilization

Our inability to clinch the historical identity of the Erh-li-t'ou Culture is above all due to the absence of written documents at Erh-li-t'ou sites thus far. This point is made especially clear when we compare Erh-li-t'ou with Yin-hsü in An-yang. There is no question that the archaeological finds here were those left by the Shang people during the final two or three hundred years of the Shang dynasty, not merely because historical records mention a Yin-hsü (Ruin of Yin) on the Huan River here, but because the historians have been able to work out, from oracle bone inscriptions found at the site, a list of kings that is fundamentally identical with the list of Shang kings recorded in the early texts.

According to the early texts, on vanquishing Chieh, the last king of Hsia, whose capital city was at Chen-hsün, generally believed to be located between Yen-shih and Kung-hsien in northwestern Honan,[50] T'ang founded the Shang Dynasty and established his royal capital at Po. The location of Po is in dispute, but most students agree with Tung Tso-pin[51] that it is located near Po-hsien in Anhwei and Shang-ch'iu in eastern Honan. It is also generally recognized that T'ang also set up additional capital cities, all referred to as Po, including Hsi Po, the Western Po, near Yen-shih, that is, near the vanquished Hsia capital at Chen-hsün.[52] After T'ang, twenty-nine kings reigned under the Shang Dynasty, and the capital city moved five times, to Hsiao (or Ao), Hsiang, Keng, Pi, and Yen, before finally moving, under King P'an Keng, to Yin (fig. 273). In 1899 (or 1898 in another version) some inscribed oracle bones came to the attention of antiquarians and were traced to their source at Hsiao-t'un village northwest of the city of An-yang, in northern Honan. After a series of pioneering studies by Lo Chen-yü, Wang Kuo-wei, and others, it was determined that these inscriptions pertained to the divinations done on behalf of the Shang kings who reigned at Yin. In 1928, the Academia Sinica began its fifteen seasons of scientific excavations, disclosing a city of immense proportions, the seat of a civilization characterized by writing, flowering bronze and jade arts, monumental architecture, a powerful kingship, a ritual calendar, human sacrifice, and a great war machine headed by the horse-drawn chariot.[53] Since 1950, selective, intensive diggings have taken

50. Chao Tieh-han, *Ku-shih k'ao-shu,* Taipei: Cheng-chung, 1965, pp. 65–68.
51. Tung Tso-pin, *Yin li p'u,* Li-chuang: Inst. Hist. Philol., Academia Sinica, 1945, vol. 9, p. 63.
52. Chao, *Ku-shih k'ao-shu,* pp. 159–210.
53. It is impossible to provide an exhaustive bibliography for the An-yang material here, but much of the original material can be found in the following: *An-yang fa-chüeh pao-kao,* 4 vols., Peking: Inst. Hist. and Philol., Academia Sinica, 1929–33; *T'ien-yeh k'ao-ku pao-kao,* 1936; *Chung-kuo k'ao-ku hsüeh-pao,* vols. 2–4, 1938–50; *Archaeologia Sinica,* vol. 2 (Hsiao-t'un) and vol. 3 (Hou-chia-chuang); and the *Bulletin of the Institute of History and Philology,* Academia Sinica, various numbers. Because of national

270. Incised human and animal designs on pottery at Erh-li-t'ou. (From *KK* 1965, no. 5, pl. 3.)



271. Radiocarbon profile of the Erh-li-t'ou Culture.

place continuously.[54] Shang remains are now known in the An-yang region from no fewer than seventeen sites, covering an area of approximately twenty-four square kilometers (fig. 274).[55]

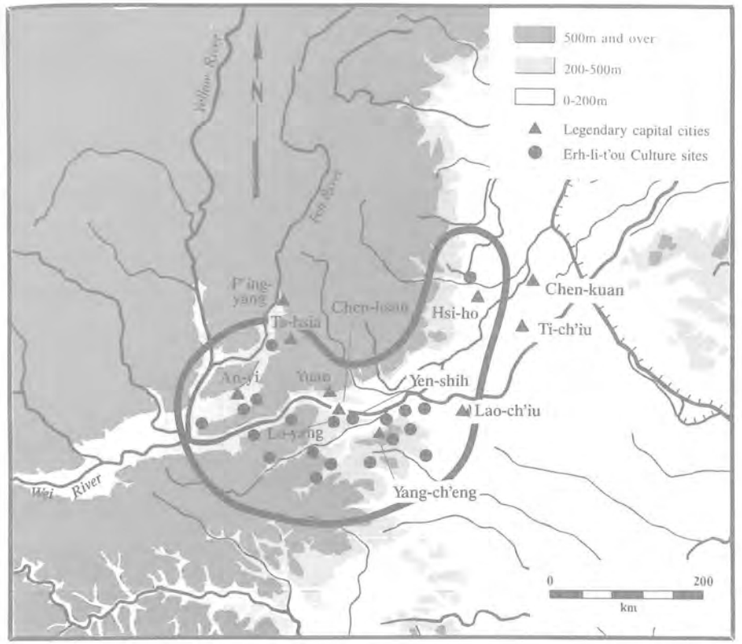
The importance of the An-yang excavations in the history of archaeology in China cannot be exaggerated.[56] The scale of the work, time, money, and labor devoted to the excavations and the scientific precision of the digging are still

and international events since 1937, much of the An-yang material excavated before the war remains unpublished. See also recent syntheses of the remains at An-yang by Li Chi, *An-yang,* Seattle: University of Washington Press, 1976; and S. Umehara, *Yin Hsü,* Tokyo: Asahi Shimbunsha, 1964.

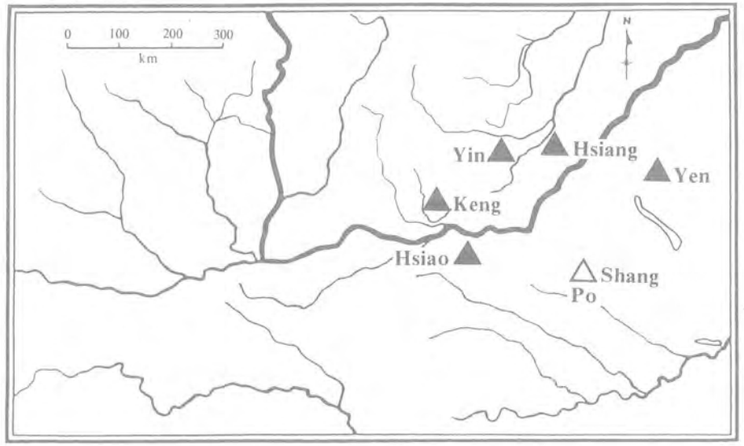
54. For a bibliography of An-yang excavations since 1950, see *Shang Civilization,* New Haven: Yale University Press, 1980.

55. Following historians, archaeologists often refer to the period of Shang when An-yang (Yin) was the capital as the Yin period and to the remains found here as Yin remains. For historians, it seems reasonable to make such a subdivision, but the remains at An-yang were deposited during a period that was probably longer than the 273 years when An-yang was the capital site. I use the word Shang for the entire period and use archaeological phases to designate chronological segments, of which Yin is one.

56. See Li Chi, "Importance of the An-yang Discoveries in Prefacing Known Chinese History with a New Chapter," *Annals Acad. Sinica* 2 (1955), 91–102.

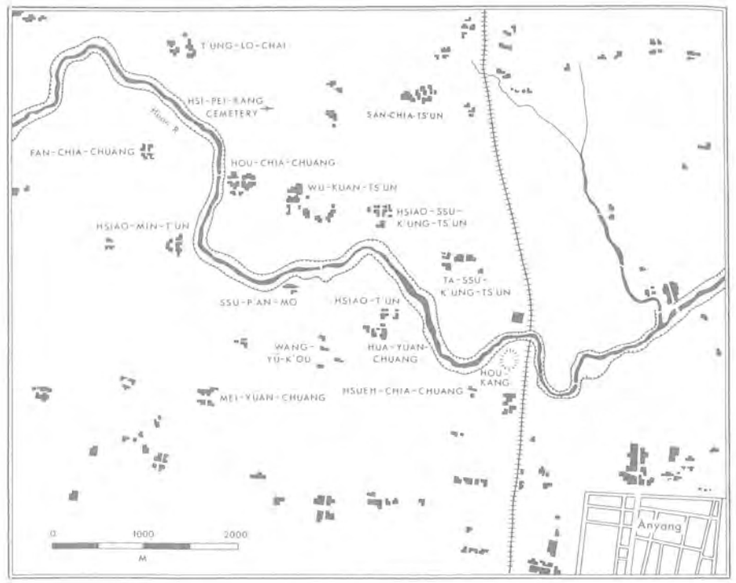


272. Major Erh-li-t'ou Culture sites and traditional Hsia Dynasty capitals.



273. Traditional Shang Dynasty capitals.

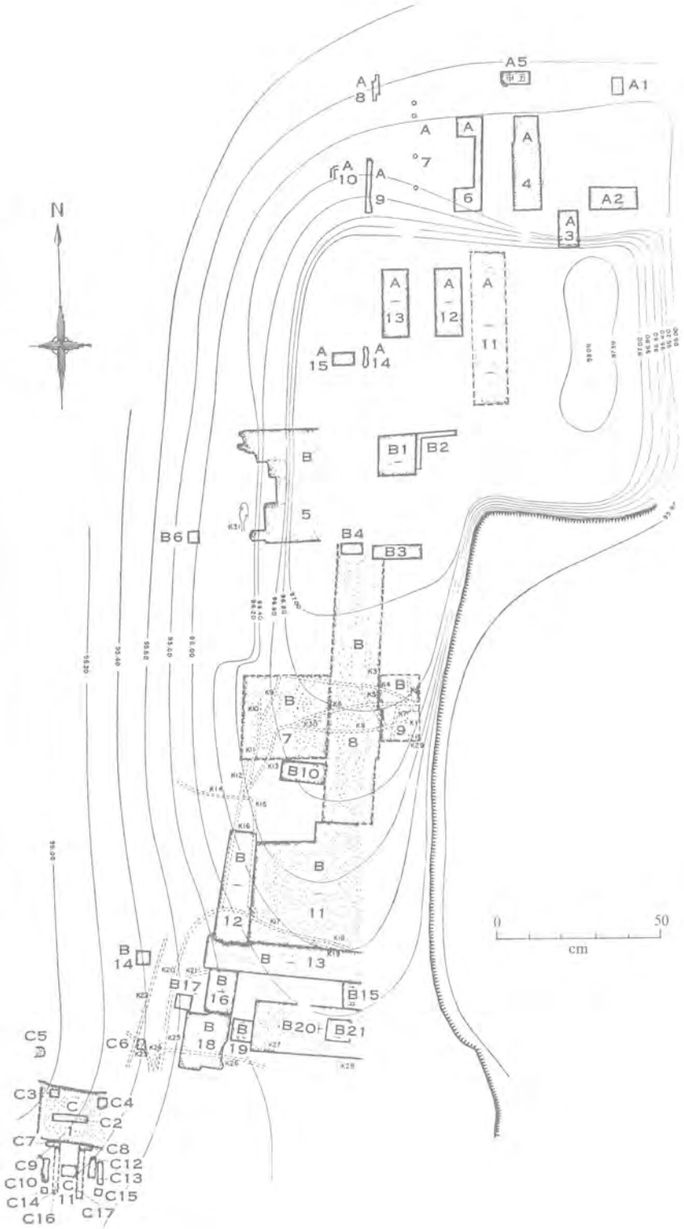
274. Shang sites in An-yang, Honan.



surpassed only rarely in China. It was the An-yang excavation that settled, once and for all, the controversial problem of the existence of this dynasty, previously accredited only by legends. It was also the first site given a date in the earliest segment of Chinese written history, and it thus ties written history to the prehistoric Neolithic cultures. However, work was interrupted by the Sino-Japanese War, leaving many sites in the An-yang group only partially excavated, and results have yet to be completely published. The center of Shang studies has tended to shift from An-yang to a few other Shang sites, some of them older and some more alluring. An-yang's fundamental importance, however, can never be doubted. Among other things, the oracle bone inscriptions from this area furnish much indispensable information concerning Shang culture and society that other Shang sites may never be able to match.

The Shang sites of the An-yang region were apparently articulated into a complex network of specialized parts.

The Yin palaces south of the Huan-ho (near the modern village of Hsiao-t'un) constituted the center of the Yin-hsü, surrounded on all sides by habitation clusters, work-



275. Shang house floors at the site of Hsiao-min-t'un, An-yang. (Based on Shih Chang-ju, *Yin-hsü chien-chu yi-ts'un*, 1959, fig. 4.

shops, and tombs. North of the Huan-ho, with Wu-kuan-ts'un and the area north of Hou-chia-chuang [Hsi-pei-kang] as a center, was the area of the royal cemetery, containing burials of noblemen and many thousand sacrificial burials, an area also encircled by Yin settlements and burials. Conditions of cultural deposits indicate that the neighborhood of Hsiao-t'un was the region of the greatest abundance, and on its outskirts were settlements of varying sizes. Remains at these settlements do not occur in a continuous area, but the area of the distribution of the settlements became greater as groups moved away from the center. Palaces and the royal cemetery were apparently under the direct control of the ruling class, and the settlements surrounding Hsiao-t'un were probably habitations of [noblemen and the common people]. The latter classes were buried near where they lived, resulting in the intermixture of living and burial remains, although it is possible that [the noblemen] had their own cemeteries also. In the neighborhoods of the settlements were many workshops. For instance, large bronze foundry sites have been found at Miao-p'u-pei-ti and Hsiao-min-t'un, and bone workshops were identified at Pei-hsin-chuang and Ta-ssu-k'ung-ts'un. Even in the area of the palaces, many clay molds and bone materials were found. These may suggest that handicrafts were carried out under the direct control of the [upper classes], and that workshops often occurred in habitation areas [of the settlements] but were not necessarily concentrated in [special industrial] quarters.[57]

All this goes to show that the entire An-yang group formed a tightly organized unit, and the presence of the Royal House in this group is symbolized by the administrative and ceremonial center near Hsiao-t'un and the "royal cemetery" at Hsi-pei-kang.

The excavated part of the site at Hsiao-t'un (fig. 275) is divided into three sections. Section A, the northernmost, consists of fifteen parallel, rectangular houses built on stamped-earth foundations. Section B, in the middle, includes twenty-one large houses, rectangular or square, built on stamped-earth foundations and accompanied by a number of burials, including horse chariots, the Shang's powerful battle machine (fig. 276). The houses are arranged in three rows on a north-south axis, the central row consisting of three large houses and five gates. Sections A and B are separated by a square stamped-earth foundation (of pure loess), which is thought to be a ceremonial altar. Section C, at the southwestern corner of the site, consists of seventeen stamped-earth foundations, arranged according to a preconceived plan and again accompanied by burials. Under the foundations in section B is a complicated system of underground water ditches. The entire area of the Hsiao-t'un settlement measures about ten thousand

57. *KK* 1961 (2), 65.

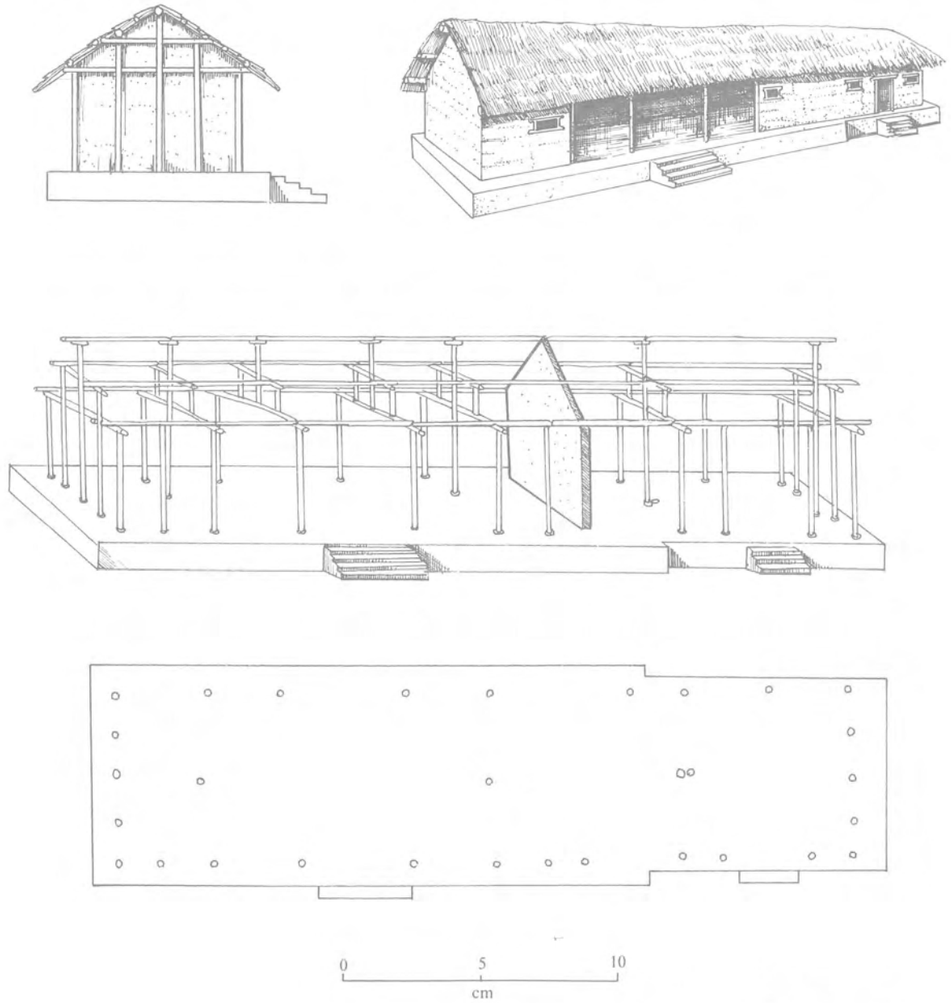
276. Chariot burial at Ta-ssu-k'ung-ts'un, An-yang. (From *KK* 1972, no. 4, pl. 2.)

square meters. According to the interpretation of Shih Chang-ju, section A was probably the dwelling area of the settlement, section B the royal temples, and section C a ceremonial quarter. It is noteworthy, however, that these three sections seem to have been constructed at different times, A being the earliest and C the latest.[58] In view of the large scale of the construction, the elaborate planning of the houses, the extensive human sacrifice associated with the construction of the temples and the ceremonial altar, the innumerable inscribed oracle bones found at the site, and the mode of construction in stamped earth (fig. 277) in contrast to the ordinary semisubterranean dwellings, it appears reasonable to assume that this settlement was the center of the Royal House of the Yin dynasty. These palaces and temples, as Tung Tso-pin described them, "were all above-ground houses with stamped-earth foundations and stone-pillar supporters [fig. 278]. Although they were constructed of wattle-and-daub, these structures looked glorious and solemn enough [fig. 279]. Near these foundations are often semisubterranean pit houses, about four meters in diameter and the same in depth. These were presumably the service area of the Royal House subordinates. Inside the pit houses are round or rectangular bins several meters deep, possibly places of storage."[59] These service areas included bronze foundries, stone and bone work-

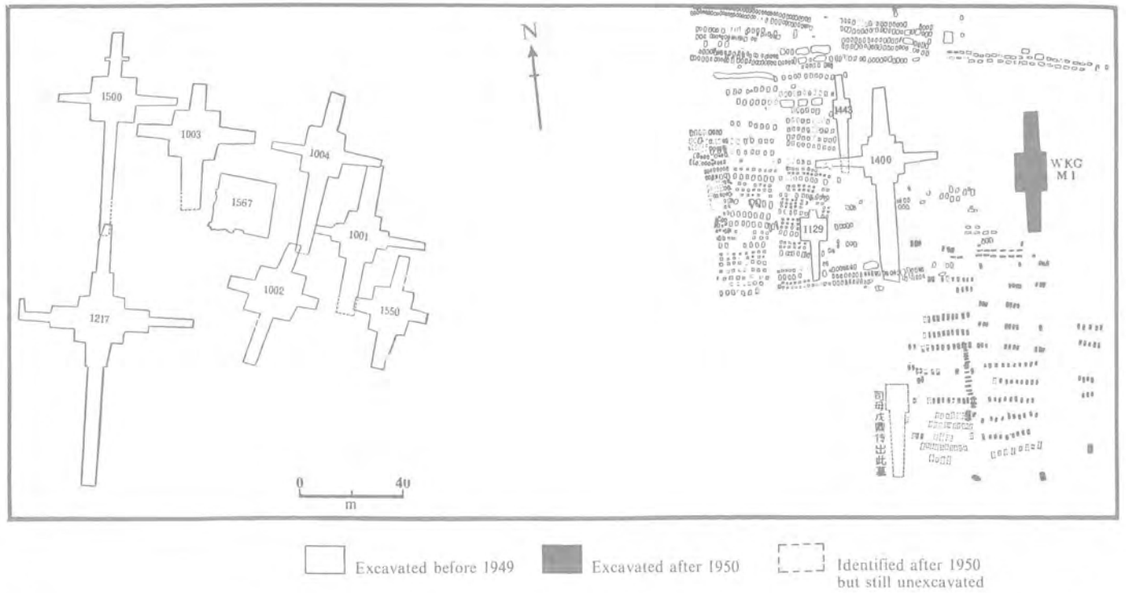
58. C. J. Shih, *Yin-hsü chien-chu yi-ts'un,* Taipei, 1959.
59. C. J. Shih, *Ta-lu Tsa-chih* 5 (1950), 12.

277. Side view of stamped-earth layers of a Shang house floor at Hsiao-t'un, An-yang. (After Shih Chang-ju, *Yin-hsü chien-chu yi-ts'un,* 1959, pl. 11.)

278. The stamped-earth floor with stone post bases of a Shang house at Hsiao-t'un, An-yang. (From Shih Chang-ju, *Yin-hsü chien-chu yi-ts'un,* 1959, pl. 9.)



279. Reconstruction of a Shang house at Hsiao-t'un, An-yang. (From Shih Chang-ju, *Annals of Academia Sinica,* 1, 1954, p. 276.)



280. Plan of the royal cemetery of the Shang Dynasty at Hsi-pei-kang, An-yang. (From *Hsin Chung-kuo ti k'ao-ku fa-hsien ho yen-chiu*, 1984, fig. 61.)

shops, and pottery kilns. But some of these pit houses must also have served as domiciles.

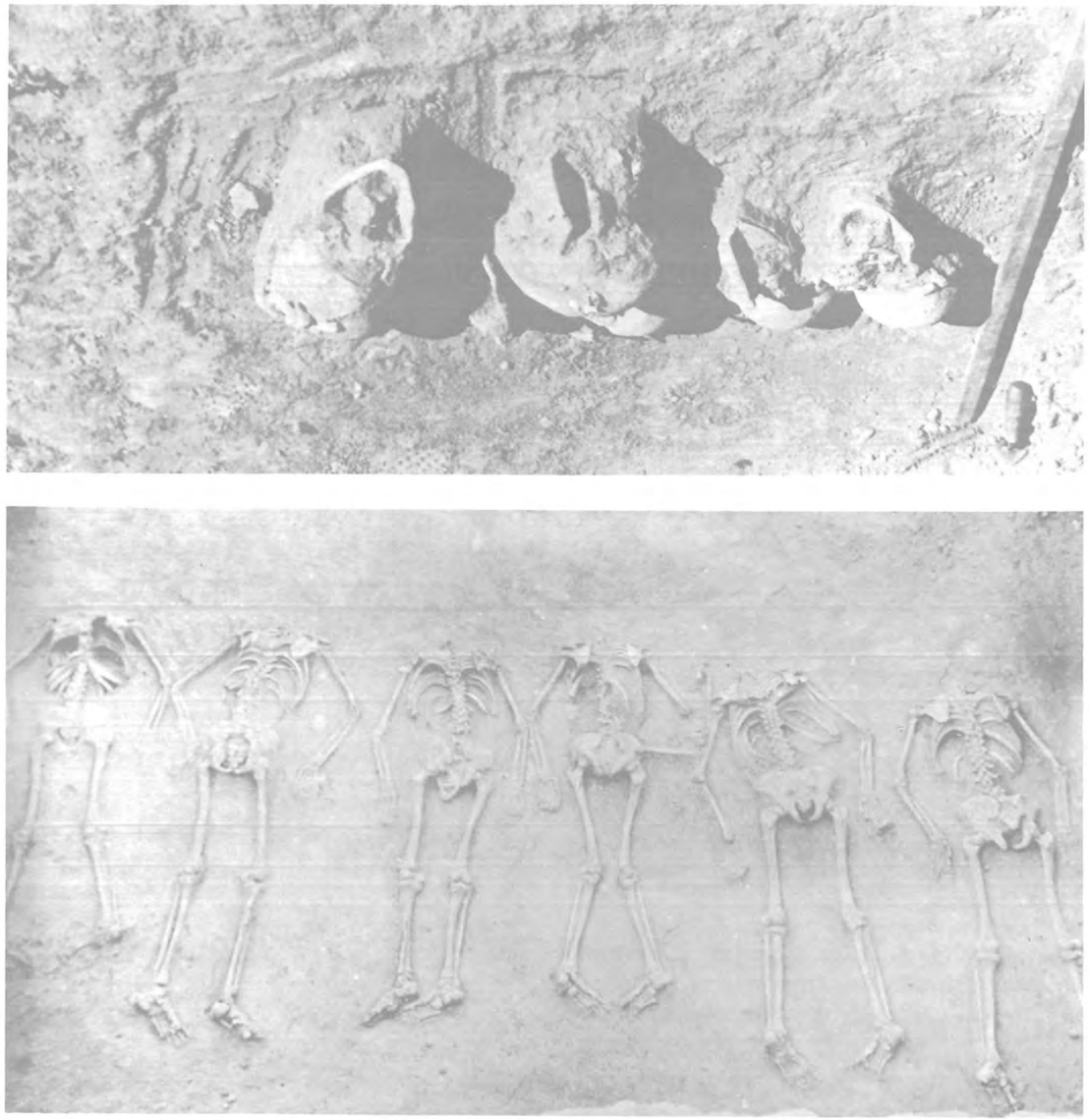
Hsi-pei-kang, near Hou-chia-chuang and including the area north of Wu-kuan-ts'un, is best known for its burial complex, which includes eleven large graves (the royal cemetery) and more than a thousand small graves, although dwellings and workshops have also been found here. The eleven large tombs (fig. 280) are grouped into a western cluster of seven and an eastern cluster of four, happily coinciding in number with the eleven kings from P'an Keng to Ti Yi who ruled from An-yang. (The last king at An-yang, Ti Hsin, was supposedly burned to death when the capital fell to the Chou invaders.) Although it has not yet been established beyond a doubt that these were the kings' graves, we know that they were constructed on a large scale, with elaborate ceremonial procedures, and that their furnishings represent the highest achievements of Shang technology and art.[60]

60. A full report of the Hsi-pei-kang excavations is being prepared by Kao Ch'ü-hsün of the Academia Sinica in Taipei, and six of the large tombs have been fully described in *Archaeologia Sinica* 3 (Hou-chia-chuang), nos. 2–8 (1962–76). A large tomb excavated in 1950 is described in Kuo Pao-chün, *KKHP* 5 (1951). Preliminary and general descriptions of the royal cemetery as a whole are available in Kao Ch'ü-hsün, *Bull. Dept. Archaeol. Anthropol.* (National Taiwan University), 13–14 (1959), 1–9; Paul Pelliot, "The Royal Tombs of An-yang," in *Independence, Convergence, and Borrowing in Institutions, Thought, and Art*, Cambridge: Harvard University Press, 1937; and Tung Tso-pin, *Ta-lu Tsa-chih* 1 (1950), 15–18.

281. Grave pit of royal tomb no. 1001 at Hsi-pei-kang, An-yang. (From Liang Ssu-yung and Kao Ch'ü-hsun, *Hsi-pei-kang 1001 ta mu*, 1962, pl. 3.)

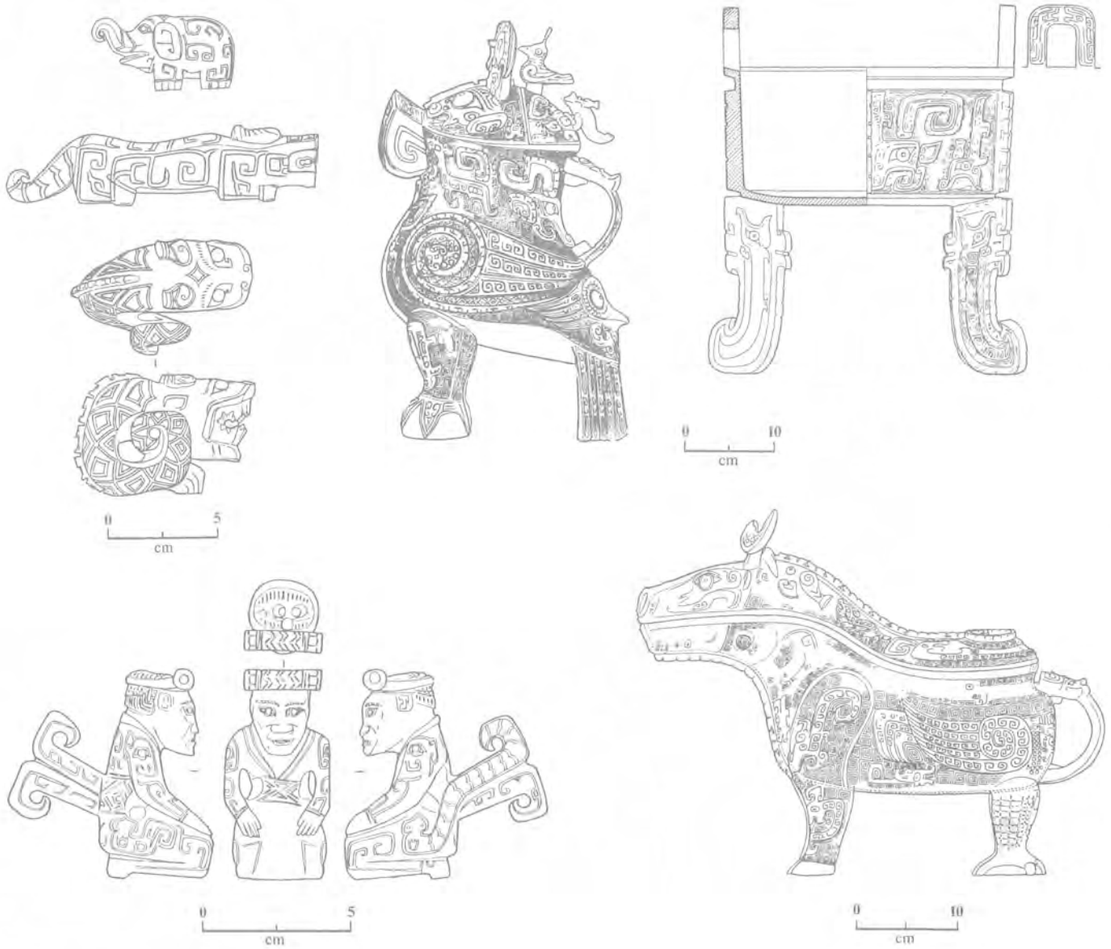
According to the estimates of Li Chi, the earth-digging alone required at least seven thousand working days for each of the large graves of Hsi-pei-kang.[61] All the graves are square or oblong, oriented north-south, with long ramps on two (north and south) or four sides. The best known of the tombs, no. 1001, is shaped like a cross in the ground plan and forms a pit about ten meters deep, with slightly sloping walls (fig. 281). The mouth of the pit is nineteen meters long, north to south, and fourteen meters wide. A ramp leads from the ground to the bottom of the grave pit on each of the four sides; the southern ramp, the longest, measures about thirty meters. Within the pit a wooden chamber was built; the chief coffin of the tomb was probably placed in the center. Many sacrificial burials occurred in various spots within the pit but were concentrated within the chamber itself and in the southern ramp. Some of the sacrifices were provided with coffins and small

61. Li Chi, Preface to Shih, *Yin-hsü chien-chu yi-ts'un*, p. iii.



282. Sacrificial burials in royal tomb no. 1001 at Hsi-pei-kang, An-yang. (From Liang Ssu-yung and Kao Ch'ü-hsun, *Hsi-pei-kang 1001 ta mu*, 1962, pls. 28–29.)

283. Stone sculptures from royal tomb no. 1001 at Hsi-pei-kang, An-yang. (From Liang Ssu-yung and Kao Ch'ü-hsun, *Hsi-pei-kang 1001 ta mu*, 1962.)



