

# Excavations at Chansen, Thailand, 1968 and 1969: A Preliminary Report

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## INTRODUCTION

THE site Chansen is located about 1 km northwest of the modern village after which it is named, a *tambon* of Takhli District in the province of Nakhon Sawan. It is in the southernmost part of the province, only 2 km from the point where it joins the borders of Lopburi and Singburi. Present-day access is not difficult. The *tambon* lies on Thailand's main north-south railroad line and is connected with the city of Lopburi and the Takhli-Chainat highway by an all-weather gravel road.

In purely topographic terms, however, Chansen's location cannot be so easily described. Unlike most known pre-Khmer "cities" in central Thailand, it is not close to either a river or one of the abrupt limestone hills that stud the edges of the country's central deltaic plain. There may once have been a canal running southward to meet a slough of the Chao Phya, whose main stream lies 15 km to the west; otherwise, Chansen's immediate neighborhood is quite featureless and deprived of obvious special advantages for communications or defense. But on the other hand, it was not a bad place to build a small city. The surrounding alluvial clay is adequately fertile, the climate is pleasant enough (and less drought-ridden than the area farther north), and the countryside is filled with plants and animals, wild and domestic, that the modern Thais find good to eat. Getting a living must have been comparatively easy then, as indeed it still is today.

Considering these subsistence possibilities and the fact that the site is located about midway on the land route between the ancient population centers around

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Fig. 1 Early towns and cities in Thailand.

Chainat and Lopburi, the coming into being and continued existence of a town or small city somewhere near Chansen is not surprising. We are unclear as to why the ancient town's founders chose this exact spot. Conceivably they were influenced by the presence of an antecedent village of the late Metal Age (Phase I at Chansen), located on a now-decayed limestone outcrop buried under the southeastern portion of the later town.

Chansen's most conspicuous feature is its moat, a 20 m wide ditch that forms an oblong oriented in the cardinal directions and encloses an area of about 700 by 700 m. The moat is still in use as a fishpond, an aquatic plant field, and a buffalo wallow. Parts of it are redredged from time to time, a circumstance that accounts for its excellent preservation and conspicuousness on aerial photographs. No other constructional features are visible from the ground or air except a low causeway and a tank (a reservoir) just east of the moated area. The fact that the area within the moat is raised (by occupational debris) an average of 1 m above the level of the

surrounding plain makes it unsuitable for irrigation and rice growing. Hence, it is a prominent feature of the local landscape, an island of scrubby forest and temporary dry-farmed fields in the middle of a sea of flat rice paddies.

Despite this visibility, Chansen was not brought to the attention of archaeologists until 1966, when it was discovered on aerial photographs by Mr. Nid Shiranan, an amateur archaeologist and prominent Thai city planner. Nid visited the site shortly afterward and photographed a number of objects that had been found by local farmers. In consultation with officials of the National Museum in Bangkok, he determined that these objects could be attributed to at least three "periods" of Thailand's protohistory: Dvāravatī (A.D. 600-1000), Śrīvijaya (ca. A.D. 800-1000), and Lopburi (A.D. 1000-1300). The site's timespan was thus considerable, which contributed to the publicity the new discovery received in the Thai- and English-language local press.

In order to investigate the site, the University Museum of the University of Pennsylvania and the National Museum of Thailand organized a joint expedition, with Dr. George Dales and Mr. Somphorn Yupho as directors and Mr. Bennet Bronson as field director. Two seasons of excavation were done: three months in the spring of 1968 and two more in the spring of 1969. By the end of the latter season it became apparent that the expedition's major objectives had been reached. Excavation was stopped and analysis of the recovered material begun. The full site report is scheduled for completion by 1971. What follows is a preliminary description of the excavations' results.

#### OBJECTIVES

Thailand cannot be said to have a true documentary history before the establishment of the kingdom of Sukhothai in the 13th century by Thai invaders from the north. Its history before then (that is, the version given by the textbooks) depends on infrequent dated inscriptions, on inferences drawn from stylistic analysis of works of art, and on the interpretation of references to Southeast Asia in the writings of ancient historians and travelers, most of them Chinese. Data of all three kinds become progressively more scarce as one goes further back in time until, somewhere early in the first millenium A.D., they disappear altogether.

Four pre-Sukhothai "periods" are generally accepted by historians (we exclude Śrīvijaya, a so-called period that is really an art style coeval with the latter part of Dvāravatī):

1. Early. The indigenous substrate upon which the first literate Indian-derived civilizations were built. Variouslly termed "Neolithic," "Metal Age," or—occasionally—"Megalithic."

2. Funan. Named for an empire centered on the Mekong Delta, dated by Chinese annals to approximately A.D. 200-600. Its extension to central Thailand has been proposed because a number of finds made there closely resemble objects from Oc Eo in South Vietnam, the only Funan site to have been extensively excavated.

3. Dvāravatī. A kingdom of indeterminate size and a group of art styles, from about A.D. 600 to 1000. The kingdom seems to have been centered around U Thong

and Nakhon Pathom in the western part of the central plain of Thailand. The styles are quite widespread, occurring in all parts of the country except the Kra Peninsula and the far northeast.

4. Lopburi. The period of Cambodian hegemony in central and northeast Thailand, from about A.D. 1000 to 1300. Lopburi itself is a city in the Chao Phya-Menam Delta, used by the Khmers as a regional administrative center. The period produces the earliest dated inscriptions yet found in Thailand. These, along with a thoroughly worked-out sequence of art styles, make it possible to date Lopburi sites and monuments with reasonable accuracy.

This four-period scheme is not too satisfactory. The periods are long and their boundaries approximate. Moreover, they are defined almost exclusively in terms of art styles; very little work has been done on the ordinary artifacts of everyday life. The scheme, therefore, is hard for the field archaeologist to use. A site can be tentatively dated if it produces a sufficient quantity of sculpture and standing architecture. But if it does not—and this is true of the vast majority of sites in Thailand—one is helpless even to guess at the site's age. With nothing but sherds to go on, one cannot differentiate between Metal Age and Khmer.

A case could be made, in fact, for replacing the accepted chronology entirely, with new boundaries and new labels. But we were unwilling to do this, largely because it seemed important that our results be framed in language (and addressed to problems) acceptable to the epigraphy- and art history-oriented scholars who have traditionally dominated the field. Our own training has been somewhat different from theirs, and these methodological differences could all too easily be escalated into the kind of mutual antipathy that obtains between traditional and "modern" archaeologists in other places. For this to happen in Southeast Asia would obviously be undesirable.

Our first objective in fieldwork, accordingly, was to attempt to turn the traditionally accepted chronology into a usable tool, innovating where necessary but retaining as much of the old system as was practicable. This involved laying considerable basic groundwork of the sort which, in other archaeologically important regions of the world, tends to have been completed long ago. Such basic procedures as pottery classification had to be started from scratch. Any absolute dates had to come from our own carbon and thermoluminescence samples. Interpretations had to be made in a virtual vacuum. No other excavated information existed by which our conclusions could be checked.

A secondary but still important objective was to train young Thai archaeologists in such modern excavation techniques as they were unfamiliar with. Seven junior staff members of the National Museum of Thailand worked with us, as well as one student and one faculty member of Silpakorn University. They worked hard and cheerfully. It is hoped that their presence was as beneficial to them as it was to us.

As for the other usual objectives of archaeological fieldwork—the recovery of the kinds of data that allow the reconstruction of ancient lifeways—these were necessarily slighted. We did not do nearly enough excavation, and very little of the right kind, to give us a clear picture of the ancient town's layout and of what its inhabitants did there. Our efforts were concentrated on elementary chronology, and chronological objectives require a rather different strategy than do sociological ones. The

latter require a horizontal, extensive mode of excavation, whereas the former are best served by digging a large number of deep, scattered test trenches.

At the beginning we did try to combine these objectives. Our first trenches were  $10 \times 10$  m squares, laid out on a grid which we hoped would cover a sizeable area. But these proved impractical. The site's stratigraphy was complex and hard to read. Controlling provenience for objects from the center of such large trenches was most difficult. In addition, it soon became clear that not all parts of the site contained the same temporal range of materials, since surface collections made elsewhere produced sherds quite different from those found in the early trenches. So our plans were changed. For the remainder of the two seasons we concentrated effort on more easily controlled small trenches scattered widely enough over the site (see Fig. 2) to yield a fair sampling of the material in it.

### EXCAVATION AND STRATIFICATION

Sixteen separate trenches were made at Chansen, all except two within the area surrounded by the moat. Each excavation in a new spot was designated an "Operation" and was assigned a new operation letter (thus: Operation A, B, C, etc.). Sometimes more than one trench was dug within the area covered by a single operation letter; such "Suboperations" were named by suffixing a small letter to the Operation's capital letter (Operation Da, Db, Dc, etc.). There were 26 of these. Altogether the trenches cover some 700 square m, about one-seventh of one percent

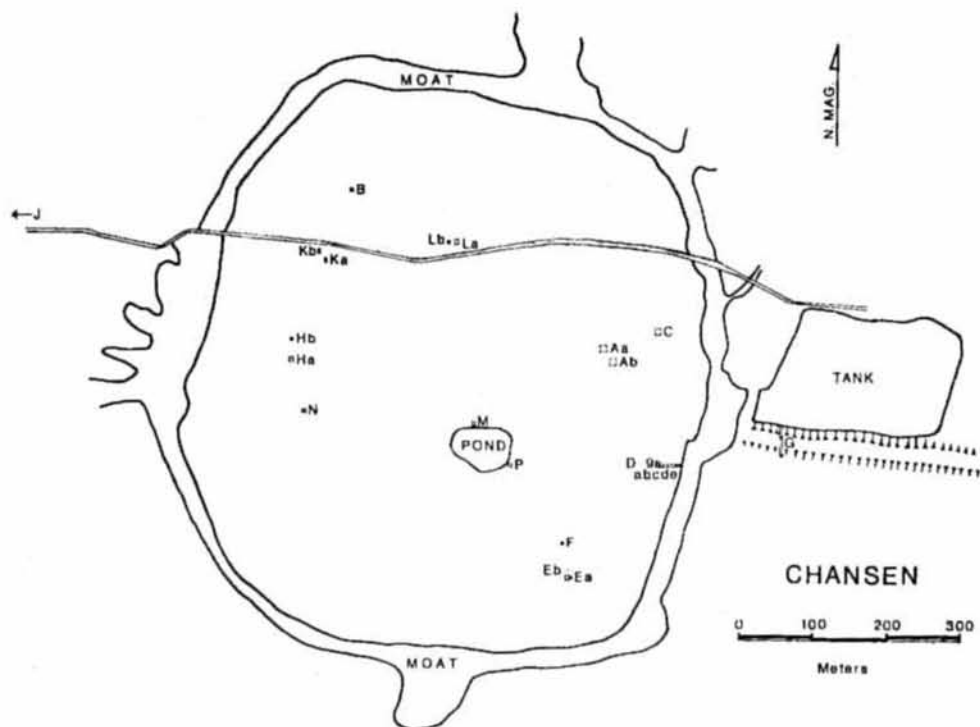


Fig. 2 Outline plan of Chansen, with locations of Operations.

of Chansen's moat-surrounded surface. The Operations and Suboperations are located on Figure 2.

