Ban Chiang: A Mosaic of Impressions from the First Two Years

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Only a decade ago, Southeast Asia was regarded as a prehistoric cul-de-sac; that it might have been an important area in the development of early civilization was an unthinkable notion. In 1960, two most eminent scholars of Southeast Asian cultural history, Coedes and Groslier still accepted the standard theory that early sophisticated stone tools, pottery and metallurgy were derived from China and India.

Coedes writes, "It is interesting to note that even in prehistoric times, the anthropomorphous peoples of Indochina seem to have been lacking in creative genius and showed little aptitude for making progress without stimuli from outside." As late as 1971, Grahame Clark's revised edition of World Prehistory contains the following quip: "Neither Southeast Asia, nor the Philippines experienced a phase of technology fully comparable with the Bronze Age in certain parts of the world. Yet, while stone tools continued in general use into the Christian era, a certain number of bronze artifacts found their way over these territories during the latter half of the first millennium B.C., and in the richer graves of Annam there were sometimes accompanied by objects made of iron."

In two brief seasons of work at the site of Ban Chiang in Northeast Thailand, the University Museum, Philadelphia—Thai Fine Arts Department, Northeast Thailand Archaeological Project has produced sufficient evidence to challenge this long-held assumption that Southeast Asia played only a minor and derivative role in prehistoric development. Data now under analysis at the University Museum are generating a major revision of the Bronze Age prehistory of East Asia, perhaps of even all of the Old World. Plenty of clues did exist that should have cast doubt on the diffusion hypothesis, but the material, rather random assemblages of stone tools, pottery and metal, was interpreted primarily on the basis of European cultural sequences. Also, until recently, there were no genuine, scientific excavations to provide the kind of reliable data that would be internationally acceptable. With the exception of Thailand, Southeast Asia was the colonial province of the French, Dutch and British. Early scholars, generally, more interested in "High Civilizations" than rude prehistory, were fascinated by the great monuments of the area, the architectural marvels of Angkor Wat or the Borobudur, and seem to have had very little interest in searching for the origins and background of the cultures which had created them.

Not until the late 1960's did Wilmolm G. Solheim of the University of Hawaii and his two Ph.D. students, Dean Bayard and Chet Gorman, begin to publish the results of their work, begun a few years earlier at the sites of Non Nok Tha and Special Cave in Thailand. There was any well-grounded argument for rethinking the traditional belief that Java Man's descendants had squatted in their caves until they were taught the rudiments of civilization by more intelligent outsiders.

The swift rise of interest in archaeology by local Southeast Asian peoples is most certainly bound up with the nationalism of recently independent nations and their determination to organize their own excavations and perhaps, quite literally, dig up their own identities. In 1960, there was very little local interest in prehistoric archaeology and not more than a handful of trained Southeast Asian archaeologists. Yet within the last decade, every Southeast Asian nation has developed an archaeological program or expanded its existing facilities.

Within this context of archaeological research and development that the University Museum and the University of Pennsylvania entered the Southeast Asian field, and it is this background that has shaped their programs of joint expeditions, with a strong emphasis on assisting their local colleagues to further their own professional education within the context of a genuine sharing of work, expenses and knowledge.

Ban Chiang is a small village in Northeast Thailand, an area considered as "depressed" by the Thai government because of its generally sparse and certainly underdeveloped resources. In 1968 or 69, a Fine Arts Department officer stopped in the village during a Northeast inspection tour and picked up a handful of small shards which he found unusual. These fragments of pottery were unusual in the sense of what was then known of the Thai prehistoric sequence, yet their significance was not to be fully realized until many years later.