284. Bronze vessels (*right*) and jades (*left*) from the tomb of Fu Hao at Hsiao-t'un. (From *Yin-hsü Fu Hao mu*, 1980.)

grave pits, but most were without either coffin or pit, and many were separate burials of heads and trunks (fig. 282). The tomb was abundantly furnished with stone, jade, shell, bone, antler, tooth, bronze, and pottery artifacts, including many that are the best examples of Shang art (fig. 283).[62]

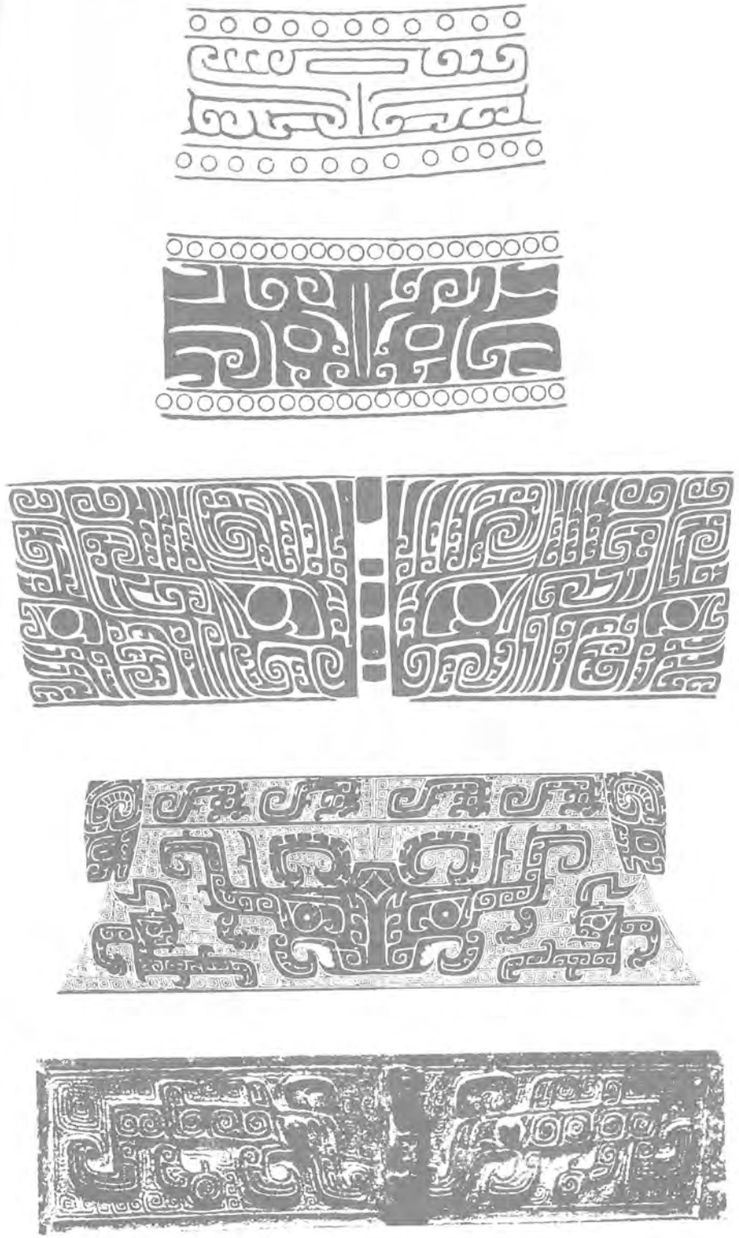
Li Chi has listed the following as the most significant contributions of the Hsi-pei-kang excavations to Shang archaeology: they demonstrate (1) the importance of pisé (stamped-earth) construction in Shang architecture; (2) Shang burial institutions and the organization of labor as indicated by the construction of single tombs; (3) the existence and magnitude of sacrificial burials; (4) the high level of achievement of the Shang material culture and the extent of the leisure of the ruling class; (5) the existence of stone sculptures and the sophistication of the decorative art; and (6) representative products of bronze industry.[63] In 1976, another tomb of "royal" proportions was excavated at Yin-hsü. This tomb, no. 5, though far smaller than no. 1001 (only 5.6 by 4 meters at the opening), was never plundered. It was located at Hsiao-t'un (west of the section C foundations) and ascribed by the inscriptions on the bronzes inside to Fu Hao, a consort of King Wu Ting. From the tomb chamber were recovered more than 1,600 objects, plus about 7,000 cowry shells. There were more than 440 bronzes, more than 590 jades, over 560 bone objects, in excess of 70 stone objects, and 3 seashells. Among them are some of the best art objects of the Shang that have ever been found (fig. 284).[64]

If Fu Hao of Tomb no. 5 was indeed a consort of King Wu Ting, who was only of the second generation to call Yin a royal capital, this means that the Shang civilization of An-yang had unquestionably moved to this city, fully mature, from elsewhere. In fact, in the 1930s and 1940s, when the full scope of the Shang civilization was disclosed archaeologically at the An-yang excavations, it had no indigenous precedent in China anywhere. It was natural for some scholars of Shang to seek an external source, perhaps from the West, of the sophisticated Shang innovations such as bronze metallurgy.[65]

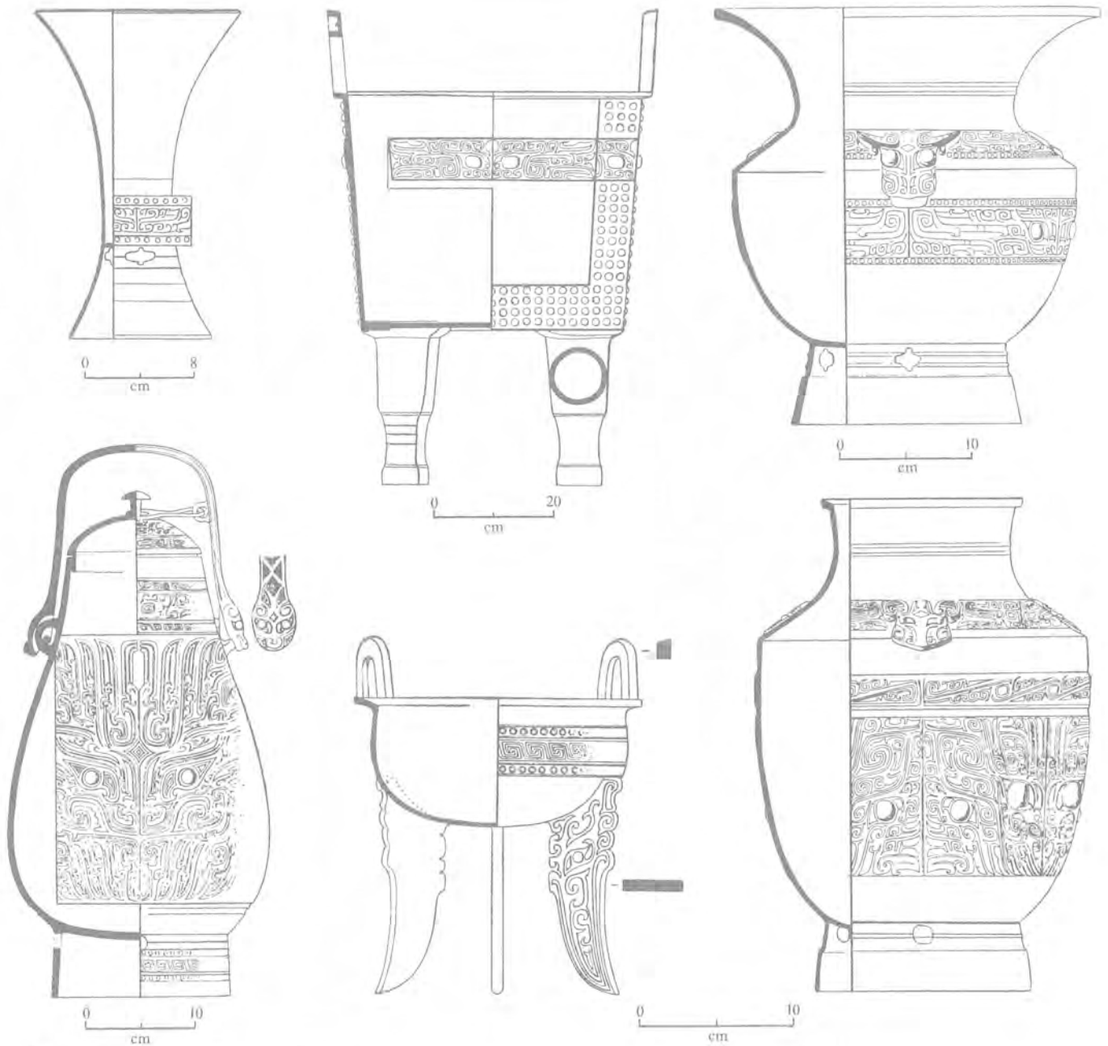
Against this historical background one can readily recognize the importance of the discovery, in 1950, of Shang remains in Cheng-chou, Honan, that were stratigraphically and typologically shown to be earlier than the Shang civilization in An-yang. As Tsou Heng had convincingly shown in a pioneering study of the new Cheng-chou finds,[66] their pottery was typologically antecedent to the same

62. Liang and Kao, *Archaeologia Sinica* 3 (Hou-chia-chuang), no. 2 (Tomb 1001), 1962.
63. Li Chi's Preface to Shih, *Yin-hsü chien-chu yi-ts'un*.
64. *Yin-hsü Fu Hao mu*, Peking: Wen-wu Press, 1980.
65. See, e.g., Max Loehr, *Am. J. Archaeol.* 53 (1949), 126–44.
66. *KKHP* 1956 (3), 77–103.

285. Typological seriation of major Shang pottery types at Hsiao-t'un and Cheng-chou. (From Tsou Heng, *KKHP* 1956, no. 3, p. 81.)



286. Five bronze decorative bands representing the five styles of Max Loehr (styles I–V, top to bottom.) (From Li Chi, *Archaeologia Sinica*, n.s. 1, 1964, p. 71, and no. 5, 1972, pp. 98, 100, and pl. 15.)



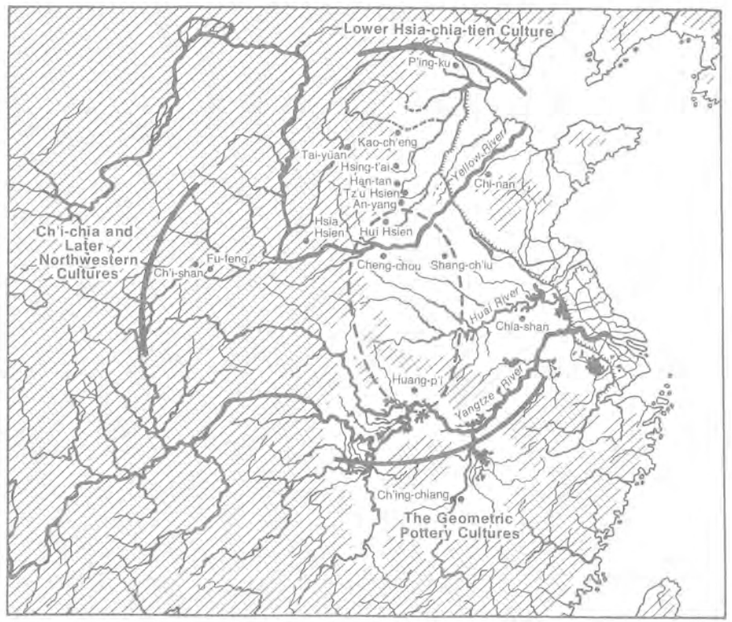
287. Bronze vessels from the Shang site at Cheng-chou. (From *WW* 1983, no. 3, pp. 53–57.)

types in Hsiao-t'un, especially in such types as the *li* tripod, the *kuei,* the *tou,* and the *tsun* beaker (fig. 285). Cheng-chou's status as an antecedent to An-yang was even more dramatically shown by a comparison of the bronze vessels. In the early 1950s, Max Loehr, in a monumental study,[67] arranged the decorative patterns of selected bronze vessels believed to have come from An-yang in a sequence of five styles. Style I consists of bands of thin lines that made up the animal motif. Style II consists of bands of broad ribbons that made up the animal motif. Style III designs are similar to styles I or II but larger and more complex. In style IV the background spirals become separated and clearly divisible from the main animal motif. In style V, the animal motif stands in relief (fig. 286). Loehr believed that these five styles had chronological significance, with I and II the earliest and V the latest. When the bronzes from Cheng-chou, as well as from Huei-hsien, in Honan, which was also excavated in the early 1950s,[68] came to light and proved to fit into styles I–III of the Loehr classification (fig. 287), the scheme was given archaeological support. At the same time, one can also say that the antecedent status of the Cheng-chou site is consistent with the force of stylistic development as perceived in art history.

Three and a half decades after the initial discovery, the Cheng-chou phase of Shang civilization is now known from a wide area stretching from northern Honan to central Hupei, and its later subphase is seen in an even larger area (fig. 288). At four sites of this phase, namely, those in Cheng-chou and Yen-shih in Honan (fig. 289), at P'an-lung-ch'eng in Huang-p'i, Hupei, and at Tung-hsia-feng in Hsia-hsien, Shansi, a stamped-earth enclosure was disclosed.[69] In this, the construction of a town wall, the Shang Cheng-chou phase is closer to the Lung-shan practice, although the failure to locate a walled enclosure in An-yang could be simply a matter of chance. In construction technology, the building of palatial structures (fig. 290) and the overall pattern of urban settlement the Cheng-chou cities are identical with An-yang. However, some of the most important An-yang elements, such as writing, chariots, and royal mausoleums, have yet to be unmistakably identified at any of the Cheng-chou phase sites.

There may yet be findings of royal mausoleums if Cheng-chou was a royal capital. Soon after the Cheng-chou city was unearthed it was identified by most scholars with the capital city of Ao (or Hsiao), the capital of King Chung-ting, the

67. "The Bronze Styles of the An-yang Period (1300–1028 B.C.)," *Archives of the Chinese Art Society of America* 7 (1953), 42–53.
68. *Huei-hsien fa-chüeh pao-kao,* Peking: Science Press, 1956.
69. For detailed bibliographies on the Cheng-chou and Huang-p'i finds, see *Shang Civilization,* 1980. For the new Yen-shih Shang site, see *KK* 1984 (4), 384; 1984 (6), 488–504, 509; 1984 (10), 872–79; 1985 (4), 322–35. For the Tung-hsia-feng walled enclosure, see *KK* 1980 (2), 104.

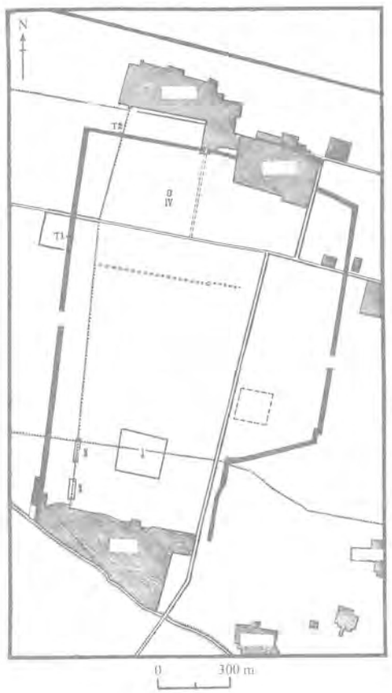


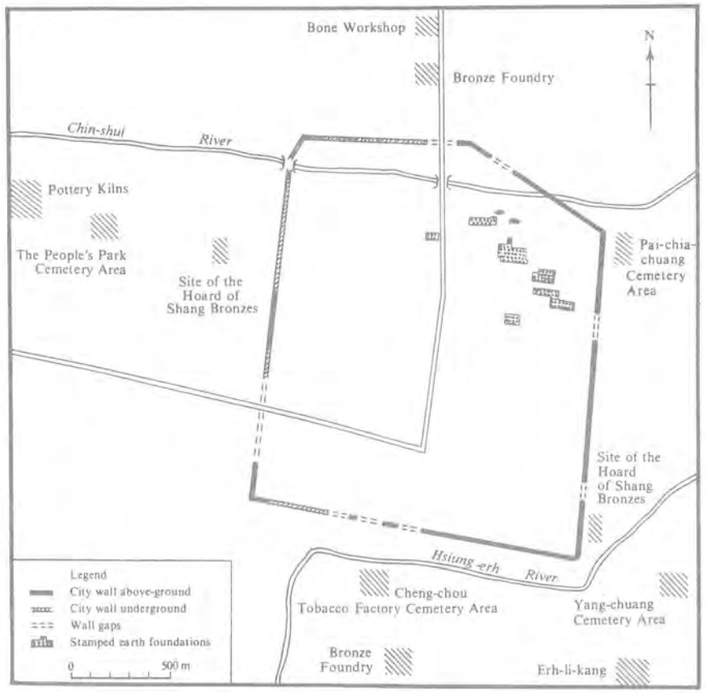
288. Distribution of Cheng-chou phase sites of the Shang civilization. (The broken oval indicates the approximate area of the Erh-li-kang subphase; the three solid arcs indicate the approximate area of the late Erh-li-kang sites.) (From K. C. Chang, *Shang Civilization*, 1980, fig. 84.)

tenth king of the Shang Dynasty. When Erh-li-t'ou was considered Early Shang in the late 1950s and early 1960s because it was shown to be stratigraphically and typologically intermediate between Cheng-chou and Lung-shan, the archaeological sequence of the Shang civilization was considered complete, with Early Shang, Middle Shang (Cheng-chou), and Late Shang (An-yang).

But even if Erh-li-t'ou was Early Shang, a crucial gap still existed in the eastern Honan area, the traditional home territory of the Shang people. In fact, the very name Shang had come from the civilization's sacred city, which is now thought by most students to be near Shang-ch'iu in eastern Honan.[70] As we have seen, Erh-li-t'ou Culture only had western Honan as its core area. Now, if we remove Erh-li-t'ou completely from the Shang sequence, or at least the early segments of it, as all scholars are now agreed to do, then we must hypothesize a real Early Shang phase, still to be discovered, in the area of eastern Honan, which is comparable stratigraphically and typologically with Erh-li-t'ou or with the later

70. Tung Tso-pin, *Ta-lu Tsa-chih* 6 (1953), 8–12.



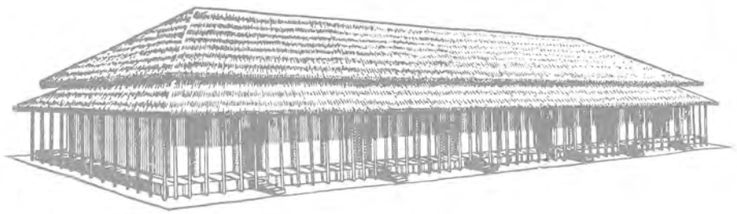


289. Shang city walls in Yen-shih (*left*) and Cheng-chou (*right*). (*Left* from *KK* 1984, no. 6, 490; *right* from An Chin-huai, in *Studies of Shang Archaeology*, 1986.)

strata at Erh-li-t'ou. In fact, according to one recent archaeological assessment, the Lower Cheng-chou and the latest (fourth) Erh-li-t'ou strata were equivalent. This means that an Early Shang is still to be identified somewhere in eastern Honan. It should correspond stratigraphically with stratum 3 of Erh-li-t'ou and earlier. It so happens that a bronze *chüeh* cup (fig. 291) is said to have been unearthed in 1964 in the Shang-ch'iu area.[71] Typologically it is very close to the Erh-li-t'ou *chüeh* cups, especially one of the two found in 1980 with an angular division of the body into two parts.[72] The Shang-ch'iu area and its environs are the heart of the so-called Huang-fan-ch'ü (Yellow River flooding region), an area that had been repeatedly flooded by the Yellow River during its numerous course

71. *Ho-nan ch'u-t'u Shang Chou ch'ing-t'ung-ch'i*, Peking: Wen-wu Press, 1981, fig. 11, p. 3.
72. *KK* 1983 (3), p. 203, fig. 9, no. 6.

290. Reconstruction of a Shang palace at Cheng-chou. (From *WW* 1984, no. 4, p. 7.)



changes and which is covered with several meters of fine silt. Archaeological research in this area has been singularly unproductive. As early as 1936, when the derivation of the Shang civilization at An-yang was a very current problem, Li Ching-tan had undertaken an initial survey of Shang-ch'iu. Li, one of the earliest participants in the Yin-hsü excavations, wrote,

In eastern Honan in the region adjoining Kiangsu and Shantung is a county called Shang-ch'iu. Its name alone is sufficient to attract our attention. This region was on the old course of the Yellow River and could very possibly be the beginning place of the Shang dynasty. . . . Therefore, the ancestry of Yin-hsü could be located in the Shang-ch'iu area. Because of these considerations, as part of their deliberations about the work assignment for the Society for the Study of Honan Antiquities in the second half of 1936, Messrs. Fu [Ssu-nien], Li [Chi], Liang [Ssu-yung], Tung [Tso-pin], and Kuo [Pao-chün] decided to undertake an investigation of the Shang-ch'iu area in eastern Honan.[73]

291. Bronze *chüeh* cup from Shang-ch'iu, Honan. (From *Honan ch'u-t'u Shang Chou ch'ing-t'ung-ch'i*, 1981, vol. 1, p. 22.)

Li Ching-tan, together with Han Wei-chou and Meng Ch'ang-lu, embarked upon an investigative journey that lasted just over a month. The result was disappointing: a few Lung-shan sites were found on some higher mounds, but no Shang sites were identified. This area is a difficult one for field research, because of the thick layer of silt. According to Li Ching-tan, during the 730 years from A.D. 971 to 1699, there is evidence here of seventeen major deluges from collapsed dikes of the Yellow River. "Usually the ground surface has about 2.5 meters of silt, underneath which is a layer of yellow sand. . . . No wonder that even Han sherds are not visible, let alone prehistoric sites!"[74]

Forty years later, at the instigation of the Loyang Field Team of the Institute of Archaeology, Academia Sinica, an investigative party was organized in 1976 and began their work in the Shang-ch'iu area "in order to understand the pertinent

73. *KKHP* 2 (1947), 84.
74. Ibid., p. 88.

issues of the late primitive society period and the cultures of the Hsia and Shang periods."[75] The same difficulty was encountered and prehistoric remains were sometimes seen buried seven or eight meters under the ground surface.[76] A late Lung-shan site located on a higher mound was excavated, but no other finds have so far been reported. The existence of Early Shang remains in this area, however, is tantalizingly suggested by the *chüeh* tripod from the Shang-ch'iu area.[77] Further, in view of the many important cultural items of the Shang civilization that may owe their derivation from the eastern coastal areas,[78] it is reasonable to expect the Shang-ch'iu area and its surrounding regions in eastern Honan, southwestern Shantung, and northern Anhwei to play a leading role in our future efforts to seek Early Shang roots.[79]

Tsou Heng has recently put forth a forcefully argued hypothesis that identifies the Shang city at Cheng-chou, not with Ao of the tenth king Chung-ting, but with Po, capital city of the dynasty's founder, T'ang.[80] This has proven to be a controversial hypothesis.[81] If this is true, the Cheng-chou phase would become Early Shang as far as the dynastic portion is concerned, but we still would have to look for a precedent predynastic Early Shang in a cultural sense that must have been as sophisticated and as strong as the latest Hsia in order for Shang to be able to launch its crushing conquest. Thus, we need to explore eastern Honan for a precedent Shang phase no matter what the Cheng-chou city was historically. Tsou Heng believes that this precedent phase has already been found in northern Honan and southern Hopei, but this belief is now narrowly based on the typological similarities of a small number of pottery vessel types.[82]

292. The twin peaks at Ch'i Shan, Shensi. (Photograph by S. Kao.)

The Beginning of Chou Civilization

As we have seen, both the Erh-li-t'ou Culture and the Hsia civilization were native to the middle Yellow River and the Lo-ho River valleys, and the Shang civilization may have first arisen in the east in the alluvial plain of the lower Yellow River valley. The Chou civilization, the third of our Three Dynasties, was the child of the Wei-shui River valley of Shensi in the west. According to textual

75. *KK* 1978 (1), 35.
76. Personal communication, Dr. Hsia Nai, 1977.
77. *WW* 1964 (9), 33; see also n. 71.
78. K. C. Chang, in: *Papers Presented to Mr. Shen Kang-po on His Eightieth Birthday*.
79. Erh-li-t'ou sites have already been reported in Eastern Honan; the principal site is Wu-ch'iang in Shang-ch'iu, see *KK* 1983 (2), 116–21, 132. See also *KK* 1981 (5), 385–97.
80. *WW* 1978 (2), 69–71.
81. *KK* 1980 (3), 255–58, 286; 1981 (3), 271–76; 1982 (2), 192–97; 1983 (5), 452–54.
82. *Hsia Shang Chou k'ao-ku-hsüeh lun-wen-chi*, pp. 105–129.

records, the royal house of the Chou built its first ruling center at Chou, under Ch'i Shan or Mount Bifurcate—so named probably because the main hill north of the fertile Chou Yuan (Plain of Chou) had two peaks (fig. 292). The building of this first Chou city is vividly described in the authentic Chou ballad, usually called *Mien* (Spread):

Of Old T'an-fu the duke
At coming of day galloped his horses,
Going west along the river bank
Till he came to the foot of Mount Ch'i
Where with the lady Chiang
He came to look for a home.

The plain of Chou was very fertile,
Its celery and sowthistle sweet as rice-cakes
"Here we will make a start; here take counsel,
Here notch our tortoise."
It says, "Stop," it says, "Halt.
Build houses here."

So he halted, so he stopped,
And left and right
He drew the boundaries of big plots and little,
He opened up the ground, he counted the acres
From west to east;
Everywhere he took his task in hand.

Then he summoned his Master of Works,
Then he summoned his Master of Lands
And made them build houses
Dead straight was the plumb-line,
The planks were lashed to hold the earth;
They made the Hall of Ancestors, very venerable.

They tilted in the earth with a rattling,
They pounded it with a dull thud,
They beat the walls with a loud clang,
They pared and chiselled them with a faint p'ing, p'ing;
The hundred cubits all rose;
The drummers could not hold out.

They raised the outer gate;
The outer gate soared high.
They raised the inner gate;
The inner gate was very strong.
They raised the great earth-mound,
Whence excursions of war might start.

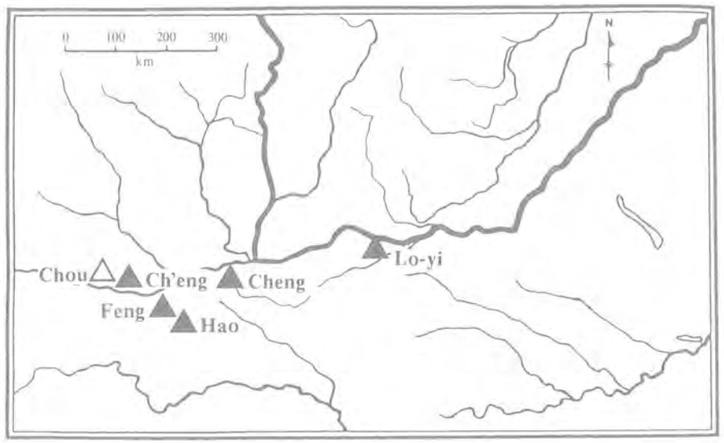
And in the time that followed they did not abate their sacrifices.
Did not let fall their high renown;
The oak forests were laid low,
Roads were opened up.
The K'un tribes scampered away;
Oh, how they panted![83]

The town that was built by T'ai Wang (or "Tan-fu the duke") at Chou became the royal capital and sacred city for the Chou House throughout the first half of the Chou Dynasty until 771 when, under pressure from the nomads coming from the north, the king moved his court to Lo-yang to initiate the Eastern Chou Dynasty (seated in Lo-yang in the east, in contrast to the Western Chou Dynasty, seated in the Wei-shui valley in the west). The king's administrative center, however, had been moving east well before the final change. T'ai Wang was succeeded by his son Wang Chi, who is said by some sources to have built a new capital at Ch'eng, to the east of Chou. Wang Chi's son, Wen Wang, began to expand his power and compete with Shang for influence; he moved the capital again, to Feng, near present-day Sian. His son, Wu Wang, moved farther to Hao, across the Feng River from Feng, still southwest of Sian. Wu Wang was the conqueror of Shang; the date of the conquest is uncertain but is probably around 1100 B.C.[84] After the conquest, there may have been another move, to Cheng, before the final disposition of the royal house in Lo-yang (fig. 293). At Lo-yang, the Chou house stayed on the throne—if not always in power—for another 515 years until Chou was subjugated by Ch'in in 256 B.C.

The nine hundred years of the Chou Dynasty are an exciting period for the student of early China because, during it, civilization throughout the country underwent fundamental changes that brought about the end of formative Chinese antiquity and the beginning of imperial China and its "traditional" pattern of life, which lasted for the next two thousand years—and is still living. Discussion

83. Trans. Arthur Waley, *The Book of Songs,* New York: Grove Press, 1960, pp. 248–49.
84. F. K. Chou, *Ta-lu Tsa-chih* 68 (1984), 195–226.

293. Traditional Western Chou Dynasty capitals.



of Chou China, however, must be left to other books. I summarize here the available archaeological evidence pertaining to the beginning of the Western Chou civilization, including the crucial period of overlap with the last segments of the Shang dynasty,[85] and I examine some of the archaeological records of Chou's more remote antiquity. I hope through this we can gain a fuller understanding of how the first civilizations emerged in China.

THE FENG AND HAO AREA

A logical place to begin a review of Western Chou archaeology is in the Feng and Hao area near Sian from which the Shang conquest was launched. Archaeological excavations of the lower Fen-ho and Wei-shui valleys have established that the ancient cultural sequence in these regions is a succession of Yang-shao Neolithic, Lung-shan Neolithic, and Western Chou. Western Chou remains in the Wei-shui valley were identified and excavated by Hsü Ping-ch'ang, Su Ping-ch'i, and Shih Chang-ju during the 1930s and 1940s,[86] but it was not until the early 1950s that the sequence from Neolithic cultures to Chou began to be clearly defined and formulated. At K'o-hsing-chuang, near Sian, Su Ping-ch'i and Wu Ju-tso grouped the early cultural remains, according to stratigraphic evidence,

85. K. C. Chang, *Bull. Inst. Hist. Philol., Academia Sinica,* 51 (1980), 197–216.
86. C. J. Shih, *Bull. Inst. Hist. Philol., Academia Sinica* 27 (1956), 205–323; P. C. Su, *Tou-chi-t'ai Kou-tung-ch'ü mu-tsang,* Peiping: National Academy of Peiping, 1948; P. C. Hsu and H. Ch'ang, *Bull. Nat. Acad. Peiping* 4, no. 6.

into three classes: Yang-shao, Lung-shan, and Chou, and characterized the Chou stratum as "gray pottery with relatively homogeneous color, wheel marks, angular rims, and clearly defined, decorative cord marks confined to the body parts of vessels; *li* tripods with low feet, low collars, and nearly flat bottoms; basins, *tou,* and plain jugs with undecorated surfaces."[87] Nine localities in the neighborhood of Sian are assigned by Su and Wu to the Chou stratum; these are characterized by deep cultural deposits, rectangular pits, graves containing human sacrifices, and relatively concentrated habitations. It is at these sites and sites contemporary with them that any investigation into the early Western Chou cities of Feng and Hao must be carried out.

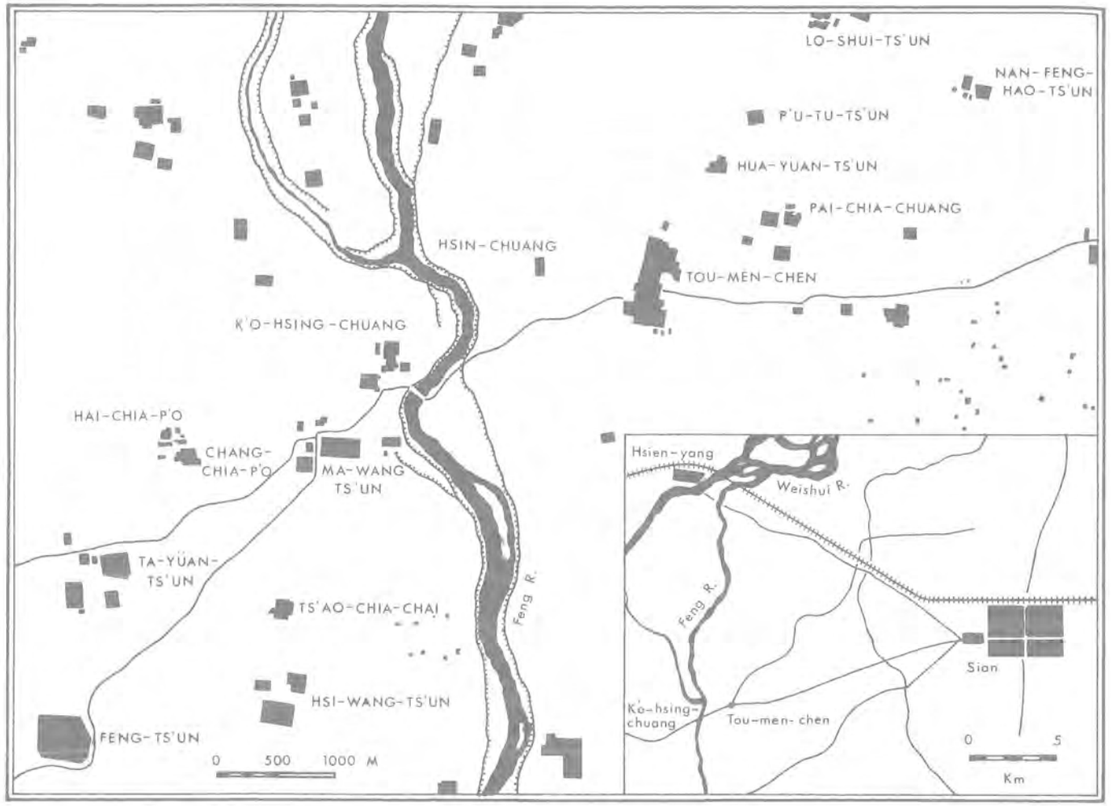
The exact location of Hao is described in historical records, and there is little question that it was in an area southwest of the modern city of Sian, in Shensi Province, on the east bank of the River Feng, a small tributary of the Wei-shui in the north. On the west bank of the same river is said to be the site of Feng, Wen Wang's capital for only fifteen years. Although the capital was moved across the river to Hao, Feng remained the site of the royal temples. The well-drained plain west of Sian, located between the Tsinling Mountains in the south and the Wei River in the north, was thus the center of the Royal Chou until they came to an end in 771 B.C.[88] The Han historian Pan Ku, writing toward the end of the first century A.D. praised this region thus,[89]

In abundance of flowering plants and fruits it is the most fertile of the Nine Provinces
In natural barriers for protection and defense it is the most impregnable refuge in heaven and earth
This is why its influence has extended in six directions
This is why it has thrice become the seat of imperial power

The last line "refers to the successful use of the area as a center of power by the Chou who launched from this plain their conquest of the Shang, by the Ch'in, the creators of unified empire, and by the great Han during the first two centuries of their rule."[90]

The archaeological investigations of the Chou settlements in the Feng/Hao area began in the 1930s, but not until the 1950s was this region given the concentrated effort it deserves. Sites containing Western Chou remains appear to cluster in two loci on both banks of the Feng (fig. 294). One is on the west bank from

87. *KKTH* 1956 (2), 36.
88. C. J. Shih, *Ta-lu Tsa-chih T'e-k'an* 1 (1953); *KK* 1963 (4), 188–97.
89. Trans. Arthur F. Wright, *Journal of Asian Studies* 24 (1965), 668–69.
90. Ibid., p. 669.



294. Villages on the banks of the river Feng southwest of Sian, Shensi, where important Western Chou sites have been discovered.

K'o-hsing-chuang in the northeast to Feng-ts'un in the southwest, in an area about 5 kilometers east-west and 2.5 kilometers north-south, a site approximating the location of the old capital Feng in the literature. The other, coinciding with the location of Hao, is on the east bank from Lo-shui-ts'un in the north to south of Tou-men-chen, covering an area about 4 kilometers north-south and 1.5 east-west.[91] Outside these two clusters, isolated remains and ruins have been found throughout the neighborhood.[92] For the sake of convenience, we refer to the

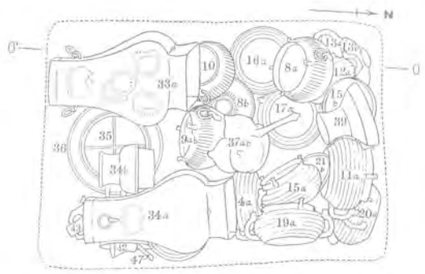
91. C. Y. Hu, *WW* 1982 (10), 57–67; *WW* 1979 (10), 63–70.
92. H. T. Hsu, *KK* 1962 (6), 306–07.

cluster of sites on the west and east banks as the Feng and Hao areas respectively.

The Feng area has yielded a large number of Western Chou remains as a result of intensive excavations since 1955. The area west of the village of Chang-chia-p'o is the best known: dwelling remains, 136 tombs, and 4 horse-drawn chariot burials excavated in 1955–57;[93] dwelling remains, 4 burials, and 1 chariot burial in 1960;[94] 31 tombs in 1960–61;[95] a large tomb with ceremonial bronzes in 1964;[96] and 124 tombs, 5 horse-and-chariot pits, and 7 animal burial pits in 1967.[97] East of Chang-chia-p'o, in the vicinity of the village of Ma-wang-ts'un, dwelling remains were brought to light during 1959–60;[98] a hoard of 53 bronze vessels (11 of which were inscribed) was uncovered in 1961 (fig. 295),[99] a large tomb with 28 bronze vessels was investigated in 1963,[100] and a hoard of 25 bronzes (many inscribed) was uncovered in 1973.[101] North of Ma-wang-ts'un, in the K'o-hsing-chuang area, habitation remains and 51 tombs of the Western Chou period were excavated during 1955–57.[102] Three rather large stamped-earth foundations (possibly over 20 meters long) were unearthed in the same area in 1977.[103] Southwest of Chang-chia-p'o, near the village of Ta-yüan-ts'un, habitation remains, wells, and burials were excavated during 1959–60.[104] We know that habitation debris is scattered throughout the area and that house foundations occurred at some spots. Workshops for bone, pottery, bronze, and tile have been found at various localities, and tombs of various kinds with furnishings of varying degrees of luxuriousness (including a few with up to 4 human sacrificial victims for a single tomb) are scattered throughout. Chariot burials were probably constructed to accommodate some departed noblemen. The remains in the whole area range in date from possibly the Wen Wang reign through the end of the Western Chou Dynasty. Apparently this Feng area was a major center of cultural activity during the entire Western Chou period, and the royal capital of Feng is perhaps still buried, to be brought to light in the future. Until that happens, however, the pattern and history of settlement west of the Feng River remains unknown.

It is significant, however, that the 182 tombs in the Chang-chia-p'o and K'o-

93. P. H. Wang et al., *Feng-hsi fa-chüeh pao-kao*, 1962; *KK* 1959 (10), 516–30; 1964 (9), 441–47, 474.
94. *KK* 1962 (1), 20–22.
95. Y. F. Chao, *KK* 1984 (9), 784–89.
96. *KK* 1965 (9), 447–50.
97. *KKHP* 1980 (4), 457–501.
98. *KK* 1962 (6), 307–09.
99. *Ch'ang-an Chang-chia-p'o Hsi-Chou t'ung-ch'i ch'ün*, Peking: Wen-wu Press, 1965.
100. *KK* 1963 (8), 413–15.
101. *KK* 1974 (1), 1–5.
102. *Feng-hsi fa-chüeh pao-kao; KK* 1959 (10), 516–30.
103. *KK* 1981 (1), 13–18, 76.
104. *KK* 1962 (6), 309.



295. A hoard of Western Chou bronze vessels found at Ma-wang-ts'un, Sian. (From *Ch'ang-an Chang-chia-p'o t'ung-ch'i ch'ün,* 1965, p. 12.)

hsiang-chuang area excavated during 1955–57 by the Institute of Archaeology, Academia Sinica, were apparently constructed throughout the span of the Western Chou's some 330 years, and the typology of artifacts and tomb construction here constitutes a complete sequence of development that can well serve as a standard scale for other Western Chou sites in the vicinity and beyond. Five major typological phases have been distinguished, primarily on the basis of ceramic types (fig. 296), and habitation remains throughout the Feng area have been cross-dated with the tombs accordingly.