Excavation was done, as far as possible, by natural strata. Objects from different soil layers were kept in separate lots (a "lot" is defined here as a group of objects from part of a single depositional unit or from a transition zone between such units). Some of the strata were difficult to discern while excavation was in progress. When a stratum change began to be suspected, a new lot was begun at that point and then correlated with its parent stratum when the sections (the trench's sides) had gone down far enough for the stratigraphic difficulty to be resolved. Obtaining a precise correspondence between depositional units and lots was sometimes not easy. Strata in tropical soils tend to be leached and run-together by comparison with soils in temperate zones. And the ancient inhabitants of Chansen lived in houses raised on piles above the earth's surface, thus precluding the development of stratigraphically clear living floors. Moreover, like their modern Thai counterparts, they were fond of digging holes in the ground for houseposts, rubbish disposal, fishponds, and the like. Nonetheless, the difficulties are not insuperable. A reasonably good picture of Chansen's history can be obtained.

A very deep deposit of mottled black and gray clay covers the entire floodplain in the vicinity of Chansen. Above this is a thin layer of clayey fertile humus. These soils are well suited to rice farming, although they are rather too sticky during the wet season (and too parched during the dry season, since the impermeable clays have no subsurface water table) for plough cultivation of unirrigated crops—a fact, incidentally, which is itself sufficient to give a high probability that Chansen's inhabitants were paddy farmers. The deep clay extends under the site, but there it is overlain by an average of 2 m of buff-colored freely draining soil which is relatively clayless. This is a human-caused deposit. In it are large quantities of potsherds, bones, charcoal flecks, and other occupational debris. Most of the cultural material at Chansen is found in these buff soils and in the darker humus-stained levels near the surface. The basal clay usually contains a few sherds in its upper half meter, perhaps intruded through dry-season cracks; below that, the clay is sterile of artifacts.

Figure 3 is a drawing of the west section of Operation C. It is reasonably typical of deposits in the northern and western parts of Chansen, although it is rather more clearly stratified than most. The deposits in the site's central southern part differ in one important respect: the basal clay is quite thin and lies on top of a white clayey marl, perhaps a decayed lime outcrop. The clay elsewhere is almost sterile, but here (in Ops. E, F, M, and P) it is artifact-rich. These artifacts are uniformly early, belonging to Phase I, an assemblage which is found only in small mixed deposits in trenches outside this marly area. The top of the marl is presently at the same height as the surface of the surrounding plain. Conceivably, however, the plain was lower two thousand years ago, in which case the marl would have appeared as a slight but well-drained rise in the otherwise flat muddy countryside. The spot's elevation may have been the quality that led the Phase I people to choose it for their homes and cemeteries.

In the second and third phases the population spread more widely over the area which eventually (at least by Phase V) was to be surrounded by a defensive moat. They settled directly on the black clay, built houses on piles, and began discarding

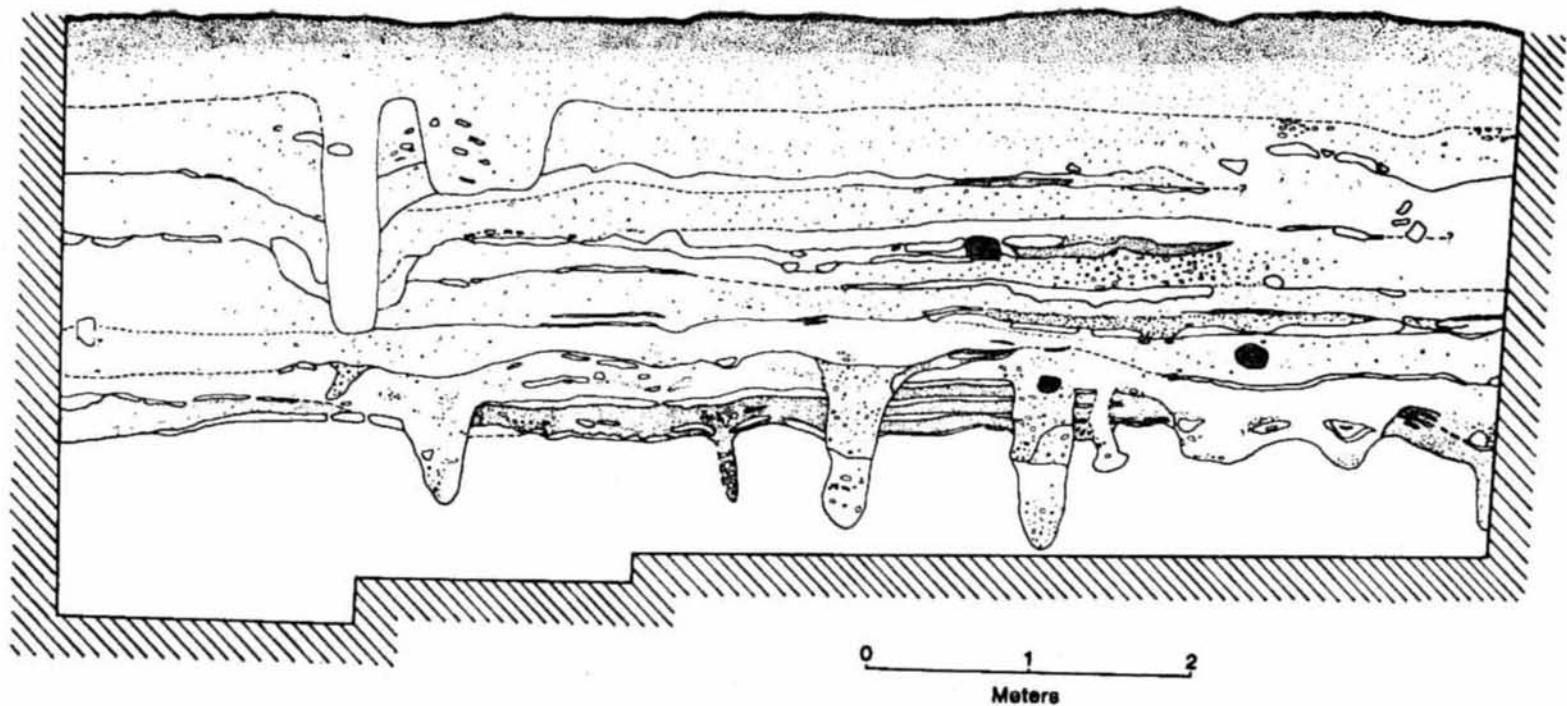


Fig. 3 Operation C, West Section.

the quantities of refuse that would turn to buff soil and raise the surface 2 m above its original level. After Phases II and III the whole to-be-moated area was already high enough to be dry during the rainy season and thus useless for paddy farming. From the standpoint of its later inhabitants, all of Chansen by now had the same attraction as did the small marly rise in Phase I: they did not have to cope with ponds of standing water beneath their houses.

Phase II deposits are usually very clayey. Those of Phase III tend to be dark buff and rather coarse. Sherds of the fourth phase are found in soils somewhat similar to, but lighter colored and finer than, those of Phase III. Phases V and VI occur in, or very close to, the topsoil, in deposits darkened by the presence of roots and humus.

Interfaces between Phase II and III strata (and less often between III and IV strata) are relatively clear during excavation. The heavily eluviated soils of the later periods are harder to read; interfaces between strata, if they exist, may be almost imperceptible. However, the separate identities of all phases are stratigraphically well established with the exception of the last two, V and VI, which are so close to the surface and so thoroughly disturbed that they cannot be cleanly divided by even the most painstaking digging techniques.

#### CONSTRUCTIONS

A considerable effort was made to find constructional remains at Chansen. Three broad classes of these are commonly found at ancient townsites in Thailand: earthworks (including waterworks), postmolds from wooden structures, and brick or laterite foundations of more permanent buildings, usually religious in function. At Chansen, earthworks and postmolds are present in abundance but brick structures are quite rare.

Local villagers say there was once a *chedi* (a stupa, a Buddhist votive edifice) in the central eastern part of the site, just where Operation Aa was dug (see Fig. 2). This was unfortunately bulldozed out several years ago for use as fill in road construction. Removal was complete. Only a few scattered bricks survive to prove that what the villagers say is true. Operation La uncovered several *in situ* bricks, apparently part of a destroyed pavement. Operation J was laid out in a promising rice paddy 1 km west of the moated area. It too proved a disappointment. None of the brick was in its original position, although a number of handsome stucco fragments were uncovered. Several more bricky locations within the moated area were tested, again to no avail. We do know that Chansen produced at least two brick monuments during its history, but we know little more than that. We have no ground plans for them and no solid dates. The most that can be said is that neither monument (at Ops. Aa and J) is very early. Both are certainly later than the beginning of the fourth phase and probably still later than that.

There were postmolds in most trenches, undoubtedly remains of pile-built wooden structures similar to rural houses of the present day. Many of the trenches were too small to contain more than one or two posts from any single structure; one would not expect to recover ground-plans of houses from these. But even the large 10 × 10 m trenches (Ops. Ab and C) failed to produce a comprehensible plan. They contained postmolds in plenty, but no three of these were sufficiently aligned



and equidistant to allow one to interpret them as parts of a single building. Three explanations are possible: (1) we may have missed some postmolds (an easy thing to do, given the lack of contrast between their fill and the surrounding soil); (2) the ancient houses, unlike the modern ones, may have been built with staggered, irregularly spaced supports; or (3) as is the practice in modern Thailand, the ancient people may have removed and reused the houseposts when the original building was abandoned. We incline to the first and third of these explanations. Old postholes whose posts had been extracted rather than left to rot in place would probably be invisible in these soils. Furthermore, the fact that central Thailand had a rather large population in the later first millennium (many ancient townsites date from that period; see also the decline of deer bones mentioned in the Appendix) makes it seem reasonable that large hardwoods suitable for houseposts were even then relatively hard to come by.

Its earthworks are Chansen's most conspicuous feature. Among them are a four-sided moat, a large trapezoidal tank, and a substantial causeway that runs out on the site's axis to the east and perhaps to the west as well. Except where it forms the south side of the tank (and is considerably enlarged by upcast from the tank's original excavation), the causeway is not massive, being from 1 to 2 m high and about 10 m wide, and built entirely of mounded earth. Its preservation is partly accounted for by its modern use as a field boundary, but it is now in the process of being ploughed away. A few traces at the western edge of the moated area suggest that there may once have been a causeway there as well; if so, it has almost entirely disappeared. The eastern segment can be followed as far as the modern canal and road that cut it 4 km to the east. Perhaps it can be traced farther, but the requisite aerial photographs are not available. Foot survey is obstructed by the canal and by the dogs of householders dwelling along the causeway line.

Geometry alone seems to indicate that the moat, tank, and causeway are part of a single plan and are approximately contemporaneous. Such dating as we have confirms this. A cut through the enlarged causeway-tank embankment at Operation G produced Phase V sherds from deep, undisturbed levels. As there was no sign of an earlier stage of the causeway within the embankment, we may tentatively conclude that the whole length of the causeway is contemporary with the embankment and the excavation of the tank. The last ancient stage of the moat's history (and perhaps its only one) can be dated by sherds from Operation D. The latest of these sherds, from strata that appear to be spoil heaps from moat-dredging, are also fifth phase. Thus the three features are very roughly coeval.

Parenthetically, Chansen was never defended by an earthen rampart behind the moat, unlike such approximately contemporary sites as Huai Duk, Kampang Saen, and Muang Bon. No trace of a piled-up wall was found in Operation D. A slight ridge parallels the northern edge of the moat, but this is probably of recent origin, either upcast from fishpond digging or a ridge for planting banana trees.

#### SMALL FINDS

The larger part of our conclusions derives from analysis of the smaller and more portable of the expedition's discoveries. Most of these will be mentioned only in passing. A few will be discussed at greater length in the sections on chronology.