Ban Chiang remained archaeologically undisturbed until July, 1966 when Stephen Young, an American student, visited Ban Chiang during the construction of a village road. From the fresh road cuts he retrieved for scientific interest several large fragments and a few nearly complete pots painted with handsome and intricate red-on-buff spiral designs. Elizabeth Lyons, then working as a consultant to the Fine Arts Department, photographed and studied them and could find no parallels with other Southeast Asian pottery or that of China and India. This puzzle now interested the Fine Arts Department and in April 1967, the then Director General, Dhanit Yupho, sent Vidyai Intakorn to conduct test excavations at Ban Chiang. He reported that the pottery, plain ware and painted, was in burial association with bronze artifacts which led Lyons to give one of the sherds plus two from Vidyai's earlier excavation on the Iron Age Lopburi Artillery Site to a Philadelphia visitor, William Kohler, who offered to hand carry them back to Philadelphia for dating at MASCA. This was done in 1968 and the Thermoluminescence analysis of the Ban Chiang specimen gave a date of around 4000 B.C. which, at the time, did not seem credible. Somewhat later, George Dales, then working in Thailand, was given two more sherds from Ban Chiang (testing by MASCA. This was done in 1971 and gave dates falling within the fourth millennium B.C.

While this was by no means enough proof for conscientious archaeologists, it was a good indication that great surprises might lie under the soil of Northeast Thailand and it began to stir University Museum curiosity about the site.

Then, in late 1971 and early 1972, new construction in the Thai village suddenly produced a large number of pointed pots, so unusually handsome that they immediately became a prize for collectors.

It was now obvious that Ban Chiang was a rich and extraordinary site and that it would be a tight race between a small group of archaeologists interested in acquiring all possible knowledge about it, and a large group of collectors avid for the objects. The Thai Fine Arts Department, spurred on by the concern of their king and some private
citizens, succeeded in getting funds to do two excavations in 1972 directed by Pete Keenan and Nikon Sitawiga. Added to this attempt in 1972 was a joint excavation at Ban Chiang by the Faculty of Archaeology, Silpakorn University and the Faculty of Social Welfare of Thammasat University. During this period the Thai Fine Arts Department also managed to have laws passed protecting the area and forbidding further private digging or trading of the artifacts.

In 1973, the University Museum's Director, Prof. Peter Hewson, who had kept in touch with these developments, visited Ban Chiang and examined the artifacts along with a number of specialists. An agreement was then negotiated with the Thai Fine Arts Department for a long-term investigation of northeastern Thailand under the direction of Phan Charoenwong of the National Museum, Bangkok, and Chester Corgorn of the Smithsonian Institution.

The material already retrieved from the Thai excavations and known from the villages in the region is incredibly rich and varied: layer upon layer of stratified pottery, stone tools and other artifacts, and human remains. Most of the excavations were carried out in the nearly marshy swamps that will allow the reconstruction of the vegetation history as well as the human occupation patterns. The research, still in progress, is being carried out by the Malaysian National Museum and the National Museum of Thailand.

The material retrieved from these sites will give us a better understanding of the early domestication of rice. Mitsuo Takahashi, a paleoanthropologist from the University of Tokyo, has undertaken a series of studies of the pottery, including stratigraphic analysis and the study of the human remains. The results of these studies will be published in a forthcoming monograph.

Planning for the continuation of the excavations in the region is currently underway. The Thai Fine Arts Department is planning a major excavation of the site of Ban Chiang, and the University of Tokyo is planning to excavate a large area of the site. The material retrieved from these excavations will be used to understand the prehistoric period in the region.

In conclusion, the excavation at Ban Chiang has been a major success. The material retrieved from the site is of great importance for our understanding of the prehistoric period in the region. The Thai Fine Arts Department is planning to continue the excavations and the material retrieved will be used to understand the prehistoric period in the region.

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1. The child's burial (Burial 82) (center foreground) lies in a grave cut into the otherwise sterile surface of the Ban Chiang mound as it existed c.3000 B.C. The circular feature, half-sectioned, just to the right of this is the original grave of Burial 76, a low, flexed burial and the one from which we recovered our lowest Phase I (Phase II) socketed bronze spearhead shown below.

2. This black burnished and incised vessel is characteristic of the black ware found only in the broad layers of Ban Chiang. A black band separates the upper polished, incised, and retouched design from the cord-marked surface below. The foot has been polished and incised with four parallel lines. Note the perforations on the foot and just under the widest turning rim. Height 15.5 cm.

3. Beaker-shaped vessels such as this red-slipped example were recovered only from Phase I (Phase II contexts). The exterior surfaces often have appliqué bands; some vessels were elaborately incised. Height 15 cm.