Compared with the Feng area, there are fewer archaeological remains in the Hao area. Historical records relate that during the T'ang dynasty the construction of K'un-ming Lake in the royal gardens destroyed a good part of the ancient ruins of Hao, which could account for the relative scarcity of remains dating from Western Chou, but exploration is only just beginning. Large tombs with ritual bronze vessels dating to the reign of Mu Wang in the early part of Western Chou were uncovered in 1954 and 1955,[105] and large areas of habitation and burial remains have been located from Pai-chia-chuang in the south to Lo-shui-ts'un in the north.[106] If this was indeed the site of the old city of Hao, further investigations of the area and of the interrelationship between the Hao government center and the Feng temple area of the Royal Chou will be very revealing and important for Western Chou archaeology.

Another crucial issue in the archaeology of the Feng and Hao area is the question of its pre-Conquest occupation. Not far from the Feng-Hao area, in Lin-t'ung, a bronze *kuei* was unearthed in a hoard of bronze vessels, tools, chariot fittings, and other objects. It bears an inscription of thirty-two characters containing references to the Shang conquest on a *chia-tzu* date and to a royal gift that was tended eight days later (fig. 297).[107] There can be no question that the whole Sian area and its vicinity were centers of Chou activities prior to the Conquest—thus predynastic—but their remains are hard to identify. At Chang-chia-p'o, between 1955 and 1957 a habitation area and a number of human burials were excavated; two occupational components were distinguished at the habitation area, and the tombs have been grouped into five stages. The early occupational stratum of the habitation area antedates the earliest burials, which have been dated, according to the typology of the bronze vessels found in the tombs,

105. *KKHP* 8 (1954); 1957 (1), 75–85.
106. *KK* 1963 (8), 403–12.
107. *WW* 1977 (8), 1–7. Another inscribed bronze vessel that might date from this time, or even from shortly before the conquest, is the so-called Ta Feng or T'ien Wang *kuei;* see T. Y. Sun, *WWTKTL* 1958 (1), 29–31; P. C. Ch'ien, *WWTKTL* 1958 (12), 56–57; T. Y. Sun, *WW* 1960 (5), 50–52; T. F. Yin, *WW* 1960 (5), 53–54.

Period	Type tomb	Li	Kuan	Kui	Tou	Yü
I	M178					
	KM145					
II	KM69					
III	M157					
IV	M453					
V	M147					

296. Pottery types of the five stages of Western Chou tombs in Sian. (From *Feng-hsi fa-chueh pao-kao,* 1962, fig. 86.)

comparable with bronze vessels of known date, to Ch'eng and K'ang, the two kings who reigned immediately after Wu Wang. The site therefore must have been inhabited before King Ch'eng. Since the region was not a major Chou area until Wen Wang's reign, the early habitation component of the Chang-chia-p'o site might possibly be dated to kings Wen Wang and Wu Wang, that is, to the Chou immediately before and after the conquest.[108] The cultural remains at the site thus have a direct bearing on Chou's level of culture at that time.

Archaeological remains uncovered from this early habitation stratum indicate very strongly that during its occupation—which probably included the period of Chou before the conquest—the Chou was already a bronze-making culture with a sophisticated social organization. Many bronze implements were found at the site, including a socketed ax, fifteen knives, sixty-two arrowheads, and several horse and chariot fittings. The knives are characteristically bent, with a concave

108. *Feng-hsi fa-chüeh pao-kao.*

297. Inscription (in rubbing) of Western Chou vessel, Li *kuei*. (From *WW* 1977, no. 8, p. 2.)

back, and are equipped with a square loop at the end (fig. 298), distinct from the common Shang types at Hsiao-t'un; and the arrowheads also differ from the Hsiao-t'un types in minor features.[109] It is not clear from the report whether these bronze implements came from the early stratum or from a later occupation (near the end of Western Chou), but from the early occupation four pieces of clay molds (for casting horse-and-chariot fittings) were excavated, indicating that during the early period the Chou were not only bronze-casters in the Shang tradition but also horse-and-chariot warriors. Also from the early period was a workshop that manufactured only hairpins and arrowheads of bone and antler. The bone hairpins are of several types, but all have counterparts in the specimens from Hsiao-t'un and Hsi-pei-kang.[110] In 1983, two tombs were excavated in this area, one southeast of Chang-chia-p'o and the other southwest of K'o-hsing-chuang, that are believed to be predynastic on account of the typology of their pottery *li* tripods.[111] The bronzes found in them include ritual vessels and *ko* halberds of characteristically late Shang types.

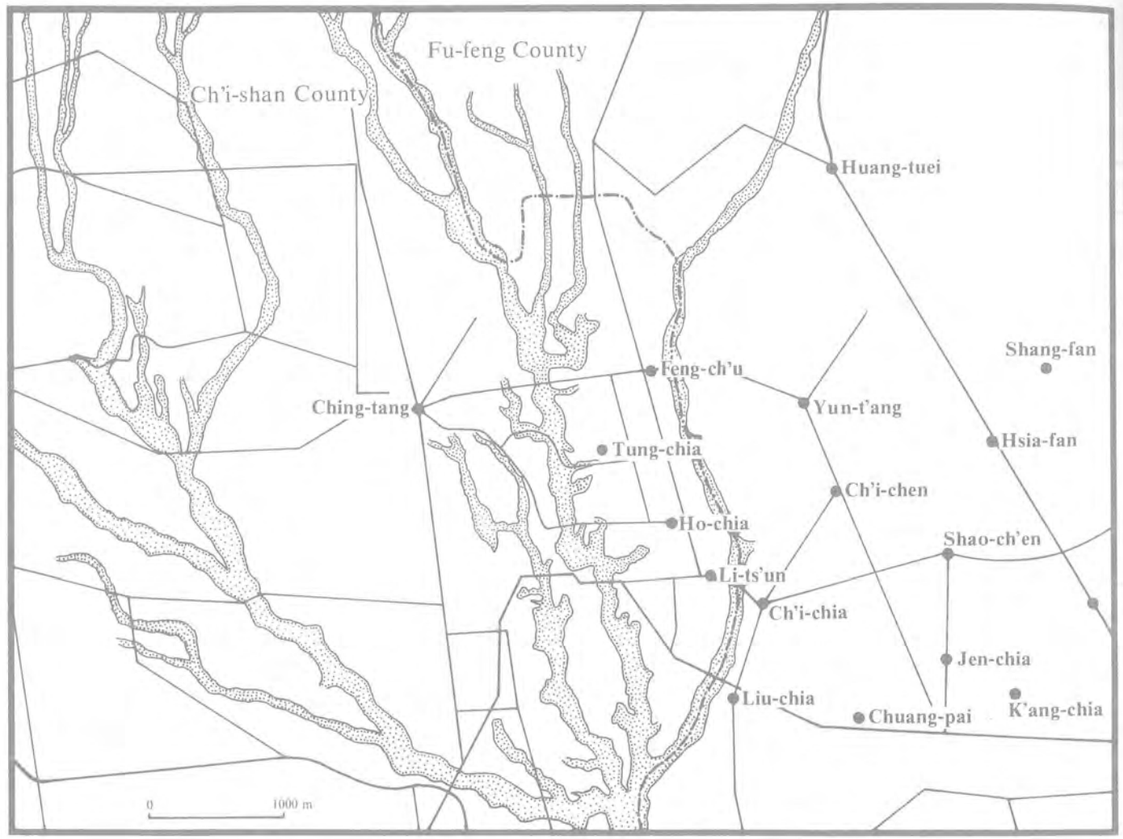
298. Bronze knives of early Western Chou from the Chang-chia-p'o site, Sian. (From *Feng Hsi fa-chueh pao-kao,* 1962, p. 83.)

Apparently the Chang-chia-p'o village of the early Western Chou period provided some essential services to the men of the upper classes whose center of activity was in the cities nearby (Feng or Hao or both), which remain to be discovered. Presumably a great deal more will be known about the level of achievement of Chou civilization when these city sites have been unearthed, but the new data from Chang-chia-p'o suffice to show that before the conquest the Chou had already achieved a level much higher than the Neolithic K'o-hsing-chuang Culture (Shensi Lung-shan Culture) of the same area, from which, or from a culture similar to which, the Chou were apparently derived. It would indeed be strange if the Chou, who were able to overthrow the powerful government of the Shang dynasty at An-yang, were still at a barbarous Neolithic level of culture and came empty-handed into the Shang legacy.[112]

CHOU YUAN

Tracing the Chou's origins we go back from Feng and Hao to Ch'i, where, as described earlier, the Chou first established their power center under king T'ai Wang. According to the vivid descriptions in the poem *Mien,* T'ai Wang's city had a massive enclosure with gates and in it were palaces, temples, and platforms, all

109. Compared with Hsiao-t'un types described in Li Chi, *Bull. Coll. Arts, National Taiwan University* 4 (1952), 179–240.
110. Li Chi, *Bull. Inst. Hist. Philol., Academia Sinica* 30 (1959), 1–69.
111. *KK* 1984 (9), 779–83.
112. See Magdalene von Dewall, *Symposium in Honor of Dr. Li Chi on His Seventieth Birthday,* Taipei, *Ch'ing-hua Journal,* pt. 2, 1966, pp. 1–68, for a discussion of the "creative" aspects of the Chou as against the Shang according to the Hsin-ts'un finds.



299. Map of Chou Yuan and major sites. (Based on *WW* 1979, no. 10, p. 46.)

constructed of stamped earth and, thus, subject to archaeological discovery. In 1943, Shih Chang-ju visited the plains in Fu-feng and Ch'i-shan, south of Mount Ch'i, and surveyed for sites, collecting a number of gray potsherds with impressed cord-marks.[113] He thought that the place had not been disturbed as much as Yin-hsü had been and indicated his hope that T'ai Wang's palaces could still be located. Extensive archaeological investigations did not take place here, however,

113. C. J. Shih, *Ta-lu Tsa-chih T'e-k'an* 1 (1952), 368–70.

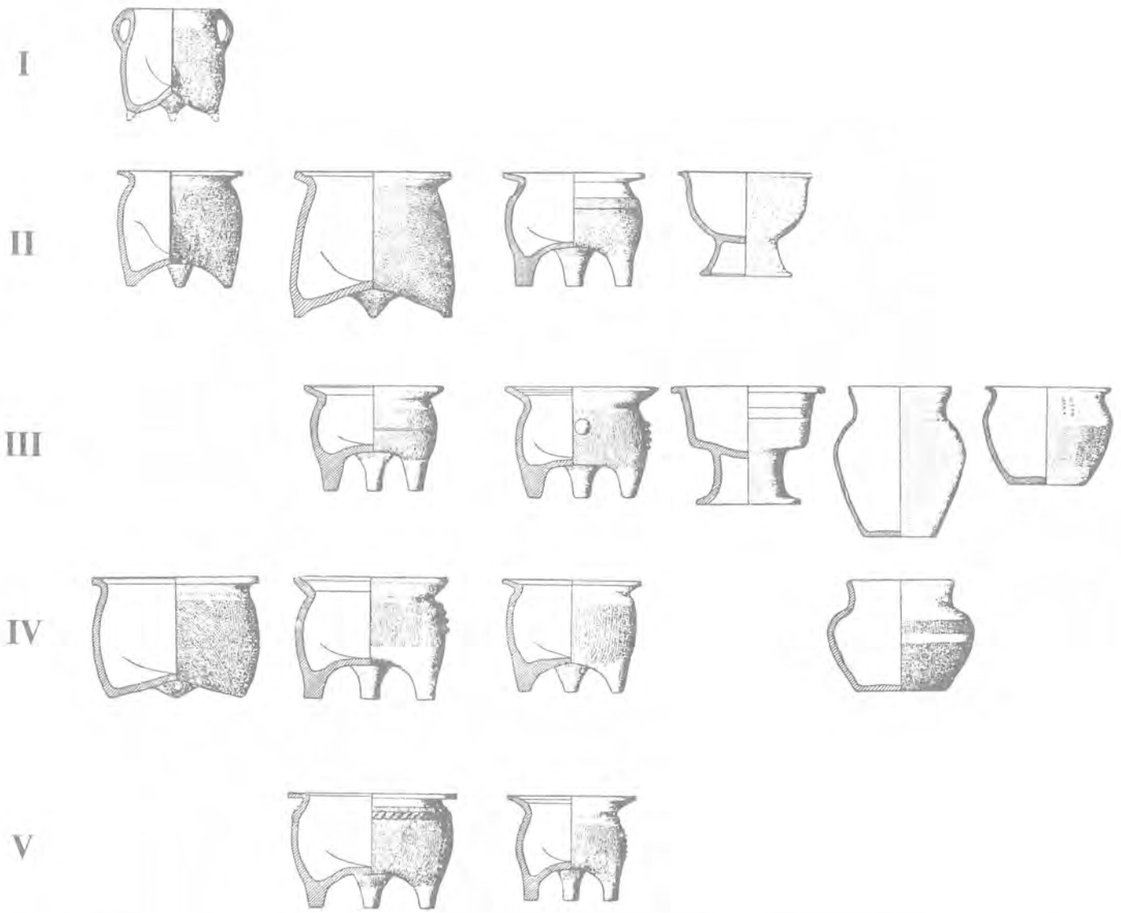
300. Chou Yuan, view from the southeast. (Photograph courtesy of Chou Yuan Archaeology Team.)

until the 1970s, and as soon as diggings commenced astonishing new finds began to be unearthed. Work is still ongoing, and Hsü Hsi-t'ai of the Shensi Institute of Archaeology is preparing a comprehensive report of work thus far. Until this is published, I can only describe some of the major features and discuss a few main issues.

The archaeological remains in the plains of Chou (Chou Yuan) are scattered in an area about three kilometers east to west and five kilometers north to south in the counties of Ch'i-shan and Fu-feng in central Shensi, on the Wei-ho River, a tributary that flows south into the Wei-shui River (fig. 299). The present villages on the perimeters of the Chou settlement are Fan-ts'un in the east, Ch'i-yang-pao in the west, and K'ang-chia and Chuang-li in the south; the north is, of course, lined by Mount Ch'i itself.[114] This is a very fertile area even today (fig. 300), but the land has been badly eroded by a series of gullies which cut the area up into disconnected plateaus, making transportation from one part of the site to another rather difficult.

Even before modern archaeology came to tackle the Chou Yuan—in fact, ever since the beginning of the Western Han Dynasty—this area had been renowned for its yield of Western Chou bronzes. Many long-famous inscribed bronzes in

114. C. F. Ch'en, *WW* 1979 (10), 46.



301. Five stages of Western Chou pottery at Shao-ch'en, Fu-feng, Shensi. (From *WW* 1981, no. 3, p. 20.)

the antiquarians' collections are known to have come from here, such as Ta Yü *ting*, Hsiao Yü *ting*, Ta Feng *kuei*, Mao Kung *ting*, and K'o *ting*. Ch'en Ch'üan-fang counted about a thousand bronze vessels known to have come from Chou Yuan prior to the 1976 excavation. Since the area had been a power center at the beginning of the dynasty and a sacred city throughout the Western Chou, the

number of bronze vessels found here is not surprising. Although most of these vessels lack archaeological information, from what we know of the situation at several excavated assemblages we are fairly certain that most of the vessels probably came from hoards, perhaps buried in something of a hurry by Chou nobles as they were forced to move east in 771 B.C. The vessels bear inscriptions that can be dated to the whole stretch of Western Chou, suggesting that the Chou Yuan remains were left at least during the two-hundred-some years of the whole dynasty. The pottery vessels found in Chou Yuan can thus be used as the standard Western Chou types from early to late phases (fig. 301).

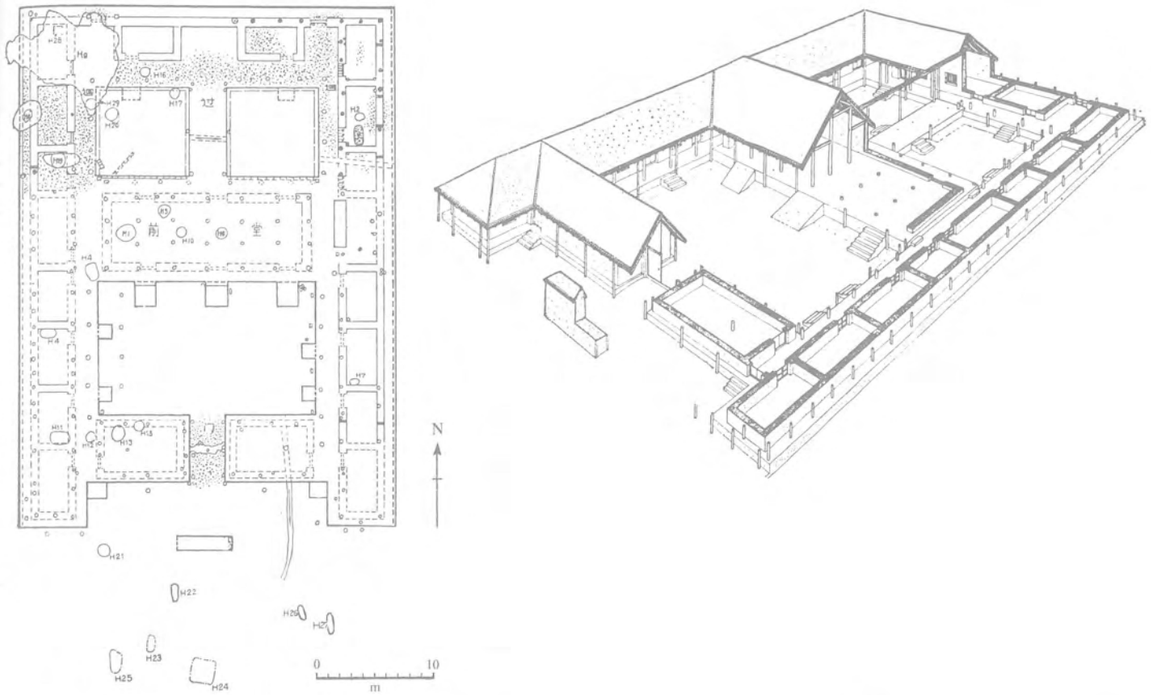
Within Chou Yuan, the southeastern portion from Hsia-fan in the east to Tung-chia in the west, about 250 meters across, was a locus of palaces or houses of noblemen on stamped-earth foundations. A complex of houses, forming a block 45 by 32.5 meters, with a central courtyard and a gate and barrier-screen in the south was excavated near Feng-ch'u in 1976 (figs. 302–03),[115] and a cluster of fifteen house floors was located near Shao-ch'en in 1976 (fig. 304).[116] The latter houses do not form a courtyard design as in the Feng-ch'u complex, but the houses are larger; some of the posts had a foundation 1.9 meters across, and the width between the rows of posts reached 5.5 meters, testifying to the massive scale of the architecture. They were also on stamped-earth foundations, and some of the walls were built with blocks of earth. Tiles were used (fig. 305); roof-tiles were probably a Chou invention. These houses provide invaluable data on Chou architecture,[117] although there is some disagreement on whether they were royal or noble houses.[118]

At the center of this palatial locus, from Yün-t'ang to Ch'i-chen and Ch'i-chia, were Western Chou workshops and the residential areas of the commoners. Among the workshops recovered were those where bone tools, bronzes, and pottery were manufactured.[119] In the southern portions and elsewhere, especially near Ho-chia, Li-ts'un, and Chuang-pai, more than a hundred human burials have been uncovered.[120] These tantalizing bits of finds, on top of the rich bronze vessel hoards known from throughout the area, indicate the complexity of the settlement patterns of the Chou city here and emphasize the incompleteness of the archaeological record.

The most unexpected major find from Chou Yuan are the Chou's oracle bone

115. *WW* 1979 (10), 27–37; 1981 (1), 65–80.
116. *WW* 1981 (3), 10–22, 34–45.
117. S. H. Yang, *WW* 1981 (3), 23–33; S. P. Yin, *WW* 1981 (9), 13–17.
118. Y. Ting, *KK* 1982 (4), 398–401, 424.
119. C. F. Ch'en, *WW* 1979 (10), 46–47; *WW* 1980 (4), 27–38.
120. C. F. Ch'en, *WW* 1979 (10), 47; *KK* 1976 (1), 31–38; *WW* 1976 (6), 61–63; 1978 (2), 94–95; 1979 (11), 1–7; 1980 (4), 39–54; *KKTWW* 1980 (1), 7–27.

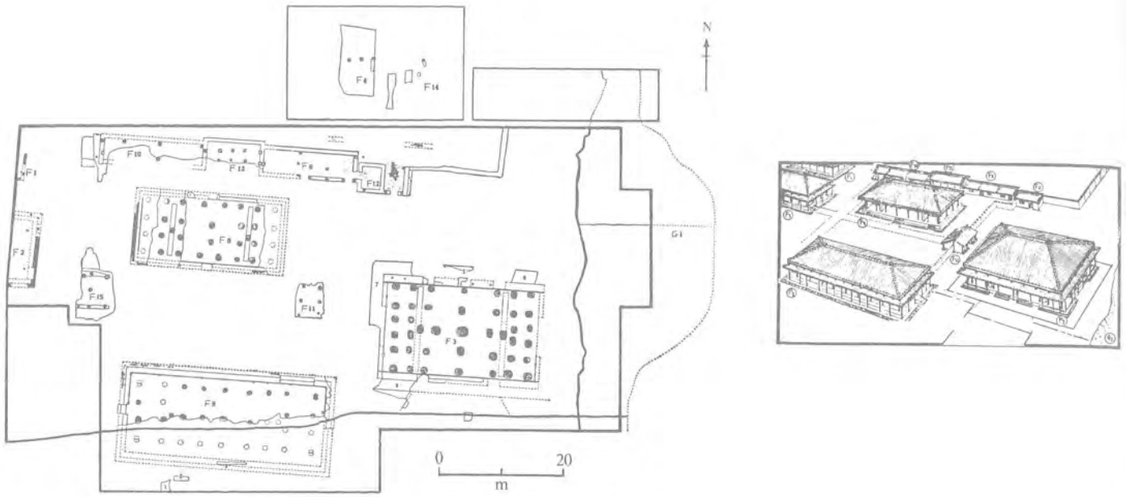
302. Front view of Western Chou house compound at Feng-ch'u, Ch'i-shan. (Photograph courtesy of Chou Yuan Archaeology Team.)



303. Floor plan (*left*) and reconstruction (*right*) of Feng-ch'u house compound. (From *WW* 1979, no. 10, p. 29; and 1981, no. 3, p. 25.)

inscriptions. The Shang oracle bone inscriptions have been known since 1899, but the Chou inscriptions have been known only since 1954, when a piece of shoulder-blade with eight characters on it was found from a Western Chou site at Fang-tuei-ts'un in Hung-tung, Shansi.[121] Since then, Western Chou inscriptions have been found at the Feng-Hao area in Sian[122] and at Pai-fu in Ch'ang-p'ing, Peking,[123] but there are only a few characters in each case. Since 1977, three batches of inscribed oracle bones have been uncovered in Chou Yuan. The first batch was found from an underground storage pit, H-11, in the southeastern corner of the second room from the south in the western row of houses in the

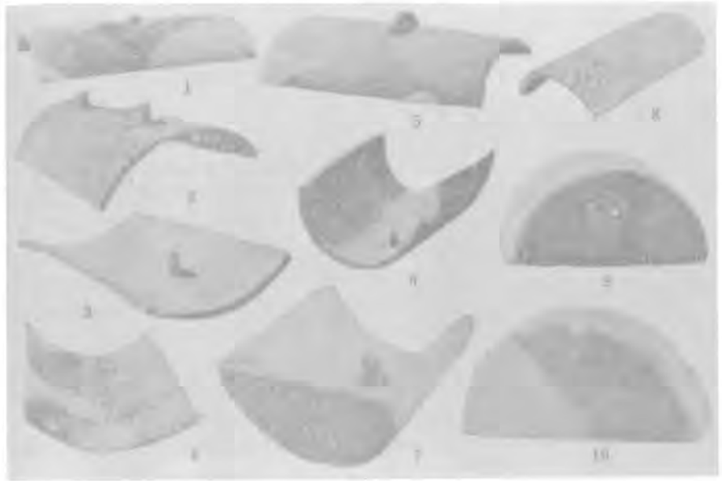
121. W. C. Ch'ang and T. F. Ku, *WWTKTL* 1956 (7), 27; H. C. Li, *WWTKTL* 1956 (11), 16–17.
122. *WWTKTL* 1956 (3), 58.
123. *KK* 1976 (4), 246–58, 228.



304. Plan of house floors (*left*) and reconstruction of houses (*right*) at the Western Chou site of Shao-ch'en. (From *WW* 1981, no. 3, pp. 10, 41.)

Feng-ch'u complex of house foundations.[124] The second batch came from a second pit, H-31, in the same room, along the northern wall.[125] These two batches together consist of 292 pieces of inscribed bones.[126] The third batch consists of 6 inscribed pieces found in several trash pits near Ch'i-chia-ts'un, in Fu-feng.[127] These inscriptions (fig. 306) are again records of divinations, but several things distinguish them sharply from the Shang inscriptions. First of all, they are extremely small: the largest character is 8 millimeters long and 5 millimeters wide, but the smallest are only 1 by 1 millimeter in size, requiring a magnifying glass to be read. Second, the calendrical terms make it clear that the ritual calendar used for the divinations was a lunar one, with distinctive terms, which were absent in the Shang inscriptions. Third, the content of the inscriptions pertained to events and rituals that took place in the court of the Chou House.[128] Finally, the preparation of the bones for divination followed a very

124. *WW* 1979 (10), 38–43.
125. *KKTWW* 1982 (3), 10–22.
126. C. F. Ch'en, in: *Ku-wen-tzu yen-chiu lun-wen-chi,* Ch'eng-tu: Szechwan University, 1982, pp. 305–434.
127. *WW* 1981 (9), 1–7.
128. H. C. Li, *WW* 1981 (9), 7–12; Y. H. Wang, *Hsi Chou chia-ku t'an-lun.*



305. Western Chou tiles at Shao-ch'en. (From *WW* 1981, no. 3, p. 16.)

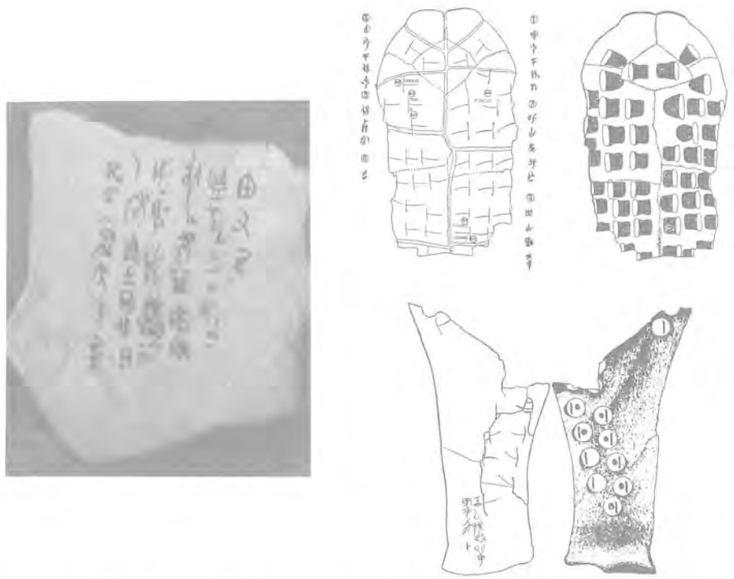
different pattern.[129] The dates of the inscriptions are generally regarded as ranging from King Wen Wang's reign to very near the end of Western Chou.[130]

The archaeology of Chou Yuan in the last decade has vastly increased our knowledge about the early phase of the Chou civilization and has brought its beginnings to the stage represented by the city of Ch'i shortly before the founding of the dynasty by conquest. During this brief interval we have both archaeological and inscriptional evidence of a state of Shang, in its final decades, and a state of Chou, in a relatively early stage of its development, interacting with each other. The establishment of this interaction and the disclosure of the many facets of Chou life at this time are among the most significant contributions archaeology has made to Chinese historiography in recent years.

BEFORE CHOU YUAN

Since Chou Yuan archaeology is still ongoing, its overall chronology has not yet been established, and the question of how far back the earliest Chou remains here go in terms of the dynastic reigns cannot be answered. If there are remains already available here that date from the reigns of T'ai Wang and Wang Chi, they cannot be identified. Even when they could be, the investigation of the Chou's

129. H. T. Hsu, *KKTWW* 1980 (2), 31, 30.
130. M. Kao, *KKTWW* 1984 (5), 76–85.



306. Inscribed Western Chou oracle bones at Chou Yuan. (From *WW* 1979, no. 10, pl. 4; and 1981, no. 9, p. 5.)

origins does not end here, for there is a lengthy tradition of Chou history before T'ai Wang moved to Ch'i, but, unless future results of pre-T'ai Wang or pre-Ch'i archaeology of Chou civilization prove otherwise, T'ai Wang's construction of his royal capital in Chou Yuan may be used to mark the beginning of a new stage in Chou history, a stage when the Chou began to interact with the Shang on the same political footing.

The future direction of the pre-Ch'i archaeology of Chou is already taking shape. According to early texts, prior to his move to Ch'i, T'ai Wang was seated at Pin. According to *Mencius* (Book I, part B), "In antiquity . . . when T'ai Wang was in Pin, the Ti tribes invaded the place. He tried to buy them off with skins and silks; he tried to buy them off with horses and hounds; he tried to buy them off with pearls and jade; but all to no avail. . . . And he left Pin, crossing the Liang Mountains and built a city at the foot of Mount Ch'i and settled there."[131] The Chou settlement at Pin was attributed to Kung Liu, an event described in the poem *Kung Liu* in *Shih Ching:* "Stalwart was Liu the Duke. He made his lodging

131. Trans. D. C. Lau, *Mencius,* Penguin Books, 1970, p. 71.

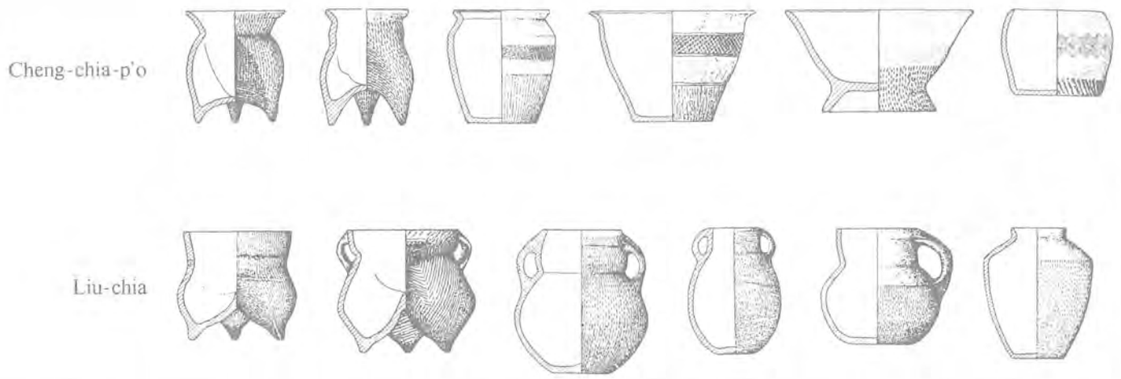
in Pin."[132] There are further tales concerning Chou's abode before Pin, but they hover over the boundary between historical traditions and legends and myths. As to the location of Pin, most historians place it in the Wei-shui River valley, possibly near the present Pin-hsien, less than a hundred kilometers north of Ch'i.[133] In other words, as far as reliable textual traditions go, the Chou civilization was an indigenous growth of the Wei-shui River valley of Shensi, probably at first concentrating in the western and northwestern portions of the Wei-shui valley within the province.

In this area's prehistory there is an interval between the Neolithic K'o-hsing-chuang II (Shensi Lung-shan) Culture and the Western Chou Culture in Chou Yuan and the Feng Hao area, an interval characterized by cord-marked gray pottery *li* tripods and bronze vessels and weapons of generally Shang typology. This culture, not yet fully known, is variously referred to as proto-Chou (*hsien*-Chou)[134] or Early Chou (*tsao*-Chou).[135] According to Tsou Heng, proto-Chou remains have so far been unearthed widely in the Wei-shui and Ching-shui River valleys of Shensi and eastern extreme of Kansu, coinciding with the area of early Chou activities described in the early texts.[136] He groups these sites into two phases:

Phase I. There are about twenty tombs and three dwelling sites of this phase. The tombs are grouped into two kinds, those with pottery vessels and those with bronze vessels. The pottery tombs are usually small or medium in size, had no waist-pits (a small pit at the bottom center of the grave pit for a sacrificial animal), used a coffin but no wooden chamber, and were furnished mostly with a pottery *li* tripod and a pottery urn, although a few had bronze halberds and disks. The bronze tombs are larger, do not have waist-pits, have a second-level ledge, probably had a wooden chamber, and were furnished with a whole range of bronze vessels, weapons, and implements.

Phase II. About fifteen tombs and three dwelling sites are grouped into this phase. Again the tombs were furnished with pottery or bronzes, but all of them had a waist-pit, in which a dog was buried.

132. Trans. Arthur Waley, *The Book of Songs,* p. 246.
133. See S. H. Ch'i, *Yenching J. Chinese Studies* 30 (1946), 63–106; C. J. Shih, *Ta-lu Tsa-chih T'e-k'an* 1 (1952), 368–70. But Ch'ien Mu, *Yenching J. Chinese Studies* 10 (1931), 1955–2008, places Pin in the Fen-ho River valley of Shansi.
134. Tsou Heng, *Hsia Shang Chou k'ao-ku-hsüeh lun-wen-chi,* pp. 297–356; S. P. Yin and C. F. Jen, *WW* 1984 (7), 42–49.
135. H. T. Hsu, *WW* 1979 (10), 50–59.
136. Tsou Heng, *Hsia Shang Chou k'ao-ku-hsüeh lun-wen-chi,* p. 315.



307. Two groups of Western Chou pottery vessels at Cheng-chia-p'o (*above*) and Liu-chia (*below*). (From *WW* 1984, no. 7, pp. 5, 9, 22.)

We need to know more about these sites, which for the most part are said not to have been published. From Tsou's brief sketches it is clear that these phases exhibit increasing influence from the Shang civilization, and that the proto-Chou people were definitely differentiated into well-defined ranks and already had bronzes, primarily weapons and ritual vessels. The occurrence of Shang-style vessels and weapons has long been known in Shensi, but during the Shang period the Shensi bronzes already exhibit local characteristics.[137] Most likely, in their influence upon the Shensi Neolithic culture, the Shang also contributed to the social transformation that climaxed in T'ai Wang's building of Ch'i and the Chou's contention with Shang as a major political power. But the process of this transformation has not yet been well documented by major archaeological sites.

Tsou Heng made a crucial observation pertaining to the Proto-Chou sites that has a bearing on the origins of the Chou civilization. He finds that in Phase I sites there are two types of pottery *li* tripods, and they do not occur in the same assemblages; namely, the *li* tripods with legs separated at the base of the vessel (*fen-tang li*) and those with legs that are fused at the base of the vessel (*lien-tang li*). This observation is supported by the findings at two new sites (excavated in 1981): Cheng-chia-p'o, in Wu-kung,[138] and Liu-chia, in Fu-feng,[139] both in Shensi, not far from Chou Yuan. Almost all of Cheng-chia-p'o's *li* tripods are fused at the base, whereas the Liu-chia tripods are all separated at the base (fig. 307). However, Tsou finds that these two types of *li* tripods occur together at

137. Li Chi, *Metropolitan Museum Journal* 3 (1970), 51–72.
138. *WW* 1984 (7), 1–15, 66.
139. Ibid., 16–29.

Phase II sites. He infers that the two types of *li* tripods represent two ethnic strains that had separate origins but later became mutually assimilated. The fused-base *li* he calls proto-Chou, which he identifies with the Chou people of the Chi clan, whereas the separate-base *li* he identifies with the Chiang clan, which throughout Western Chou was a close affiliate and partner of the Chi clan. Tsou Heng derives the Chi strain (with its fused-base *li*) from the Kuang-she Culture, a poorly known Lung-shan phase in central Shansi, but the Chiang strain (with its separate-base *li*) from the Ssu-wa Culture of Kansu.[140] This suggestion has been taken to heart by a number of Shensi archaeologists[141] and has led to such designations as "the pottery *li* of the Chou people of the Chi clan."[142] Much additional research is needed before we can give family names to pottery vessels.