By comparison with the general run of archaeological sites in other places, Chansen is artifact-rich. Its soils average about 300 sherds to the cubic meter, along with a number of nonceramic artifacts and large amounts of bone. To be sure, such artifact density is not unusual for an urban site in Thailand (Pimai exceeds it; U Thong is about the same), but nonetheless it is high enough to pose considerable problems in processing the yield of 1500 cubic m of excavated earth. Speed in publication was obviously desirable. Furthermore, for reasons of expense, we wished to hold to a minimum the material shipped to the United States for study. Most sorting and analysis was therefore done in Bangkok, as rapidly as seemed consistent with accuracy.

Work on the pottery is virtually completed. The final recording of type distributions was finished in Bangkok in the late spring of 1969. Many of the sherds were then discarded. A comprehensive type collection was deposited at the National Museum in Bangkok for use by interested scholars.

Analysis of faunal remains is not so far advanced. Nothing more than rough sorting could be accomplished in Thailand, since skeletal type collections for comparison are not at present available there. All identifiable bones were shipped to the University Museum, where work on them is being carried out under the direction of Mr. Elkins Wetherill. Some of his preliminary conclusions are reported in the Appendix.

Artifacts made of ground or polished stone (several celts, numerous saddle querns, handstones, pestles, whetstones, and miscellaneous fragments—see Fig. 12) have been roughly typed but not yet submitted to a mineralogist. Celts were quite scarce; conceivably the ancient people kept them more as curios than as tools. Large querns were common. Modern Thais incline to the notion that these were used for grinding spices or perhaps bark for cosmetic purposes. In view of their numbers and size, however, it seems possible that they had a more substantial use. They may have been used for grinding grain.

Artistic objects include an ivory comb with incised decoration (Fig. 7); several fragmentary human figurines (Plates I and II); sherds stamped with human and animal motifs and with abstract symbols (Plate III; Fig. 10); some fragments of stucco relief; and a few very crude animal torsos. The study of these has been undertaken by Mr. Somphorn Yupho and Miss Elizabeth Lyons.

Metal objects are made of bronze (rings, bells, bracelets); iron (knives, spatulas, assorted other tools, a possible ploughshare); gold (a single ring); and an unidentified white metal, probably tin (weighted rings, discs, split rings that may be net weights). All these are fairly easy to type except the iron, the condition of which is often so bad as to obscure the original form. No metallurgical analysis has yet been attempted.

The excavations produced many glass beads, all of them small and in opaque or clear simple colors. None were in the polychrome techniques that are believed to be typical of Indian or Roman imports. A large number of similar beads are in museums and private collections in Thailand, but very few have previously been recovered from stratified contexts. The ability to assign chronological meaning to some kinds of beads would be most useful to Thai archaeologists. It is hoped that Mr. Chin You-di, that country's leading authority on the subject, will undertake to study the ones from Chansen. Spindle-whorls were also numerous. Their forms are varied

and appear to change over time. However, the spindle-whorl chronology is still tentative. It will not be detailed here.

Besides all these things, a miscellany of other objects was encountered in the trenches from time to time, including bricks (with rice-chaff impressions), fossils, stucco fragments, and what are either natural iron concretions or foundry slag. Many of these have scientific interest and will eventually be analyzed. Charcoal, of course, was eagerly sought after. A number of radiocarbon dates have been obtained.

### CHRONOLOGY

Ancient Chansen's history spans somewhat more than a thousand years. It begins in the latter part of the first millennium B.C. and ends (if we ignore its reoccupation in recent times) about A.D. 1000. This stretch of time can be divided into six phases, each of which is here represented as having about the same duration (see Table 1). The dates for the first and last of these are little more than guesswork, as will be presently pointed out.

TABLE 1. THE CHRONOLOGY OF CHANSEN

PHASE	DATE (A.D.)	DESCRIPTION
I	200 B.C.-0	"Metal Age." Iron- and bronze-using village.
II	0-250	Initial Indianization. Village. Indian-looking pottery. Buddhist artifacts.
III	250-450	Early "Funan." Large village. Artifact similarities with Oc Eo in Mekong Delta.
IV	450-600	Later "Funan." Large village. Oc Eo similarities continue. Pottery types proliferate.
V	600-800	Dvāravatī. Moated town. Art objects in Dvāravatī style. Many similarities with pottery of accepted Dvāravatī sites. Possible connections with Sambor Prei Kuk in Cambodia.
VI	800-1100	Late Dvāravatī. Village (?). Virtual identity of pottery styles with those of Pimai, a Khmer site in northeast Thailand.

We do *not* visualize Chansen's past as a series of unconnected cultures separated by catastrophic interludes like invasions or natural disasters. The first phase is indeed culturally distinct from the second, but the rest are linked to one another by enough stylistic continuities to make it fairly certain that they are parts of a single thousand-year cultural continuum. However, the rate of change during this millennium was not steady. Periods of relative stability alternated with periods of flux when artifacts of different stable periods were in use simultaneously. The stable times are here called "phases." The change-times are perforce ignored and treated as being of negligible duration. Although in the abstract it is quite conceivable that one of them may have lasted as long as a stable period, the evidence that we have makes the duration of the change-times impossible to estimate.

On the whole, the phase model works well for the Chansen sequence. Traits and types do not change one-at-a-time. They appear and are subsequently replaced in groups, as if tied together. This pattern of artifactual behavior can be observed in all parts of the sequence except its upper end, where (in the fifth and sixth phases) the model runs into trouble. The deposits from which this material comes are

uniformly shallow, hard to read, artifact-rich, and badly disturbed. Most of the relevant lots are mixed; only two "pure" sixth-phase lots were found in the entire site. Furthermore, the fifth phase is extremely variable, almost suspiciously so. Dividing the upper part of the sequence into two phases may be only an approximation of the truth. Perhaps the rate of change during this, the most complex and urbanized period of Chansen's existence, was nearly continuous; perhaps we are lumping together several distinguishable short-term periods. Excavation of another site, with a greater depth of better-stratified V-VI related deposits, will almost certainly produce a substantial revision of this segment of the Chansen chronology. But until then we have decided to retain the two-phase terminology for the upper portion of the sequence. It is convenient and understandable, and does not distort the situation unacceptably.

#### PHASE I

As far as is known, this is the initial occupation of Chansen. It is "Metal Age," meaning (1) that both bronze and iron were in use, and (2) that there is no indication of contact with India.

Its pottery assemblage is quite distinctive (see Fig. 4). Several important types are so unusual in appearance that their presence at another site would be easily recognized. As of this writing, no such sites are known to exist with the possible exception of the lowest level at Huei Duk, a massively walled site east of Muang Bon where a test pit was dug during the 1968 season. Chansen I shares only a very general resemblance with the assemblages at the Lopburi Artillery Site and Ban Dai in Utthai Thani, sites whose geographical proximity and pre-Indian metal-using character might otherwise lead one to expect cultural connections.

Operations Eb and P produced burials in their Phase I strata. Since the ones in Operation P were discovered after the University Museum staff members had left the site, we can give no definite information about them at present. The grave furniture of the Eb burial (Fig. 5) consisted of three pots (two of them familiar Phase I types), an unrecoverable bronze bracelet on the skeleton's wrist, a bronze ring on its finger, and a bulky iron implement (a hoe haft? a ploughshare?) under its right leg. Impressions of a loosely woven mosquito netting-like fabric could be seen on this implement, demonstrating that weaving was among the civilized skills possessed by the Chansen I people. The body was extended, on its back, and oriented with its head to the west.

No datable charcoal was found in these levels. Several sherds have been submitted for thermoluminescence dating, but results were not available when this report was prepared. Accordingly, the 200 B.C. date cited above is a conservative late estimate. The only evidence supporting the notion that there is no time gap between Phase I and Phase II is the absence of any stratigraphic indication (a sterile layer, for example) of such a chronological hiatus. Phase I may in fact be a good deal earlier than our estimate. As was noted in the preceding section, it is typologically unrelated to Phase II: there is such a lack of continuity that no first phase artifact closely resembles anything from the second phase. This might be taken to indicate that a considerable time elapsed between the departure of the first occupants and the arrival of their successors.

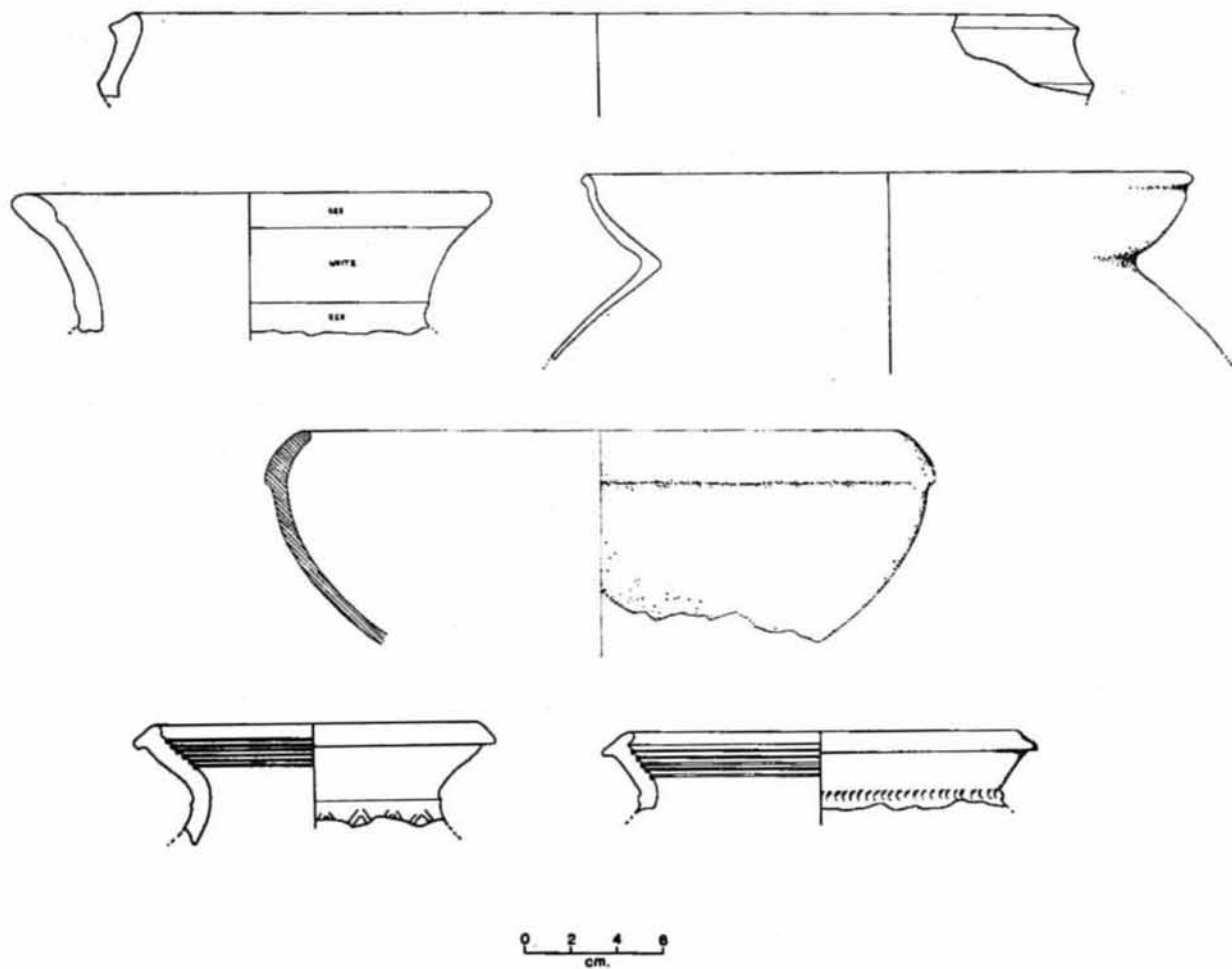


Fig. 4 Phase I: characteristic pottery types

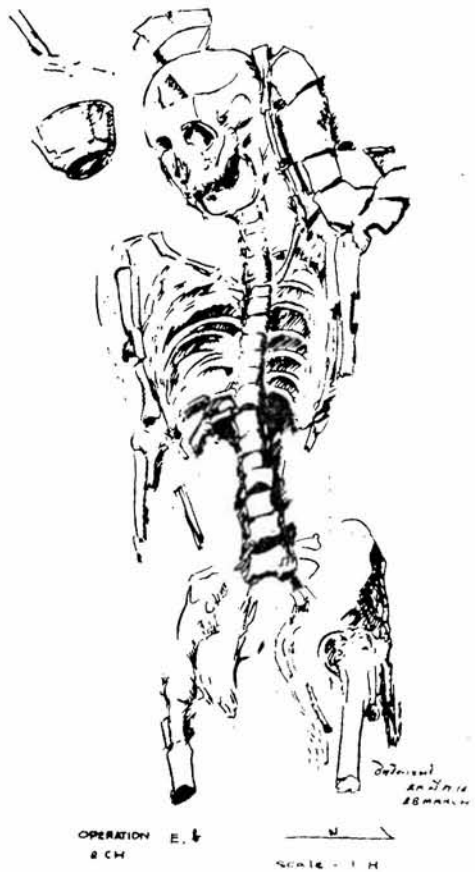


Fig. 5 Phase I burial in Operation Eb.

