

Book Reviews

Early Civilization in China

The Cradle of the East. An Inquiry into the Indigenous Origins of Techniques and Ideas of Neolithic and Early Historic China, 5000–1000 B.C. PING-TI HO. Chinese University of Hong Kong, Hong Kong, and University of Chicago Press, Chicago, 1976. xxii, 440 pp., illus. \$20.

As the frontiers of research into prehistory have expanded beyond western Europe and the Near East to all parts of the world students have questioned the notion that ancient cultural development must have followed the patterns set down in the areas of earliest research, or that these areas were wellsprings from which ideas flowed to lesser cultures. In particular, the contributions of East Asia and the Indo-Pacific world have come under reexamination. However, even the most innovative thinkers have generally been Westerners from a circumscribed academic tradition. Ping-ti Ho gives us a different perspective in looking at the field as a specialist in Chinese ancient history and civilization. The purpose of his book is “to ascertain whether the major cultural elements which eventually coalesced in Shang civilization were of indigenous origins” (p. 270). *The Cradle of the East* is an attempt to show that from the Yang Shao Neolithic through to the Chou there was a continuous series of creative innovations in North China that gave rise to and fostered Chinese civilization.

In the southeastern portion or the primary loess region of southern Shensi, Shansi, and northwestern Honan, at a time before 5000 B.C., the Yang Shao culture began with a loess-adapted, short-fallow agriculture. The agricultural setting, according to Ho, was a treeless steppe covered with only the sparsest *Artemisia* and *Chenopodium*. The major crop was millet. In addition, pig husbandry, the earliest in East Asia, was practiced. The Yang Shao are said by Ho to have developed the earliest writing system in the world, consisting of word signs on pottery; some of these appear to be potter's marks, others marks of ownership by clans, families, or individuals. The agricultural base was expanded with the addition of rice, first domesticated by the central Chinese Ching-lien-kang cul-

ture by 4000 B.C. Wheat and barley were introduced from the West in the second or late third millennium B.C., and sorghum arrived in the last few centuries B.C. Ho stresses that the Chinese ceramic tradition developed within China, except for a few borrowed vessel forms that can be found in Late Shang sites from 1300 B.C. or later. Following a detailed comparison of painted ceramics from the Near East and western Asia he rejects the idea that the Yang Shao painted pottery was derived from the West. Bronze technology, which developed about 1600 B.C., and can be seen first at such sites as Erh-li-t'ou, is also indigenous to China. Experimentation with copper may have occurred as early as 2000 B.C. in the Kansu area, on the evidence of radiocarbon dates from the Ta-ho-chuang site. The Chinese system of ordinals, the “Celestial Stems and Earthly Branches,” as well as Chinese script and language, are also said to be indigenous. Finally, prehistoric and early historic religion—ancestor worship, scapulimancy, plastromancy, and “embryonic ritualist and humanistic thought” (p. 342)—is said to be uniquely Sinitic in character. The “silk route” linking southwestern Asia, central Asia, and China was not open until horse riding and chariots developed after the middle of the second millennium B.C. Ho states that the major elements of Chinese civilization are all derived from the Yang Shao nuclear area, the ideas having reached other parts of China by a centrifugal process.

Most specialists would agree that millet cultivation, painted pottery, bronze, and Chinese script and language originated in North China. In fact, for many, tracing diffusion, however gratifying to nationalistic sentiment, is no longer of much interest anthropologically. The notion of diffusion tells us very little about the internal social and technological development of the prehistoric groups we study. Ho's documentation of an important culture area in East Asia and the dynamics of Yang Shao development is an important contribution in itself. But in my estimation, the claim that this area is the wellspring of East Asian culture is a step backward. It is more important, for instance, to recognize the contributions to the world's food repertoire of South

China and Southeast Asia (rice, citrus, bamboo, tea, root crops), of New Guinea (sugar cane and the *Australimusa* bananas), and of Japan (the processing of gobo, *Arctium lappa* L., and of konnyaku, *Amorphophallus Konjac* K. Koch). Moreover, if one were interested in pursuing the model of “cradles,” an interesting one could be constructed for central China based on early cord-marked pottery and the cultivation of rice and a number of other crops.