The Rise of the Three Dynasties and Their Common Characteristics

The current archaeological data in the Yellow River valley from the latest third millennium and the second millennium B.C. make it clear that the process of cultural and social growth that led to the emergence of civilizations took place in a framework of parallel regional traditions within the Chinese interaction sphere, but also that the highest peak of cultural achievement—and possibly of political hegemony—had shifted geographically from Erh-li-t'ou to Shang and finally to Chou. Both interregional interaction and dominant influence from the cultural and political hegemony may be cited as among the driving forces toward civilization, but the record of the crucial periods of overlap—Early Shang, interacting with Erh-li-t'ou, and proto-Chou, interacting with Shang—is still incomplete. We should learn more about that process as the gaps in our empirical record are filled. We know enough, however, to emphasize that the so-called Three Dynasties were not a sequence of successive cultural and social phases of a single high civilizational center surrounded by a sea of barbarians; they were, rather, a system of parallel and interrelated regional developments with shifting centers of gravity. A better term than the Three Dynasties might be the Three States. In the Chou poem of *Huang-yi*, in the *Shih Ching*, we read,

August is God on High;
Looking down, he is majestic;

140. Tsou Heng, *Hsia Shang Chou k'ao-ku-hsüeh lun-wen-chi*.
141. S. P. Yin and C. F. Jen, *WW* 1984 (7), 42–49.
142. C. Y. Hu, *KKYWW* 1982 (1), 69–74, 93.

He inspected and regarded the [states of] the four quarters,
He sought tranquility for the people.

These two kingdoms [of Hsia and Shang],
Their government had failed;
Throughout those states of the four [quarters] he investigated and estimated;
God on High brought it to a settlement;
Hating their extravagance,
He looked about and turned his gaze to the West,
And here he gave an abode.[143]

Here Hsia and Shang, "the two kingdoms," and Chou, "the West," are three of "the states of the four quarters." The God on High did not like Hsia or Shang and chose Chou as his abode. But evidently he did not live with the Chou always; even in the Chou's telling of history there were times when Hsia and Shang, successively, had the God's mandate. The history of any of the Three Dynasties must be viewed in the spatial and interactional context of the many "states of the four quarters."

Moreover, the contention of the Three Dynasties, one fiercely vanquishing another once in a while, was not in the nature of cultural or even ethnic struggles; it was primarily the contention of the various subgroups within a single cultural tradition for political dominance. Despite obvious differences of detail, Hsia, Shang, and Chou as characterized in the early texts are variants of a single culture.[144] In the archaeological record, we see that a number of common characteristics, both in material culture as manifested in archaeological finds and in significant aspects of cultural processes, were shared by the Erh-li-t'ou, Shang, and Early Chou civilizations.

Let us go over the archaeological manifestations and point to these shared characteristics. To begin with, the people of the Erh-li-t'ou, Shang, and Chou civilizations were all farmers of the millets, both foxtail (*Setaria italica*) and panic (*Panicum miliaceum*). They used stone, bone, and shell hoes and sickles, and mortars and pestles. We know that the Shang and Chou also planted soybeans, wheat, and some rice, but this we know only from inscriptions and texts, which are unavailable for Erh-li-t'ou. All three peoples kept dogs, pigs, cattle, and sheep, and they hunted and fished.

The city was the political center; it was not a dense agglomeration of buildings

143. Trans. Bernhard Karlgren, *The Book of Odes*, Stockholm: Museum of Far Eastern Antiquities, 1974, p. 194.
144. Y. P. Yen, *Ta-lu Tsa-chih T'e-k'an* 1 (1952), 387–421.

but a network of specialized parts, including a palace citadel, cemeteries, residential areas, and workshops. The buildings were above ground, often on low platforms, or semisubterranean. The architectural technology was characterized by wattle-and-daub on timber frames for the semisubterranean houses, and by stamped earth and timber posts on boulder bases for the ground houses. The city walls were also built of stamped, layered earth. The city enclosure, the large palatial houses, and the small houses were all rectangular, oriented to the four cardinal directions, with north-south as the main axis; main doors and gates faced south.

The dead were buried by interment in rectangular pit graves, usually face up and stretched. Wooden coffins were used, inside a wooden chamber, for the well-to-do. The graves of the wealthy were richly furnished with food and drink in pottery and bronze vessels, ornaments, ritual objects of jade and turquoise, and often cinnabar. The grave goods were often placed on a second-level ledge around the wooden chamber formed by digging a smaller pit at the bottom of a larger one.

Their pottery vessels were predominantly gray in color and impressed with cord-marks, and they went into the same assemblage of types, including urns, jar, *tou*, and tripods, especially *li* tripods. The types included, prominently, sets of vessels for containing, warming, and drinking alcoholic beverages. The same types of vessels were also made in bronze. The bronze vessels were cast, characteristically, by the so-called piece-mold method. First, a clay model was made. Then more clay was applied over the model to produce a mold. The mold was cut into pieces or segments and removed. After a thin layer of clay was scraped off the surface of the model, the piece-molds were reassembled, and a cavity was thus formed between the model (now a "core") and the molds. Molten metal was then poured into the cavity to cast the vessel.

In addition to food and drink vessels—for ritual as well as practical use—bronze was used for weapons and for a small number of tools such as adzes, chisels, awls, and knives. All the weapons had the distinctive *ko* halberd. Horse chariots were used by the Shang and Chou, but they have not been found at Erh-li-t'ou.

Other characteristic objects often found archaeologically are musical instruments of bronze and stone; jade rings, rings with a slit, spatulas, human and animal figurines, pendants, and ceremonial knives and weapons; cowry shells, perhaps used as media of exchange; lacquerwares; and fabrics, often of silk.

The vessels, weapons, musical instruments, and other objects were decorated with a common animal style of art, featuring realistic and fantastic animals and birds. Among the fantastic animals was the so-called *t'ao-t'ieh*, an animal face

and/or body split from the middle and spread flat symmetrically on the object surface. The face featured prominent eyebrows, eyes, and upper jaws, sometimes also fangs, but had no lower jaws or only traces of them.

All three peoples used animal shoulder-blades, and the Shang and Chou also used turtle shells, for divination purposes. The Shang and Chou inscribed writings on some of these bones, and they also wrote on a number of other materials and cast inscriptions on bronzes. In all cases, writing was used for religious, ritual, and political purposes. Insofar as we know, there was only a single system of writing; a single language is used for these writings.

The Erh-li-t'ou, Shang, and Early Chou not only had the same general material culture as just listed, their archaeological record displays or suggests the same social and political institutions and also shows that the same processes of change were at work in their development through time. Moreover, some of these processes of change are highly distinctive in a comparative sense. I have written extensively on this topic elsewhere,[145] but I highlight aspects of it here to enliven the hard archaeological facts.

Compared with their precedent, the Lung-shan Culture of the middle Yellow River phases, Erh-li-t'ou, Shang, and Chou showed qualitatively intensified differentiation of society and qualitatively higher degrees of achievement in the arts, but in two aspects they exhibit remarkable continuity, not only from their Lung-shan forebears but going all the way back to the Yang-shao and Ta-wen-k'ou Cultures. One is in productive technology. No significantly new technological invention has been archaeologically documented from the Neolithic into the Bronze Age: the same stone, bone, shell, and presumably wooden digging, earth-turning, weeding, and harvesting implements were used during both periods. The emergence of Bronze Age civilizations in China was not accompanied, insofar as our available archaeological record suggests, by a significant use of metal farming implements, irrigation networks, any use of draft animals, or the use of the plow. For a breakthrough in agricultural technology in China we will have to wait until about 500 or 600 B.C., when cast iron began to be used widely and for agricultural implements.

The second aspect of continuity from the Neolithic to civilization is the importance of kinship. Clans and lineages, as shown both in inscriptions, when available, and in the layout of cemeteries and the association of emblems on vessels buried in the graves, not only continued to serve as the primary groups governing

145. K. C. Chang, *Early Chinese Civilization*, Cambridge: Harvard University Press, 1976; *Shang Civilization*, New Haven: Yale University Press, 1980; *Chung-kuo ch'ing-t'ung shih-tai*, Hong Kong: Chinese University of Hong Kong, 1982; *Art, Myth, and Ritual*, Cambridge: Harvard University Press, 1983.

social interaction but also provided a genealogical basis for the differentiation of their members into political and economic classes through the mechanism of hierarchical segmentation. Within each clan there were major and minor lineages determined by genealogical distance, and the lineage hierarchy was coupled with the hierarchy of the settlements.

The hierarchical organization of the settlements of the Three Dynasties gives us a powerful clue to the factors responsible for the accumulation of wealth, required for the emergence of any civilization, without new productive technologies. These factors in the case of China are primarily in the political realm: cumulation of wealth was achieved through increasingly uneven distribution of resources, which in turn was achieved by the emergence of an all-powerful kingship associated here above all with the bronzes. For the beginning of Chinese civilization, bronzes were the key, because the bronzes were the instruments of "the two major affairs of the State, the ritual and the warfare," as the ancient Chinese themselves stated in *Tso Chuan* under the entry for 577 B.C. (the thirteenth year of Duke Ch'eng).

It is highly significant that bronze was used in ancient China primarily for two kinds of objects: ritual paraphernalia and weapons. The former includes a seemingly infinite variety of food and drink vessels and musical instruments, and the latter includes weapons of war, weapons of repression (primarily the executioner's ax), and the horse chariots. There are also bronze tools, such as adzes, chisels, and awls, which were indispensable for the manufacture of the wheeled vehicles.

The role of bronze weapons in the distribution of wealth is obvious, but that of bronze ritual paraphernalia is less so. Bronze, actually, was not the only material for such use; jade, ivory, lacquerware, wood, pottery, and other materials were also used for ritual purposes. These ritual objects were the paraphernalia of ancient shamans in their tasks of communication with the departed ancestors and with other deities. The oracle bones were used for the same purpose. Many of the ritual objects were adorned with images of animals, which according to later textual evidence were in all likelihood the agents or helpers of the shamans in their task of ascension. We recall that shamanistic figures are evidenced as far back as the Yang-shao Culture, and the Three Dynasties shamans were their later versions. The major difference is that some of the shamans of the Three Dynasties either acquired political powers themselves or were monopolistically employed by the kings as a medium of political power—derived from the shaman's ability to communicate with the sage and foreknowledgeable ancestors and deities.

In this sense the first Chinese civilizations were shamanistic; their art was in fact shamanic paraphernalia, which were not only the trappings but also the very

instruments of political power. I use the word *shamanistic* here in the same way that Peter Furst has characterized the Mesoamerican civilizations as being shamanic or shamanistic:

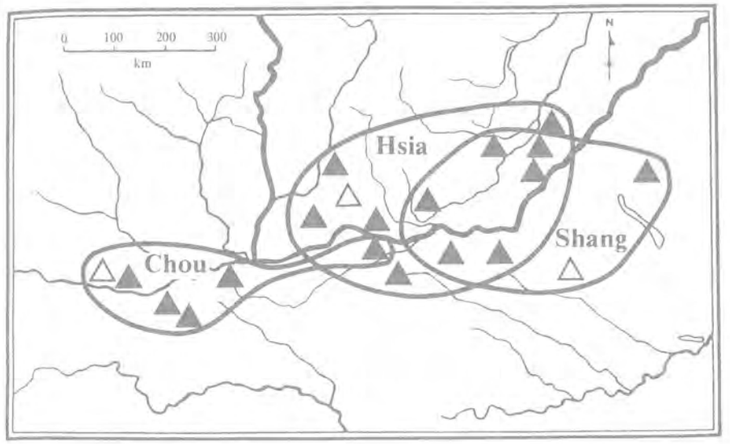
Origin through transformation or metamorphosis, rather than creation in the Biblical sense, is the hallmark of Mesoamerican religion. The stratified universe with its respective spirit rulers, world axis, world trees with birds, world mountains, world quarters and color directions—all these and more are surely Mesoamerican, as are qualitative equivalence of man and animal, naguals or alter egos, companion animals, the use of animal skins, claws, teeth, masks and other parts to symbolize or effect transformation.[146]

All these and more are surely ancient Chinese as well. Scholars of ancient China will be familiar with the shamanistic core of its cosmology, with its stratified universe and with the religious personnel who could penetrate the barriers separating the cosmic layers with the help of world trees with birds, world mountains, and animal alter egos. What is crucial to the issue of the rise of civilization in China is the monopoly of high shamanism, which enabled only the high and the mighty to communicate, to be knowledgeable, and to have the authority to rule. Thus, the possession of art objects—rare in themselves, but rendered even more valuable by their role in communication—was possession of political power in early China. Not coincidentally, the ancient symbol of state and of legitimacy was the so-called *Chiu Ting,* or The Nine Ting Tripods. In *Tso Chuan,* under the entry for 605 B.C., we encounter the following statement about the role of the Nine *Ting* Tripods:

In the past when the Hsia Dynasty was distinguished for its virtue, the distant regions put into picture their distinctive wu, *and the nine pastors sent in the metal of their provinces. The* ting *tripods were cast, with representations on them of those* wu. . . . *Hereby a harmony was secured between the high and the low, and all enjoyed the blessing of Heaven. When the virtue of Chieh was all-obscured, the tripods were transferred to Shang, for six hundred years. Chòu of Shang proved cruel and oppressive, and they were transferred to Chou. . . . King Ch'eng fixed the tripods in Hsia-ju, and divined that the dynasty should extend through thirty reigns, over seven hundred years. Though the virtue of Chou is decayed, the decree of Heaven is not yet changed.*[147]

What is stated here cannot be clearer in pinpointing the role of the bronzes in early China: with their animal images the bronze vessels enabled man to unite

146. "Shamanistic Survivals in Mesoamerican Religion," *Actas del XLI Congreso Internacional de Americanistas* (Mexico), 3 (1976), 153.
147. Based on translation by James Legge, *The Chinese Classics,* vol. 5, Oxford: Clarendon Press, 1872, p. 293.



308. Capital sites of the Three Dynasties. Their distribution coincides with the distribution of ancient copper and tin mines in ancient China. (From *WW* 1985, no. 2, p. 65.)

Heaven and Earth, and he who possessed the bronzes was the legitimate ruler. The fierce contention among the many states of early China, thus, came to be symbolized as a fierce contention for each other's art treasures. The Nine *Ting* Tripods of course symbolize all art objects, but because of the scarcity of the metal and the trouble it must have taken to mine and smelt the ochres and to cast the vessels the bronzes were given a paramount place among symbols. One measure of the central importance of bronze in the early Chinese scheme of things is the hypothesis that the frequent moves of the capital cities of the Three Dynasties (see figs. 272–73, 293)[148] were necessitated by the frequent exhaustion of the copper and tin mines in North China and the consequent incessant chase after new sources of the metal. The capital cities are seen in this hypothesis as the leaders of the chase (fig. 308).

148. K. C. Chang, *WW* 1985 (2), 61–67.

7

The First Civilizations: Beyond the Three Dynasties

In the "Wang Chih" (Kingship) section of *Li Chi* we read the following classification of the peoples in China from the perspective of the Chou people toward the end of the Chou Dynasty:

The people of those five regions—the Middle states, and the Jung, Yi (and other wild tribes around them)—had all their several natures, which they could not be made to alter. The tribes on the east were called Yi. They had their hair unbound, and tattooed their bodies. Some of them ate their food without its being cooked with fire. Those on the south were called Man. They tattooed their foreheads, and had their feet turned in toward each other. Some of them ate their food without its being cooked with fire. Those on the west were called Jung. They had their hair unbound, and wore skins. Some of them did not eat grain-food. Those on the north were called Ti. They wore skins of animals and birds, and dwelt in caves. Some of them did not eat grain-food.[1]

This five-part division of the people of the world—into the Hua Hsia people of "the Middle states," the Yi of the east, the Man of the south, the Jung of the west, and the Ti of the north, was obviously a twofold reflection of the world view of the Chou people: first, their ethnocentrism, and, second, their concept of the Four—the Four Directions, the Four Quarters, the Four Lands, and so on. The Chou people, of course, inherited these from the Shang, who in turn probably inherited them from the Hsia. All of these were people of the Chung Yuan, the Central Plains, with its primary region in between the Yellow River and the Lo-ho River.

In chapter 6 I summarized the available archaeological data on the first civilizations of the Central Plains, the Three Dynasties. In many senses the Central Plains did constitute a culture area, as shown by the inventory of common cultural characteristics at the end of the last chapter. In a very important way this area separated itself from the surrounding regions, namely, the area's literary documents record a world of its own, and this was the only area in ancient China that had such a record. The people here had grounds to feel themselves different from the Yi, the Man, the Jung, and the Ti, aside from the question of eating or not eating grains and the question of eating their meat raw or cooked. In fact, they not only felt themselves different, they also felt themselves superior. In *Tso Chuan* one sees that the Jung and the Ti are repeatedly referred to as "wolves" (660 B.C.) or "birds and animals" (568 B.C.).

For valid historiographic reasons Chinese archaeologists have during the last six decades concentrated their efforts in the Central Plains, and the result is that

1. Based on translation by James Legge, *The Li Ki*, vol. 27 of *The Sacred Books of the East*, Oxford: Clarendon Press, 1885, p. 229.

the prehistory in this area is the most completely known. This has tended to give an illusion of support to the hypothesis of the Central Plains' nuclear status as a center of diffusion to the peripheral areas, where developmental sequences are often still incomplete and, thus, seem secondary and derivative. However, during the last ten years or so, there has been significant decentralization of Chinese archaeological initiatives, and local archaeological activities have picked up considerably. Consequently, as more is being learned about the indigenous history of each of the peripheral regions, many of them are beginning to yield their own developmental histories within the general framework of the continuing interaction sphere. More and more of these regions beyond the Three Dynasties appear to have achieved civilized status at about the same time that civilization emerged in the Central Plains. This has not proved to be so in all regions. But, whatever their civilizational status during the second millennium B.C., many of the peripheral regions interacted with the Central Plains, with substantial consequences on both sides.

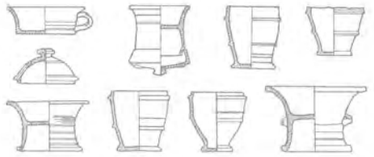
In this chapter I briefly examine the current archaeological status of five of these peripheral regions during the second millennium B.C., regions that may have been inhabited by the people referred to as the Yi, the Man, the Jung, and the Ti by the Central Plains inhabitants. The five regions are Shantung and northern Kiangsu, the Liao-ho River valley, eastern Kansu, the Lower Yangtze, and the Middle Yangtze basin (fig. 309).

Shantung and Northern Kiangsu in the Second Millennium B.C.

In the spring of 1960 a Neolithic site was excavated near Tung-yüeh-shih-ts'un, in P'ing-tu, eastern Shantung. At the site was found a distinctive assemblage of gray and black pottery of thick body, featuring such types as the beaker with a flat base, urn on a pedestal with several circumferential ridges, and lids with knobs.[2] While recognizing its distinctive flavor, the archaeologist who dug the site nevertheless classified it as Lung-shan. It was only in the late 1970s and early 1980s that archaeologists working in Shantung began to realize that the assemblage from Tung-yüeh-shih-ts'un, or the Eastern Yüeh-shih village, actually represented a different culture from the Lung-shan, whose sites have been identified throughout Shantung and in northern Kiangsu. The name Yüeh-shih Culture or Yüeh-shih phase has been suggested.[3] The culture's diagnostic features are in its pottery, which includes the beaker, the urn on a pedestal, *hsien* steamer, *tou*, and lids,

2. *KK* 1962 (10), 509–18.
3. W. M. Yen, *WW* 1981 (6), 43; C. H. Chao, *KKYWW* 1984 (1), 92–99.

309. The core (*hatched*) and peripheral (*blank*) areas of early civilizations in China.



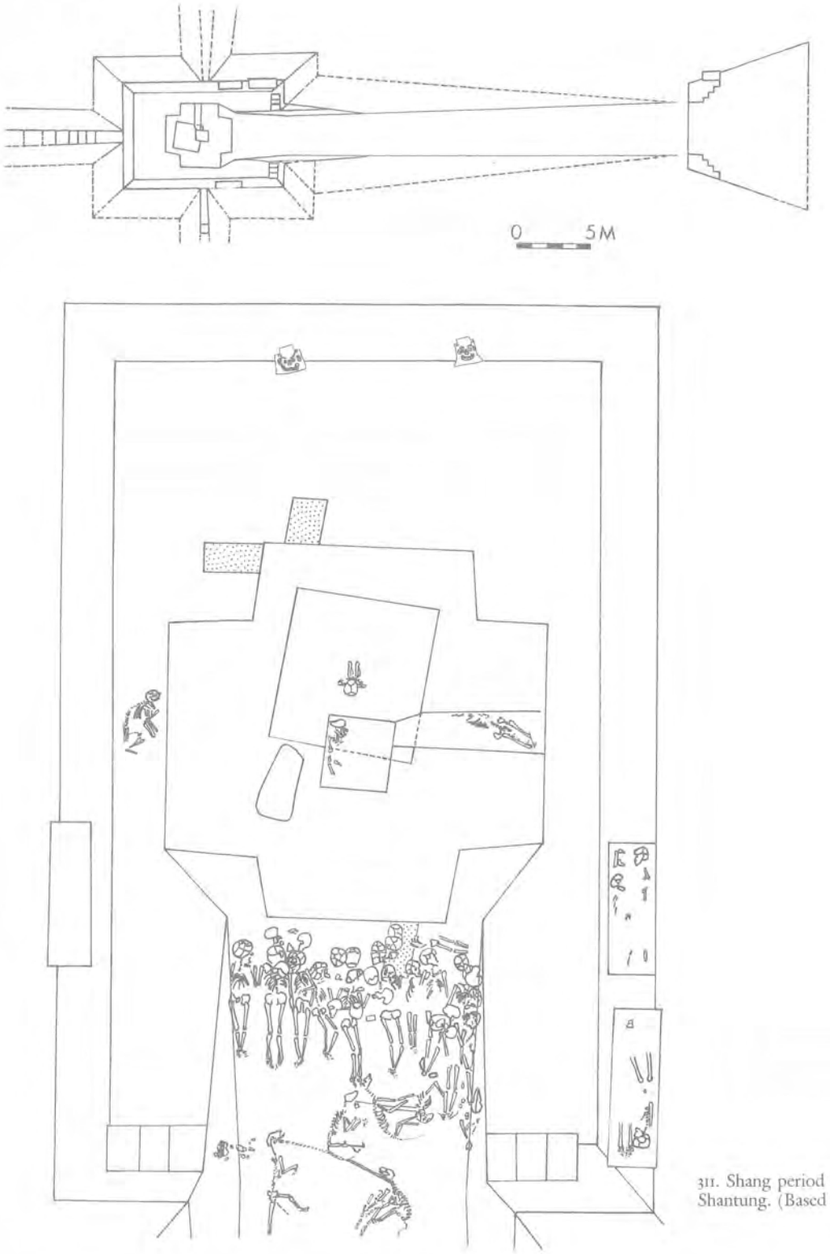
310. Pottery types of the Yüeh-shih phase in Shantung. (From *KKHP* 1984, no. 1, p. 20.)

many with heavy circumferential ridges (fig. 310). Bronze awls and arrowheads have also been found from Yüeh-shih sites. Its chronological position may be tentatively placed into a period "comparable with the Hsia and early Shang in the Central Plains in western Shantung," but which "may have lasted somewhat longer in eastern Shantung."[4] This culture may be the earliest Bronze Age phase in Shantung after the Lung-shan, and its future archaeological investigations will be noted with interest.

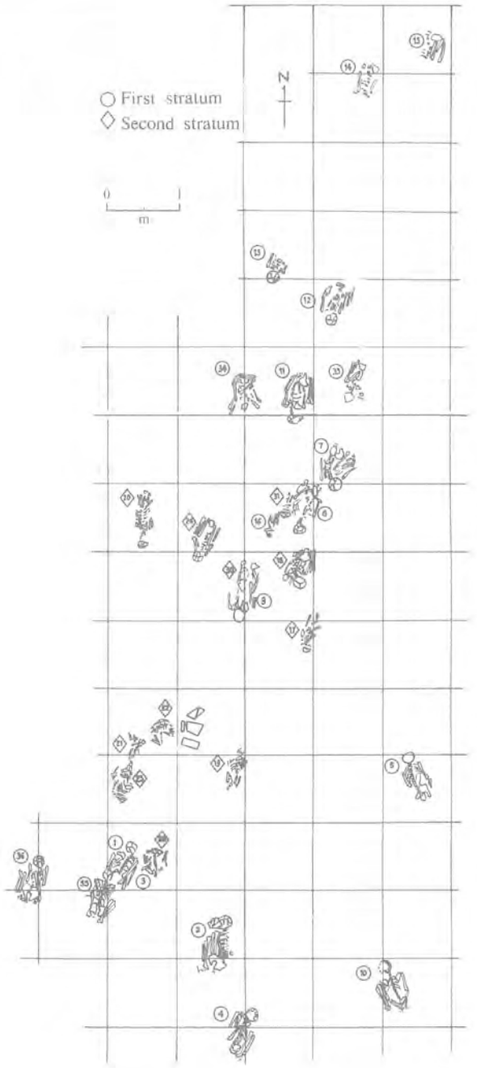
Slightly later than the Yüeh-shih Culture are a number of Shang-period sites with Shang-style bronzes. According to survey data up to 1972, Shang remains are said to have been reported from the entire province except for the district of Te-chou in northernmost Shantung.[5] The best known of the Shang sites, however, are two that were discovered many years ago and where new investigations have revealed important data. These are Ta-hsin-chuang, in the eastern suburb of Chi-nan,[6] and Su-fu-t'un, northeast of Yi-tu.[7] The Su-fu-t'un cemetery was excavated in 1965–66 and four Shang tombs were found. Tomb no. 1, the only one described in publications thus far, closely resembles the royal tombs at Hsi-pei-kang. The tomb pit is rectangular, 8.25 meters deep, about 15 meters north-south and 10.7 meters east-west, oriented north-south 3 degrees to the west. It has four ramps, a cross-shaped wooden chamber surrounded by reconstituted second-level platforms, and two successively excavated pits at the bottom. The entire grave was heavily furnished with bronzes (including two large axes with *t-ao-t'ieh* faces), pottery, jade objects, stone ornaments, and 3,790 cowrie shells. (The grave had been plundered, and many whole bronze vessels were presumably removed.) In addition, skeletons of forty-eight humans and six dogs, all sacrificial victims, were found in various parts of the grave—in the pits at the bottom, on the second-level platform, and at the base of the southern ramp. This is the largest Shang tomb yet uncovered outside An-yang (fig. 311).

South of Shantung, in the Huai-ho River plain of northern Kiangsu, there are several Shang-period sites in the Hsü-chou area, especially Kao-huang-miao[8] and Ch'iu-wan;[9] sites in Fu-nan,[10] Shou Hsien,[11] and Chia-shan[12] in northern Anhwei, and even in Fei-hsi in Central Anhwei at the Yangtze drainage.[13]

4. C. H. Chao, *KKYWW* 1984 (1), 96.
5. *WW* 1972 (5), 3; see also *KK* 1961 (2), 86–93.
6. F. S. Drake, *China Journal*, 31 (1939), 77–80; 33 (1940), 8–10; *WW* 1959 (11), 8–9; 1972 (5), 3; *KK* 1959 (4), 185–87; 1973 (5), 272–75.
7. *KKHP* 2 (1947), 167–77; *WW* 1972 (8), 17–30.
8. *KKHP* 1958 (4), 7–17; *KK* 1960 (3), 25–29.
9. *KK* 1973 (2), 71–79; 1973 (5), 296–98; *WW* 1973 (12), 55–58.
10. *WW* 1959 (1), inside cover; 1972 (11), 64–66; *The Exhibition of Archaeological Finds of the People's Republic of China*, Peking: 1974, p. 18.
11. *KKHP* 2 (1947), 250; Li Chi, *Bull. Inst. Hist. Philol.* 23 (1951), 612.
12. *WW* 1965 (7), 23–25.
13. *Exhibition of Archaeological Finds*, p. 18.



311. Shang period tomb at Su-fu-t'un, Yi-tu, Shantung. (Based on *WW* 1972, no. 8, p. 25.)



312. Shang period burial area at Ch'iu-wan, Hsu-chou, Kiangsu. (From *KK* 1973, no. 2, p. 77.)

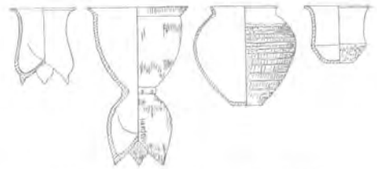
313. Erected rocks at the center of a Shang burial site in Ch'iu-wan, Kiangsu. (From *KK* 1973, no. 2, pl. 6.)

The materials in this area have not been described in archaeological publications in great detail, and our knowledge about the Shang civilization in the Huai-ho plain is extremely limited. But the Fu-nan bronzes are of such a style (a combination of *early*-looking "trumpet-mouthed" *tsun,* the nonseparation of the decorative motif from a *lei-wen* background—supposedly an *early* feature—and the high relief decor commonly regarded as a *late* feature) and were made by means of such idiosyncratic casting techniques that some observers are convinced that they were the products of a local metallurgical industry.[14] At the Ch'iu-wan site, a burial area was excavated in 1965 in which twenty skeletons, two isolated skulls, and twelve dog skeletons were found in an area of some seventy-five square meters, at the center of which was a cluster of four large rocks erected together on the ground (figs. 312–13). All the human skeletons were prone, with flexed lower limbs, most with arms bound behind the back. Clearly this is a scene of human sacrificial rituals, and several commentators have used textual evidence to show that the find represents a She (Earth deity) rite involving human sacrifice, well known among the Eastern Yi people of ancient China.[15] Hsü-chou is located in the Shang state of P'eng, and the Ch'iu-wan find clearly points to a local civilization comparable to the Shang of Honan in its social stratification and in which there was undoubtedly a metallurgical industry capable of producing vessels with the area's own decorative style.

The Lower Hsia-chia-tien Culture of Northern Hopei and the Liao-ho River Valley

Toward the latter half of the third millennium B.C., the Hung-shan Culture (see chapter 3) of the upper Liao-ho River valley vanished. In just about the same area—the Liao-ho River valley, the Jehol highlands of western Liaoning and northern Hopei, and the Peking-Tientsin plain—a new culture appeared, featuring a completely new ceramic assemblage. The rocker-stamped, flat-based jars and urns of the Hung-shan Culture completely disappeared, giving way to the gray cord-marked *li* tripod and *yen* steamer as the leading types. This is the Lower Hsia-chia-tien Culture—so called because the new assemblage was first recognized in the lower stratum of the site of Hsia-chia-tien, in Ch'ih-feng, western Liaoning.[16] The Lower Hsia-chia-tien phase has a distinctive stone inventory as well, including polished cylindrical axes, flat hoes, shouldered hoes, flat perforated axes, knives, and microliths. Its *li* tripod, the most characteristic of its pottery types, includes several varieties, depending on the curve of the belly; its long-belly *li,* with a flaring mouth, wide rim, elongated body, and conical solid feet with pointed tips, is the diagnostic type of the phase (fig. 314).

14. V. C. Kane, *Archives of Asian Art* 28 (1974–75), 80; *WW* 1972 (11), 64–66.
15. *KK* 1973 (5), 296–98; *WW* 1973 (12), 55–58.
16. *KK* 1961 (2), 77–81; *KKHP* 1974 (1), 111–44; *WW* 1973 (11), 44–45, 77.



314. Pottery types of the Lower Hsia-chia-tien Culture at Feng-hsia, Pei-p'iao. (From *CKHNL* 1, 1980, p. 166.)

Several hundred sites are now attributed to Lower Hsia-chia-tien, and more than a dozen have been excavated. Two regional phases are usually distinguished: north of the Yen-shan Mountains of northern Hopei, and south of the Yen-shan Mountains.[17] The major sites north of Yen-shan are—in addition to Hsia-chia-tien and Yao-wang-miao in Ch'ih-feng, the sites excavated in 1960—Chih-chu-shan, also in Ch'ih-feng;[18] Ta-tien-tzu, in Ao-han;[19] and Feng-hsia, in Pei-p'iao;[20] all in Liaoning. South of Yen-shan the best known sites are Liu-li-ho in Fang-shan;[21] Ta-t'o-t'ou in Ta-ch'ang;[22] Chang-chia-yuan in Chi-hsien;[23] and Ta-ch'eng-shan in T'ang-shan;[24] all in northern Hopei, Peking, and Tientsin. (It should be noted that there is a school of thought which refers to the sites south of Yen-shan as the Ta-t'o-t'ou phase, not classifying them as Lower Hsia-chia-tien on the basis of differences in house patterns and pottery modes.)[25]

The gray cord-marked pottery, especially the *li* tripods, which finds no precedent in the local Hung-shan Culture, resembles the Lung-shan pottery of Hopei. Bronze objects such as arrowheads, knives, rings, earrings, and small implements with sockets have been found at many sites, and some pottery vessels in graves were painted in red, white, or yellow pigments with designs that sometimes recall the spirals on Shang bronzes (fig. 315). Many dwelling houses were found, constructed with rocks or clay slabs, the clay houses similar to some of the houses in Honan Lung-shan. The Lower Hsia-chia-tien has been regarded as another local version of the Lung-shan Culture or the Early Shang Culture.[26] But its virtual coincidence in geographic distribution with the antecedent Hung-shan Culture would lead one to suspect that the emergence of the Lower Hsia-chia-tien Culture was the result not of a Lung-shan intrusion but of a drastic replacement of the Hung-shan Culture due to very strong influence from Hopei, first during the period of the Lung-shan Cultures and then continuously during the Shang and Western Chou dynasties as well. The first appearance of Shang is marked by the

315. Painted potsherds of the Lower Hsia-chia-tien Culture at Feng-hsia, Pei-p'iao, Liaoning. (From *KK* 1976, no. 3, p. 208.)

17. C. H. Li, *CKHNL* 1 (1980), 163–70.
18. *KKHP* 1979 (2), 215–42.
19. *KK* 1975 (2), 99–101.
20. *KK* 1976 (3), 197–210, 186.
21. *KK* 1976 (1), 59–60.
22. *KK* 1966 (1), 8–13.
23. *WWTLTK* 1 (1977), 163–71, 91.
24. *KKHP* 1959 (3), 17–35.
25. C. K. Han, *CKHNL* 3 (1984), 220–29.
26. C. H. Li, *CKHNL* 1 (1980), 167.

Liu-chia-ho site in P'ing-ku near Peking, which has yielded a typically late Cheng-chou phase assemblage.[27] Bronze vessels of the An-yang phase have been found in hoards or mortuary contexts as far north as K'o-tso in the Ta-ling River valley[28] and in K'o-shih-k'o-t'eng Banner on the Sharamurun.[29] The association of these bronze vessels with the local assemblages is unclear, but the chronological context of these finds must be the Lower Hsia-chia-tien. The interrelationship of Lower Hsia-chia-tien and Shang and Western Chou civilizations in this area will be the key to understanding the societal and cultural changes that were taking place here in the second millennium B.C.[30]

The Hsin-tien, Ssu-wa, and Sha-ching Cultures of Kansu

The site of Yang-shao-ts'un in western Honan was discovered in 1920 by Liu Ch'ang-shan, a field assistant of J. G. Andersson. In 1921 Andersson investigated the site himself, finding, among other things, some painted pottery which he considers to be related to the Painted Pottery cultures of Anau and Tripolye. In 1923–24 Andersson made an extensive survey in the area of eastern Kansu, presumed to be the area linking the east with the west. In the Huang Ho valley in eastern Kansu around the city of Lan-chou, and in the valleys of the T'ao Ho and the Huang-shui (Hsi-ning Ho), Andersson found a considerable number of early culture sites. Grouping them into six stages, he considered them the linear succession of a "Painted Pottery culture" tradition and gave them consecutive dates (B.C.).[31] Andersson's Kansu chronology, in its final modified version, is as follows:[32]

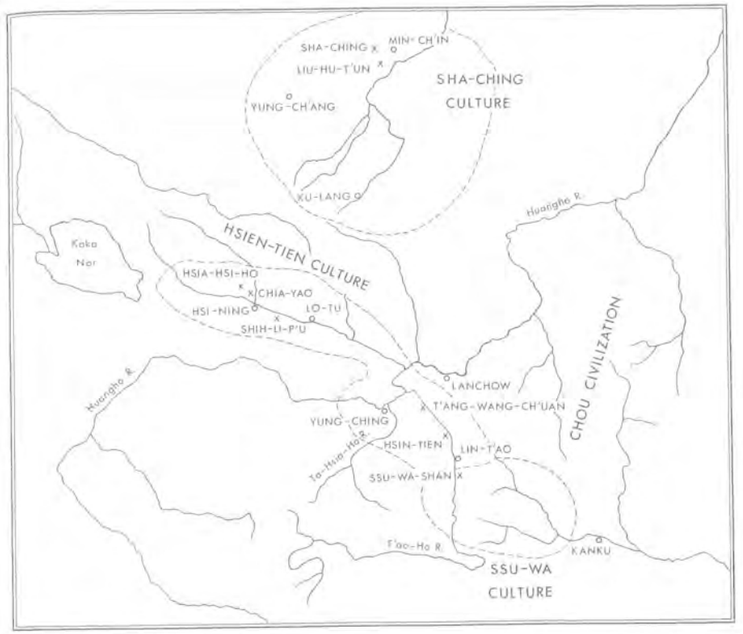
Late Stone Age:

Ch'i Chia (2500–2200)
Yang Shao (Pan-shan) (2200–1700)
Ma Ch'ang (1700–1300)

Bronze Age:

Hsin Tien (1300–1000)
Ssu Wa-Ch'ia Yao (1000–700)
Sha Ching (700–500)

27. *WW* 1977 (11), 1–8.
28. *KK* 1973 (4), 225–26; 1974 (6), 364–72; *WW* 1977 (12), 23–33, 43.
29. *KK* 1977 (5), 354, 356.
30. Cf. Tsou Heng, *Hsia Shang Chou k'ao-ku-hsüeh lun-wen-chi*, Peking, Wen-wu Press, 1980, pp. 262–71.
31. J. G. Andersson, *Memoirs GSuC*, ser. A, 5, 1925.
32. *BMFEA* 15 (1943), 295.