## PHASE II

The long period of continuous Indian-influenced occupation at Chansen begins at about the beginning of the Christian era. Phase II occupied the first two hundred and fifty years of this period. It is called "Indian-influenced" on two grounds. First, its pottery looks rather like pottery from early historic sites in India and not at all like the earlier indigenous forms (those of Chansen I, for instance). This assertion will not be documented in this preliminary statement, but the interested reader might compare pots from Sisulpalgarh, Arikamedu, and Brahmagiri with the pottery illustrated here (Figs. 6, 8, etc.). Second, Phase II deposits produced a single artistic artifact which is Indian in style, a much-broken but reconstructible ivory comb decorated on both sides with engraved motifs. It has considerable esthetic value and iconographical interest. The engravings (Fig. 7) are of horses, an elaborately plumed goose, and a row of Buddhist emblems, all in a style related to that of Amarāvati, a 1st-4th century A.D. site on the east coast of India. Perhaps the comb was actually made in India. If so, it is one of the very few authentic early Indian imports to have been found in Southeast Asia.

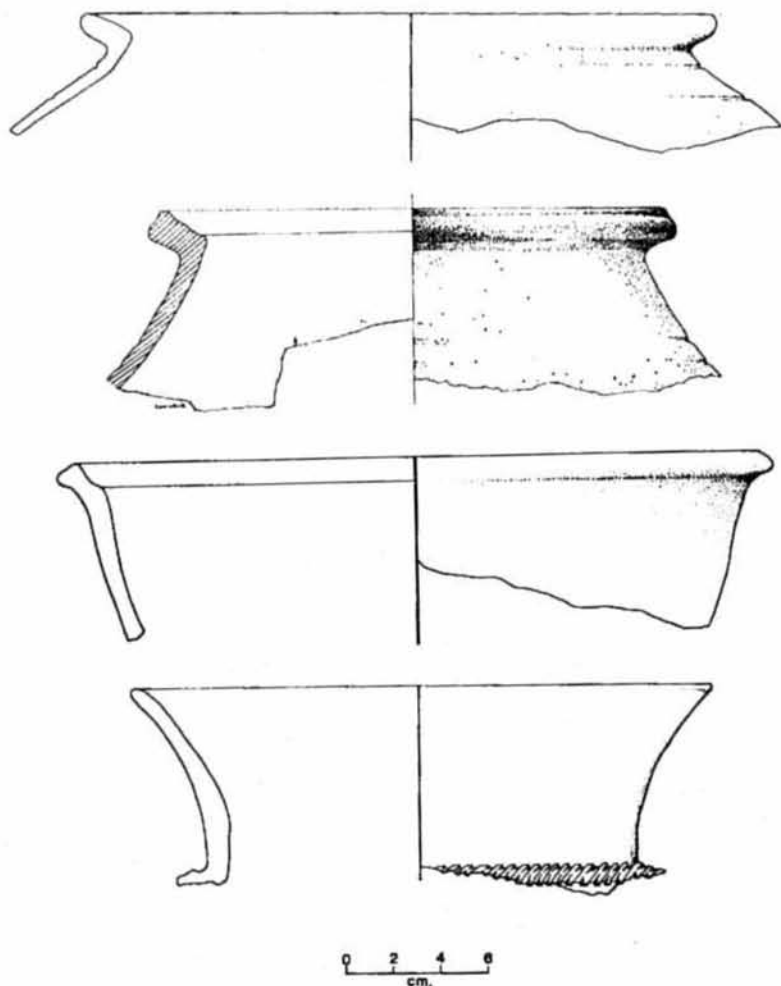
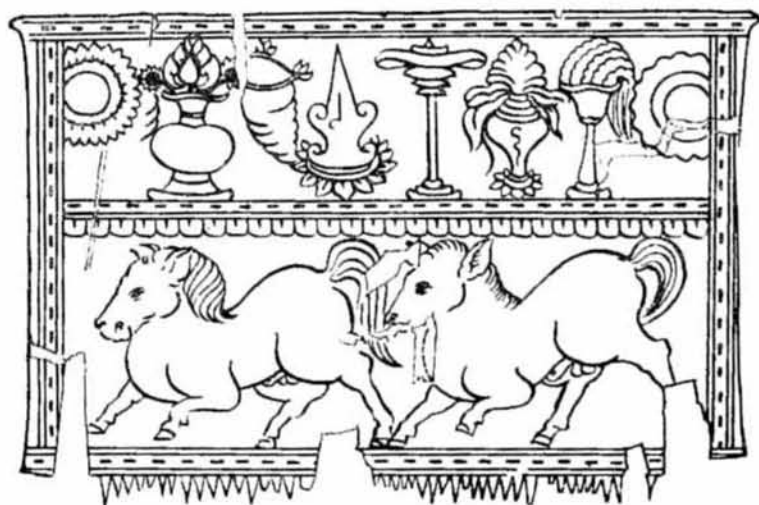


Fig. 6 Phase II: characteristic pottery types.

The most interesting aspect of the comb is its date. Several relevant charcoal samples have been run. One, from less than a meter away, dates in the second half of the 1st century A.D. Another, from the same trench but several meters distant from the comb, dates at A.D. 250. A third sample, from Phase II levels in another trench, yields a date of about A.D. 0. Now, the Phase II provenience of the comb is relatively secure—the strata immediately above it appeared to be intact and undisturbed. The phase's dating is also quite secure. That A.D. 250 is its late limit is shown by the fact that Phase III, a very well-dated assemblage, begins before A.D. 300 (see next section). The beginning of Phase II is clearly several centuries earlier.

The question is, How old is the comb? It is certainly at least as old as A.D. 250. And it quite possibly was used and discarded sometime during the 1st century. The association between it and sample P-1512 (A.D.  $3 \pm 42$ ) is reasonably good. If such an early date is accepted, the comb's importance is magnified. It is by a





PINE ARTS DEPARTMENT—UNIVERSITY OF PENNSYLVANIA ARCHAEOLOGICAL EXPEDITION.

SOMPORN YUPHO, CURATOR.

ITTISART VISASWONGSA | DRAWING | 9 MAY 1966

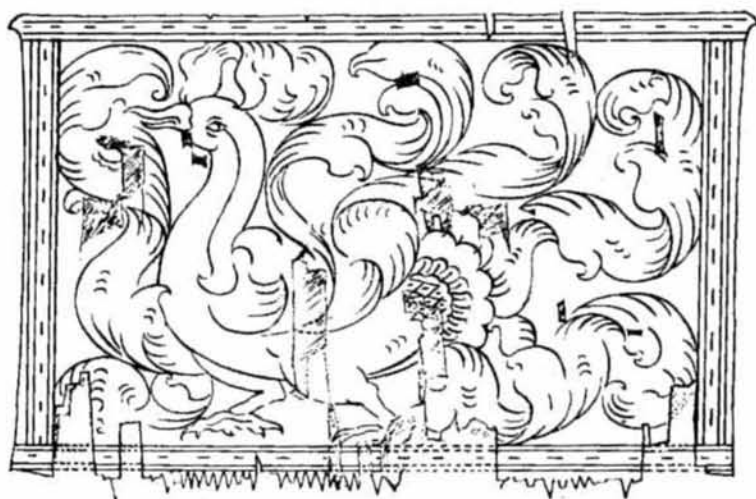


Fig. 7 Ivory comb from Phase II.

span of at least a century, the earliest solid date (1) for the presence of Indian influence in Southeast Asia (see Coedès 1968:16–19); and (2) for the earliest appearance of Buddhism in Thailand. Neither historians nor Buddhists will find the date incredible. Both groups, for reasons of logic and of faith, have often hypothesized that Indians and Indian goods first appeared in the region at about A.D. 0. But they may be pleased to have corroboration for their hypotheses—corroboration, moreover, from a place well removed from those coastal areas where Indians and Buddhists first touched Southeast Asian shores.

Phase II material was found in most of the Chansen trenches, but in relatively small amounts. Although spread widely over the site, the population then was



presumably not large. The phase is quite distinct from the one following it. Deposits of this date are characteristically unmixed save for a few scattered sherds of Phase I. One pottery type continues in use during Phase III, but despite continuities of shape and function, most of the Phase II types are not readily confused with those of later periods.

Three Carbon-14 samples from Phase II have been processed:

A.D.	$3 \pm 42$	(P-1512)
A.D.	$65 \pm 48$	(P-1508)
A.D.	$256 \pm 87$	(I-4370)

Like all other dates cited in this report, these are calculated with the 5730 half-life. They are to be published in Volume 12 of *Radiocarbon*.

### PHASE III

Like its predecessors, the third phase is a distinctive entity, characterized by a number of strong pottery types (Fig. 8). Several of these belong to a single dominant "ware," a complex of gray-black solid wheel-made pots with similar pastes and shared decorative attributes, such as flanged carinations and fingernail-impressed shoulders. These are not common in surface collections made at other sites in the vicinity. A second "ware," a group of small flaring-mouthed jars and bowls made of brilliantly burnished red-orange-yellow paste, also has not been found outside Chansen, although it is most conspicuous.

Of course, surface finds are not always reliable indicators of what lies deep below the surface, but one's impression is that sites of this period tend to be rather individualistic in terms of the pottery they contain. The solid gray-black and the burnished orange wares, for instance, do not appear to be common at U Thong, where material of probably similar date was kindly shown us by Messrs. Watson, Loofs, and Parker of the Thai-British Archaeological Expedition. Publication of Tha Muang (at U Thong) and excavation of other contemporary sites may force us to modify the notion, but for the moment it seems that autochthony was the rule in early first millennium Thailand. Different subregions used different, though not unrelated, kinds of pots. Regional trade and cultural uniformity were not highly developed as yet. Perhaps political unification of the region was also still to come.

Most interesting among the ceramic finds were two green-glazed objects (Fig. 13, *center bottom*) that may have been lids. Both are made of high-fired stoneware, are of closely similar shape and size, and are identically broken. One other is known to us, a virtual twin found in 1969 by the Thai-British Expedition at U Thong. The Chansen examples are both from Phase III, dating between A.D. 250 and 450. They are thus quite early; they may be, in fact, the oldest glazed objects (and the earliest examples of deliberately-produced stoneware) yet known for Southeast Asia beyond North Vietnam. Whether they were made locally within the region or were imports from outside (China?) is not clear. The technical analysis which would help in deciding the question has not so far been done.