A number of specialists in Southeast Asian archeology have been critical of the old model of diffusion from North China to Southeast Asia. In particular, cultivation, ceramics, and bronze technology are said to have appeared earlier in northern Thailand on the basis of evidence from Spirit Cave, Non Nok Tha, and Ban Chiang. While the original researchers, Chester Gorman and Donn Bayard, have been careful to show that their results are tentative, others who have described the Thai finds have pushed the claims too far. As a result, there has been criticism from those working on similar problems from other areas (see K. V. Flannery, *Annual Review of Anthropology*, vol. 2 [1973], p. 286). While there is evidence suggesting that root crops and some vegetables were cultivated by Hoabinhian populations in Thailand prior to 6000 B.C., it is difficult to be certain of the matter until reports of more early plant remains are forthcoming. Similarly, the Ban Chiang painted pottery, thought on the basis of thermoluminescence dates to be more than 6000 years old, is now found by radiocarbon dating to be no older than the first millennium B.C. Secure dating of bronze production at Non Nok Tha places it not much earlier than 2000 B.C., though copper working may date to the fourth millennium B.C. While some of the Southeast Asia specialists have been clamoring on the basis of the brief reports at hand that China is later in each aspect and quite possibly the recipient of many innovations from Southeast Asia, Ho argues that actual cultivation is much earlier in North China and that bronze technology is independent and of comparable antiquity. I believe that cultivation may have been earlier in South China and Southeast Asia because of favorable early post-Pleistocene conditions. The agricultural systems which evolved there appear to have utilized a wider range of species and were different from those in the North, but were in no way inferior. The claims for extremely early metallurgy or civilization in Southeast Asia must certainly be backed up with complete site reports. Yet the ques-

tions are not as simple or as closed as they appear in *The Cradle of the East*. Some middle position that recognizes the differences in environments and human populations in eastern Asia and draws out the distinctive qualities of each area is what we need now.

Paul Benedict has attempted to show that a wide range of vocabulary items, including those for the zodiacal signs, ancestor worship, and early terms for cultivation, are borrowed from Austro-Thai languages in South China (*Behav. Sci. Notes* 2, 275 [1967]). Few linguists agree with Benedict about the reality of the Austro-Thai grouping, the reconstructed vocabulary, or the diffusion of the vocabulary items, however. Another recent theory, proposed by Edwin Pulleyblank, is that the Heavenly Stems and Earthly Branches are a quasi alphabet, which represented the consonants of Chinese in the second millennium B.C. and may have had a common origin with the 22 signs of the ancient Semitic alphabet (*J. Am. Orient. Soc.*, in press). The idea of a writing system in the Neolithic challenges many time-honored ideas concerning the origins of scripts and their social contexts. Was the Neolithic society of Yang Shao times complex enough to warrant the use of a script? I think it remains to be proven that the marks on Yang Shao pottery were symbols with abstract meanings and not signs. It is interesting that, in addition to being found at the North Chinese sites, these marks were found on Sandy Red Ware sherds from the Fengpitou site of southern Taiwan, dating to 1900–1400 B.C. (K. C. Chang, "Fengpitou, Tapengkeng, and the Prehistory of Taiwan," *Yale Univ. Publ. Anthropol.*, No. 73 [1967], pp. 95, 100), in which context they were thought to be owner's or maker's marks.