316. Hsin-tien, Ssu-wa, and Sha-ching cultures in Kansu.

This chart, once influential, is cited for historical interest only, for the entire scheme is long out of date. Archaeological materials that have accumulated since the early 1920s in eastern Kansu show that the first farmers who occupied eastern Kansu were of the Ta-ti-wan phase of the earlier farmers, which was followed by the Yang-shao of the Kansu subdivision, a derivative of the Yang-shao peoples in the central plains. These were followed by peoples of the Ch'i-chia Culture, corresponding in time to the Lung-shan Cultures to the east but possibly of a different ethnic strain and probably of a distinctive cultural tradition. Between the Ch'i-chia and the Ch'in civilization, which swept into this region and made it a part of the Ch'in Empire, and contemporaneous with the Shang and the Chou civilizations in the middle and lower Huang Ho valley, the area in eastern Kansu was occupied by several contemporary or overlapping cultures: Hsin-tien, Ssu-wa, and Sha-ching (fig. 316).

THE HSIN-TIEN CULTURE

Archaeological assemblages of the Hsin-tien Culture have been recognized in the lower T'ao Ho valley north of the town of Lin-t'ao, the Huang Ho valley

around the city of Yüng-ching, and the lower Huang-shui valley east of the town of Lo-tu.[33] They consist of some stone implements, copper and bronze objects, and, above all, a distinctive ceramic style characterized by coarse red and gray fabrics, white and red slip, and geometric patterns painted in black pigment. The pottery was handmade by means of the coiling technique and a beater. Both the coiled surface and the cord impressions produced by the beater were then smoothed over with wet fingers. The black paintings were simple and robust, executed freehand in bands around the shoulder and the middle circumference of the pot; the designs were mostly curvilinear and round. The pottery is characterized by a distinctive demarcation between the body and the collar, a large mouth, and one or two large vertical handles attached to the middle part of the pot with one end connected to the body and the other attached to the rim or below the rim.[34] Within this culture, at least two phases are distinguishable: Hsin-tien phase A, centering in the T'ao Ho valley; and Hsin-tien phase B, concentrated in the Huang Ho valley near the city of Yüng-ching. Two other ceramic phases, T'ang-wang, near Yüng-ching, and Chia-yao (classified by Andersson with the Ssu-wa Culture), both in the lower Huang-shui, may also be related to the Hsin-tien Culture.

Hsin-tien phase A, also referred to as the Chi-chia-ch'uan phase, the classical Hsin-tien phase recognized by Andersson, is represented by dwelling sites at Huei-tsui, T'ao-sha Hsien, and Chi-chia-ch'uan, Lin-hsia Hsien; and by the cemetery at Hsin-tien (Hsin-tien locality A), T'ao-sha Hsien. Burial sites of this phase have also been found in Lin-t'ao, Lin-hsia, and other localities in T'ao-sha.[35] The Huei-tsui dwelling site was on a high terrace surrounded by deep ravines and was probably highly advantageous for defense purposes. Andersson believed that the natural topography of this site was essentially the same as it is today.[36] From this locality, pottery, stone and bone implements, beads, half of a cowrie shell, a bronze knife, and a bronze button were discovered by Andersson. The bronze knife has very similar counterparts among the Yin knives, and Wu Chin-ting finds some of the meander designs on the pottery reminiscent of Northern Chinese bronze patterns.[37] A *wu-shu* coin of the Han Dynasty was found, but Andersson considers it intrusive. The pottery is coarse and highly porous, mostly of a gray or red color. The vessels were coiled, beaten, and then smoothed over with wet fingers. Two forms predominate: round-bottomed

33. *KKTH* 1958 (9), 47; *KK* 1959 (7), 379.
34. G. D. Wu, *Prehistoric Pottery in China*, London: Kegan Paul, Trench, & Trubner, pp. 105–06.
35. J. G. Andersson, *BMFEA* 15 (1943), 167–79; *KK* 1962 (2), 69–71.
36. *BMFEA* 15 (1943), 168.
37. Wu, *Prehistoric Pottery in China*, p. 106.

bowls and big-mouthed, high-collared jars with two handles. The handles are all vertical, either placed at the belly at the maximum diameter of the piece or below the rim with one end attached to the rim or the upper part of the collar and the other end to the shoulder. The bottoms are predominantly concave. On the whole, the pots are relatively small, with an average height and diameter of fifteen centimeters. The surface designs consist of the beaten cord-marks that were not obliterated, incisions, scratched short parallel lines, and paintings in black pigment. The painting is largely confined to the shoulder and collar, consisting of simple geometric designs of forcefully but freely executed thick lines, such as horizontal black bands, narrow wavy lines, triangles, meanders, and N-shaped patterns. Some conventionalized anthropomorphic and zoomorphic patterns are also present. The Chi-chia-ch'uan site has yielded a similar ceramic ware, as well as well as a semisubterranean rectangular house, a number of storage pits, and a flexed burial.[38]

Hsin-tien phase B, also referred to as the Chang-chia-tsui phase, is represented by three localities in Yüng-ching Hsien: Chang-chia-tsui, Han-chia-tsui, and Wa-cha-tsui.[39] In the same area, assemblages of Hsin-tien phase A were also found. These two phases were probably chronologically successive, B being the earlier, but no stratigraphic evidence has been uncovered to confirm this view.[40] At the Chang-chia-tsui site, 165 round and rectangular pits were excavated, packed within a small area and yielding deep cultural debris. Chipped stone axes with ground edges, stone spades, knives (rectangular or notched), spindle whorls, perforated disks, and mortars and pestles were collected, along with bone spades, needles, awls, combs, ornaments, and a fragment of a bronze vessel, a bronze spearhead, and two pieces of bronze slugs. Among the pottery remains, some red and gray pieces with a fine texture were noted, but most are of a kind of brick-red ware tempered with sand or powdered pottery. They were also coiled, smoothed over, and burnished, like the pottery of phase A, but on the whole they have a finer paste and there is a greater proportion of white slipped specimens. For surface decoration, cord-marks, applied ridges, beaten checkers, and paintings are reported. The painting is again done in black pigment, but a few red patterns are found. The designs consist of parallel lines, deformed S-shapes, double spirals, N-shaped patterns, chevrons filled with parallel lines, sun patterns, crosses, and X-shaped patterns; most are common to both phase A and phase B, but others bear strong resemblance to the T'ang-wang phase. The vessels are more elongated,

38. *KK* 1962 (2), 69–71; *KKHP* 1980 (2), 187–219.
39. *KK* 1959 (4), 182–83; *KKHP* 1957 (2), 30; 1980 (2), 187–219.
40. *KKHP* 1957 (2), 30.

317. Pottery of Hsin-tien Culture phase B, Kansu. (From *KKHP* 1957, no. 2, p. 32.)

with larger handles than their phase A counterparts, and the bottoms are uniformly flat rather than concave. In addition to jugs and bowls, pans, mugs, and *ting* and *li* tripods are also common (fig. 317).

At another Hsin-tien B site, Lien-hua-t'ai in Yüng-ching, a knife, an awl, a spatula, and a vessel of bronze have been unearthed. The awl contains 81.25 percent copper, 9.56 percent tin, 3.30 percent lead, and 1.30 percent zinc; the spatula has 81.69 percent copper, 12.66 percent tin, and the vessel is shown to contain 92.50 percent copper and 6.80 percent tin.[41]

Closely related, if not practically identical, to Hsin-tien phase B is a ceramic phase that has been termed the T'ang-wang style.[42] The type site of this style is Shan-shen, near T'ang-wang-ch'uan, in Tung-hsiang Hsien, Kansu, in the lower T'ao Ho valley, but pots and sherds of the same style have been collected at other sites near Yüng-ching, in Lin-t'ao Hsien in the lower T'ao Ho, and along the lower Huang-shui east of Lo-tu.[43] The site of Shih-li-p'u near Hsi-ning in Chinghai, found by Andersson, who classified it with the Ma-ch'ang phase of the Kansu Yang-shao horizon, yielded pottery that shows no relation whatsoever to the Ma-ch'ang[44] but bears unmistakable resemblance to the T'ang-wang style. The pottery is characterized by red ware of coarse paste, tempered with powdered pottery and occasionally with sand. Most of the sherds and pots are plain or corded cooking ware, but some of them were burnished and painted in black pigment. The surface was first smoothed over (thus obliterating the coil marks) and then, very often, slipped in red. Black patterns were executed on the slipped surface, most confined between two parallel lines around the belly and consisting of spirals and whorls. Additional geometric patterns, such as S-shaped designs, parallel oblique lines, N-shaped designs, meanders, and chevrons filled with parallel lines, adorn parts of the rest of the pot on the collar, shoulder, or handle. The forms include jars with two or four vertical handles, single-handled mugs, *tou,* and *li* tripods. The most conspicuous feature is the very large loop handle, often higher than the mouth (fig. 318). Both in form and in decoration, the T'ang-wang style is closely similar to the Hsin-tien phases, particularly phase B, to which some investigators would assign this style.[45]

In the same area of distribution is another ceramic phase typified by the site of Chia-yao, which was grouped by Andersson with the Ssu-wa Culture, but it is

41. *KK* 1980 (4), 296–310; *WW* 1984 (9), 94–95.
42. *KKHP* 1957 (2), 23–27.
43. *KKHP* 1957 (2), 23–27; *KK* 1959 (7), 379; *WW* 1981 (4), 16–20; J. G. Andersson, *BMFEA* 15 (1943), 160–61.
44. K. C. Chang, *Bull. Inst. Hist. Philol.* 30 (1959), 298.
45. *KK* 1959 (4), 184.

318. Pottery of the T'ang-wang style, Kansu. (From *KKHP* 1957, no. 2, pls. 1–3, p. 33.)

considered by many other fieldworkers as an independent culture.[46] I believe it should instead be regarded as a ceramic phase related to that of Hsin-tien, which we may call the Chia-yao phase. The type sites, Chia-yao and Hsia-hsi-ho, were first discovered in 1923–24 by Andersson in the valley of a tributary of the Huang-shui in Hsi-ning Hsien, Chinghai.[47] The Chia-yao (Ch'ia-yao, K'a-yao) site, a cemetery, yielded thirteen skeletons which lie stretched on their backs, most with the head west. Some of the corpses had been sprinkled with red ocher. Eight burials were found at Hsia-hsi-ho, across the river. The vessels found in the graves have flat or (more rarely) concave bases, big bellies, and collars of varying length. The saddle-shaped mouth occurs on some of the pots. Most of the jars are equipped with two vertical handles of the shoulder or collar type. Four-handled jars, with two large collar handles and two small shoulder loops, are also present. The surface of the pottery is brick red or grayish, mostly plain, but corded specimens are also reported. Andersson recorded no painted specimens.

In addition to pottery, the Chia-yao and Hsia-hsi-ho graves yielded perforated stone disks, bone awls, plates, arrowheads, turquoise beads, clay spindle whorls, bronze buttons, folded buttons, links, openwork funnels, a knife, and some "rectangular objects." Andersson classified these assemblages as Ssu-wa solely on the basis of some jars with saddle-shaped mouths, which are characteristic of the Ssu-wa culture. This classification is dubious. It appears that the Chia-yao assemblages resemble the Hsin-tien phases more closely than the Ssu-wa Culture for the following reasons: (1) the saddle-shaped mouth is not common and is also found in the Hsin-tien phases, which may indicate cultural contacts with the Ssu-wa; (2) large collar handles, some of which are higher than the rim, are present; (3) four-handled jars are found; (4) concave bases are represented; and (5) geographically the Chia-yao phase is separated from the Ssu-wa region by a considerable area occupied by the Hsin-tien. This classification—with Hsin-tien instead of Ssu-wa—is strengthened by the result of new investigations since 1959 in Huang-chung Hsien and near the city of Hsi-ning which brought to light thirty-one localities of the Chia-yao phase.[48] Among the pottery remains were coarse red sherds tempered with powdered pottery and occasionally with sand or mica. These were coiled, some slipped (in red or, rarely, grayish white), and painted, corded, appliquéd, incised, or combed. The painting was done in black pigment, in designs of zigzags, triangles, and spirals. In form, the pottery is characterized by a wide mouth and large and small vertical handles, mostly on the collar part of

46. J. G. Andersson, *BMFEA* 15 (1943), 222; but see *KKTH* 1956 (6); and *WW* 1960 (6), 36.
47. J. G. Andersson, *BMFEA* 15 (1943), 185–197.
48. *WW* 1960 (6), 35–36; *KK* 1964 (9), 475–76.

the jar. A few *li* tripods were found. Concave bottoms occurred quite frequently. In addition, some stone, horn, and bronze artifacts were discovered. Among the bronzes, the *ko* halberds, buttons, and two-winged arrowheads are said to resemble Chou types.[49] The close similarity of this Chia-yao assemblage to the T'ang-wang phase of the same region has been noted,[50] and there is some speculation that the T'ang-wang phase was probably the proto-Chia-yao, so to speak. At any rate, the Chia-yao phase is shown to be related to the Hsin-tien phases by the new finds, in the following aspects: temper of powdered pottery, coiling, red slip, black pigments in painting, and spiral designs. It is thus possible that Hsin-tien phase B and the T'ang-wang style represent an earlier stage of the Hsin-tien Culture, which evolved into Hsin-tien phase A in the T'ao Ho valley and into the Chia-yao phase in the Huang-shui valley.

THE SSU-WA CULTURE

This culture is now represented by over a dozen archaeological sites in the upper T'ao Ho valley, south of Lin-t'ao Hsien, and in the upper Wei-shui tributaries in eastern Kansu and westernmost Shensi.[51] The type locality of this culture is the Ssu-wa-shan cemetery in Lin-t'ao Hsien, discovered by Andersson in 1924.[52] The pottery remains in the eight burials here are plain, rather large, and brick red or red in color. The shape of the vessels is characterized by jars with saddle-shaped mouths; some *li* tripods were found, and these also have saddle-shaped mouths. The body of the vessels is essentially oval, which has led Wu Chin-ting to conclude that the pots are designed to be easily portable.[53] Two vertical handles are attached to the upper part of the vessel. On the collar between the two handles there is in some cases an indented appliquéd ridge. The average height of the vessels is twenty-four centimeters. They are coarse, sand-tempered, handmade, and smoothed out while still wet. Wu also observed that "every characteristic of the pottery seems to testify that the Ssu-wa Culture is not Chinese, though it might have been influenced by that culture."[54] In addition to pottery, Andersson found an armlet of bronze, a perforated axe, and two goat horns. According to him the goats were probably domesticated.[55]

The Ssu-wa-shan site was investigated again in 1945 by Hsia Nai, who excavated six additional burials. Three ways to dispose of the dead were distinguished by Hsia in his data: cremation and ash urns; interment of the dorsal and stretched type; and probably secondary burials. These burial customs, Hsia contends, indicate that the Ssu-wa-shan people were not Han Chinese but might have been the Ch'iang recorded in Chinese annals.[56] Pottery similar to that found by Andersson was uncovered by Hsia, who also recognized the use of the coiling techniques and of powdered-pottery tempers. A stone and a clay ball were collected, possibly slingstones. On the surface of a potsherd, impressions of grains were noted.[57]

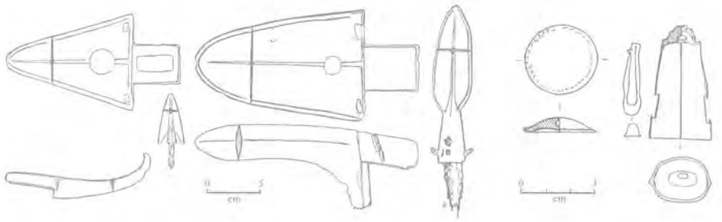
More sites of the Ssu-wa tradition were investigated in the T'ao Ho and upper Wei-shui valleys in 1956,[58] 1957,[59] 1958[60] and 1980.[61] In 1957, some painted sherds were discovered in the Ssu-wa assemblages, with such patterns as concentric semicircles, meanders, and other geometric designs executed in black. Stone implements associated with the Ssu-wa pottery were mostly chipped, including edge-ground axes, knives with side notches, and shouldered axes. In 1980, at the Hsü-chia-nien site in Chuang-lang, eastern Kansu, a Ssu-wa cemetery was unearthed, yielding 104 burials, including two horse-and-chariot pits. Seven of the tombs contained a single human sacrificial victim. In a few tombs were found bronzes, mostly weapons (halberds, spearheads, knife), bells, disks, and bracelets (fig. 319). Some of the bronzes are similar to Western Chou types.

THE SHA-CHING CULTURE

Approximately two hundred kilometers north of Lan-chou, in the arid land between the Huang Ho and the Ch'i-lien Mountains, lies the eastern segment of the so-called Ho Hsi corridor, drained by the Pai-t'ing River. Ecologically, this region is on the border between the Huang Ho valley and the steppe, but it is still on the south side of the Great Wall. When the Ch'i-chia Culture in the Huang Ho and T'ao Ho valleys to the south gave way to the Hsin-tien and Ssu-wa phases described above, the arid land in the north was occupied by a different cultural tradition, the Sha-ching.

Archaeological remains of this culture have been located in Min-ch'in, Yüng-ch'ang, and Ku-lang counties.[62] It is typified by the archaeological sites at Sha-

49. *KK* 1959 (7), 380.
50. Ibid., p. 379.
51. *KKTH* 1956 (6), 15; 1958 (9), 47; *KK* 1959 (7), 327, 380; 1963 (1), 48; see also C. Y. Hu, *WWCK* 2 (1980), 118–25.
52. J. G. Andersson, *BMFEA* 15 (1943), 179–85.
53. Wu, *Prehistoric Pottery in China*, p. 107.
54. Ibid.
55. *BMFEA* 15 (1943), 185.
56. *KKHP* 4 (1949), 96.
57. Ibid., pp. 106–07.
58. *KKTH* 1956 (6), 15.
59. *KKTH* 1958 (9), 45.
60. *KK* 1959 (7), 327.
61. *KK* 1982 (6), 584–90.
62. *KKTH* 1956 (6), 16.



319. Bronze weapons, knife, button, and bell of the Ssu-wa Culture from Hsü-chia-nien in Chuang-lang. (From *KK* 1982, no. 6, p. 588.)

ching-ts'un, in Min-ch'in (Chen-fan), Hsien, which were discovered in 1923–24 by Andersson.[63] These consist of a fortified dwelling site—Liu-hu-t'un—and a cemetery. The former was a mud-walled fortress, 50 meters in diameter. Found inside were a *li* tripod, some handled high bowls, a steatite pan, some bone artifacts (needles, arrowheads, and so on), a bronze knife, a bronze prismatic arrowhead, and a piece of golden string. The cemetery is 260 meters to the west, and in it over forty burials were excavated. The skeletons lay on their backs, stretched or slightly flexed. The pottery was reddish—containing sand or mica for temper—beaten, and red-slipped. Some of the pots were painted in red pigment, and the favorite designs were horizontal lines, triangles, and bird figures. In form, two shapes are characteristic: handled mugs with vertical walls and small jars with two small shoulder loops. The bodies and the collars of the jars are not distinctively demarcated. In addition to pottery, Andersson found in the burials stone and turquoise beads, marble rings, perforated stone objects (similar in shape to the banner stones of the eastern United States), cowrie shells (all ground flat and open at the back), and copper and bronze artifacts including a spearhead, an arrowhead (with square cross section), a ring, a knife tip, a flat three-lobed piece with a spiral design on the front and a bridge on each of the end lobes on the back (similar to an object found in a Warring States grave in Luan-p'ing, Hopei), tubes which were annulated at the ends and widened and smooth in the center (identical with objects found in the Ordos), and a button. In 1976, another mud-walled fortress was found at San-chiao-ch'eng, in Yung-ch'ang. In it were found a bronze knife, a bronze arrowhead, and a fragment of an iron hoe. One kilometer to the southwest is a burial area, where a bronze knife and several bronze plaques were collected. A Late Chou dating is suggested.[64]

The chronological position of the three cultures is stratigraphically clear—they can be shown to be earlier than the Han Dynasty but later than the Ch'i-chia

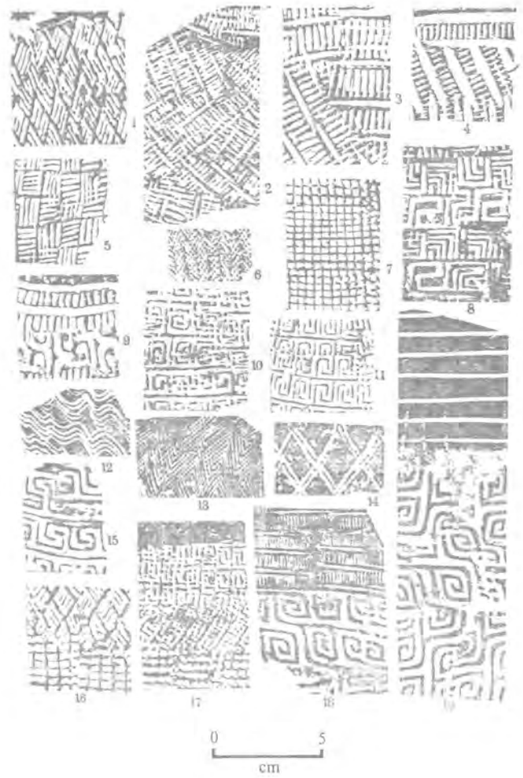
63. J. G. Andersson, *BMFEA* 15 (1943), 197–215.
64. *KK* 1984 (7), 598–601.

Culture in the same area. Stratigraphical evidence at Chang-chia-tsui and Wu-chia in Yüng-ching Hsien shows that the Hsin-tien Culture was definitely later than the Ch'i-chia,[65] and that at Ssu-wa-shan the Ssu-wa Culture was subsequent to the Ma-chia-yao phase of the Kansu Yang-shao Culture.[66] Furthermore, the saddle-mouthed jars sometimes found in the Hsin-tien assemblages indicate that the Hsin-tien and the Ssu-wa at least overlapped in time.[67] Some idea of the relative dating of these approximately contemporary cultures can be derived from the typology of the *li* tripods found in these assemblages (most of which are said to be of the Yin-Chou types), from the metal objects of Yin, Chou, and Ordosian affinities, and from the fact that within the Ssu-wa, which adjoined the Western Chou civilization of the Wei-shui valley, cultural elements such as specific types of shouldered axes and side-notched stone knives and bronze halberds have been found, which indicate contact with the Chou. It seems reasonable to place the Kansu cultures at the end of the second millennium and the first half of the first millennium B.C., an interval long enough for subdivisions to be made, such as the development of the Hsin-tien phases (Hsin-tien B and T'ang-wang into Hsin-tien A and Chia-yao).

The Geometric Cultures of the Lower Yangtze

As mentioned in chapter 4, archaeological discoveries in the 1930s in the Nanking and Shanghai areas prompted the organization of the Wu Yüeh Shih-ti Yen-chui Huei (Society for the Study of the History and Geography of Wu and Yüeh), Wu and Yüeh being the two prominent states in the lower Yangtze during the Chou Dynasty. Among the archaeological discoveries that generated or were generated by the interests of the society were Wei Chü-hsien's work at Ch'i-hsia-shan in Nanking,[68] and Ch'en Chih-liang's work in Yen-ch'eng, near Shanghai.[69] Both sites yielded ancient potsherds with geometric impressed designs. Since then, the archaeologists have found that pottery and potsherds paddle-impressed with geometric designs (circles, parallel lines, wavy lines, crosshatches, checkers, chevrons, lozenges, triangles, squares, spirals, and a whole range of other shapes) are widespread through both time and space (fig. 320). This pottery began toward the end of the Neolithic, came to a peak during the Shang and Chou dynastic periods, and persisted into Han and Six Dynasties potteries.

65. *KKTH* 1956 (6), 15.
66. *KKHP* 4 (1949), 74.
67. *KKTH* 1956 (6), 15; 1958 (9), 47.
68. C. H. Wei, "Wu Yüeh min-tsu," *Chin-chan Yüeh-k'an* 1 (1931) (2–3), 59–79.
69. C. L. Ch'en, *Yen-Ch'eng fang-ku chi*, n.p., 1935.



320. Rubbings of geometric patterns on pottery of the Hu-shu Culture. (From *KKHP* 1958, no. 1, p. 79.)

Within this time period, the geometric pottery underwent a "soft" phase, with thicker body, grainier paste, and softer texture, and a "hard" phase, with thinner body and finer paste, hard as metal. In area of distribution, the core of the geometric pottery is found in the lower Yangtze valley, in southern Kiangsu, northern Chekiang, and Kiangsi and Anhwei around the Yangtze valley, but pottery that can be characterized as geometric also occurred in various proportions within local ceramic assemblages in Honan in the north and throughout a large part of eastern South China, especially along the southeastern coast. The pottery is of such wide occurrence and importance in Chinese archaeology that a

ten-day national conference on "The Issue of the Impressed Pottery South of the Yangtze" was held in the summer of 1978 at Lu Shan, or Mount Lu, in Kiangsi.[70]

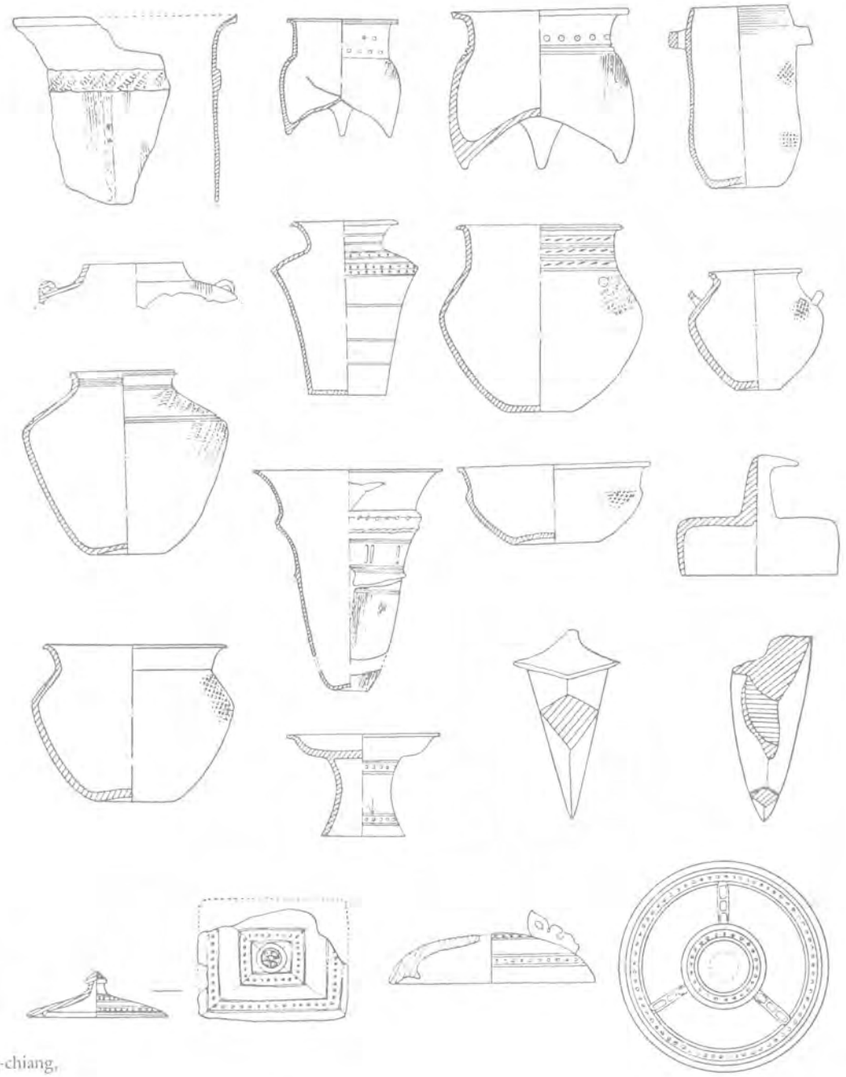
The wide distribution of the geometric pottery makes it plain that the concept of a Geometric Pottery Culture, which was used in the past to refer to the geometric pottery sites in the lower Yangtze, is not valid.[71] The Geometric Pottery, however, is a valid term that can be useful in interrelating the individual cultures that are significantly characterized by this ceramic style. The Lu Shan conference of 1978 reported a consensus on dealing with the geometric pottery in six individual regional cultures—namely, those in (1) the Lake T'ai area, (2) the Nanking-Chen-chiang area, (3) the Lake Po-yang and Kan-chiang River area, (4) southern Chekiang, Fukien, and eastern Kwangtung, (5) Kwangtung, and (6) Hunan. In this section we take a brief look at the first three regions, all in the lower Yangtze, where significant elements of civilization are found to occur in the second millennium B.C. Hunan will be discussed in the next section. Kwangtung and Fukien will be omitted from discussion here because evidence for civilizations is not found there until the next millennium.

LAKE PO-YANG AND THE KAN-CHIANG RIVER

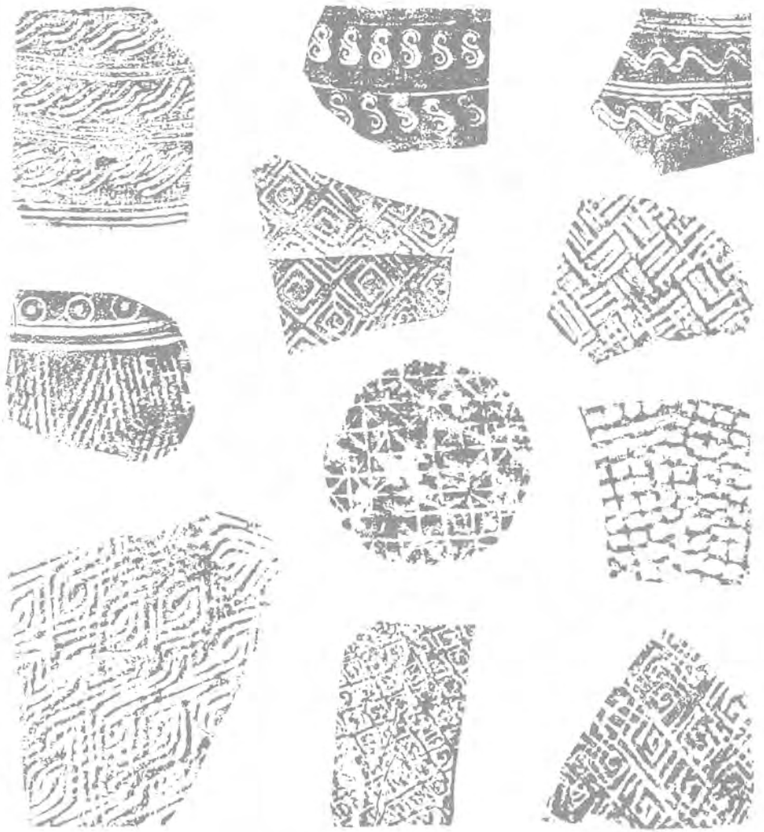
The only major second millennium B.C. site in this region is the Wu-ch'eng site in Ch'ing-chiang, northern Kiangsi, on the Kan-chiang River, excavated in four seasons from 1973 to 1975.[72] This is sometimes referred to as a Shang site, but primarily in a chronological sense. The culture here definitely was heavily influenced by Shang from Honan, but overall it was the product of an indigenous Geometric environment.

Two semisubterranean house floors, rectangular with round corners, were unearthed. One is 3.6 by 2.1 meters, and the other 2.65 meters long. Both the wall and the floor were baked hard and gray. Two pottery kilns, with firing chambers shaped like an upturned bowl, and more than thirty underground pits were excavated. Sixteen burials were found, all heavily eroded but furnished with pottery vessels and occasional bronzes. The pottery vessels include such types as the *li* tripod, *hsien* and *tseng* steamer, *tou* on pedestal, urn, jar, beaker with flaring mouth, and such wine vessels as *chüeh* and *chia* (fig. 321). Many of these, such as the *li*, the *tou*, the urn, the wine vessels, and the beaker with flaring mouth, are very similar to Shang types of the Erh-li-t'ou phase, which was accessible upstream on the Yangtze at P'an-lung-ch'eng. But the wide use here of the Geo-

70. *WWCK* 3 (1981).
71. Ibid., p. 2.
72. *WW* 1975 (7), 51–71; *WWTLTK* 2 (1978), 1–13.



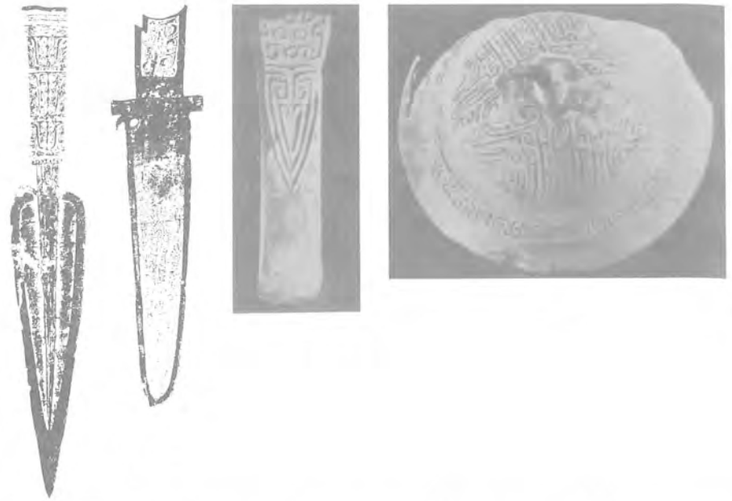
321. Pottery types at Wu-ch'eng, Ch'ing-chiang, Kiangsi. (From *WW* 1975, no. 7, p. 66.)