Artistic objects are not common in the third phase. None were recovered, save for a few fragmentary, crude animal figurines.

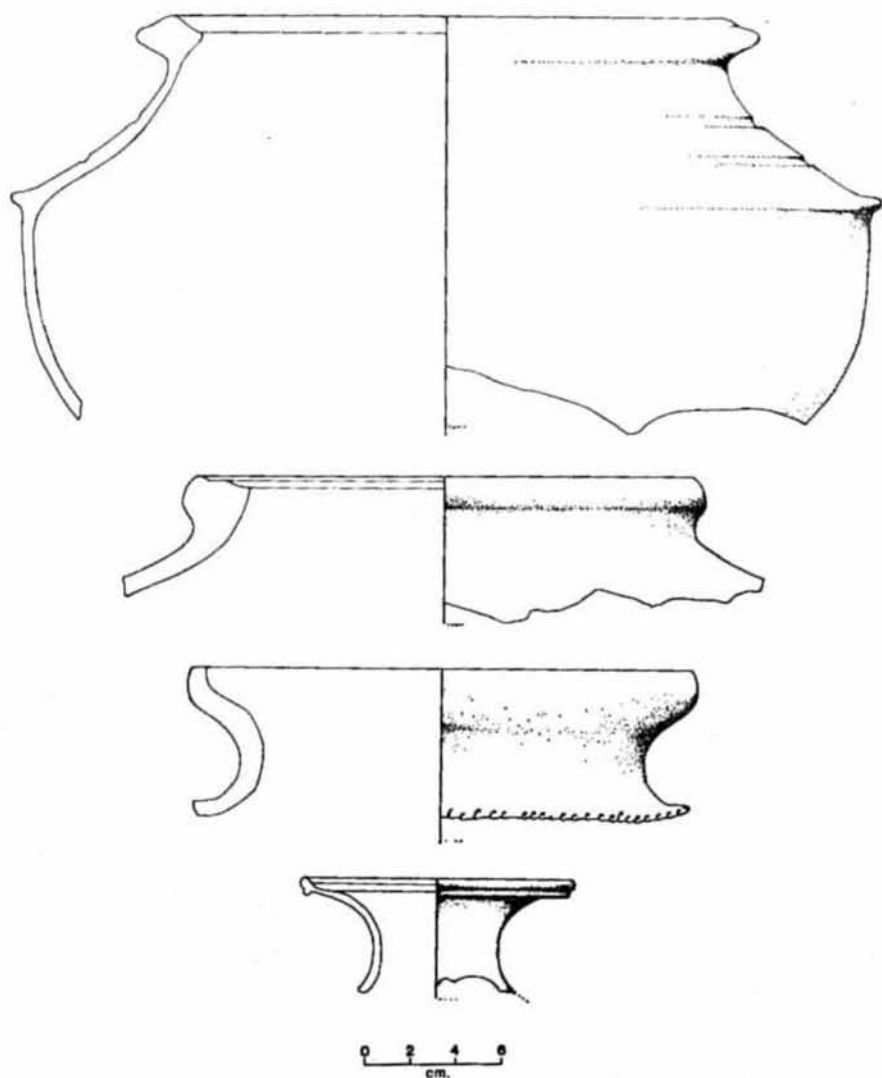


Fig. 8 Phase III: characteristic pottery types.

Two classes of small finds from Phases III and IV have special importance because they are included on the small list of artifacts found in Thailand (mainly at U Thong and Nakhon Pathom) that have been attributed to the influence of the empire of Funan. They are similar to objects found by Malleret at Funan's type-site, Oc Eo in the Mekong Delta.

The first class contains a total of four excavated examples of what Malleret (1962 III:81-84) calls "anneaux alourdis," penannular objects with enlarged ends made of tin and occasionally (not at Chansen) of gold (Fig. 12, *top right* is a rather atypical example). These were cast in rectangular bivalve molds, which have been found at Oc Eo, U Thong, and Chansen. Our excavations produced only a single fragment of one, but a complete specimen is in the collection of the abbot of the

Chansen monastery. The rings themselves have a fairly wide distribution, having been found at the above-mentioned sites, at Nakhon Pathom (there are several intricate gold examples in the collection of Air Vice Marshal Montree Harnvichai), and at a number of other places in Southeast Asia, comprehensively summarized by Malleret (1962 III:ibid.).

The other class of finds is a group of curious earthenware objects that appear to be stamps (Fig. 13, *upper right*), perhaps for printing designs on fabric. Closely similar "tampons" are illustrated by Malleret (1960 II:Plates XLVII-L). They also occur at U Thong, where one is on display at the site museum.

Such a small number of items does not, naturally, carry much weight as far as calling Chansen a dependency of Oc Eo is concerned. The objects are unusual enough, however, and distinctive enough, to indicate that the levels from which they came are roughly contemporary. This is borne out by the correspondence between the suggested dating of Oc Eo (approximately A.D. 100-600) and the radiocarbon-derived dates for the third and fourth phases at Chansen (A.D. 250-600).

Phase III is the best-dated segment of the Chansen sequence. So far, we have dates on six samples:

260 ± 37 B.C.	P-1543
A.D. 307 ± 54	P-1541
A.D. 329 ± 36	P-1540
A.D. 363 ± 48	P-1538
A.D. 401 ± 44	P-1509
A.D. 414 ± 48	P-1539

Something seems to have gone amiss with the first of these. The rest are satisfyingly consistent.

#### PHASE IV

Several pottery types continue into the fourth phase from the third. A good deal of the pottery, however, is new: it does not much resemble any of the material from earlier phases. The assemblage is also quite varied. There are about twice as many strong types as in the preceding phase. Moreover, for the first time there are numbers of distinctive one-of-a-kind specimens which, one assumes, are imports from other sites. Regional trade and artifactual complexity seem to be on the increase. Fourth-phase consumers appear to have had more elaborate wants and needs than their predecessors. A given volume of soil produces more artifacts than before. Perhaps this indicates that the population has grown.

The "Funan" artifacts discussed in the preceding section constitute only a small part of the Phase IV assemblage. Artistic objects are not common; most of them, as in Phase III, are crude hand-modeled figurines. On the other hand, this is the high water-mark at Chansen for lamps of various kinds: small saucers with and without lips for wicks (Fig. 13, *top left* and *center*); crude "fruitstand"-shaped pedestals with shallow depressions on top for holding oil (Fig. 13, *bottom left*); and curious double-bowled pottery objects vaguely similar to the famous Alexandrine lamp of P'ong Tuk. We have called these last objects "lamps" following Quaritch

Wales (1965:Fig. 9), who found several during his excavations at Muang Bon. About twenty fragmentary specimens were found at Chansen in fourth- and fifth-phase strata. A fourth type of lamp-like object was also common during this time: small, relatively deep, handmade bowls, usually very crude and often with a piccrust rim. They look rather like crucibles; however, their bottoms show no trace of metallic residucs. They may be lamps.

The phase produced the only inscription to be excavated at Chansen, a few words incised on a terra-cotta object that may be part of a small stupa. The script appears to be Grantha but has not yet been translated. In general, the indications are that inscriptions are rare at Chansen, judging by the fact that no inscribed object is present in the local monastery's large collection of material donated by farmers and treasure hunters. The least uncommon are clay impressions of inscribed seals. At

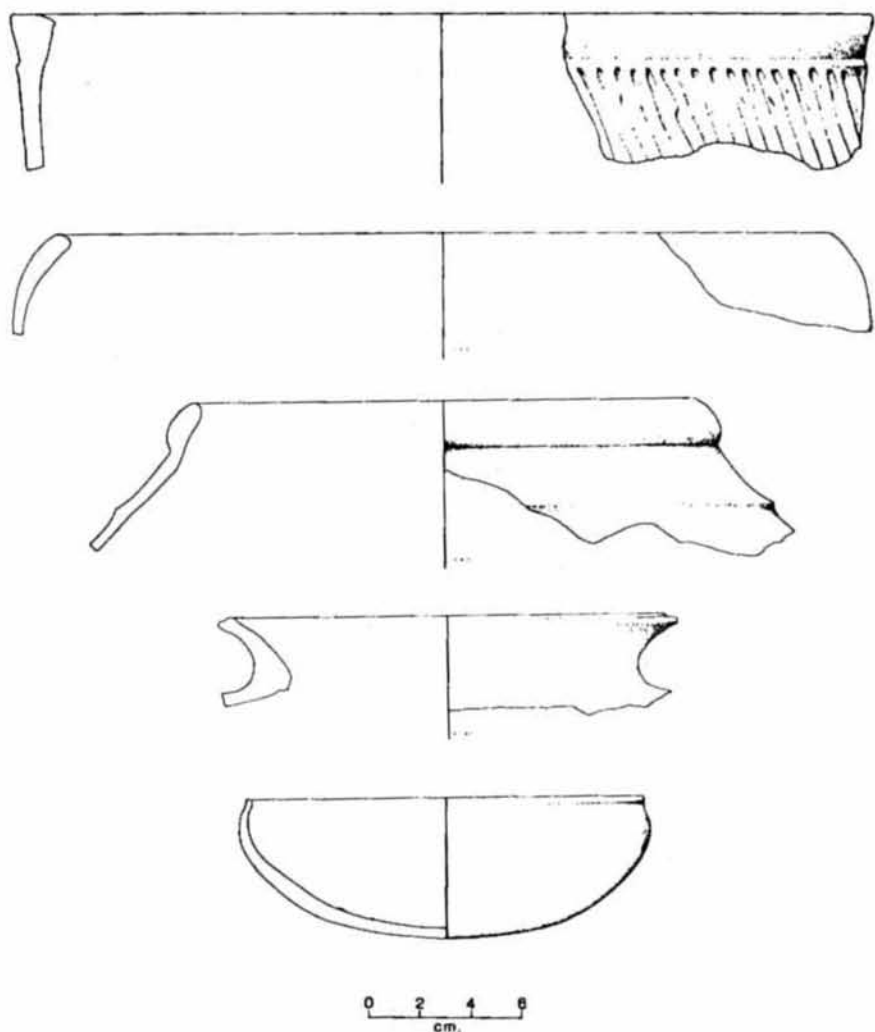


Fig. 9 Phase IV: characteristic pottery types.

least two of these have been found. One is in the collection of one of the village antiquities dealers.

One type of pottery is of special interest, a group of ten large, shallow bowls with beveled inturned rims, fine dark pastes, and burnished glossy gray-black surfaces (Fig. 9, *second from top*). Rim-sherds from these bowls are strongly reminiscent of the Rouletted Ware found at Arikamedu and other early historic-period sites in India. The sherds are clearly imports at Chansen. They are not at all like any other pottery found there. It is tempting to suggest that they are imports from as far away as India. However, the suggestion must be rejected. The Chansen examples are too late (ca. A.D. 450-600) to be Rouletted Ware, even if the resemblance is very close. Several characteristic fourth-phase types are illustrated in Figure 9.

Only one C-14 date for the fourth phase has been run so far:

A.D. 491  $\pm$  86 I-4368

It appears reasonable but its context is somewhat ambiguous. The lot from which the sample came contained both Phase III and Phase IV sherds.

#### PHASE V

The fourth phase becomes the fifth by a more gradual process than was the case with earlier phase transitions. Mixed IV-V lots are quite common, although in most trenches there are pure IV lots underneath and fairly unmixed V lots over them. But gradual as it may have been, the completed change was thorough indeed. The second through fourth phases resemble one another noticeably, in that details change while the general cultural inventory remains constant. In the fifth phase this is not so. The traditional patterns undergo a fundamental change.