4. The bronze spearhead found almost within the skeletal grave of Burial 76. Length 15 cm.

5. Square D6 of the surface of layers 36 illustrates the very complex (intercutting) burials characteristic of Phase I (Phase II). 1976 excavations in the center foreground the flexed burial 82 is set to cut the upper juvenile burial 84; an enlargement of the flexed burial 55 (No. 9 below) shows an elephant ivory bracelet on the left wrist, commonly encountered in these low-lying burials.

6. Shown above is the now almost completely exposed flexed burial visible in half-section in the photograph above. The hole in which the burial lies is the actual grave cut some five to six thousand years ago. These rare and early flexed burials may well be our first indication that the initial Bronze Age settlers of the Kanat Plain are the descendants of an earlier Southeast Asian highland people; Hafushian or even older, dated back to 12,000 B.C., and the hunters and gatherers who occupied these sites were, upon death, placed in a very similar flexed position, seated or in a prone position, soles facing the ground.
sophisticated, and this, plus the abundant presence of rice tempering in the black pottery, makes us believe that the group had already adapted to an agricultural life on the Korat Plateau. How long a period of trial and error elapsed before the various technologies (metalurgy, pottery, plant husbandry, etc.) coalesced to form the mature complex recorded in Phase I at Ban Chiang is still unknown. Continuing survey and excavations will undoubtedly answer this and other such questions; we have little doubt, however, that we will eventually trace bronze metallurgy well back into the early 4th millennium B.C., perhaps finding its origins in the mountain ranges abutting the edges of the Korat Plateau, areas known today in antiquity for their rich tin and copper deposits, the natural ingredients necessary for man's first step into the Bronze Age.

While the background to the earliest metallurgical development awaits further excavation, the excavation of these two seasons continued. The early Ban Chiang smiths seem to have been acquainted with iron. Above the varied ceramics of Phases I and II is a thick grey layer with cord-marked and burnished ceramics and supine burials. The surface of this layer showed evidence of occupation—post-hole alignments and erosional surfaces strewn with artifacts—tentatively dated to about 2000 B.C. This correlates well with Phase III best defined during the 1974 excavations and characterized by large, cord-marked vessels with incised curvilinear designs which were also dated to about 2000 B.C. by a radiocarbon sample.

Above this phase, in both the 1974 and 1975 excavations, we encountered Phase IV, a rich funerary phase yielding perhaps the most distinctive pottery characterized by incised curvilinear and geometric designs, the areas outlined by these incised designs then being painted red. This pottery was associated with burials rich in bronze artifacts.

A number of multiple burials were uncovered during both the 1974 and 1975 seasons. Often the individuals were placed in supine positions, side by side, and held by the feet. A different type of multiple burial is illustrated here: Burial 45 (1974) was fully exposed and partially tilted to the right, a skull remaining in the phallic position of a second burial. Burial 46 (fully exposed above), appeared lying on the left side of Burial 45. Directly above Burial 43 we excavated a large pottery vessel containing an infant burial. The skeletal characteristics of these burials suggest we may be dealing with a young family, a man and wife, who died and were buried together.

A reconstruction of a large mended curvilinear vessel recovered during Phase III of the Ban Chiang excavations. The particular vessel contains the remains of a young child. Burial 43. 1974. Similar incised curvilinear vessels were characteristic of the principal layers of Non Nok Tha. Approximately 35 cm.

The valley floor in the Kao Khu area was almost level, and no great natural features were present to obstruct the flow of water. The valley was nearly 1000 m wide in the Kao Khu area and slightly less wide in the Ban Chiang area. The village site was located at the edge of the valley. The site is a confluence of two streams, the stream on the left being fed by a small spring. The village was located on the right side of the valley floor. The pottery and other artifacts found in the village site were of the same type as those found in the Ban Chiang area. The village was probably abandoned in the late 2nd millennium B.C.
1. This juvenile, lying near the Phase IV/Phase V interface, was buried with two unique and archaeologically very important bracelets. On the right wrist (A) is a banded, made of intricately woven wrought iron on the left wrist (B) is the bronze bracelet around the outside of which were worn several strands of wrought iron. We consider this ornamental use of iron to reflect the rarity of that metal during its initial appearance on the Koseat Plains some 12 to 1500 years B.C.