322. Geometric potsherds at Wu-ch'eng. (From *WW* 1975, no. 7, pp. 62–64.)

metric style bespeaks the distinctive flavor of the site (fig. 322). In addition, many of the pottery vessels at Wu-ch'eng are glazed; 3.84 percent of the sherds from layer 1 here are glazed, 3.87 percent from layer 2, and 16.6 percent from layer 3. A small percentage (0.23, 1.21, and 12.6 percent respectively from layers 1, 2, and 3) of the sherds are classified as primitive porcelain. This was made of "porcelain clay," grayish white in color, with a chemical composition classifiable as porcelain (76.47 percent SiO_2, 14.91 percent Al_2O_3, 2.06 percent K_2O, 2.27 percent Fe_2O_3,

323. Bronzes at Wu-ch'eng. (From *WW* 1975, no. 7, no. 67; and 1980, no. 8, p. 2.)



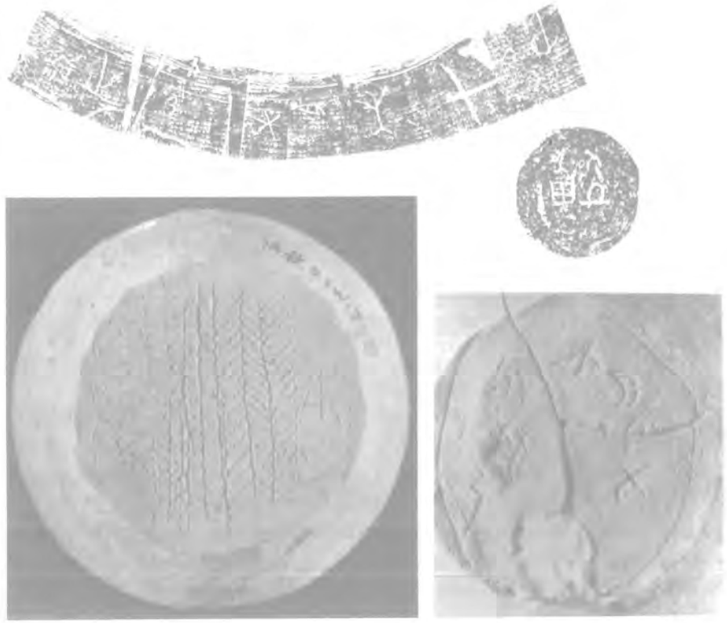
324. Stone molds for bronze casting at Wu-ch'eng. (From *WW* 1975, no. 7, p. 67.)

and 1.18 percent MgO).[73] Similar glazed pottery and primitive porcelain have also been found in Cheng-chou. They may have come from the south.

A number of bronzes and stone molds were brought to light, establishing the fact that at Wu-ch'eng there was a bronze industry producing objects possibly of Shang inspiration but of indigenous style. From the excavations came a couple of bronze knives, an ax, a spearhead, and a *ko* halberd; two additional bronze *ko* halberds and another spearhead were found accidentally in a tomb in 1976,[74] and a bronze vessel cover was collected from the surface (fig. 323). The decorative designs, with their spirals and cicadas, are unquestionably of Shang affiliation, but the animal mask made up of spiral bands on the vessel cover and the pattern of circles on the socket of the spearhead are of local distinction. A large number of stone molds, for the manufacture not only of such implements and weapons as the adz, chisel, ax, knife, and arrowhead but also of larger and more intricate objects like the halberds and ritual vessels, were unearthed (fig. 324). There definitely were local bronze foundries, which have not been archaeologically isolated.

Another very important category of finds at Wu-ch'eng consists of symbols incised on pottery and on stone molds. Altogether 143 different characters have

73. K. Y. Li and S. F. P'eng, *WW* 1975 (7), 77–83.
74. *WW* 1980 (8), 1–2.



325. Pottery inscriptions at Wu-ch'eng. (From *WW* 1975, no. 7, p. 76 and pl. 10.)

been recognized, some of them identifiable with inscriptional characters in Anyang. Most of them occur singly, but, significantly, in several cases they appear in linear sequence: seven characters in one case, five in another, twelve in a third, four in a fourth, and eleven in a fifth (fig. 325).[75]

Wu-ch'eng is perhaps the most important site in the context of an early Southern Chinese civilization. Its ties to the north with regard to the Cheng-chou phase of Shang civilization are clear, but this is not the end of the story. The general Geometric context, the distinctive decorative designs on bronzes as well as pottery, the highly developed glazed pottery and primitive porcelain, the indigenous writing system (still undeciphered except for the few characters identical with oracle bone inscriptions), not to mention the completely local inventory of implements (stepped adzes and the saddle-shaped pottery knives), all point to an early civilization, with its own metal industry and writing system, that apparently grew

75. *WW* 1975 (7), 51–71; *WWTLTK* 2 (1978), 1–13; L. T'ang, *WW* 1975 (7), 72–76.

out of a Southern Chinese Neolithic base. On the other hand, this appears also to be another case of the interrelated rise of the first Chinese civilizations, for the Cheng-chou Shang civilization must have exerted a strong local impact.[76] It is also significant that bronze was again used here for ritual vessels and for weapons, as in the north, although it seems to have been used here for implements to a larger extent. The field research at Wu-ch'eng is continuing, and we await more detailed study of the settlement patterns of Wu-ch'eng and the other sites that undoubtedly exist in the area.[77]

THE NANKING AND CHEN-CHIANG AREA

This is the area of the so-called Hu-shu Culture, named after the type site at Hu-shu, in Chiang-ning county, Kiangsu, near Nanking, excavated in 1951.[78] In the first comprehensive description of the culture, published in 1959, Tseng Chao-yüeh and Yin Huan-chang of the Nanking Museum gave the first space-and-time definition and characterization of the culture,[79] which they summarized in 1963,[80] as follows:

First discovered in 1951, this culture [now claims] 190 sites in the Ning-chen Mountains and the Ch'in-huai River area. . . . In addition, many sites in the Lake T'ai drainage system also contain remains of the Hu-shu Culture. . . . There are 15 sites [in the latter area]. From the point of view of present data, the center of the Hu-shu Culture is in the Ning-chen area and the Lake T'ai area is in an accessory position.

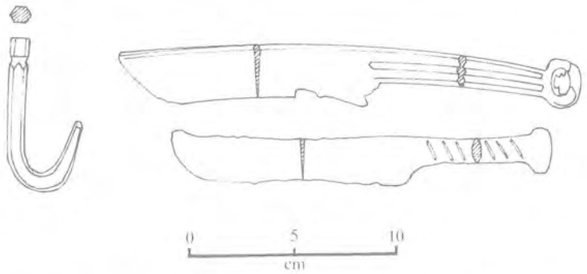
As for the content of the Hu-shu Culture, the most important points include the following. (1) Their dwelling sites are mostly located on earthen mounds on the lakeshores or riverbanks and by the hills; we call them mound sites. But in the Lake T'ai drainage area, some Hu-shu Culture sites are down the hill or under present ground level. (2) The inhabitants were good at building houses by baking. The floors were paved tight in layers and then fired dry. The walls also show evidence of having been fired. (3) Stone was the main material for production implements. Fairly large stone workshops have been uncovered. Among stone implements there are many sickles, adzes, and knives, and stone hoes and hammers also appeared, indicating a fairly high level of agricultural production. (4) The discovery of the bones of such domestic animals as cattle, sheep, pigs, and dogs in small numbers indicates that animal domestication was a supplementary economic activity. (5) The discovery of large quantities of stone arrowheads, net-sinkers, the bones and shells of water animals, and deer antlers tells of the important role fishing and hunting were still playing in their economic life. (6) In pottery, handmade sandy red ware was the main ware, but fine-paste, black-skinned polished pottery, fine-paste geometric impressed soft pottery, and sandy geometric impressed pottery also occurred. The most prominent types were the li *tripod and* yen *steamer for cooking, the large jars for food storage, the grinding bowl with spout, and the* lei *jar,* p'ou *urn, basin, and bow. (7) The widespread occurrence of copper ochres, copper slugs, copper-smelting utensils, and small bronze objects indicates that the people had mastered bronze smelting and casting techniques and used bronze objects. (8) The wide occurrence of oracle bones (shoulder-blades and turtle shells) suggests the prevalence of the custom of divination.*

This description still applies after more than twenty years have elapsed, although, because the prehistory of the lower Yangtze is better known now, the overall position of the Hu-shu Culture in that prehistory is much better understood. For one thing, the contemporary culture in the Lake T'ai area has proven too different to remain a part of the Hu-shu Culture, and it is now agreed to constitute a separate, Ma-ch'iao, phase,[81] which is taken up below.

Although continuity from its Neolithic antecedents is evident in the Hu-shu Culture, important new elements appeared in addition to the geometric pottery. Bronze knives, arrowheads, axes, fishhooks, and handles and legs of bronze *ting* tripods have been found at a number of sites near Nanking (fig. 326) and Tan-t'u.[82] Pottery crucibles and fragments of bronze have been found from a lower stratum of this culture at Pei-yin-yang-yin, near Nanking, indicating the practice of bronze metallurgy in the local village communities. Shang and Chou-type bronze arrowheads and knives as well as copper ores and pottery spoons (probably for bronze smelting) have been found at a number of sites in the Yi-cheng and Liu-ho area.[83] At the site of T'ai-kang-ssu near Hsi-shan-ch'iao, in Nanking, excavated in 1960, twenty-nine bronze artifacts, three pieces of oracle turtle shells, and stone, bone, and shell implements and pottery were discovered, together with ten burials. Some were headless bodies, some were heads only, and the legs of others had apparently been tied.[84]

It is difficult to assess the extent to which the development of the Hu-shu Culture may be attributed to Shang influence. Tseng and Yin have singled out

76. P. C. Li, *WWCK* 3 (1981), 133–43.
77. *WW* 1977 (9), 58–63; *KK* 1976 (4), 273; *Wen-wu k'ao-ku kung-tso san-shih-nien* (Thirty years of cultural relics work and archaeology), Peking: Wen-wu Press, 1979, p. 243.
78. "Chiang-su Hu-shu shih-ch'ien yi-chih tiao-ch'a chi," *Nan-ching fu-chin k'ao-ku pao-kao* (Report of archaeology in the vicinity of Nanking), Nanking Museum, 1952.
79. *KKHP* 1959 (4), 47–56.
80. *Kiangsu-sheng ch'u-t'u wen-wu hsuan-chi* (Selections of cultural objects unearthed in Kiangsu), Peking: Wen-wu Press, 1963, pp. 5–6.
81. T. C. Chiang, *Nanking Ta-hsüeh Shih-hsüeh Lun-ts'ung* 2 (1979), 169–80.
82. *KK* 1962 (1), 32–33.
83. *KK* 1962 (3), 128.
84. Ibid., pp. 117–24.



326. Bronze artifacts from the site of Suo-chin-ts'un, near Nanking. (From *KKHP* 1957, no. 2, p. 29.)

the following traits of the Geometric culture in southern Kiangsu which they consider to be derived from Yin or early Western Chou influences:[85] (1) in ceramics, such forms as *p'ou, lei, li, yen, kuei, yü, min,* and *tou,* such accessory parts as lugs, and such decorative designs as *yün* and *lei* patterns, cowrie, bands of triangles, and strings, all similar to the bronzes of the late Yin and early Chou; (2) in stone typology, stone halberds and stone arrowheads similar in form to the bronze halberds of the Yin and Chou dynasties and the bronze arrowheads excavated from Yin-Hsü; and (3) bronze knives, arrowheads, and handles and feet of the *ting* tripods of the late Yin and early Chou styles. According to Jao Tsung-yi, potsherds found in regions as far south as the Han-chiang valley in eastern Kwangtung resemble the "white pottery" of the Shang dynasty to such an extent in color and decorative designs as to suggest cultural influence.[86] But even if it did not reach that far south, Shang unquestionably influenced the emergence of the Wu-ch'eng culture of Kiangsi—a culture that apparently grew out of a Geometric substratum. But Kiangsi is still some ways upstream from the Yangtze delta.

If the Shang civilization had not quite come to the lower Yangtze, there cannot be any question that the Western Chou had come this far. Groups of bronze vessels that are probably Western Chou types have been discovered not only in the lower Yangtze Valley in Tan-t'u, Yi-cheng, Nanking, Li-shui, and Tan-yang in southern Kiangsu but also from such southern localities as Ch'ang-hsing, on the western shore of T'ai-hu Lake in northern Chekiang, and T'un-hsi in southern Anhwei (fig. 327), in the upper reaches of the Ch'ien-t'ang-chiang (Chekiang River).[87] These bronzes exhibit either the characteristic features that have been attributed to the Yin-Chou substage of the Archaic style according to North

85. *KKHP* 1959 (4), 54.
86. *Ta-lu Tsa-chih* 8 (1954), 65–67.
87. *WWTKTL* 1955 (5), 58–62; 1956 (12), 31; *WW* 1960 (7), 48; 1965 (6), 52; 1973 (1), 62; 1975 (8), 87–88; 1980 (8), 3–9; *KK* 1960 (6), 41; 1961 (6), 321–23; *KKHP* 1959 (4), 59–87; *WWTLTK* 2 (1978), 66–69.

327. Bronze vessels of Western Chou types found at T'un-hsi, southern Anhwei. (From *KKHP* 1959, no. 4, pl. 1.)

China criteria, or the typical diagnostics of the Middle Chou style as defined by Bernhard Karlgren. Accordingly, these sites can be grouped into two classes:

1. *Early Western Chou:* Tan-t'u and Yi-cheng finds, characterized by an Archaic style with features assumed to be Western Chou instead of Yin—four-eared *kuei, p'an* with bent ears. These two sites are in the lower Yangtze in southern Kiangsu.
2. *Late Western Chou* or *Early Eastern Chou:* Nanking, Li-shui, Tan-yang, T'un-hsi, and Ch'ang-hsing finds, characterized by a typical Middle Chou style with local characteristics. The first three sites are in the Yangtze Valley of southern Kiangsu, but the other two sites are farther south, in the Chekiang Valley in southern Anhwei and northern Chekiang, already within the Lake T'ai-hu area.

These findings are of considerable importance for the study of Western Chou bronzes, and in connection with the present discussion their composition and geographical distribution are highly significant. The distribution of the bronzes of different ages indicates that the southerly expansion of North Chinese cultural

influences extended from the lower Yangtze to the Chekiang Valley during the span of the Western Chou dynasty. In addition to some bronze types that are so similar to their North China counterparts as to suggest importation from the north—a suggestion strengthened by the inscriptions of Western Chou characters on a *kuei* vessel from the Yen-tun-shan site of Tan-t'u—there are other forms of bronze and other decorative designs on the vessels that find no counterparts in North China but must be considered to have been manufactured in situ and influenced stylistically by the local cultural tradition.

Some of the vessels [from the Tan-t'u group] are not identical with North China bronzes stylistically. For instance, the lid-knob and ting *ears in the shape of standing animals . . . are rarely seen on North China bronzes. The body shape and the foot form of two small* ting *tripods resemble the pottery* ting *tripods of the [local Geometric] cultures. The textile pattern on a pair of horn-shaped vessels and on several horse fittings is identical with the textile patterns on the local geometric stamped pottery. One can positively say that these bronzes were manufactured in situ and thus exhibit some characteristic features of the local culture.*[88]

At the T'un-hsi site, many ceramic remains found in association with the Western Chou type of bronzes are indistinguishable from the Geometric pottery discovered elsewhere in the area in less glamorous contexts,[89] and the bronzes differ from North Chinese bronzes in decorative patterns, shapes, and sometimes even in type, as, for example, a special local kind of musical instrument. These distinctive features, if they mean the local manufacture of some bronzes, are significant indicators of the nature of the communities that were responsible for their making, use, and burial.

Another highly suggestive fact about these Western Chou bronzes is that, as they appear in the present archaeological record, they are isolated islands of high civilization surrounded by the sea of less advanced communities of the local Geometric. In these communities, cultural elements indicative of Western Chou contacts, such as ceramic shapes, decorative designs, and the remains of bronze artifacts, are few and insignificant in comparison with the overwhelming majority of other remains found at the same sites, which consist of stone, bone, and shell implements of a local Neolithic tradition and ceramics of the geometric stamped style.

These facts suggest that the rise of some of the Western Chou civilizations in the lower Yangtze Valley may have been brought about by an elite class who

88. *KKHP* 1959 (4), 54.
89. Ibid., p. 78.

established there a local technological and societal pattern after the North China model. The region of southern Kiangsu was known in Western Chou as the state of Wu and, according to local traditions, was the location of the burial place of two Western Chou princes, T'ai Po and Chung Yüng. These princes, according to Ssu-ma Ch'ien's *Shih Chi,* "escaped to the habitations of the Ching Man barbarians, tattooed themselves and cut off their hair [according to the local customs] to indicate their decision not to return. . . . They called themselves Kou Wu. The Ching Man people considered them as righteous men, and more than a thousand families followed their leadership." To what extent the details of this story are valid is debatable, but the story in its broad outline and the archaeological facts have jointly established the process of acculturation in this region by the Western Chou civilization.[90]

Such events were not confined to the lower Yangtze and Chekiang valleys. Eastern Chou historical documents record that many civilized kingdoms in southeast China communicated, traded, and warred with the Royal Chou and other northern Chinese states. Of these kingdoms, Wu of southern Kiangsu; Yüeh of Chekiang, Fukien, and Kwangtung; and Yen of southern Kiangsu are the best known. It is evident that these kingdoms emerged during the Western Chou dynasty, and the process described above may very well represent the initial phase of such an emergence. But in the archaeological record the remains of these early kingdoms in South China are not widely found and substantially represented until the Eastern Chou period.

THE LAKE T'AI-HU AREA

In the Lake T'ai-hu area, following the Liang-chu Culture there arose a new, Geometric culture typified by layer 4 of the Ma-ch'iao site in Shanghai[91] but also seen in the upper strata at Ch'ien-shan-yang in Wu-hsing and Shui-t'ien-pan in Hang-chou, both in northern Chekiang, and remains of this culture have also been reported in Su-chou in Kiangsu.[92]

The Ma-ch'iao site, excavated in 1960 and 1966, consists of five cultural strata. Layer 1 is recent. Layer 2 is from T'ang to the Five Dynasties. Layer 3 is Eastern Chou. Layer 4 typifies the Ma-ch'iao Culture. Layer 5 belongs to the Liang-chu Culture. In layer 4, no dwelling remains came to light, but there were fourteen underground storage pits and ten shallow pits with ashes and burned clay fragments, possibly hearths. Among the stone artifacts are axes, hoes, sickles, knives,

90. See H. C. Li, *WW* 1980 (8), 35–40, 84.
91. *KKHP* 1978 (1), 109–36.
92. T. C. Chiang, *Nanking Ta-hsüeh Shih-hsüeh Lun-ts'ung* 2 (1979), p. 172.

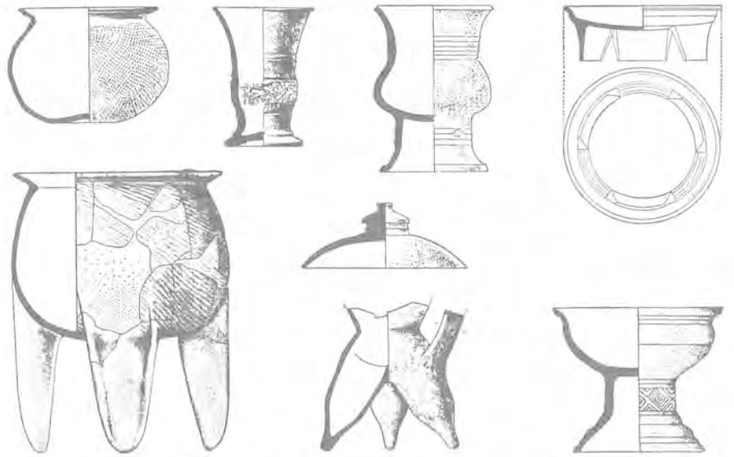
328. Pottery decorations apparently derived from bronzes, at Ma-ch'iao, Shanghai. (From *KKHP* 1978, no. 1, p. 126.)

adzes, chisels, drills, spearheads, arrowheads, and grinding stones. There are a copper chisel and a copper knife; the latter proved to contain 73.54 percent copper, 2.29 percent silicate, and traces of impurities.

The pottery is characteristically Geometric; the designs are classified into three categories: bands of spirals and fish and bird designs, which are plainly derived from bronzes (fig. 328); textile designs such as baskets, leaf-veins, and checkers; and cord-impressions. The wares are sandy red (26 percent), fine brown (41 percent), and fine gray (33 percent), and the vessels were wheel-made. In type, there are the *ting* tripod, *hsien* steamer, cooking pot, *tou*, *ho* tripod pitcher, and beaker of several kinds, many resembling bronze types (fig. 329). Because the *ting* tripod is its prominent cooking vessel, the Ma-ch'iao assemblage differs from the Hu-shu Culture; it also contains more bronze-inspired types and designs. The Western Chou bronzes from T'un-hsi and Ch'ang-hsing are close to the T'ai-hu Lake area and may represent, in both vessel type and decorative design, the kind of bronze prototypes that influenced Ma-ch'iao pottery.

The Rise of Civilization in the Middle Yangtze Basin

The middle Yangtze basin was during much of the Chou Dynasty the stage of the Ch'u civilization, one of China's most powerful, elegant, and literary civilizations in the ancient period. Associated with it is the *Ch'u Tz'u* (The Elegies of Chu), which, along with *Shih Ching*, ranks among the greatest literatures of the ancient



329. Pottery types at Ma-ch'iao. (From *KKHP* 1978, no. 1, pp. 129–31.)

world. The origin and early history of the Ch'u civilization are thus among the major issues in Chinese archaeology.

In the poem "Pi-kung," in the "Lu-sung" section of *Shih Ching*, the peoples to the south are referred to as Ching and Shu. The inhabitants of the lower Han-shui valley in northern Hupei are known as Shu; Ching, originally the name of a plant which was also known as Ch'u, refers to the people living around Ching Mountain, thought to be in present Nan-chang Hsien, near Hsiang-yang, Hupei Province. The names of Ch'u and Ching were used interchangeably during the Chou period to designate the people in the lower Han-shui and the middle Yangtze valleys. The name of Ching seems to have appeared earlier than Ch'u, although Ch'u has since been widely used.[93]

The legendary beginnings of the Ch'u rulers appeared in various literary records, but only around the time of Wen Wang of Western Chou did the genealogical record become historically established. Ssu-ma Ch'ien's *Shih Chi* says that Ch'eng Wang of Western Chou made Hsiung Yi, the contemporary ruler of Ch'u, an earl to govern the people of Ch'u and made Tan-yang his capital. The exact geographical location of Tan-yang is disputed. Four hypotheses have been advanced identifying it as one of the following present-day locations: Tang-t'u, in central-eastern Anhwei on the Yangtze; Chih-chiang or Tzu-kuei in western

93. Oyanagi, Shigeta, *Tōhōgakuhō* (Kyoto) 1 (1931), 196–228.

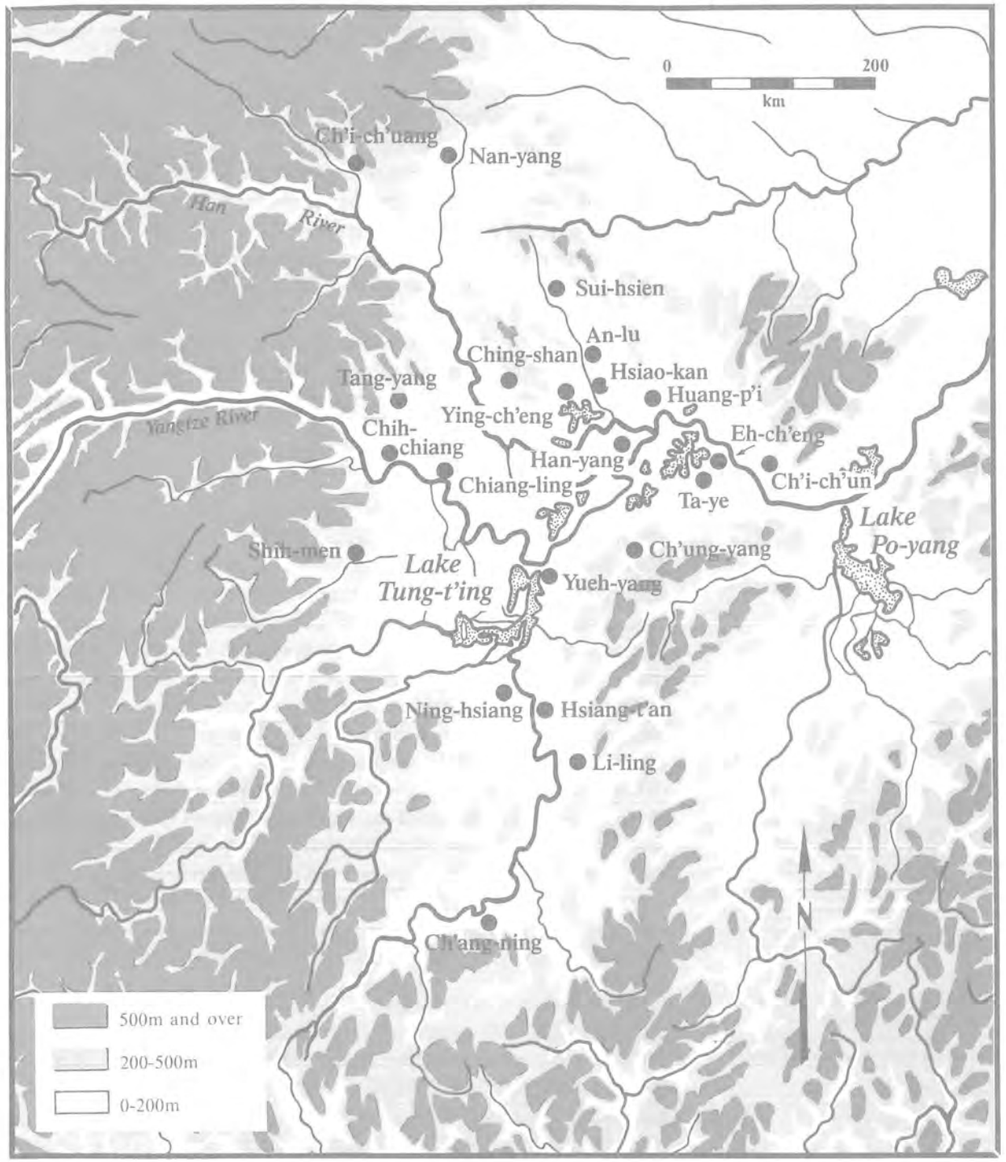
Hupei in the Yangtze Valley; the area between Shang Hsien in southeastern Shensi and Hsi-ch'uan in southwestern Honan, in the upper middle Han-shui valley.[94] Thus, the majority of scholars believe that Tan-yang was somewhere in the Han-shui and middle Yangtze valleys, but the Tang-t'u theory, advanced by the authoritative *Han-shu ti-li-chih,* also deserves serious consideration. No matter where the original center of the political Ch'u may have been, by the beginning of the Eastern Chou period, under the reign of Earl Hsiung T'ung, the Ch'u state had become a major power in central China. Hsiung T'ung went so far as to defy the Royal Chou authority and to call himself a king. From then on, throughout the Eastern Chou period, the territory of the Ch'u extended from eastern Shensi east to the lower Yangtze Valley, as far north as the heart of Honan, and as far south as the Tung-t'ing Lake area in southern Hupei and northern Hunan. This powerful state was overthrown by the Ch'in Dynasty in 223 B.C., but the people and the culture maintained their distinct identity into the Han Dynasty.

Cultural remains of the Ch'u dated to the Eastern Chou period have been found in a very wide area of the central part of South China, covering the Huai Ho valley in southeastern Honan and northern Anhwei and the Great Lake area of Hupei and Hunan. Ch'u remains over such a wide area bear out the literary tradition that the state of Ch'u expanded territorially around the beginning of the Eastern Chou, which is also suggested by the relative homogeneity of the cultural style represented by the relics from this region.

What is the archaeological prehistory of the Ch'u before the Eastern Chou? In chapters 4 and 5 we examined the Neolithic data of the middle Yangtze basin and saw a well-established sequence of Ta-hsi—Ch'ü-chia-ling—Ch'ing-lung-ch'üan III Cultures, the last being comparable to the Lung-shan Cultures of the other regions preceding their first civilizations. The pre–Eastern Chou segment of the Ch'u history is the segment between Ch'ing-lung-ch'üan and Eastern Chou. This is a gap that is gradually being filled, by a series of Shang and Western Chou sites in the Han-shui and middle Yangtze valleys in Hupei and Hunan. It appears clear that the impetus for the rise to civilization in this area came from the north; a string of archaeological sites and assemblages with Shang and Western Chou bronze or pottery types can be traced along the Han-shui River valley, which connects the middle Yangtze basin with Honan (fig. 330).

Originating in southern Shensi, the Han-shui connects Honan with eastern

94. H. S. Hsu, *Chung-kuo ku-shih ti ch'uan-shuo shih-tai,* Peking: Hsüeh-hsi Sheng-huo Press, 1960, pp. 167–70; M. H. P'ei, *WW* 1980 (10), 72–73; *Ch'u shih yen-chiu chuan-chi* (Special collection of studies of history of Ch'u), 1983(?), pp. 39–64; Y. H. Feng, *CHKK* 1980 (2), 13–21; Y. C. Kao and Y. T. Ch'eng, *CHKK* 1980 (2), 23–30; T. S. Tsung, *CHKK* 1980 (2), 27–30; P. H. Liu, *CHKK* 1980 (1), 45–57.

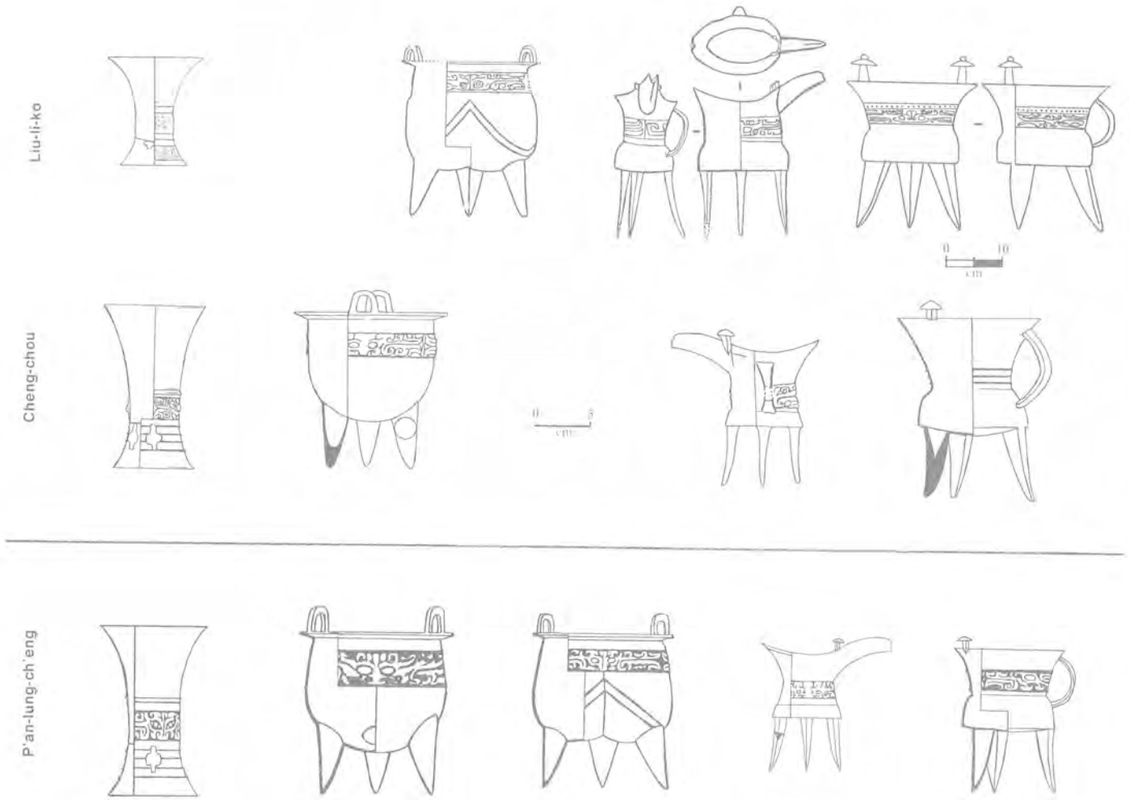


330. Shang and Western Chou sites in the middle Yangtze River valley.

Hupei, and throughout Chinese history it has been an important avenue of communication between the north and the south. At its mouth it opens into the central Chinese lacustrine basin, now drained by the middle Yangtze and the two largest lakes in China, Tung-t'ing in the west and Po-yang in the east; in ancient times most of this region was covered by Great Lake Yün-meng. In recent years Shang remains and Shang sites have been unearthed in this whole area in significant numbers, extending the distribution of the Shang civilization in a southern direction to a hitherto unexpected extent.

To begin, in southwestern Honan in the upper Han-shui valleys, Shang sites are known at Shih-li-p'u in Nan-yang[95] and at Hsia-wang-kang in Hsi-ch'uan.[96] The Shang remains at Hsia-wang-kang have been compared with the Early Shang remains of the Erh-li-t'ou phase, the first such remains identified outside the northwestern Honan-southern Shansi area. Further down the Han-shui, several small sites were identified in the late 1970s and early 1980s in An-lu and Hsiao-kan, where potsherds with characteristic Cheng-chou Shang and Western Chou types and modes were collected.[97] Next to these near the confluence of Han-shui and Yangtze are the important sites in Huang-p'i, especially the P'an-lung-ch'eng site, the walled enclosure with palace foundations, pit graves, and bronze ritual vessels and weapons.[98] The P'an-lung-ch'eng bronzes are virtually identical with the vessels of the Cheng-chou phase in central and northern Honan (fig. 331) and are generally regarded as being indicative of a Shang intrusion here in the middle Yangtze basin rather than a mere influence.[99] The presence of Shang throughout the Han-shui valley after P'an-lung-ch'eng is indicated by the reported discoveries of An-yang phase bronze ritual vessels in Sui-hsien, Ying-ch'eng, Huang-p'i, and Han-yang,[100] but details of these finds are unavailable. Huang-p'i is also the locale of the important Western Chou cemetery at Lu-t'ai-shan, where five pit graves with wooden chambers and bronze ritual vessels with inscriptions were excavated in 1977–78.[101] The bronze vessels, including *ting* tripods, square *ting*, *hsien* steamer, *chüeh* cup, *ku* cup, *yu* bottle, and *kuei* urn, are generally of early Western Chou types, but the associated pottery included geometric wares and proto-porcelains that are distinctive of the south.[102]

95. *KK* 1959 (7), 370.
96. *WW* 1972 (10), 13–14.
97. *WW* 1982 (7), 8–10.
98. *KKTH* 1958 (1), 56–58; 1958 (9), 72–73; *KK* 1964 (8), 420–21; *WW* 1976 (1), 49–55; 1976 (2), 5–15, 26–41; Robert Bagley, *Artibus Asiae* 39 (1977), 165–219.
99. See H. W. Sung, *CHKK* 1983 (2), 61–65; T. L. Kao, *CHKK* 1985 (1), 82–89, 98; but see C. Wang, *CHKK* 1983 (4), 47–51.
100. C. H. Yang, *CKHNL* 3 (1984), 207–19; *CHKK* 1984 (3), 108–09.
101. *CHKK* 1982 (2), 37–61.
102. H. Y. Ch'en, *CHKK* 1982 (2), 62–72.



331. P'an-lung-ch'eng bronze vessels (*bottom*) compared with similar types from Liu-li-ko, Hueí-hsien (*top*) and Cheng-chou (*center*). (From K. C. Chang, *Shang Civilization*, 1980, fig. 80.)

On the middle Yangtze River valley itself, Shang and Western Chou sites have been reported throughout, from Ch'i-ch'un in the east to Yi-ch'ang in the west. To briefly recount from the east: The site of a village of timber structures was excavated in 1958 at Wang-chia-tsui, northeast of Ch'i-ch'un. Remains of an ancient habitation were found in an area about thirty thousand square meters in size, where relics of timber structures were found in clusters in and around two small ponds. In the western cluster 109 wooden posts (twenty centimeters in

332. Fragment of a lacquered cup from the Western Chou site in Ch'i-ch'un, Hupei. (From *KK* 1962, no. 1, p. 7.)

diameter) and remains of timber walls were brought to light, and three adjoining rooms (eight by five meters each) were restored, apparently three separate parts of a large, continuous structure. Remains of stairs were found. In the eastern cluster 171 posts were counted, but only two rooms were restorable. Other than pottery, which is Lung-shan-like, and stone and clay artifacts, there were bronze arrowheads of the Shang and early Chou type, a bronze *chüeh* tripod, wooden containers, a lacquered cup with decorative patterns borrowed from bronze vessels (fig. 332), pieces of oracle bones and turtle shells, and remains of rice husks. The local character of this site is pronounced—witness the black pottery, paddy husks, and apparently a pile type of house construction—but the bronze vessel forms, bronze and ceramic decorative patterns, and the oracle bones very clearly indicate North Chinese affiliations.[103] Upstream along the Yangtze, late Shang or early Western Chou bronze vessels were collected in Ta-yeh[104] and Eh-ch'eng.[105] In Ch'ung-yang, a bronze drum was found; its decorative designs are of the late Cheng-chou phase, with southern features.[106]

Further upstream are the important sites at Chang-chia-shan[107] and Wan-ch'eng[108] in Chiang-ling, and Mo-p'an-shan[109] and Chao-chia-hu[110] in Tang-yang. At Chang-chia-shan, pottery containing clearly identifiable Shang (late Cheng-chou phase) types and modes was found between a Ch'ing-lung-ch'üan III layer, below, and a layer with Western Chou–type pottery, above. An early Bronze Age–type bronze arrowhead was also unearthed here. The other three sites in Chiang-ling and Tang-yang are all regarded as Western Chou. The cemetery at Chao-chia-hu is undoubtedly the most important in terms of the Ch'u origins. Here, from 1975 to 1979, 297 tombs were unearthed, ranging in date from Western Chou to the end of the Ch'u occupation here (ca. 278 B.C.). The later tombs are recognizably Ch'u; thus the Western Chou assemblage here, being precedent to the Ch'u, is unquestionably relevant in a discussion of the pre–Eastern Chou history of the Ch'u civilization.