It is certainly the time of Chansen's population maximum, if one can infer this from the several-fold increase in potsherd densities. It is also a time of extensive cultural intercourse in central Thailand. Virtually all the typical artifacts of the fifth phase (and the sixth as well) can be duplicated in, and in fact are not easily distinguishable from, assemblages at many other sites in the region. One can hardly avoid the idea that at this time Chansen came under the influence of a strong regional cultural entity. Moreover, there is good reason to believe that this entity (which has been defined at Chansen mainly through pottery typology) can be identified with the art style and kingdom known to historians as "Dvāravatī."

Most of our artistic small finds come from this phase. Many of them fit into the Dvāravatī complex of styles and motifs, including several seated lions in terra-cotta (Plate IV), and a black clay Lakshmi (or Māyā) figurine (Plate I). A group of stucco relief fragments from Operation J also is stylistically Dvāravatī. However, since few datable sherds were found in association, their dating relative to the ceramic sequence is in doubt.

Of some interest are two figurine fragments (Plate II) that belong to a distinct group within the still-unstudied miscellany of small terra-cottas which (1) are found at Dvāravatī art-producing sites, and (2) are not recognizably "Dvāravatī" in style. Members of the group are found widely in central Thailand, the most famous being

the man-with-monkey figurines from U Thong (there are a number in the U Thong museum). The Chansen figurines in question are very similar in overall appearance except that they may be monkeyless and that they have different neck-ornaments. The similarity is strong enough to make it quite certain that the figurines of this group are contemporaneous. And, since the two Chansen examples come from good Phase V contexts, it is likely that all of them date to early Dvāravātī.

Pottery technology and styles undergo a considerable change with the advent of Phase V. Pastes are heavily grit-tempered and hard to break or cut. Firing tempera-

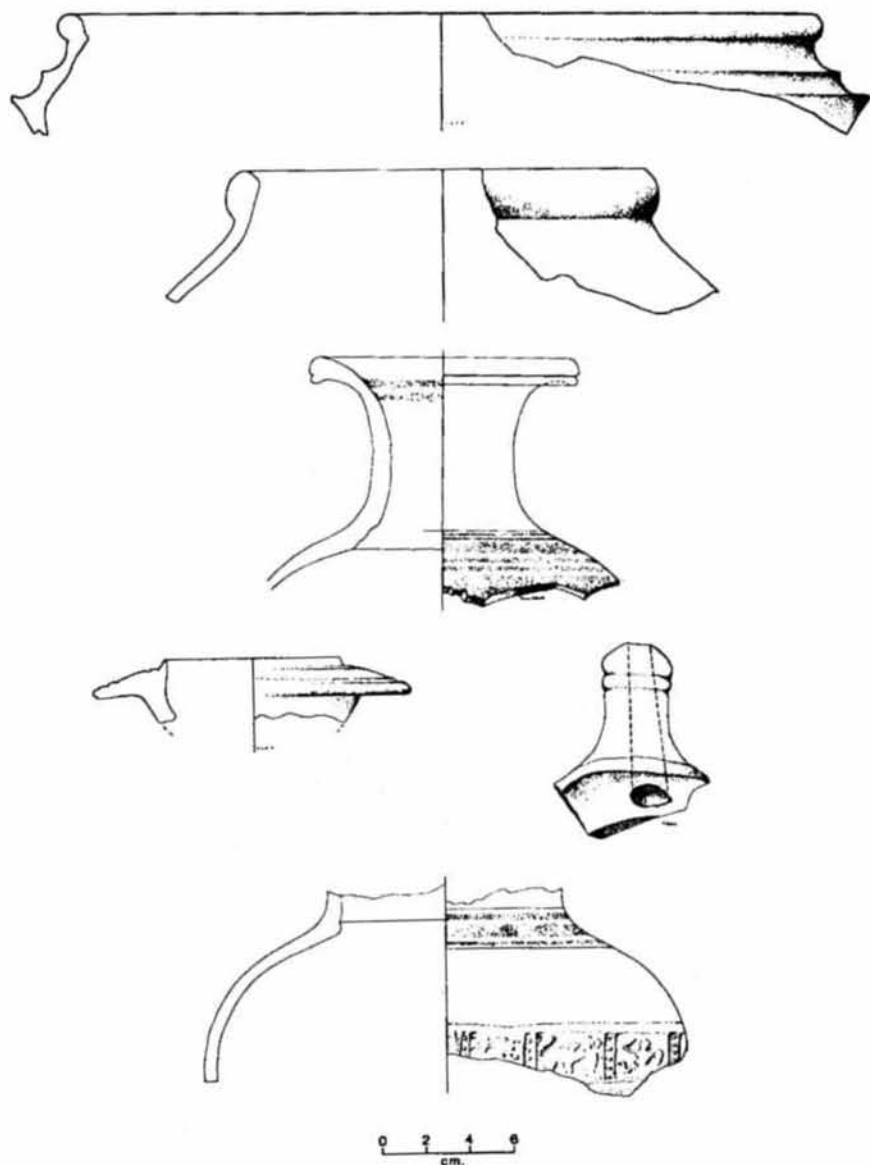


Fig. 10 Phase V: characteristic pottery types.

tures were apparently quite high. Some of the pots were fired almost to stoneware, though true stonewares (and correspondingly advanced kiln techniques) do not become well established until after Phase VI. Painting as a pot-decorating technique appears sporadically throughout Chansen's history (in Phases I, II, and IV), but it does not become common until the fifth phase, when several types of high-necked flaring-mouthed jars are invariably decorated with thin horizontal red and white stripes (Fig. 10, *third from top*). Burnishing, however, disappears, perhaps as a consequence of the new fashion for heavily-tempered clays.

Two striking types of fifth-phase pottery are known almost exclusively from Chansen. The first, a cause of much amusement among the workers, is a group of phallic spouts once attached to the shoulders of large jars. What these jars look like is not known, since no spout has been found attached to a rim-*sherd*. Conceivably, they resemble the flaring-mouthed jars discussed above.

The second is a type of pot, perhaps quite similar to the parent jars of the phallic spouts, decorated with a band of rectangular stamped designs around the shoulder. Adjacent designs are different (see Plate IV; also Fig. 10, *bottom*), but it may be that a series of three or four designs would be seen to repeat several times if one could reconstruct a pot's entire circumference. Each represents a single motif (elephants, cows, horses with riders, running or dancing figures, abstract floral designs) separated by rectangular frames and rows of raised dots.

That neither stamped *sherds* nor phallic spouts have been found elsewhere is somewhat puzzling, considering that both are sufficiently attention-getting to have been saved if encountered during the course of plowing or pot-hunting. We have seen one stamped *sherd* from Lopburi, excavated just outside Wat Maha That, but this is made of a true purple-gray stoneware and belongs to a different type, a single example of which was found at Chansen. Otherwise, the closest analogue is a single *sherd* from Hastinapura in India (Lal 1954: Plate XXI,6) from a level so early (ca. 200 B.C.) as to make any relationship improbable. The standard phallic spout of Chansen appears to be similarly autochthonous. However, a less common but related type of quasi-phallic spout is very similar to a type, also attached to a striped body, found by Groslier at Sambor Prei Kuk. It is believed that these Cambodian spouts date at the latest to the first part of the 8th century.

The dates we give for the fifth phase are largely guesswork. We have no carbon from an unmixed Phase V stratum. The one sample that has been run is from an ambiguous V-VI context:

A.D. 973  $\pm$  80 I-4369

Thermoluminescence dates may help when we get them, but for now we must have recourse to more traditional and inferential dating methods.

Phase V is clearly Dvāravatī from an art-historical point of view. This puts it somewhere between the 6th and 11th centuries, if one accepts the generally agreed-on time limits for the style. But it should be remembered that our real reference point is pottery, not art. True, Chansen V-like *sherds* are usually found on the surface of Dvāravatī art-producing sites (the assertion will be backed up in a later article), but the art/pot equation cannot be taken too far. We may not take it for granted that the two classes of artifacts behave identically through time or that a change in one will probably synchronize with a change in the other.



What is needed is stratigraphic evidence through which excavated *objets d'art* can be shown to co-occur with excavated sherds. We have some evidence of this sort at Chansen but not enough. Dvāravatī art and Phase V sherds appear for the first time in the same strata; accordingly, their beginnings can be roughly synchronized. But the remainder of their respective histories is still unclear. Phase V is succeeded by a sixth ceramic phase which probably fits into the latter part of the time span usually assigned to Dvāravatī. However, assuming that Dvāravatī art in central Thailand can be divided stylistically into early and late periods, can one equate the "late" period with Phase VI? Obviously not; at Chansen, we have no art that is securely associated with sixth-phase pottery, and evidence of this kind from other sites is not yet available.

There is not much chance, then, of attaining any great precision in assigning absolute dates to Phase V. We chose A.D. 600 for its beginning because (1) this is not in conflict with what radiocarbon dates we have, and (2) we are unwilling to alter the accepted chronology without good cause. We chose A.D. 800 for its end partly for the simple reason that the earlier phases have an average duration of about 200 years, and also because fifth-phase pottery has an incompletely understood but definite relationship with pottery from Sambor Prei Kuk in Cambodia, an area whose chronology is better known than that of Thailand. Sambor Prei Kuk is the ancient Isanapura, one of the capitals of Land Chenla. Its heyday was in the 7th century; it had already gone into decline in the 8th. The year A.D. 802 is arguably its end, and the latest date that its pottery can have been in use, for that is the date of the accession of Jayavarman II, founder of the Khmer Empire and conqueror of the last remnants of Chenla. We do not wish to lean too heavily on the "relationship" between Chansen V and Sambor. We have only glanced hurriedly through the splendid type collections assembled by Mr. Groslier at Angkor, and we have not shown him our material. But a suspicion of a relationship does exist, and this has influenced our selection of A.D. 800 as a terminus for Phase V.

#### PHASE VI

The difficulty of separating this phase from the preceding one has already been mentioned. Only one operation (Eb) produced relatively pure deposits of sixth-phase material. In the other trenches, Phase VI was found only in disturbed topsoil lots, thoroughly mixed with earlier things. This raises the possibility that the Eb deposit is simply a specialized assemblage within and contemporary with a more generalized fifth-phase culture. We believe not, however. Phase V lots quite often contain nothing from Phase VI, even though the reverse is rare. The mixed V-VI lots are closer to the surface and later than the pure V lots. The mixing of the topmost strata may be due to physical disturbance or may be a reflection of a long, gradual transition from one phase to the next.

The same people, one imagines, inhabited the site during both phases. But they did not remain equally prosperous and numerous. There is much less Phase VI than Phase V material at Chansen: not much more than would have been produced by a modest village located within the confines of what had formerly been a good-



sized town. The engineering works of the preceding phase were not repaired or altered in Phase VI. The material culture was less elaborate than before and appears to have been borrowed or imported in toto from other sites. All of which adds up to a picture of slow decline. Conceivably the causes of Chansen's old prosperity were no longer operative. Perhaps trade routes had changed; perhaps, for all we know now, the situation at Chansen is merely a symptom of a more general decline in the entire region.

None of the artistic finds can be securely associated with Phase V, although several of those mentioned in the last section come from mixed V-VI lots. Casual pot-hunting by local farmers has occasionally brought late objects to light, including at least one figurine in Śrīvijaya style (8th-11th centuries) and several Khmer bronze palanquin-fittings (probably 11th century or later).