2. A bi-metallic spearhead recovered from Phase IV of the 105 excavations. The blade is made of wrought iron, the bronze tang has been cemented onto the iron blade. 20.5 cm. long.

3. The cylindrical iron clay gather is characteristic of Southeast Asian archaeology. Their often elaborately carved surfaces witness the sophisticated use of a three-dimensional tool to impart an interlocking curvilinear design upon a two-dimensional surface. In some ways they resemble early Near Eastern "cylinder seals," although their closest Near Eastern parallels are often made of carved stone from one we have recovered a fragment of blue, red and silver pigment; from one we have recovered what appears to be a strand of silver thread. Although many were have been inscribed to these rollers, we feel their primary function was the painting of cylinder seals. The roller at left is 5.5 cm. long.

4. The painted, footed vessel on the left (associated with Burial 21, 1975) is one example of the Ban Chiang tree-trunk painted ware characteristic of Phase V.

Five Carbon-14 dates from the 1974 excavations dated this phase to 1600-1200 B.C. This phase was again encountered during the 1975 excavation, and while we expected the wealth of bronze, we did not expect to recover iron in association with the incised and painted pottery. The iron artifacts are as distinctive in their appearance as the pottery: three spearheads with long smelted and forged iron blades are mounted in cast-iron bronze sockets. A comparable composite type of metal artifact appears in late Shang Dynasty Chinese contexts several hundred years later. A juvenile was buried wearing two bracelets on the left wrist or or she were a wide bronze bracelet with an outside wrapping of iron—the rare and valued metal—and an intricately woven mass of iron, once a delicate bracelet, was recovered from the right wrist.

The three, almost identical bi-metallic spearheads attest to a certain standardization in the treatment of iron, and yet the ornamental use of iron, placed on the outside of bronze, suggests the initial appearance of the new and presumably rare metal. Interestingly enough, in the phase above this, iron becomes plentiful and is used for agricultural implements while bronze is reserved for ornamental use.

The exact date for this early appearance of iron will be determined this year from Carbon-14 samples collected during the late 1975 season. On typological grounds the associated pottery corresponds to our 1974 phase which is firmly dated between 1600 and 1200 B.C. (Dates 1200 and 700 B.C. for iron were also reported several years ago by Thai archaeologists.) The metallurgical sequence at Ban Chiang now emerges as a progression from early bronze artifacts (both weapons and jewelry) in the lowest phases to bi-metallic objects where iron is used either for important working edges or as ornamental additions, until finally, in the upper phases, iron is used for more commonplace agricultural implements and bronze resumes its status as the primary ornamental metal. Such a long-term, evolutionary trend in the use of iron may well be the first clue that we are indeed dealing with an in situ Southeast Asian development.

The wealth of material from Ban Chiang copiously illuminates the activities of the everyday villagers: hunting, animal husbandry, metallurgy, pottery making, etc. In the 1974 Phase III dated to 2000 B.C. we excavated the grave of an extremely tall, muscular male, promptly christened "Nimrod" by our students after the Biblical hunter. "Nimrod" was buried some 4000 years ago in a manner befitting a hunter; at his left hand was a long, beautifully fashioned, tanged bone spearhead, at his left shoulder the antler of a young deer; a long polished bone pin beneath his skull must once have pressed against his long hair, and, perhaps most impressive, was the necklace of tiger claws worn around his neck.
Pluit Chareonwongp was a graduate of Silpakorn University in Bangkok, Thailand, where he majored in ceramic art. Following three years of further graduate work at the Institute of Archaeology, Cambridge, he returned to Thailand where he was Lecturer in Archaeology at Silpakorn University and later at the National Museum, Bangkok. Pluit was selected by the Thai government to direct the joint Thai-Fine Arts Department—University of Pennsylvania Archaeology Project—inspired by the joint appointment in the Oriental Studies and Anthropology Departments of the University of Pennsylvania and its assistant curator in charge of the South Asian section of the University Museum. He received his Ph.D. in 1975, was awarded a Ford Foundation Post-Doctoral Fellowship in 1979, and has been a visiting professor at a number of universities in the United States and Europe.