From Hupei, Shang and Western Chou assemblages went further west and south. In the west, through the area Tzu-kuei to Yi-tu, where a number of possible Shang sites have been identified,[111] we follow the Yangtze to eastern

103. *KK* 1962 (1), 1–9.
104. *WWTLTK* 5 (1981), 203–05.
105. *KK* 1982 (2), 210.
106. *WW* 1978 (4), 94.
107. H. Y. Ch'en, *CHKK* 1980 (2), 77–86.
108. *KK* 1963 (4), 224–25.
109. *CHKK* 1984 (2), 7–12, 28.
110. Y. C. Kao and K. K. Wang, *CKHNL* 2 (1982), 41–50.
111. C. Lin, *CHKK* 1984 (2), 29–38, 22.

Szechwan. The late Shang and early Western Chou civilizations appear to have had some contact with the Szechwan Neolithic, as indicated by the remains of *li* tripods of gray and cord-marked ware, and sherds of *tou* of a Bronze Age style[112] found in the Yangtze Valley in the extreme eastern end of Szechwan, where it adjoins Hupei. Some authors maintain that the Shang culture reached as far as the Min River valley, as shown by such sites as Shui-kuan-yin in Hsin-fan Hsien.[113] This view is perhaps supported by the bronze *ko* halberds and ceremonial vessels with animal-mask decorations discovered at Chu-wa-chieh in P'eng Hsien.[114]

In the south, we follow Lake Tung-t'ing and the rivers Hsiang, Tzu, Yuan, and Li and enter the province of Hunan, where a large number of Shang and early Western Chou bronzes have been found in recent years.[115] The only sites whose excavation reports are available are the Fei-chia-ho site in Yüeh-yang[116] and the site at Tsao-shih in Shih-men,[117] both in northern Hunan, but remarkable late Shang-style bronze ritual vessels with distinctive local motifs are reported all along the Hsiang River from Ning-hsiang,[118] Hsiang-t'an,[119] Li-ling,[120] and Ch'ang-ning,[121] the last site just a little over a hundred kilometers from northern Kwangtung. Current archaeological work throughout the province has turned up dozens of Shang and Western Chou sites, indicating "an ancient culture indigenous to this area, produced by a merging of Central Plains Shang and Chou cultures with the culture indigenous to Hunan."[122]

This whole area we have very briefly explored, the area around the ancient Lake Yün-meng—north to the Han-shui River valley of northern Hupei and southwestern Honan, east to easternmost Hupei, west to easternmost Szechwan, and south to the river valleys of Hunan—must be where the Ch'u homeland was located, and Shang and Western Chou were periods of Ch'u's growth and development. The process of the Ch'u development apparently involved regional interaction and stimulation; Shang and Western Chou influence flowed down the Han-shui and made a sufficient impact upon the indigenous Ch'ing-lung-ch'üang III Culture of the Yangtze Valley to stimulate the civilizational growth

112. *KK* 1959 (8), 399–400.
113. Ibid., p. 401.
114. *WW* 1961 (11), 30.
115. S. J. Chou, *CKHNL* 1 (1980), 195–203; C. C. Ho, *Hunan K'ao-ku Chi-K'an* 2 (1984), 120–27, 28.
116. *KK* 1985 (1), 1–6.
117. *KK* 1962 (3), 144–46.
118. *KK* 1963 (12), 646–48; C. H. Kao, *WW* 1960 (10), 57–59; C. H. Hsiung, *WW* 1983 (10), 72–74.
119. *Hunan K'ao-ku Chi-k'an* 1 (1982), 19–24.
120. *WW* 1976 (7), 49–50.
121. *The Chinese Exhibition*, Washington, D.C.: National Gallery of Art, 1974, no. 92.
122. C. C. Ho, *Hunan K'ao-ku Chi-k'an* 2 (1984), p. 121.

that culminated in the Ch'u civilization of Eastern Chou. As to the precise region where Ch'u first began to form in the archaeological record, a recent consensus is forming to focus on the Tsu-chang River valley west of Chiang-ling, where Western Chou sites such as those at Chao-chia-hu and Neolithic sites seem to come from opposite directions to meet and furnish a nucleus of the earliest civilizational manifestations.[123] Most of the available data has not yet seen print, and most explorations are still ongoing. Although the Tsu-chang River area fits in with one of the hypothetical Tan-yang locations, it is premature at this time to close out the other possibilities. The prehistoric archaeology of the Ch'u civilization is just beginning.

123. Yü Wei-ch'ao, *WW* 1980 (10), 1–12; *CHKK* 1980 (1), 17–30; 1982 (2), 1–6; Y. C. Kao, *WW* 1982 (4), 49–52.

Conclusion

The second millennium B.C. was the millennium of civilizations in the Chinese interaction sphere, as was described in chapters 6 and 7. Insofar as the available archaeological data suggest, the Three Dynasties, all offsprings of the middle Yellow River valley Lung-shan Culture, took the initiative in crossing the civilizational threshold, and the regions around them—Shantung, eastern Mongolia and southern Manchuria, Kansu, the lower Yangtze valley, and the middle Yangtze valley—soon followed suit in varying degrees. There was, nevertheless, a difference between the core and the peripheries. The Three Dynasties were literate—in the case of Hsia only in a retrospective sense—but the peripheral regions were not, the Wu-ch'eng inscriptions, simplistic and undeciphered, notwithstanding. The Three Dynasties were replete with cities, palaces, royal tombs, and a ritual art in bronzes and jades, but all these are still not visible in the peripheries, except for ritual art in the form of bronze vessels, which apparently imitated Central Plains prototypes. By approximately 1000 B.C., manifestations of civilization were everywhere, and they seem interrelated because the same styles and themes occur in all the regions, even though each region also had its own distinctive features. This date—1000 B.C.—is thus a convenient one to end this volume.

To use 1000 B.C. as a cut-off date forces us to miss one of the most creative and exciting millennia in Chinese history, or indeed in human history. The period from 1000 B.C. to the time of Christ witnessed the remarkable florescence of Chinese culture in each of the several regions that had taken shape since about 5000 B.C. In technology, China soon acquired cast iron metallurgy and immediately put it to use in agricultural production—above all in plow making and the construction of vast irrigation networks. Obviously associated with these was the transformation of Chinese cities to centers of both politics and trade. The middle half of the first millennium B.C. in these cities was the original period of the Hundred Flowers, the period of Confucius, Lao-tze, Chuang-tze, and other great thinkers. In art, soon we witness the many sophisticated and spirited varieties of the Huai Style, manifest in some of the most astonishingly magnificent art objects in ancient Chinese archaeology, such as those found in the 1920s and 1930s in Li-yü, Hsin-cheng, and Chin-ts'un, and those found in very recent years in P'ing-shan, Sui-hsien, and Chiang-ling. In 221 B.C., all these mature and magnificent regional traditions coalesced into the Ch'in civilization, the first unified Chinese empire under Ch'in Shih Huang Ti.

All these have been left out because the sheer volume of Eastern Chou archaeology required another full-length book, but also because the process of Eastern Chou development essentially followed the initial steps that the ancient Chinese peoples had taken during the second millennium B.C. The pattern of civilizational

development throughout the Chinese interaction sphere had been set several millennia further back. Two prominent elements in that developmental history are worthy of discussion here, because, even though they may not be uniquely Chinese, the Chinese case certainly demonstrates them more fully and clearly than anywhere else.

The first important element in the developmental history of Chinese civilization that we have just completed summarizing is the dialectic interrelationship of the interaction sphere and each of its constituent regions. The constituent regions—even before they were anyone's "constituents"—were ecologically defined, and each had its own indigenous history dating back to the Upper Palaeolithic. Current archaeological data point to scattered earlier farming cultures in the Yellow River valley—Tz'u-shan, P'ei-li-kang, Pei-shou-ling, and Ta-ti-wan. In South China were found isolated cave sites with cord-marked pottery. There are very general similarities among all of these sites, and the Li-chia-ts'un phase ties them together geographically. But we still know too little of this period to speak of more than scattered regional occurrences.

By 5000 B.C., however, the several regional cultures had taken clear shape: Yang-shao, Ta-wen-k'ou, Hsin-lo, Ma-chia-pang, Ho-mu-tu, Ta-hsi, and Ta-p'en-k'eng. Their respective identities are conspicuous and easily recognized. But in another thousand years, during the fourth millennium, these regional cultures had begun to reach out and interact sufficiently to enable us to recognize, above the continuing regional cultures, a larger sphere of interaction. The regions had touched each other, and similar elements of material culture began to occur interregionally, as if they had flowed into each other's bodies through interconnecting veins. This flow, this interaction, and this reciprocal influence intensified as time went on. During the Lung-shan period and the period of the civilizations, activities, phenomena, events, cultural traits all seem to occur in various regions of the interaction sphere simultaneously or in quick succession. When the Wei-shui River valley sneezed, as it were, the Lake T'ai-hu region caught cold. Regional distinctions are maintained, belying any interpretation that suggests there were mass migrations, but interregional similarities also became increasingly pronounced. The Ch'in unification did not happen by force alone; it was actually a political follow-up of a process of cultural unification that had gone on for some four thousand years.

Why did regional universes interact? The exchange of unique resources and the use of scarce goods as symbols of power were obvious factors in the later periods when political ranking was intensified, but we cannot discover any compelling motives for interaction during the earlier periods other than appealing to truistic explanations in demography—when population grew people pushed out. But

the fact that the river systems in China interlink in a vast network that coincides with the scope of the interaction sphere in a historically dynamic manner must at least have been an enabling or facilitating factor. The two major rivers in China, the Yellow and the Yangtze, flow west to east across China parallel to each other, and each is joined regularly by major navigable tributaries flowing north-south. These tributaries link the two river systems and link either of them with the next zone. Also parallel to both rivers are the Huai-ho and Pearl rivers, and again tributaries link them together. Some of the key tributaries are the Ju-ho and Ying-ho rivers, which link the Yellow and Lo-ho regions with the Huai-ho plain; the Han-shui River, connecting eastern Shensi and central Honan with Hupei; and the Hsiang-chiang and the Kan-chiang rivers, which link the Yangtze drainage system with the Pearl River drainage system. Chinese archaeology has not paid a great deal of attention to the manufacture of watercrafts—no Neolithic or Bronze Age boat has yet come to light. But there can be no question that prehistoric boat traffic must have been heavy on the rivers and streams, because archaeological sites are invariably strewn along river banks, and because interregional linkage is often clearly traceable along river courses. Interestingly, no crossover river traffic is possible between the Yellow River valley of North China and the Liao-ho River valley of eastern Mongolia and southern Manchuria. Prehistoric inhabitants had to walk over mountain passes to go back and forth, and consequently the Hung-shan and Hsia-chia-tien Cultures in the Liao-ho area exhibit more distinctive features than cultures connected with the Central Plains by river. In fact, from southern Manchuria to North China the traffic was probably more by the coastal route; the cultural similarities between Liao-tung Peninsula and Shantung, connected only by means of seafaring watercraft, were pronounced during the Lung-shan period.

A second prominent element in the developmental history of Chinese civilization is that throughout the long developmental sequence—whether within each region or in the interaction sphere as a whole—the political arena was the prominent aspect of the culture, and the social stratification that culminated in the emergence of the civilizations was made possible primarily through political means. By these we refer to the kind of phenomena we have observed pertaining to the rise of the Three Dynasties, such phenomena as the continued use of a Stone Age technology in Bronze Age agriculture, the continued importance of kinship in the regulation of interpersonal relationships, the coupling of kinship with political status, the importance of shamanism and ritual art in the path to high political office, and the coercive nature of the labor for royal construction works and for the production of wealth. Archaeological investigations of the civilizations of the peripheral regions are not adequate for us to come to grips

with the details of these societies or their transformative processes, to which we have access in the Central Plains thanks to more intensive archaeology and the availability of written records. But from what we do have from these peripheral regions, the pattern of civilizational growth does not appear to diverge fundamentally from that of the Central Plains. Metal, often bronze, was again used for small implements, weapons, and ritual vessels and musical instruments; there is no evidence for its use in agricultural production until later. The artistic motifs associated with the ritual objects—of bronze, jade, lacquerware, and the like—are again dominated by members of the animal kingdom. The Ch'u in particular followed the shamanistic line with great vigor, which culminated in the earliest and arguably the greatest shamanistic literature, the *Ch'u Tz'u* (The Elegies of Ch'u). All these data tend to show that the various regional cultures interacted across the entire sphere not only in accordance with similar mechanistic principles but also in the larger context of a common cultural tradition. Perhaps if we call the totality of these regions the Chinese cotradition, using the term coined by Bennett, rather than the Chinese interaction sphere, we may be better able to capture the humanistic spirit of the situation. But perhaps we will be even better served by prudence and should refrain from either final causes or overreaching generalizations.

The most exciting and challenging characteristic of Chinese archaeology, especially that of the ancient world, is its incalculable and unpredictable potential. We used to think that China, with its voluminous written records, had long ago revealed all of its four thousand years of history to us and that, when new archaeological material was brought to light, the archaeological history and prehistory would serve primarily to supplement or to replicate. When new sites and new objects were unearthed they were immediately used to reconstruct a Chinese prehistory according to the patterns known for hundreds, even thousands, of years. Not until the 1970s, after more than half a century of accelerated cumulation of new data, did it begin to dawn on us that the underground treasures had been brought to light for only just a few decades, that the hidden past of those treasures was of incalculable dimensions, and that we have barely scratched the surface. What has been found already is so new that we can no longer conceive of Chinese prehistory in terms of Chinese history—Chinese prehistory is proving to be something hitherto totally unknown. We are in the midst of a Golden Age of Chinese archaeology, because we have the opportunity to witness the creation of a completely new body of knowledge concerning the prehistory of a quarter of all humanity. In Chinese archaeology we are at the threshold of another age, whose dimensions are now only dimly perceived. But one thing is certain—the new Chinese prehistory and history, to be built upon archaeological data presently

available and of the future, will help future generations of scholars to rewrite the ancient history of the world and to rethink the principles that governed that history. This is because, when that prehistory and archaeological history are built in essential form, they will be the most complete record of the largest and most continuous civilization the world has seen.

This book presents only the early beginnings of that body of knowledge, and it is organized in a framework that may accommodate the new discoveries for another short period. Explicit theories have been consciously avoided insofar as possible, because new data, competently and intelligently gathered, are now and for the foreseeable future much more important. On the other hand, the archaeologists who gather data must begin in earnest to deliberate on the ways data are analyzed and presented for comparison and correlation. The archaeological literature is already so flooded with minutiae and idiosyncratic taxonomies that comparing even sites, let alone different regions, is becoming extremely difficult. Those students familiar with the taxonomic indigestion and complexity in the study of Japanese prehistory will shudder to think of this happening in China, many times the size of Japan. Unless corrected, Chinese archaeology may soon collapse of its own weight. Chinese archaeologists realize this, and one hopes that they will soon do something about it. Otherwise, books like this will become impossible to write.

Epilogue: Ancient China and Its Anthropological Significance

The study of how Chinese civilization originated is only now beginning to yield an adequate outline of the whole story, thanks to the intensive archaeological research in the last thirty-five years and to the traditional rich textual record. That story is not only of interest to sinologists but full of implications of consequence to our understanding of ancient world history and its evolutionary principles.

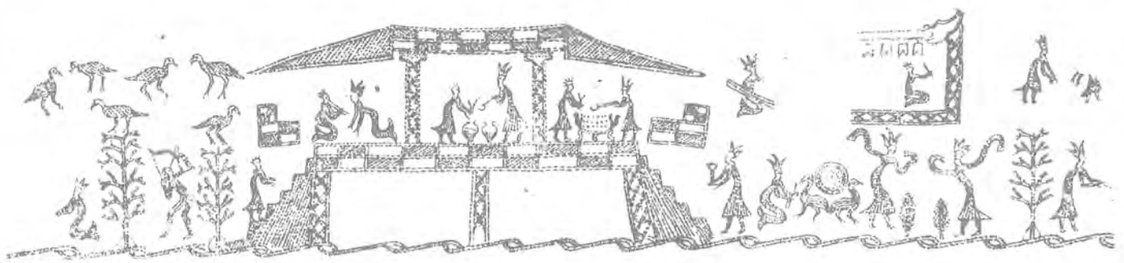
As recently as fifty years ago students of ancient China and ancient Eurasia were still thinking of the emergence of ancient Chinese civilization in terms of a diffusion from the West, and in the ensuing decades much discussion and debate had focused on the question of whether ancient Chinese civilization was indeed indigenous and pristine. Today, our concern has gone far beyond that simplistic question. Our interest now lies in discerning the characteristic pattern and dynamics of the origin and growth of civilization in China and in comparing them with those of other ancient civilizations for the sake of generating and testing universal theories of historical change.

What excites us today is the fact that, when we compare the Chinese pattern and dynamics with many of our long-cherished "self-evident truths" concerning the origin of civilization, we find that they do not fit. And here lies the challenge.

To explain, I begin by briefly characterizing the first Chinese civilizations, of the Bronze Age from about 2200 to 500 B.C. It is important to affirm at the outset that the common markers of early civilizations—bronze metallurgy, writing, cities, state hierarchies, palatial structures, temples, and monumental art—and the social stratification, sanctioned by law and by military force, that enabled the production of these markers, had emerged in force as the Bronze Age of China came into full swing. Here Chinese civilization is no different from other civilizations of the ancient world. What is remarkable about ancient Chinese civilization is its close relationship with shamanism, which gives these same markers special meaning.

In *Art, Myth, and Ritual: The Path to Political Authority in Ancient China*,[1] I presented a hypothesis of the workings of ancient Chinese society to explain its manifestation in civilization. The hypothesis may be summarized in this very brief formula: the wealth that produced the civilization was itself the product of concentrated political power, and the acquisition of that power was accomplished through the accumulation of wealth. The key to this circular working of ancient Chinese society was the monopoly of high shamanism, which enabled the rulers to gain critical access to divine and ancestral wisdom, the basis of their political

1. Cambridge: Harvard University Press, 1983.



333. Ritual scenes incised on a bronze cup of the Eastern Chou period in the collection of Shanghai Museum. Note the birds and trees at left. (From *WW* 1961, no. 10, p. 29.)

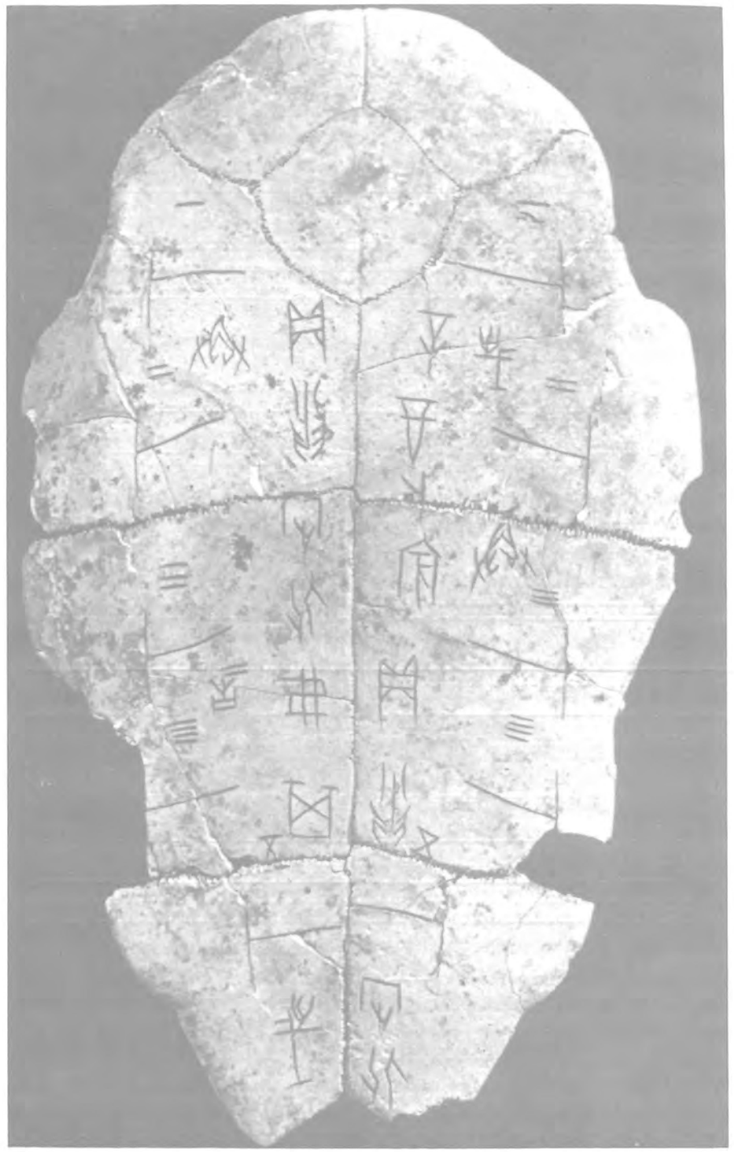
authority. Most of the markers of the ancient civilization were in fact directly related to this shamanism.

Men and gods, animate and inanimate things, the living and the dead members of the clans—all of these beings existed in the ancient Chinese world within the same universe, but that universe was layered and subdivided. The most important divisions were the Heaven and the Earth, and the ancient Chinese could be seen as particularly preoccupied with the Heaven-Earth intercommunication. The shamans—religious personnel equipped with the power to fly across the different layers of the universe with the help of the animals and a whole range of rituals and paraphernalia—were chiefly responsible for the Heaven-Earth communication. From Heaven the shamans and their agents brought to Earth music and poetry, but they also brought down widsom and foreknowledge, which invested the rulers with the authority to speak, guide, and command.

To achieve their flights the shamans depended upon the aid of a system of objects and things (and presumably incantations). There were sacred mountains, through which they ascended and descended. There were sacred trees, often depicted in art with birds perching on top, serving the same purpose (fig. 333). Divination was carried out by means of animal bones and shells or with the help of yarrow sticks. Writing was prominently associated with divination: bone divination was recorded in the oracle bone inscriptions (fig. 334), and a manual of what was probably a yarrow stick counting system eventually evolved into the classic *Book of Changes*.

Animals were the main helpers of the ancient shamans, their images adorning the ritual vessels and weapons of bronze and other materials (figs. 335–36). Rituals at which the vessels were used were likely the occasions where the actual flights took place, and on these occasions other instruments for the flight also came into display: food, drink, music, dances, costumes and their appendages, and perhaps

334. Inscribed turtle shell left by Shang Dynasty diviners. (From Bradley Smith and Wango Weng, *China: A History in Art*, 1973.)



335. Man-and-animal motif in Shang bronze art. *Above:* man depicted may be the image of a shaman, the animals his helpers. (Wine vessel is in the Sumitomo Collection of Kyoto; photo courtesy of Senoku Hakkokan.) *Below:* decoration on a bronze ax found in the tomb of Fu Hao in An-yang. (Photo courtesy of the Institute of Archaeology, Chinese Academy of Social Sciences, Peking.)

336. Truly a microscopic symbol of ancient Chinese cosmology and ritual, the jade *ts'ung*, such as the one shown here (excavated in 1982 in Ssu-tun, Ch'ang-chou, Kiangsu, from a Liang-chu Culture site), represents the Heaven-Earth communication act in a nutshell. The round portion was Heaven and the square portion Earth. They were penetrated and brought together by an *axis mundi* (the shaft of the jade, which was perhaps the essence of the sacred mountains), shown with the shaman's animal agents. (From *WW* 1984, no. 2, pl. 3.)

a little sexual flirtation. The shamans may on occasion have worked themselves into ecstasy, undoubtedly helped along by alcohol.

The shamanistic items described above include many of the markers of ancient civilization. Because these items induced authority, their possession invoked political power. Shamans were employed by the politically powerful; in fact, the king himself is known to have possessed shamanistic powers. When the road to Heaven was monopolized by the possessors of such powers, ancient art and ritual were the sources of political clout, and the accumulation of art and ritual objects an instrument of social stratification. In this scenario, technology plays no crucial part; in fact, Bronze Age technology of food production remained the same as prehistoric. The only breakthrough in this sphere—bronze metallurgy—was applied to politics in the form of ritual vessels and weapons.

This rise of civilization in ancient China associated with a differentiated access to the means of communication—instead of the means of production—was in essential ways at variance with our traditional wisdom pertaining to the rise of civilization, which associated it with such qualitative changes in culture and society as technological innovations in the form of metal implements and irrigation devices, cities in which merchants and craftsmen congregated, writing that served to record complex economic transactions, and a political system increasingly based on territorial bonds and less on kinship. Together these new features indicated a new stage in human history in which an artificial civilization emerged to elevate humans to a higher plane than that of our nature-bound barbarous ancestors:

We can see the process of the growth of a civilisation as the gradual creation by man of a larger and more complex environment, not only in the natural field through increasing exploitation of a wider range of resources of the ecosystem, but also in the social and spiritual fields. And, whereas the savage hunter lives in an environment not so different in many ways from that of other animals, although enlarged already by the use of language and of a whole range of other artefacts in the culture, civilised man lives in an environment very much of his own creation. Civilisation, in this sense, is the self-made environment of man, which he had fashioned to insulate himself from the primeval environment of nature alone.[2]

This concept of the first civilized society is fundamentally at odds with the ancient Chinese reality of a layered but interlinked world continuum, in which privileged humans and animals roamed about from one layer to another. Chinese civilization in its outer appearance focused on the instruments that enabled this

2. Colin Renfrew, *The Emergence of Civilisation*, London: Methuen, 1972, p. 11.

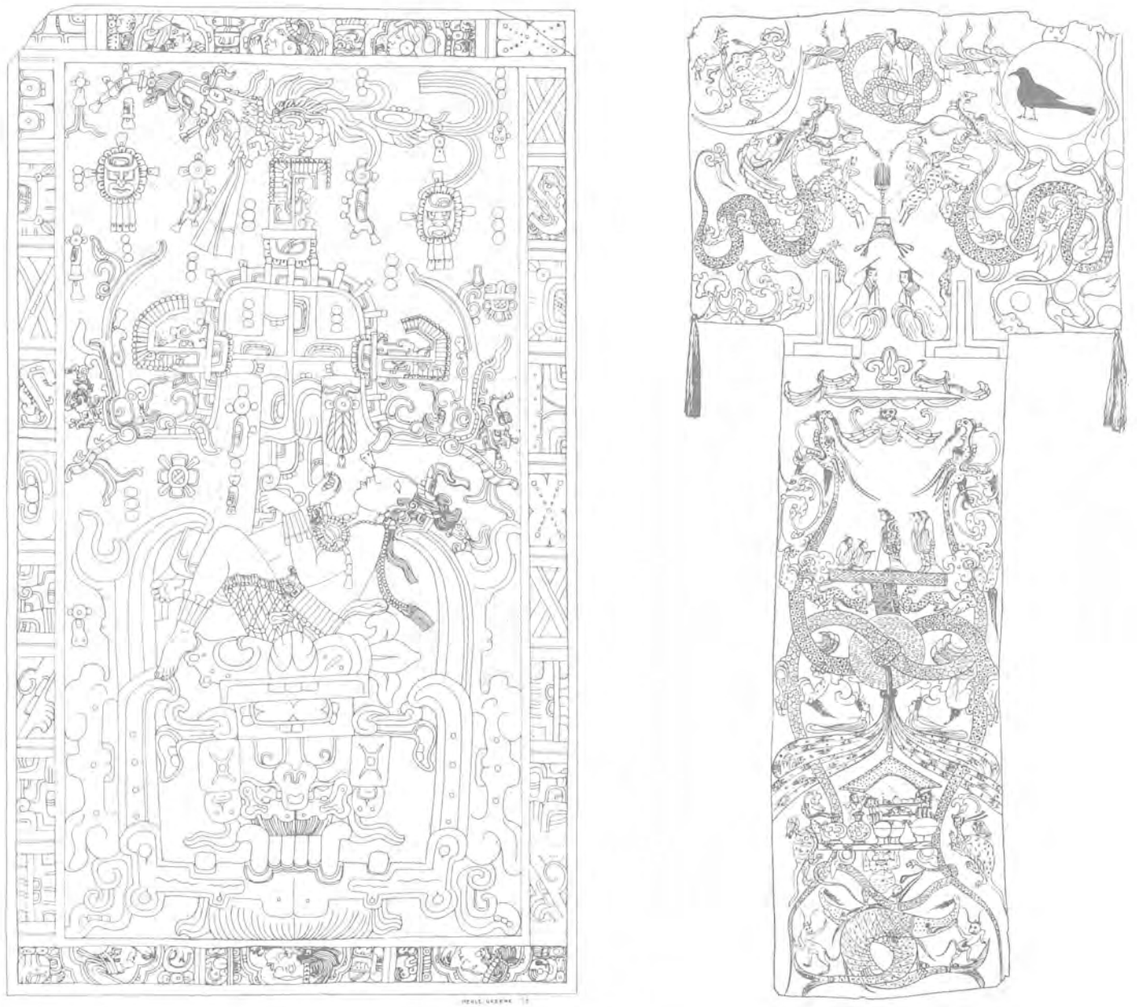
interpenetration. In many ways—among them the closeness to nature and to animals and the continuity of kinship in human society—the first civilized society of China carried on many essential features of its savage and barbarous antecedents. Politics, rather than technology and trade, was the prime mover of the major societal transformation that resulted in the Chinese civilization.

How is China's apparent lack of correspondence to the civilization stereotype to be resolved? No one is better equipped to tackle this problem than anthropologists, who can understand cultural differences as well as similarities, and who have access to many of the variations on the civilizational theme. The outstanding contribution of Chinese studies is that, because of the clear and strong case China presents, it compels us to ask the crucial question and to look again at the evidence. When we do so we find that China is far from being unique—rather, its pattern is repeated within many other ancient civilizations. Take, for example, the following statement about the Aztecs and contrast it with the above quotation from Renfrew:

The Mexica saw the relationship between their city [Tenochtitlan] and its environment as an integrated cosmological structure—an ordered universe within which the natural phenomena were regarded as intrinsically sacred, alive, and intimately relatable to the activities of man. This outlook contrasted with that of the Europeans, who saw cities as artifacts of civilization—places where religious and legal institutions sharply distinguished man's identity from that of untamed nature. The Spanish friars and soldiers automatically placed themselves as human beings on a higher level than other forms of life in a hierarchy of Creation. But the Indians approached the phenomena of nature with a sense of participation: the universe was seen as reflections of relationships between life forces, and every aspect of life was part of an interpenetrating cosmic system.[3]

The Aztec-Spanish contrast echoes the contrast between China and the civilizational stereotype mentioned earlier. In fact, most if not all of the essential characteristics of ancient Chinese civilization are also seen in ancient Mesoamerican civilizations. In the classic Maya civilization of the first millennium A.D., we find not the outcome of a major technological breakthrough but another highly stratified society in which politics and ritual played decisive transformative roles. We see a stratified universe with the bird-perched-on-cosmic-tree and religious personnel interlinking the upper, middle, and lower worlds (fig. 337). We find the use of writing primarily for purposes of politics and ritual. We find that kinship was intertwined with politics, and that ancestors were venerated. We also

3. Richard F. Townsend, *State and Cosmos in the Art of Tenochtitlan*, Washington, D.C.: Dumbarton Oaks, 1979, p. 9.



find an art in which animals served as messengers interlinking the different worlds.

How do we account for the many similarities—some fundamental, others of detail—between ancient China and ancient Mesoamerica? It is tempting to appeal to diffusion or trans-Pacific contacts, but such contacts if any could only have been sporadic and intermittent and cannot account for the broad similarity of the pattern of societal growth. Besides, the Mesoamerican pattern is not at all unique; elements of it are found all over the New World. Peter Furst has addressed the issue of a shamanistic substratum of the civilization of both the New World and part of the Old World. Joseph Campbell, in his recent book *The Way of the Animal Powers,*[4] has gathered enough evidence to present a comprehensive picture showing how the ancestral Indians, on crossing Beringia during the last glacial period, carried with them a system of shamanistic cosmology and rituals that had its roots in the Upper Palaeolithic substratum of the Old World. Accordingly, the ancient Chinese pattern and the ancient Mesoamerican pattern were both derived from the unfolding of a common deep cultural heritage. They point to a cultural continuum of many thousands of years, within which a civilized state eventually came out of a transformative process, in various times and various places, not in the realm of technology but in the realm of politics.

From the confines of this vast cultural continuum (which I will call the Maya-China continuum, realizing that the continuum goes back to long before Maya or China), European civilization and its Oriental precedents achieved a significant breakout. For reasons about which only my colleagues in Near Eastern Studies can speculate, the ancient inhabitants of Mesopotamia of the late fourth millennium B.C. underwent a transformative process, which too resulted in a civilized state, that involved a wholly new set of changes: technology in the form of metal tools and irrigation canals; large-scale trade of resources; cuneiform inscriptions and their prehistoric antecedents used primarily to facilitate economic transactions; territorial societies prevailing over the original clans and lineages in the regulation of interpersonal behavior; and, finally, a cosmology that emphasized the separate existence of gods, granted them creative powers, and promoted powerful temples independent of the state. Since these are the changes that were carried into, and further developed by, the historical civilizations of the West, and since modern social theorists took off from the Western historical experience, these factors became enshrined as the universal elements of a civilizational stereotype.

For both the idea of a Maya-China continuum and the idea of a Near Eastern

337. The engraving on the Maya sarcophagus of Palenque (*left*) and the silk painting from the Han Dynasty tomb at Ma-wang-tuei (*right*) depict a universe of three layers, the Upper World, the Middle World, and the Under World. Underlying both pictures is the idea of interworld penetration. Various devices were involved in both cases, for example, the animals, birds, the cosmic tree. (The Palenque design is from Merle Green Robertson, *The Sculpture of Palenque,* vol. 1, Princeton: Princeton University Press, 1983. The Ma-wang-tuei photograph is from *KK* 1973, no. 1, p. 44.)

4. Vol. 1 of the *Historical Atlas of World Mythology,* London: Alfred van der Marck, 1983.

breakout, I will depend on my colleagues in these areas for confirmation or modification, but the mere possibility of a new world paradigm for the beginning of civilization carries important implications for social scientists. If these ideas are valid, the modernization of the developing world of today may be seen as an effort—belated and possibly not yet thought through—on the part of the rest of the world to catch up with the West, in a fundamental realignment of cosmology and technology, after a bifurcation more than five thousand years old. For anthropologists in particular, the reminder that many of our conventional wisdoms pertaining to the pattern and dynamics of civilization were in fact based upon the unique experience of a single—albeit great—civilization can only mean one thing: any universal theories of society must be generated from within the Maya-China continuum as well as from within the history of the West. Ironically, the official doctrine to explain Chinese history is Marxism, one of the many social theories that have been constructed on the Western experience alone. It is time that more studies be made of the so-called Asiatic mode of production—not in terms of an established doctrine but as a study of cross-cultural history.

In this brief epilogue I am not trying to overemphasize the importance of Chinese studies, whose importance has long been recognized. The recent studies of ancient China are once again reminding us as anthropologists of the absolute necessity of studying our culture in all its variations before we attempt to formulate universal theories, and also the necessity of studying cultures both past and present in order to understand either. An integrated anthropology—one, for example, that incorporates studies of the cosmology and rituals of the Palaeolithic hunters, all of the ancient civilizations, and modern shamanism—is still our best instrument to study ourselves.