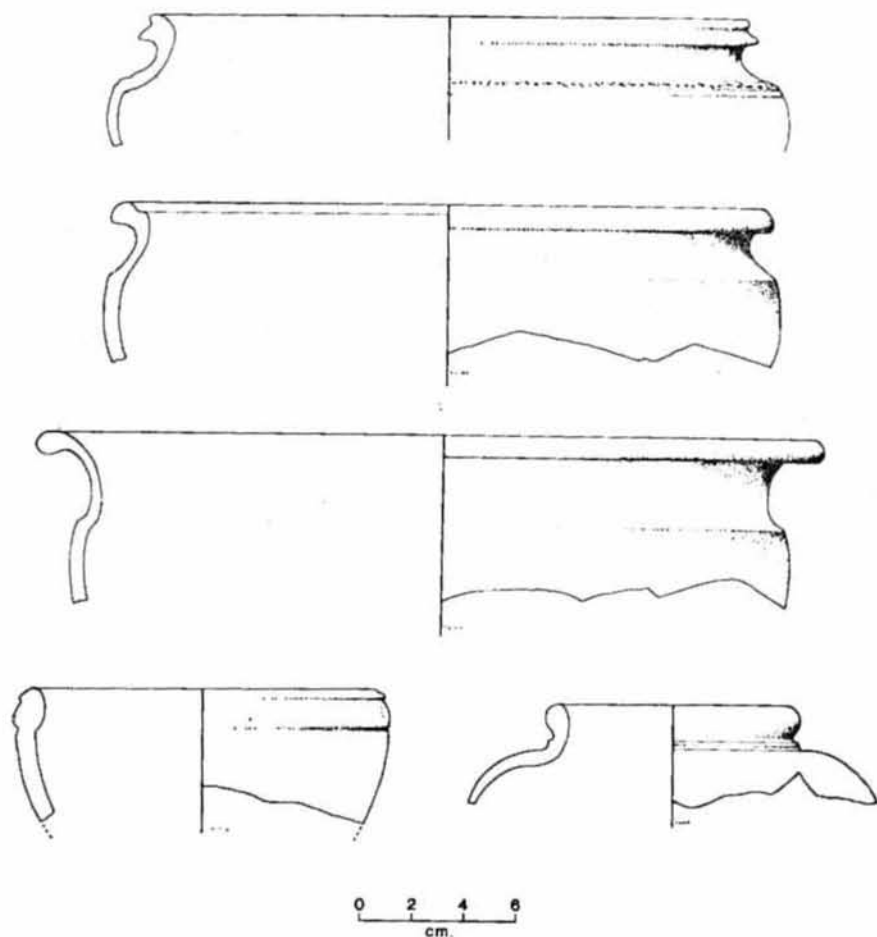


Fig. 11 Phase VI; characteristic pottery types.

The pottery (Fig. 11) is poor in variety and lacks the local individuality of earlier phases. It is well-made and kiln-fired; the paste is often of an even light gray color, nearly as hard as a low-quality stoneware. Most likely it is the product of

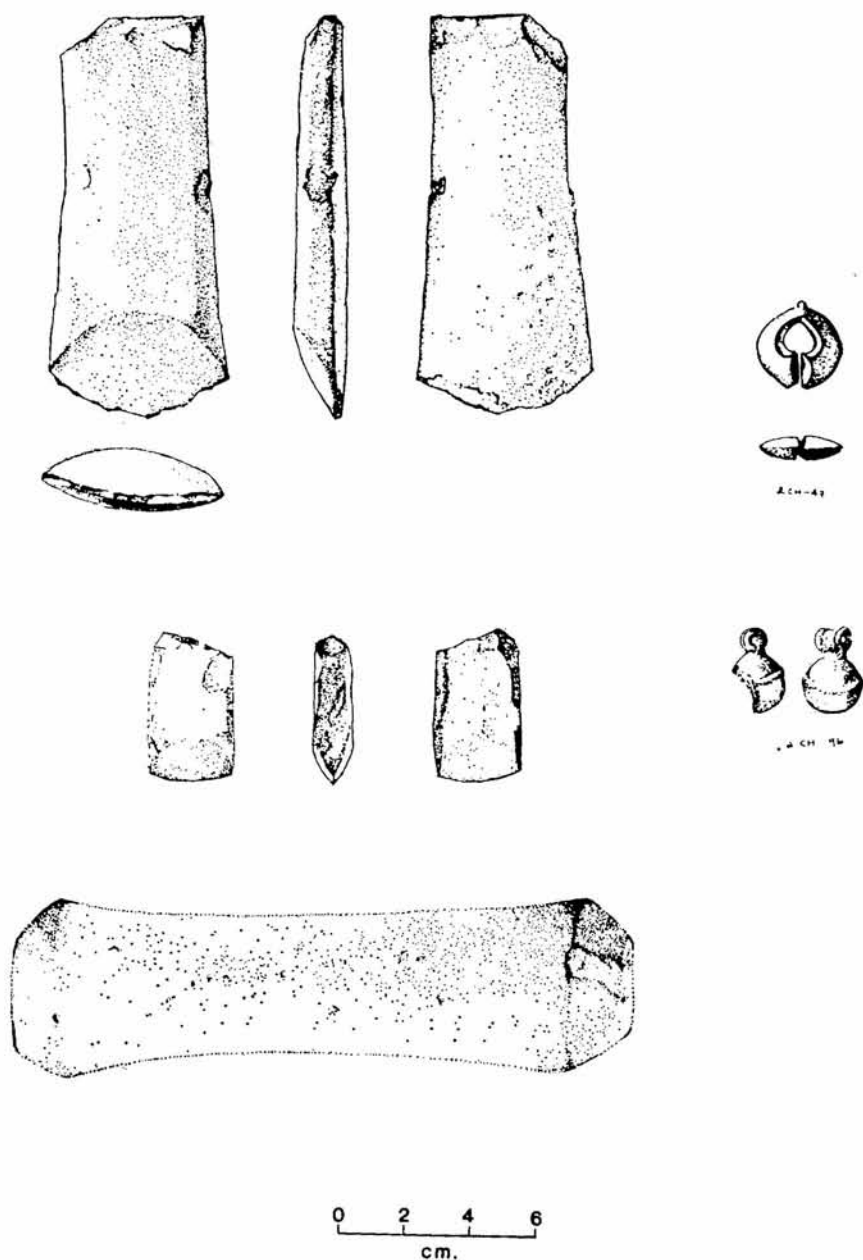


Fig. 12 Stone and metal artifacts from Chansen.

professional potters who did not work in Chansen. The same shapes and pastes are found at many other sites in Thailand and, probably, Cambodia. The real type-site for these wares is Pimai in the northeast, where the same range of the same types has been found in the middle levels of the fill within the *prasad* sanctuary by Dr. Peacock and by Silpakorn University's 1969 training excavation.

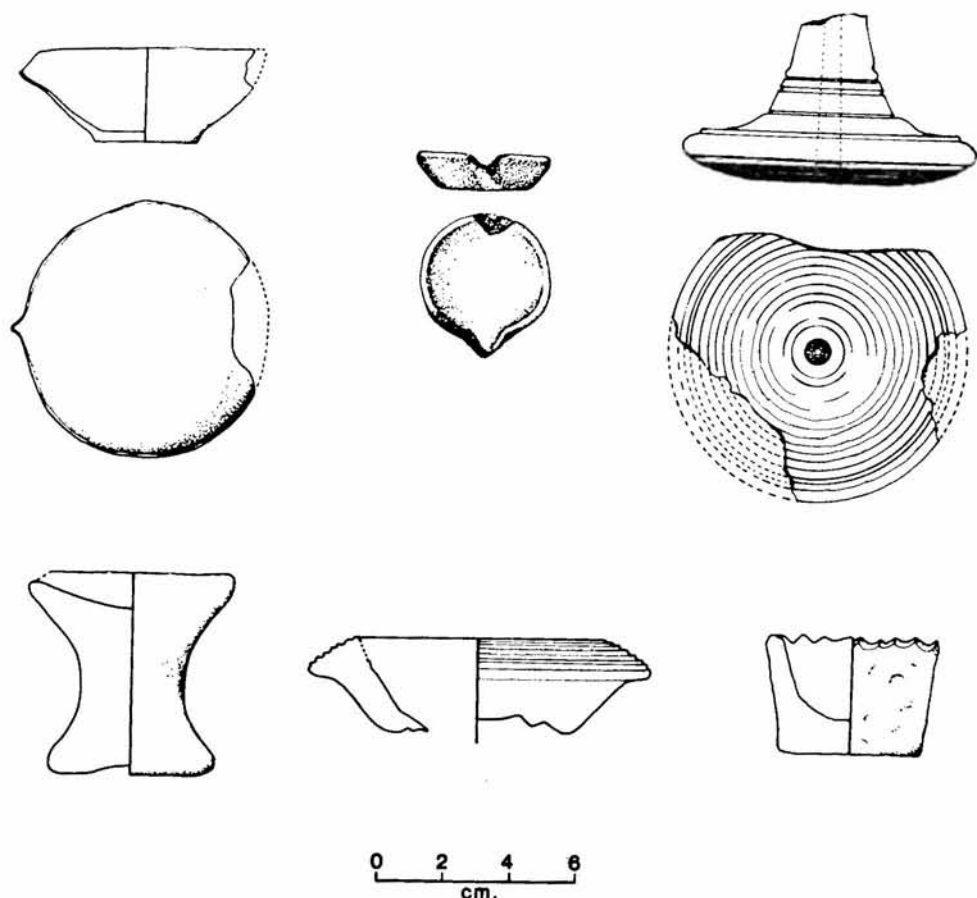


Fig. 13 Ceramic objects from Chansen.

Dr. Peacock (personal communication) has suggested that this fill may antedate the construction of the *prasad*. He may, of course, modify this suggestion when he has finished analyzing the results of his excavations, but we can tentatively use it to derive an end-date for the sixth phase. If the *prasad* was built after the deposits containing Phase VI-like sherds were laid down, then its construction date can be used as a *terminus ante quem* for the assemblage. It was built in A.D. 1108 (Boisselier 1966:94); the phase must have ended sometime before then.

However, putting a precise date on the moment when the last farmer moved away from the moated area at Chansen may not be so easy. At least one T'ang or Sung sherd was found there, a Ying Ch'ing ware fragment in a mixed fifth-sixth phase lot. The terminal occupation lasts, then, down to the time when Chinese porcelain began to be imported in quantity into Southeast Asia. This cannot be much before A.D. 1100. On the other hand, no brown-glazed Khmer pottery (which also comes into use in Thailand and Cambodia around 1100) has been found at Chansen. Since these wares are easily recognized and have considerable market value, the pothunters would certainly have noticed them if they had been present. And from this negative evidence it follows that 12th century occupation at Chansen was minimal.

We have selected the date A.D. 1100 for the end of Phase VI quite arbitrarily. People may have continued to make their farms on the old townsite for another century or so. But this last lingering occupation is not of much concern to us. By then, Chansen as a settlement had ceased to exist.

#### CONCLUSION

In summary, Chansen, a site chosen virtually at random, turned out better than we had a right to expect. Its considerable antiquity came as a surprise, to some extent counterbalanced by disappointment as to the quality of Dvāravatī-related deposits.

It may turn out that the presence of a Metal Age (as used here, "Metal Age" means, quite simply, pre-Indian) occupation in the bottommost levels is not such a surprising coincidence. Several other protohistoric sites were built on top of prehistoric settlements, among them P'ong Tuk, Pimai, and the Phase V-related site of Huai Duk. Since this is almost the full list of first millennium sites where excavations have been carried down to natural soil, one could almost propose that *most* early Indianized townsites were built on Metal Age foundations. The proposition seems a priori a little unlikely, but the association of early protohistoric with late prehistoric is surely somehow meaningful. At the least it implies that there is a great deal of late Metal Age material in Thailand. At most, it implies that the Indianizers when they arrived settled in already long-established towns.