Basic to Ho's formulation is the idea of an initial agricultural system for Yang Shao based on permanent fields in an arid loess environment. A good portion of this argument is based on the interpretation of palynological data, which I have criticized elsewhere on the grounds of inadequacy of samples and lack of consideration of plant succession and anthropogenic factors (*Antiquity* 48, No. 191, 226 [1973]). More recently I have encountered another problem with the interpretation. *Artemisia* was found to be the predominant pollen in a long core from Wu-Ch'eng County, Shansi. From this Ho concludes that *Artemisia* itself can represent only arid steppe (p. 25), citing the North American *Artemisia tridentata* (sagebrush) as an example. On checking the *Iconographia Cormo-phytorum Sinicorum*, volume 4 (Peking,

1975), my wife found that of some 47 species found in North China, *A. eriopoda*, *annua*, *apiacea*, *viridissima*, *anomala*, *deversa*, *feddei*, and *argyi* all grow at the edge of forests or in sparse woodland. I still prefer to think that the Yang Shao nuclear area at the time of incipient agriculture was an open deciduous woodland, and that the initial system was one of swiddening. The area may have lain along an ecotone between forest and steppe; but I do not see the evidence that it was entirely treeless. Nor can I understand Ho's statement that swidden is a "simple and wanton method, characteristic of the tropics" (pp. 41, 49). Until the chronological relationships of the huge number of Yang Shao sites are understood, there is no reason to rule out the possibility that they were occupied for relatively short times at repeated intervals by shifting cultivators. Although permanent-field agriculture is described in the *Tso Chuan*, this document belongs to the Late Chou and cannot be used to substantiate inferences about situations that existed thousands of years earlier.

The Cradle of the East makes one stop to ponder the political and social implications of culture history, in addition to the notions of stages of culture evolution. Perhaps I am too conservative to accept the notions of cultivation systems that start with permanent fields and Neolithic farmers who invent their own writing systems. It is certain that in testing the hypotheses that are presented in this book we will advance not only in our understanding of China and her prehistoric neighbors but also in our conception of Neolithic and Bronze Age existence.

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Crustaceans

Fiddler Crabs of the World. Ocypodidae: Genus *Uca*. JOCELYN CRANE. Princeton University Press, Princeton, N.J., 1975. xxiv, 738 pp., illus. \$75.

Jocelyn Crane's massive compilation of information about the genus *Uca* provides a wealth of facts on a variety of biological subjects. It contains material that will be of interest to ecologists, ethologists, and evolutionary biologists in general as well as to those concerned with crustacean behavior, morphology, and systematics. Crane does not review physiological work on *Uca* in detail, but almost all other aspects of the biology of

fiddler crabs are considered in depth. Particularly in systematics, morphology, natural history, and behavior, Crane has incorporated a considerable quantity of data on *Uca* that have not been published elsewhere. Although the body of information the book presents on the genus is formidable, Crane points out numerous areas in which data are lacking or inadequate.

The main portion of the book is organized into a systematic section (where detailed data are presented species by species) and a synthesis section (where comparative viewpoints on separate aspects of the biology of *Uca* are brought together). Numerous plates, figures, and tables augment the text, although the placement of all figures and tables in one section sometimes makes for clumsy reading. Cross-referencing is generally good, although occasionally the reader must search around to track down definitions or descriptions. The keys and the appendix on field methods are helpful aids to anybody working or contemplating working on fiddler crabs.

As might be expected in such a wide-ranging book, the author does not present startling new approaches. Rather, each aspect of the subject is presented in the light of knowledge of the other aspects. Experts on specific subjects may disagree with certain conclusions (I would question some of Crane's conclusions on the functions of displays, and she is mistaken in stating that crabs do not have statocysts), but this does not detract from the substance of the book. The use of behavioral, morphological, and ecological characteristics in understanding the systematics of fiddler crabs has characterized Crane's studies for many years. The present synthesis of these features of *Uca* biology strengthens the evolutionary conclusions reached.

It is likely that significant portions of the material in the book (especially in the 300-page systematics section) will not be of interest to many readers who are not working specifically on *Uca*. The morphological detail may not be of direct concern to a vertebrate ethologist, and the behavioral detail may not excite an invertebrate taxonomist. But any biologist seeking specific information on a particular subspecies, species, or subgenus of *Uca* (Crane groups the 62 species she recognizes into nine subgenera) will appreciate being able to go to one reference work to locate it. The synthesis sections should be of interest to a much wider audience.

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