This page contains a description of the archaeological excavation work at Ban Chiang, a site located in northeast Thailand. The excavation has yielded a wealth of information about the prehistoric culture of the area, including pottery, tools, and other artifacts. The text describes the excavation methods and the types of materials recovered. It also highlights the contributions of the researchers involved in the project, including the role of the University Museum in supporting the work. The page includes an illustration of a ceramic vessel from the site, which is used to illustrate the types of artifacts found during the excavation.

ACKNOWLEDGMENTS

Many people have given unstintingly of their time and talents to ensure the success of the 1974 and 1975 excavations. Among them were the many students who participated in the over-all project. We are grateful for the support of the University Museum, which provided financial assistance and logistical support throughout the project. We also wish to acknowledge the contributions of the local communities and the Thai government, which played a key role in making the project possible. The full names of all contributors are listed in the acknowledgments section at the end of the report.
Various teams of Thai archaeology students from Silpakorn University took part in the Ban Chiang projects during both years. Penpim Kaesuriya and Saengchan Traikasem worked at Ban Chiang during 1974 and returned during 1975 to assume major roles in the survey program.

During the 1975 excavations a number of Thai students including Surin Phookajorn, Supapan Nakban, Sukit Tiangmanikul, Pathom Rasitanond and Amphan Kich-ngam attended a long term training program at Ban Chiang. Amphan under a Ford Foundation SEAFP grant is now continuing graduate study under Professor Higham at the University of Otago.

The villagers of Ban Chiang through their hospitality, trust, and spontaneous good humor made not only our research but also our leisure time in Ban Chiang a very unforgettable experience. Visitors appeared with unerring accuracy from almost every corner of the world; they were generally advised that after one day's grace they were liable for corvee duty in the pot-cleaning and bagging shed.

Finally we would like to acknowledge the role of one person whose imagination, drive and optimism united our two museums in this continuing research effort, Froelich Rainey, Director of the University Museum.

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### Tentative Stratigraphic Sequence through the Ban Chiang Mound

<table>
<thead>
<tr>
<th>Phase*</th>
<th>Associated Pottery Styles and Markers</th>
<th>Approximate Dates</th>
<th>Significant Finds</th>
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<td>VII</td>
<td>Historic Thai celadons, Chinese blue-on-white porcelains, local N.E. Thai earthenwares.</td>
<td>A.D. 1600-1800</td>
<td>Historic assemblages: clay pipes, pottery, bronze and iron artifacts.</td>
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<tr>
<td>VI</td>
<td>Red slipped and burnished pottery (cruder than earlier material)</td>
<td>300-250 B.C.</td>
<td>Last prehistoric funerary phase at Ban Chiang. Iron Age tool assembly, glass beads, special alloys for jewelry.</td>
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<td>V</td>
<td>Red-on-buff Ban Chiang painted (freehand painted pottery).</td>
<td>1000-500 B.C.</td>
<td>Tentative</td>
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<tr>
<td>IV</td>
<td>Incised and painted pottery: geometric and curvilinear designs.</td>
<td>1600-1200 B.C.</td>
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<tr>
<td>I and II</td>
<td>Black to grey burnished and incised pottery; decorated and un-decorated &quot;beaker&quot; forms, and a variety of cord-marked and burnished vessels.</td>
<td>3600-2900 B.C.</td>
<td>The interface between these two burial phases is difficult to place exactly in time. Flexed burials were found only in these two basal phases, and one flexed burial contained a cast bronze spearhead. One burial from this phase wore bronze anklets, another bronze bracelets.</td>
</tr>
</tbody>
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* This is a tentative correlation of the phases established in the field during both the 1974 and 1975 field seasons. A technical report is now in preparation; in that we plan to assign names to each phase and present the complete C-14 and TL sequence from both years.

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**Suggested Reading**

Bayard, Donn T.
1971

Higham, C.F.W.
1972

1975

Hutterer, Karl L.
1976

Solheim, Wilhelm G. II
1970

1972

van Esterik, Penelope
1973