The radiocarbon dates for the first two Indianized phases (II and III) seem to us quite solid. We are aware of, and recognize the strength of, the arguments for placing initial Indianization in Southeast Asia at about A.D. 200 or later. But the Carbon-14 evidence cannot be gainsaid. Even if the two 1st century dates are thought improbable, the five dates that cluster within the 4th century seem to place the third phase very securely. And if Phase III begins in A.D. 300, it is not unreasonable to push Phase II back considerably further into the past.

The implications of a 1st century date do not have to be spelled out. It is earlier than most of Amarāvati, earlier than the accepted dates for the late stages of "Dongson." There are indications, furthermore, that the Indianization of Chansen in Phase II is by no means superficial. On the contrary, Chansen II is very Indianized indeed. Even the common domestic pottery looks more Indian than Southeast Asian—an impressionistic observation which, if substantiated, could greatly alter our notions about the Indianizing process. After all, it is ordinary people—proletarians, petty bourgeoisie—who make and buy household pottery, not great merchants or exiled princes. Which provides another twist in the old debate about who came to Southeast Asia from India, and why. Moreover, even in its heyday Chansen was not an important place, being inland and not well situated as an entrepôt for even the Chao Phya River trade. If Indian influence was present in strength by A.D. 50, then its first contact with the Southeast Asian coast may well have occurred before the beginning of the Christian era.

Hardly less important is the evidence at Chansen for contacts with Cambodia, again at an unexpectedly early date. As with the evidence for Indian contacts, the Chenla-Dvāravatī pottery resemblances are unclear and difficult to interpret.

Indeed, it is premature to do more than suggest that the two areas were in some kind of contact at about the time (1) that Land Chenla was being consolidated from the ruins of Funan, and (2) that towns, perhaps kingdoms, producing Dvāravatī art were coming to be spread thickly over the central plain of Thailand. The nature of their contact and the ultimate source of the traits they hold in common will have to be left for future research to clarify.

However, in Phase VI these Cambodia-Thailand links become less tenuous. It seems fairly safe to say that, whatever their linguistic and political affiliations, the two areas became part of a single ceramic province well before A.D. 1000, the traditional date for the incorporation of central Thailand as a province of the Khmer Empire.

Let us emphasize that much of what has just been said is tentative in the extreme. Archaeologically speaking, we have been working in a vacuum, on a sequence hitherto untouched by the spade. In ordinary circumstances, one would depend on already established sequences from other sites in order to refine and correct one's own. But this is hardly possible in central Thailand, where there are no published sequences. Until very recently there have been no scientifically excavated sites.

At present the situation is changing. No fewer than four other groups are working on protohistoric problems with relevance to Chansen. The Fine Arts Department of Thailand has an active excavation program, under the leadership of H. S. H. Subhadradis Diskul of Silpakorn University and of Mr. Chin You-di of the National Museum. Brian Peacock has been excavating at Pimai in the northeast. William Watson, Helmut Loofts, and Hamilton Parker have completed their work at U Thong. Bernard Groslier, perhaps the first to see the need for modern techniques in post-prehistoric Southeast Asian archaeology, is preparing to publish his monumental Cambodian pottery sequence. Even some of the more traditionally oriented specialists have done work on what Boisselier (1966:28) calls "humbles tessons de poterie"—Boisselier himself at U Thong and Nakhon Pathom, and Quaritch Wales in the course of his pioneering excavations in the south and at Muang Bon.

But unfortunately, all this work on "humble potsherds" has one feature in common: it is completely unpublished. There are not more than ten pictures of unglazed post-prehistoric earthenware, sections and photographs included, in the entire literature on the archaeology of Thailand, Laos, and Cambodia. Malaysian material is much better illustrated; most of it, however, is of the wrong date. And Vietnam would be just as bad were it not for the admirable exception of Oc Eo, lonely on its eminence as the single adequately published site in Mainland Southeast Asia.

So, the neat six-step sequence of two-century periods that we have outlined is quite tentative. We will be able to make minor improvements on it ourselves when we have more radiocarbon and some thermoluminescence dates, and when we are further along in correlating Chansen with surface collections from other Thailand sites (to be the subject of an eventual article) and in research on artifactual and art-stylistic ties with more distant and better-dated places (also to be the subject of an article). But minor improvements are all we can hope to make until some of the dark mass of unpublished data is brought to light.\*

\* The Chansen excavation was made possible through the generosity of the Otto F. Haas Foundation and the J. D. R. 3rd Fund. Transportation and subsistence of several staff members was supported by a Ford Foundation Traineeship Grant to the University Museum.

## APPENDIX

*A Preliminary Report on Faunal Remains from Chansen*

By Elkins Wetherill Jr., University of Pennsylvania

This preliminary report is based on the study of only two types of bone, teeth and phalanges. The former were chosen because they were easy to separate from the bulk of animal bones; the latter because they were virtually the only complete bones present. A gross count of these bones is presented in Table 2, listed by phase and genus. Entries in the columns between phases indicate mixed provenience. Specific identifications, it should be noted, are as yet highly tentative.

*Cattle*

Three types of phalanges were noted in the collection. The large and massive ones have been termed, tentatively, *B. bubalis* (domestic water buffalo). The small squat variety appear to belong to domestic cattle, probably of the humped *indicus* type. The third variety, which is long and thin, conceivably belongs to a native wild species, perhaps banteng or gaur. However, it is not yet possible to exclude the hypothesis that this third type may be a sexually dimorphic variant of one of the other two.

*Deer*

At least two species of *Cervus* are present, a large and a small variety. The smaller one may be the muntjak or barking deer. The identity of the other species has not been determined.

*Pig*

No evidence exists at present for more than one species. It was probably domestic, although the fact that the third molars are often well worn may indicate that some individuals were either feral or allowed to forage in a semi-wild condition.

*Dogs and Cats*

Bones of both *Canis* and *Felis* are present in limited numbers throughout the sequence.

*Elephant*

Aside from finds of manufactured objects made of ivory, the only direct evidence for the presence of *Elephas* was a single tooth, found in a Phase II level.

*Molluscs*

Three species of mollusc are present: two land snails and one aquatic bivalve.

The absence of axial bones and the predominance of scapula and limb fragments may indicate that animals were killed and butchered in some specialized section of the site which has not been excavated. The animals would have been quartered there, then further dismembered at the place where they were to be cooked and eaten.

The only significant shift in dietary habits that seems to have occurred during the thousand-year history of the site is a decline in the relative number of deer bones. This can possibly be interpreted as a consequence of the removal of forest cover from the plain around Chansen, due to an increase in farming and the growth of population.

TABLE 2. STRATIGRAPHIC PROVENIENCE OF IDENTIFIED FAUNA

FAUNA	PHASE							TOTALS				
	VI	V	IV	III	II	I						
<i>Bos indicus</i> phalanges	6	8	3	2	9	1	13	18	11	—	—	71
<i>Bos</i> "?" phal.	1	1	2	2	2	1	3	7	6	—	—	25
Total	7	9	5	4	11	2	16	25	17	—	—	96
<i>Bos</i> teeth upper	8	13	5	3	8	12	13	10	20	1	—	93
lower	—	5	6	2	3	14	16	14	19	—	—	79
frags.	—	2	3	1	6	5	4	8	10	—	—	39
Total	8	20	14	6	17	31	33	32	49	1	—	211
TOTAL <i>Bos</i>	15	29	19	10	28	33	49	57	66	1	—	307
<i>Bubalus bubalis</i> phalanges	1	2	—	1	2	—	2	7	6	1	—	22
teeth	1	—	1	—	—	1	—	1	2	—	—	6
TOTAL <i>B. bubalis</i>	2	2	1	1	2	1	2	8	8	1	—	28
<i>Cervus</i> large phalanges	—	—	—	1	—	1	5	1	5	—	—	13
small phalanges	—	—	2	—	—	—	—	1	3	1	—	7
Total	—	—	2	1	—	1	5	2	8	1	—	20
<i>Cervus</i> teeth	—	3	1	4	1	2	11	1	17	4	—	44
TOTAL <i>Cervus</i>	—	3	3	5	1	3	16	3	25	4	—	64
<i>Sus</i> phalanges	—	—	—	—	1	1	—	—	1	—	—	3
teeth	—	3	3	2	7	2	4	4	15	—	—	40
TOTAL <i>Sus</i>	—	3	3	2	8	3	4	4	16	—	—	43
<i>Canis familiaris</i> teeth	—	1	4	—	1	—	4	3	1	—	—	14
<i>Felis domesticus</i> teeth	—	—	—	—	—	1	—	—	1	—	—	2
<i>Elephas maximus</i> teeth	—	—	—	—	—	—	—	—	1	—	—	1
TOTAL phalanges and teeth	17	38	30	18	40	41	75	75	118	7	—	459

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Plate II Male Figurine, Phase V. Height 87 mm.



Plate I Lakshmi, Phase V. Height 78 mm.



Plate IV Scented Lion. Phase V. Height 67 mm.

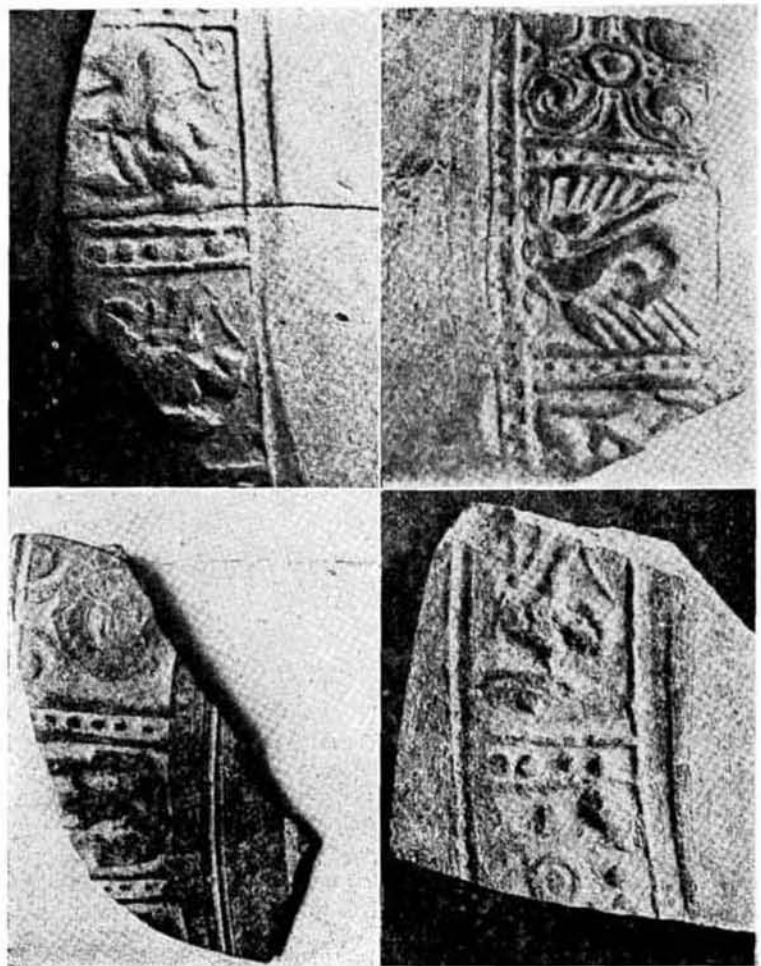


Plate III Stamped Sherds. Phase V.