Glossary of Chinese Characters

An Chin-huai 安金槐
An-ch'iu 安丘
An-hsiang 安鄉
An-k'ang 安康
An-lu 安陸
An-shan 鞍山
An-t'u 安圖
An-yang 安陽
Ang-ang-hsi 昂昂溪
Ao 隞
Ao-han 敖漢

Chan Kuo Ts'e 戰國策
Chang Cheng-hsiang 張正祥
Chang Shen-shui 張森水
Chang-chia-p'o 張家坡
Chang-chia-shan 張家山
Chang-chia-t'ai 張家台
Chang-chia-tsui 張家嘴
Chang-chia-yuan 張家園
Chang-ch'iu 章丘
Chang-ho 漳河
Chang-ling-shan 張陵山
Chao Ch'ing-fang 趙青芳
Chao-chia-hu 趙家湖
Chao-ch'eng 趙城
Chao-wan 趙灣
Chao-wu-ta 昭烏達
Chao-yi 朝邑
Chen-chiang 鎮江
Chen-fan 鎮番
Chen-hsün 斟鄩
Chen-p'ing 鎮平
Chen-shui 溱水
Chen-yuan 鎮原
Cheng 鄭
Cheng Chen-hsiang 鄭振香
Cheng-chia-p'o 鄭家坡
Cheng-chou 鄭州
Cheng-ting 正定
Chenla feng-t'u chi 真臘風土記
Chi 姬
Chi Nien 紀年
Chi-chia-ch'uan 姬家川
Chi-hsien 薊縣
Chi-nan 濟南
chia 斝
Chia 甲
Chia Lan-po 賈蘭坡
Chia-hsing 嘉興
Chia-shan 嘉山
chia-tzu 甲子
Chia-yao 甲窯
Chia-yi 斝彝
Chiang 姜
Chiang Han 江漢
Chiang Han K'ao-ku 江漢考古
Chiang-chai 姜寨
Chiang-chia-p'ing 蔣家坪
Chiang-ling 江陵
Chiang-nan 江南
Chiang-ning 江寧
Chiao-hsien 膠縣
Chieh 桀
Chieh-tuan-ying 界段營
Chien-kou 澗溝
Chien-kou-ts'un 澗溝村
Chien-p'ing 建平
Chien-shih 建始
Chien-teh 建德
Chih-chiang 枝江
Chih-chu-shan 蜘蛛山
Chih-wu Hsüeh-pao 植物學報

chin 斤
Chin 晉
Chin Shih Hsüeh 金石學
Chin-men 金門
Chin-niu-shan 金牛山
Chin-ts'un 金村
Ching 涇
Ching 荊
Ching Man 荊蠻
Ching-chih 景芝
Ching-ch'uan 涇川
Ching-ho 涇河
Ching-shan 京山
Ching-shui 涇水
Ching-ts'un 荊村
Chiu Ting 九鼎
Chiu-chiang 九江
Chiu-ch'üan 酒泉
Chòu 紂
Chou 周
Chou Li 周禮
Chou Pen-hsiung 周本雄
Chou Shu 周書
Chou Yi 周易
Chou Yuan 周原
Chou-ch'ü 舟曲
Chou-k'ou-tien 周口店
Chou-shan 舟山
Chu Jung 祝融
Chu Shu Chi Nien 竹書紀年
Chu-ch'eng 諸城
Chu-wa-chieh 竹瓦街
Chu-wei-ch'eng 築衛城
Chuan Hsü 顓頊
Chuang 莊
Chuang Tzu 莊子
Chuang-ho 莊河
Chuang-lang 莊浪
Chuang-li 莊李
Chuang-pai 莊白
Chuang-tze 莊子
chüeh 爵
chüeh 玦
Chung Kuo 中國
Chung Yüng 仲雍
Chung-hsiang 鍾祥
Chung-kuo Ku-tai She-hui Yen-chiu 中國古代社會研究
Chung-kuo K'ao-ku Hsüeh-huei Nien-huei Lun-wen-chi 中國考古學會年會論文集
Chung-kuo Ti-ssu-chi Yen-chiu 中國第四紀研究
Chung-mou 中牟
Chung-ting 仲丁
Chung-t'iao 中條
Chung-yüan 中原
Chung-yuan Wen-wu 中原文物

Ch'an 滻
Ch'ang-chou 常州
Ch'ang-hsing 長興
Ch'ang-ning 常寧
Ch'ang-pin 長濱
Ch'ang-p'ing 昌平
Ch'ang-sha 長沙
Ch'ang-shan 長山
Ch'ang-she-ling 長蛇嶺
Ch'ang-tao 長島
Ch'ang-wu 常武
Ch'ang-yang 長陽
Ch'ao-an 潮安
Ch'ao-hsien 巢縣
Ch'en 陳
Ch'en Chih-liang 陳志良

Ch'en Ch'üan-fang 陳全方
Ch'en P'an 陳槃
Ch'en-chia-wo 陳家窩
Ch'eng 成
Ch'eng 程
Ch'eng T'ang 成湯
Ch'eng Wang 成王
Ch'eng-kung 呈貢
Ch'eng-tzu 呈子
Ch'eng-tzu-yai 城子崖
Ch'i 齊
Ch'i 岐
Ch'i Chia 齊家
Ch'i Shan 岐山
Ch'i-chen 齊鎮
Ch'i-chia 齊家
Ch'i-chia-p'ing 齊家坪
Ch'i-chia-ts'un 齊家村
Ch'i-ch'un 蘄春
Ch'i-hsia-shan 棲霞山
Ch'i-hsien 淇縣
Ch'i-lien 祁連
Ch'i-lin-shan 麒麟山
Ch'i-shan 岐山
Ch'i-shui 淇水
Ch'i-yang-pao 岐陽堡
Ch'ia-yao 卡窯
Ch'iang 羌
Ch'iang 鬯
Ch'iao-ts'un 橋村
Ch'ien Mu 錢穆
Ch'ien-hsi 黔西
Ch'ien-hsi 遷西
Ch'ien-hsien 乾縣
Ch'ien-mou 前茆
Ch'ien-shan 潛山
Ch'ien-shan-yang 錢山漾
Ch'ien-t'ang 錢塘
Ch'ien-t'ang-chiang 錢塘江
Ch'ih-feng 赤峯
Ch'in 秦
Ch'in Ling 秦嶺
Ch'in Shih Huang Ti 秦始皇帝
Ch'in-an 秦安
Ch'in-huai 秦淮
Ch'in-huang-tao 秦皇島
Ch'in-shui 沁水
Ch'in-wang-chai 秦王寨
Ch'in-wei-chia 秦魏家
ch'ing 磬
Ch'ing-chiang 清江
Ch'ing-kang-ch'a 青崗岔
Ch'ing-ku-tuei 青固堆
Ch'ing-lien-kang 青蓮崗
Ch'ing-lung-ch'üan 青龍泉
Ch'ing-shui 清水
Ch'ing-shui-t'an 清水灘
Ch'ing-tun 青墩
Ch'ing-t'ai 青台
Ch'ing-t'ang-yü 青塘圩
Ch'ing-yang 慶陽
Ch'iu-pei 邱北
Ch'iu-wan 丘灣
Ch'u 楚
Ch'u Tz'u 楚辭
ch'un ch'iu 春秋
Ch'un Ch'iu ta-shih-piao kuo chueh hsing ts'un-mie piao chuan-yi 春秋大事表國爵姓存滅表譔異
Ch'ung-yang 崇陽
Ch'ü 瞿
Ch'ü Tsu Ting Yu 瞿祖丁卣
Ch'ü-chia-ling 屈家嶺

Ch'ü-chiang 曲江
Ch'ü-fu 曲阜
Ch'üan-hu-ts'un 泉護村
Ch'üeh-mu-ch'iao 雀幕橋

Djalai-nor 札賚諾爾

Eh-ch'eng 鄂城
Eh-kou 莪溝
Erh-chien-ts'un 二澗村
Erh-lang-kang 二郎崗
Erh-li-kang 二里崗
Erh-li-t'ou 二里頭

Fan-ts'un 樊村
Fang Yu-sheng 方酉生
Fang-ch'eng 方城
Fang-shan 房山
Fang-tuei-ts'un 枋堆村
Fei-chia-ho 費家河
Fei-hsi 肥西
fen 分
Fen 汾
fen-tang li 分檔鬲
Fen-yang 汾陽
Feng 酆
Feng 灃
feng chien 封建
Feng Hu Tzu 風胡子
Feng-chuang 馮莊
Feng-ch'u 鳳雛
Feng-huang-ling 鳳凰嶺
Feng-hsia 酆下
Feng-k'ai 封開
Feng-pi-t'ou 鳳鼻頭
Feng-shan 鳳山
Feng-ts'un 馮村
Fengtien 奉天
Foochow 福州
fu 父
Fu Hao 婦好
Fu Hsi 伏羲
Fu Shen 傅申
Fu Ssu-nien 傅斯年
Fu-ch'üan-shan 福泉山
Fu-feng 扶風
Fu-ho 富河
Fu-ho-kou-men 富河溝門
Fu-hsin 阜新
Fu-kuo-tun 富國墩
Fu-lin 富林
Fu-nan 阜南
Fu-niu 伏牛
Fu-shun 撫順

Hai Tai 海岱
Hai-an 海安
Hai-feng 海豐
Hainan 海南
Han 漢
Han Fei Tzu 韓非子
Han K'ang-hsin 韓康信
Han Wei-chou 韓維周
Han-chia-tsui 韓家嘴
Han-chiang 韓江
Han-chung 漢中
Han-shu ti-li-chih 漢書地理志
Han-shui 漢水
Han-tan 邯鄲
Han-yang 漢陽
Hang-chou 杭州
hang-t'u 夯土

Hao 鎬
Hei-ching-lung 黑景隆
Hei-ku-tui 黑孤堆
Hei-mu-kou 黑木溝
Heng-chen-ts'un 橫陣村
ho 朱、合、盉
Ho Chieh-chün 何介鈞
Ho Hsi 河西
Ho Hsü 赫胥
Ho Lo 河洛
Ho-chia 賀家
Ho-chia-wan 何家灣
Ho-hsien 和縣
Ho-mu-tu 河姆渡
Ho-t'ao-chuang 核桃莊
Hou-chia-chuang 侯家莊
Hou-kang 後岡
Hou-ma 侯馬
hu 壺
Hu-chou 湖州
Hu-shu 湖熟
Hu-t'ou-kou 胡頭溝
Hu-t'ou-liang 虎頭梁
Hua Hsia 華夏
Hua-chai-tzu 花寨子
Hua-ch'eng-kang 划城崗
Hua-hsien 華縣
Hua-t'ing-ts'un 花廳村
Hua-wo 花窩
Hua-yin 華陰
Huai 淮
Huai-an 淮安
Huai-ho 淮河
Huai-yang 淮陽
Huan-ho 洹河
Huan-hsien 環縣
Huan-shui 洹水
Huang 黃(山)
Huang Ho 黃河
Huang Ti 黃帝
Huang-chung 湟中
Huang-ch'uan 潢川
Huang-fan-ch'ü 黃泛區
Huang-kang 黃崗
Huang-lung 黃龍
Huang-niang-niang-t'ai 皇娘娘台
Huang-p'i 黃陂
Huang-shui 湟水
Huang-yen-tung 黃岩洞
Huang-yi 皇矣
Huei-hsien 輝縣
Huei-hsing-kou 會興溝
Huei-tsui 灰嘴
Hung-hua-t'ao 紅花套
Hung-shan 紅山
Hung-shan-hou 紅山後
hung-ting-wan 紅頂石碗
Hung-tung 洪洞
Hung-tse 洪澤
Hung-yai 紅崖
Hung-yen-pa 紅岩壩
Huo-shan 霍山

Hsi Po 西亳
Hsi-chiao-shan 西樵山
Hsi-chiao-ts'un 西樵村
Hsi-ch'ou 西疇
Hsi-ch'uan 浙川
Hsi-han-shui 西漢水
Hsi-hou-tu 西侯度
Hsi-hsia-hou 西夏侯
Hsi-hsiang 西鄉

Hsi-kao-yai 西高崖
Hsi-ning 西寧
Hsi-ning Ho 西寧河
Hsi-pa-chien-fang 西八間房
Hsi-pei-kang 西北岡
Hsi-shan-ch'iao 西善橋
Hsi-shui-ch'üan 西水泉
Hsi-t'ou 溪頭
Hsi-t'u-ch'iao 西土橋
Hsi-wang-ts'un 西王村
Hsi-yin-ts'un 西陰村
Hsia 夏
Hsia Nai 夏鼐
Hsia-chia-tien 夏家店
Hsia-ch'uan 下川
Hsia-fan 下樊
Hsia-hsi-ho 下西河
Hsia-hsien 夏縣, 瑕縣
Hsia-ju 瑕鄏
Hsia-p'an-wang 下潘汪
Hsia-wang-kang 下王崗
Hsiang 相
Hsiang 湘
Hsiang-chiang 湘江
Hsiang-fen 襄汾
Hsiang-t'an 湘潭
Hsiang-yang 襄陽
Hsiao 囂
Hsiao Yü *ting* 小盂鼎
Hsiao-chu-shan 小珠山
Hsiao-ch'ang-liang 小長梁
Hsiao-ch'iao-pan 小橋畔
Hsiao-ho-yen 小河沿
Hsiao-huei-tung 硝灰洞
Hsiao-kan 孝感
Hsiao-k'ung-shan 小空山
Hsiao-min-t'un 孝民屯
Hsiao-nan-hai 小南海
Hsiao-p'an-kou 小潘溝
Hsiao-shan 蕭山
Hsiao-t'un 小屯
hsien 鼏, 秈
Hsien Ch'in ku ch'i chi 先秦古器記
hsien-Chou 先周
Hsien-jen-tung 仙人洞
Hsien-shih-lan 先識覽
Hsin Chung-kuo ti K'ao-ku Shou-huo 新中國的考古收穫
Hsin Tien 辛店
Hsin-an 新安
Hsin-chai 新寨
Hsin-cheng 新鄭
Hsin-chou 新州
Hsin-fan 新繁
Hsin-k'ai-liu 新開流
Hsin-lo 新樂
Hsin-tien 辛店
Hsin-t'ai 新泰
Hsin-ts'un 辛村
Hsin-yi 新沂
hsing 姓
Hsing-hua-shan 杏花山
Hsing-k'ai 興凱
Hsing-lung-wa 興隆洼
Hsing-yang 滎陽
Hsing-yi 興義
Hsiu-ning 休寧
Hsiu-yen 岫岩
Hsiung T'ung 熊通
Hsiung Yi 熊繹
Hsü 許
Hsü Hsi-t'ai 徐錫台
Hsü Hsü-sheng 徐旭生

Hsü Ping-ch'ang 徐炳昶
Hsü-chia-nien 徐家碾
Hsü-chia-yao 許家窯
Hsü-chou 徐州
Hsü-ch'ang 許昌
Hsüan Yüan 軒轅
Hsüan-ch'eng 宣城
Hsüeh-chia-kang 薛家崗
Hsüeh-kuan 薛關
Hsün-yi 旬邑

Jao Tsung-yi 饒宗頤
Jen-lei-hsüeh Hsüeh-pao 人類學學報
Jih-chao 日照
Ju-ho 汝河
Ju-shui 汝水
Jui-ch'eng 芮城
Jung 戎

Kan-chiang 贛江
Kan-shui 贛水
Kang-shang-ts'un 崗上村
Kao Ch'ü-hsun 高去尋
Kao-huang-miao 高皇廟
Kao-hsiung 高雄
kaoliang 高粱
Keng 耿
ko 戈
Ko-tzu-tung 鴿子洞
Kou Wu 句吳
ku 觚
Ku Tsu-yü 顧祖禹
Ku-chi-chui-tung-wu yü Ku-jen-lei 古脊椎動物與古人類
Ku-lang 古浪
Ku-liang Chuan 穀梁傳
Ku-tang 古堂
kuan 罐
Kuan Tzu 管子
Kuan-miao-shan 關廟山
Kuan-yin-tung 觀音洞
Kuang-ho 廣河
Kuang-lu 廣鹿
Kuang-she 光社
kuei 鬶, 鬹
Kuei-hua-shu 桂花樹
Kuei-lin 桂林
Kuei-nan 貴南
Kuei-te 貴德
Kung Liu 公劉
Kung Liu 公劉
Kung-an 公安
Kung-hsien 鞏縣
Kung-wang-ling 公王嶺
Kung-yang Chuan 公羊傳
kuo 國
Kuo Mo-jo 郭沫若
Kuo Pao-chün 郭寶鈞
Kuo Yü 國語
Kuo-chia-ts'un 郭家村

K'a-yao 卡窯
K'ang 康
K'ang-chia 康家
K'ao-ku 考古
K'ao-ku Hsüeh-pao 考古學報
K'ao-ku T'ung-hsün 考古通訊
K'ao-ku yü Wen-wu 考古與文物
K'ao-ku-hsüeh Chi-k'an 考古學集刊
K'ao-ku-t'u 考古圖
K'o *ting* 克鼎
K'o-ho 窪河

K'o-hsing-chuang 客省莊
K'o-hsüeh T'ung-pao 科學通報
K'o-shih-k'o-t'eng 克什克騰
K'o-tso 嗑左
K'uai-shui 澮水
K'uan-tien 寬甸
K'un 混
K'un-ming 昆明
K'ung-sang 空桑

La-yi-hai 拉乙亥
Lai-pin 來賓
Lan-chou 蘭州
Lan-t'ien 藍田
Lao Tzu 老子
Lao-ha 老哈
Lao-kuan-t'ai 老官台
Lao-tze 老子
lei 耒 電 壘
lei-wen 雷文
li 鬲
Li 澧
Li Chi 禮記
Li Chi 李濟
Li Ching-tan 李景聃
Li Hui-lin 李惠林
Li Hsiao-ting 李孝定
Li Ssu 李斯
Li Wen-chieh 李文杰
Li, Y. H. 李有恒
Li Yang-sung 李仰松
Li Yü-sun 李遇孫
Li-chia-ts'un 李家村
Li-chiang 麗江
Li-ch'eng 歷城
Li-hsien 澧縣
Li-ling 醴陵
Li-shih 礪石
Li-shui 澧水
Li-ts'un 禮村
Li-yü 李峪
Li-yü-tsui 鯉魚嘴
liang 兩
Liang 梁
Liang Chou Chin-wen-tz'u Ta-hsi 兩周金文辭大系
Liang Chou Chin-wen-tz'u Ta-hsi T'u-lu 兩周金文辭大系圖錄
Liang Ssu-yung 梁思永
Liang-chu 良渚
Liang-ch'eng-chen 兩城鎮
Liang-shan 梁山
Liao-ho 遼河
Liaotung 遼東
Lien-hua-t'ai 蓮花台
lien-tang li 連襠鬲
Lien-yün-kang 連雲港
Lin 林(聖龍)
Lin-chia 林家
Lin-fen 臨汾
Lin-hsia 臨夏
Lin-ju 臨汝
Lin-t'ao 臨洮
Lin-t'ung 臨潼
Lin-yi 臨沂
Ling-ching 靈井
Ling-t'ai 靈台
Ling-yuan 凌源
Liu Ch'ang 劉敞
Liu Ch'ang-shan 劉長山
Liu Yao 劉燿
Liu-chia 劉家

Liu-chia-ho 劉家河
Liu-chiang 柳江
Liu-chou 柳州
Liu-ho 六合
Liu-hu-t'un 留胡屯
Liu-li-ho 琉璃河
Liu-lin 劉林
Liu-p'an 六盤
Liu-wan 柳灣
Lo 洛
Lo Chen-yü 羅振玉
Lo-chia-chiao 羅家角
Lo-ch'uan 洛川
Lo-ho 洛河
Lo-shui-ts'un 洛水村
Lo-ta-miao 洛達廟
Lo-tu 樂都
Lo-yang 洛陽
Lu 魯
Lu Shan 廬山
Lu sung 魯頌
Lu-chai 魯寨
Lu-feng 祿豐
Lu-shan 廬山
Lu-t'ai-shan 魯台山
Luan-p'ing 灤平
Lun Yü 論語
Lung-an 隴安
Lung-ku-shan 龍骨山
Lung-shan 龍山
Lung-tung 龍洞
Lung-t'an-tung 龍潭洞
Lü Ta-lin 呂大臨
Lü-liang 呂梁
Lü-shih Ch'un-ch'iu 呂氏春秋
Lü-shun 旅順

Ma-chia-pang 馬家浜
Ma-chia-wan 馬家灣
Ma-chia-yao 馬家窯
Ma-ch'ang 馬廠
Ma-ch'ang-yen 馬廠沿
Ma-ch'iao 馬橋
Ma-lang-chi Ts'un 馬郎磯村
Ma-lang-ch'uan-shan 馬郎船山
Ma-liang-kou 馬良溝
Ma-pa 馬壩
Ma-wang-ts'un 馬王村
Man 蠻
Mao Kung *ting* 毛公鼎
Mao-chia-shan 毛家山
Mao-mao-tung 貓貓洞
Matsumoto Nobuhiro 松本信廣
Mei-shan 煤山
Meng Ch'ang-lu 孟常祿
Meng Tzu 孟子
Meng Wen-t'ung 蒙文通
Meng-chin 孟津
Meng-ko-chuang 孟各莊
Mi-hsien 密縣
Miao Man 苗蠻
Miao-hou-shan 廟後山
Miao-p'u-pei-ti 苗圃北地
Miao-ti-kou 廟底溝
Mien 緜
Mien-ch'ih 澠池
min 皿
Min 閩
Min-chiang 閩江
Min-ch'in 民勤
Min-ho 民和
Min-hsien 岷縣
Min-shan 山民山

Mo Tzu 墨子
Mo-p'an-shan 磨盤山
Mu T'ien Tzu Chuan 穆天子傳
Mu Wang 穆王

Nai-ma-t'ai 奈馬台
Nan-chang 南漳
Nan-chao 南召
Nan-hai 南海
Nan-hsing-fu 南興埠
Nan-hsiung 南雄
Nan-ning 南寧
Nan-t'ai-ti 南台地
Nan-yang 南陽
Nan-yang-chuang 南陽莊
Nan-yang-hu 南陽湖
Ni-ho-wan 泥河灣
Ning-chen 寧鎮
Ning-hsiang 寧鄉
Ning-hsien 寧縣
Ning-po 寧波
Ning-yang 寧陽
Nu-li-chih Shih-tai 奴隸制時代
Nü Wa 女媧

Pa 灞
Pa-lin 巴林
Pai-chia-chuang 白家莊
Pai-chia-ts'un 白家村
Pai-fu 白浮
Pai-lien-tung 白蓮洞
Pai-lung-chiang 白龍江
Pai-se 百色
Pai-t'ing 白亭
Pai-ying 白營
Pan Ku 班固

Pan-p'o 半坡
Pan-shan 半山
Pan-shan-ch'ü 半山區
Pao-chi 寶雞
Pao-chi-yen 寶積岩
Pao-ti 寶地
Pao-t'ou 堡頭
Pao-tzu-t'ou 豹子頭
Pei-chuang 北莊
Pei-hsin 北辛
Pei-hsin-chuang 北辛莊
Pei-liu 北劉
Pei-p'iao 北票
Pei-shou-ling 北首嶺
Pei-yin-yang-ying 北陰陽營
Pen-hsi 本溪
pi 壁
Pi 邳
Pi-kung 閟宮
Pin 豳
Pin-hsien 豳縣
Po 亳
Po-hai 渤海
Po-hsien 亳縣
Po-ku-t'u 博古圖
Po-yang 鄱陽

p'an 盤
P'an Ch'i-feng 潘其鳳
P'an Keng 盤庚
P'an-lung-ch'eng 盤龍城
P'an-nan-ts'un 盤南村
P'ao-ma-ling 跑馬嶺
P'ei Wen-chung 裴文中
P'ei-li-kang 裴李崗
P'eng 彭

P'eng Hsien 彭縣
P'eng Shih-fan 彭適凡
P'eng-lai 蓬萊
P'eng-li 彭蠡
P'i-hsien 郫縣
P'ing-ku 平谷
P'ing-liang-t'ai 平糧台
P'ing-lu 平陸
P'ing-shan 平山
P'ing-tu 平度
p'ou 部
P'u Tz'u T'ung Ts'uan 卜辭通纂
P'u-hsien 蒲縣
P'u-lan-tien 普蘭店

San Chuan 三傳
San Huang 三皇
San Li 三禮
San-chiao-ch'eng 三角城
San-ho 三河
San-li-ch'iao 三里橋
San-li-ho 三里河
San-men-hsia 三門峽
San-yuan-kung 三元宮
Sang-kan 桑乾
Sanmen 三門
Sham-wan 深灣
Ssu Wa-Ch'ia Yao 寺窪卡窯
Ssu-leng-shan 四棱山
Ssu-ma Ch'ien 司馬遷
Ssu-ming 四明
Ssu-shui 泗水
Ssu-tun 寺墩
Ssu-wa 寺窪
Ssu-wa-shan 寺窪山
Su Ping-ch'i 蘇秉琦

Su-chou 蘇州
Su-fu-t'un 蘇埠屯
Su-shui 涑水
Sui Jen 燧人
Sui-hsien 隨縣
Sun-chia-chai 孫家寨
Sung 宋
Sung-chiang 松江
Sung-shan 嵩山
Sung-tse 菘澤
Sung-tzu 松滋
Sha Kuo T'un 砂鍋屯
Sha-ching 沙井
Sha-ching-ts'un 沙井村
Sha-kuo-t'un 砂鍋屯
Sha-wo-li 沙窩李
Sha-yüan 沙苑
Shan Hai Ching 山海經
Shan-hsien 陝縣
Shan-pei 山背
Shan-shen 山神
Shang 商
Shang Chün Shu 商君書
Shang Ch'ü Fu *ting* 商鱞父鼎
Shang Fu Chi *ting* 商父己鼎
Shang Shu 尚書
Shang Yang 商鞅
Shang-chuang 尚莊
Shang-ch'iu 商丘
Shang-hsien 商縣
Shang-ma-shih 上馬石
Shang-na-pang 上那蚌
Shang-sha-tsui 上沙嘴
Shang-sun-chia 上孫家
Shang-sung-ts'un 上宋村
Shao-ch'en 召陳

She 社
She-hsien 歙縣
Shen Nung 神農
Shen-wan 深灣
Shen-yang 瀋陽
sheng 升
shih 氏
Shih 詩
Shih Chang-ju 石璋如
Shih Chi 史記
Shih Ching 詩經
Shih kuo 十過
Shih Pen 世本
Shih-chia 史家
Shih-ch'ien Yen-chiu 史前研究
Shih-ch'uan 石川
Shih-hui-pa 石灰壩
Shih-hsia 石峽
Shih-hsing 始興
Shih-li-p'u 十里鋪
Shih-ling-hsia 石嶺下
Shih-lou 石樓
Shih-men 石門
Shih-p'eng-shan 石棚山
Shih-p'ing 茌平
Shih-yang-shih-hu-shan 石羊石虎山
Shih-yü 峙峪
Shou Hsien 壽縣
Shu 蜀、舒
Shu 書
Shu Ching 書經
Shuang-miao-kou 雙廟溝
Shui Ching Chu 水經注
Shui-ch'eng 水城
Shui-ch'üan 水泉
Shui-hu-ti 睡虎地
Shui-kuan-yin 水觀音
Shui-mo-kou 水磨溝
Shui-tung-kou 水洞溝
Shui-t'ien-pan 水田畈

Ta Feng *kuei* 大豐簋
Ta Yü *ting* 大盂鼎
Ta-chang-chuang 大張莊
Ta-ch'ang 大廠
Ta-ch'eng-shan 大城山
Ta-ho-chuang 大何莊
Ta-ho-ts'un 大河村
Ta-hsi 大溪
Ta-hsia-ho 大夏河
Ta-hsien-chuang 大賢莊
Ta-hsin-chuang 大辛莊
Ta-ku-shan 大孤山
Ta-li 大荔
Ta-lien 大連
Ta-ling-ho 大凌河
Ta-lung-t'an 大龍潭
Ta-p'en-k'eng 大坌坑
Ta-ssu-k'ung-ts'un 大司空村
Ta-ti-wan 大地灣
Ta-tien-tzu 大甸子
Ta-tun-tzu 大墩子
Ta-t'o-t'ou 大坨頭
Ta-t'ung 大通
Ta-wen-k'ou 大汶口
Ta-yao-ts'un 大窯村
Ta-yeh 大冶
Ta-yü-ling 大庾嶺
Ta-yü-t'ai 達玉台
Ta-yüan 大源
Ta-yüan-ts'un 大原村
Tai-hsi 代溪

Taku 大姑
Tali 大理
Tan-ch'eng 鄲城
Tan-chiang 丹江
Tan-t'u 丹徒
Tan-yang 丹陽
Tang-t'u 當塗
Tang-yang 當陽
Tao Te Ching 道德經
Te-chou 德州
Teng-feng 鄧封
Ti 狄
Ti Hsin 帝辛
Ti Ku 帝嚳
Ti Shun 帝舜
Ti Yao 帝堯
Ti Yi 帝乙
Ti-chih Hsüeh-pao 地質學報
Ti-chih K'o-hsüeh 地質科學
Ti-pa-p'ing 地巴坪
Ti-pu 遞部
Tien-chün-t'ai 點軍台
ting 鼎
Ting Su 丁驌
Ting Yi 丁穎
Ting-ts'un 丁村
Torii Ryūzo 鳥居龍藏
tou 豆
Tou-men-chen 斗門鎮
Tu-an 都安
Tu-shih-tzu 獨石仔
Tuan Fang 端方
Tuan-chai 段寨
tuei 敦
Tung Tso-pin 董作賓
Tung-chia 董家
Tung-chuang-ts'un 東莊村
Tung-hai 東海
Tung-hai-yü 東海峪
Tung-hsia-feng 東下馮
Tung-hsiang 東鄉
Tung-hsing 東興
Tung-kan-kou 東乾溝
Tung-kang-ling 東崗嶺
Tung-kou 東溝
Tung-p'ing-hu 東平湖
Tung-shan-tsui 東山嘴
Tung-t'ing 洞庭
Tung-t'ing-hu 洞庭湖
Tung-yüeh-shih-ts'un 東岳石村

T'ai 太(湖)
T'ai Po 太伯
T'ai Wang 太王
T'ai-an 泰安
T'ai-hu 太湖
T'ai-kang-ssu 太崗寺
T'ai-pei 台北
T'ai-p'ing Huan-yü Chi 太平寰宇記
T'ai-shan 泰山
T'ai-yuan 太原
T'aihang 太行
T'an-fu 亶父(公亶父)
T'an-shih-shan 曇石山
T'ang 湯
T'ang-chia-kang 湯家崗
T'ang-ho 唐河
T'ang-hu 唐戶
T'ang-shan 唐山
T'ang-wang 唐汪
T'ang-wang-ch'uan 唐汪川
T'ang-yin 湯陰

T'ao Ho 洮河
T'ao-ho 洮河
T'ao-sha 洮沙
T'ao-ssu 陶寺
t'ao-t'ieh 饕餮
T'eng-hsien 滕縣
T'ie-sheng-kou 鉄生溝
T'ien Wang *kuei* 天亡簋
T'ien-men 天門
T'ien-shui 天水
T'ien-shui-kou 甜水溝
T'u-chu-shan 土珠山
T'u-chu-tzu 土珠子
T'u-ku-t'ai 土谷台
T'u-shan 塗山
T'umen 屠門
T'un-hsi 屯溪
T'ung Chu-ch'en 倗柱臣
T'ung t'ien jen chih chi, chiu ku chin chih pien, ch'eng yi chia chih yen 通天人之際究古今之變成一家之言
T'ung-ch'uan 銅川
T'ung-hsiang 桐鄉
T'ung-liang 銅梁
T'ung-tzu 桐梓

tsao-Chou 早周
Tsao-lü-t'ai 造律台
Tsao-shih 皂市
tseng 甑
Tseng 曾
Tseng Chao-yüch 曾昭燏
Tseng Fan 曾凡
Tseng-p'i-yen 甑皮岩
Tsien, T. H. 錢存訓
Tsinghua 清華
Tsinling 秦嶺
Tso Chuan 左傳
Tsou Heng 鄒衡
Tsou-hsien 鄒縣
Tsu-chang 沮漳(河)
tsun 尊

Ts'ai 蔡
Ts'ao 曹
Ts'ao-hai 草海
Ts'ao-hsich-shan 草鞋山
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Wa-cha-tsui 瓦渣嘴
Wan-ch'eng 萬城
Wan-ch'üan 萬泉
Wan-nien 萬年
Wang Chi 王季
Wang Chien 王建
Wang Chih 王制
Wang Fu 王黼
Wang Jen-hsiang 王仁湘
Wang Kuo-wei 王國維

Wang Tse-yi 王擇義
Wang Tsun-kuo 汪遵國
Wang-chia-kang 王家崗
Wang-chia-tsui 王家嘴
Wang-ch'eng-kang 王城崗
Wang-wan 王灣
Wang-yin 王因
Wang-yu-fang 王油坊
Wei 魏、衛、渭
Wei Chü-hsien 衛聚賢
Wei-fang 濰坊
Wei-ho 衛河、漳河
Wei-hsien 濰縣
Wei-nan 渭南
Wei-ning 威寧
Wei-shui 渭水
Wen Wang 文王
Wen-wu 文物
Wen-wu Chi-k'an 文物集刊
Wen-wu Ts'an-k'ao Tzu-liao 文物參考資料
Wen-wu Tzu-liao Ts'ung-k'an 文物資料叢刊
Weng-niu-t'e 翁牛特
Weng-yuan 甕源
Woo Ju-k'ang 吳汝康
wu 物
Wu 吳
Wu 吳(汝康)
Wu Chin-ting 吳金鼎
Wu Hsin-chih 吳新智
Wu Ju-tso 吳汝祚
Wu Shan-ch'ing 吳山菁
Wu Ti 五帝
Wu Ting 武丁
Wu Wang 武王
Wu Yüch Shih-ti Yen-chiu-huei 吳越史記研究會
Wu-an 武安
Wu-chia 吳家
Wu-ch'eng 吳城
Wu-ch'eng 午城
Wu-ch'iang 烏牆
Wu-han 武漢
Wu-hsien 吳縣
Wu-hsing 吳興
Wu-hu 蕪湖
Wu-kuan-ts'un 武官村
Wu-kung 武功
Wu-shan 武山, 巫山
wu-shu 五銖
Wu-tu 五渡
Wu-wei 武威

Ya-p'u-shan 鴨蹼山
Yang Shih-t'ing 楊式挺
Yang Tien-hsun 楊殿珣
Yang-chou 楊州
Yang-ch'eng 陽城
Yang-ch'un 陽春
Yang-kao 陽高
Yang-kua 陽瓜
Yang-shao-ts'un 仰韶村
Yang-t'ou-wa 羊頭窪
Yang-yuan 陽原
Yao 堯
Yao-chiang 姚江
Yao-kuan-chuang 姚官莊
Yao-wang-miao 堯王廟
Yeh-tien 野店
Yeh-wang 業王
Yen 燕、奄

yen 鴈
Yen Wen-ming 嚴文明
Yen Yen 嚴鄢
Yen-chou 兗州
Yen-ch'eng 奄城
Yen-erh-wan 雁兒灣
Yen-shan 燕山
Yen-shih 偃師
Yen-tun-shan 煙墩山
Yen-ts'un 閻村
yi 彝 邑
Yi 夷
Yi 易
Yi 乙
Yi Ching 易經
Yi Chou Shu 逸周書
Yi Li 儀禮
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Yin-hsü 殷墟
Ying-ch'eng 應城
Ying-ho 潁河
Ying-k'ou 營口
Ying-she shih-hsüeh 影射史學
Ying-shui 潁水
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Yü 禹
yü 盂
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Yüan K'ang 袁康
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Yuan-mou 元謀
Yuan-shan 圓山
Yuan-yang-ch'ih 鴛鴦池
Yueh 越
yüeh 鉞
Yüeh chüeh shu 越絕書
Yueh-ch'eng 越城
Yueh-shih 岳石
Yueh-shih-ts'un 岳石村
Yueh-yang 岳陽
yün 雲
Yün-hsi 鄖西
Yün-hsien 鄖縣
Yün-meng 雲夢
Yün-t'ang 雲塘
Yüng-chiang 邕江
Yüng-ching 永靖
Yüng-ch'ang 永昌
Yüng-ch'eng 永城
Yüng-teng 永登
Yüng-ting 永定

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The references cited in this volume are given in the footnotes, which constitute an extensive bibliography for the field of ancient Chinese archaeology up to the end of 1985. The following list is in three parts. The first gives titles of periodicals and serial publications wherein the overwhelming majority of the original data are reported. The second consists of a highly selective minimum of titles in non-Chinese languages which are recommended for their wide coverage and general significance. The third part lists similar titles in Chinese.

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