

# Chansean Museum





## Preface

This text aims to provide knowledge about artifacts of the Pre-Historic and the Dvaravati Periods, as well as local wisdom for visitors of the Chansean Museum. The precise description of the settlement of this ancient city is included to create a better understanding and to arouse a spirit of conservation among local people and visitors. This beautiful heritage is only one source of knowledge in our recognition of our proud civilization. The museum is grateful for the efforts and cooperation of Ms. Walailak Songsiri and Mr. Mongkhon Plianbangchang who undertook the research and writing.

I wish the blessing of the Lord Buddha be with them.

**Phra Khru Niwitthammakhan**

Abbot of the Chansean Temple

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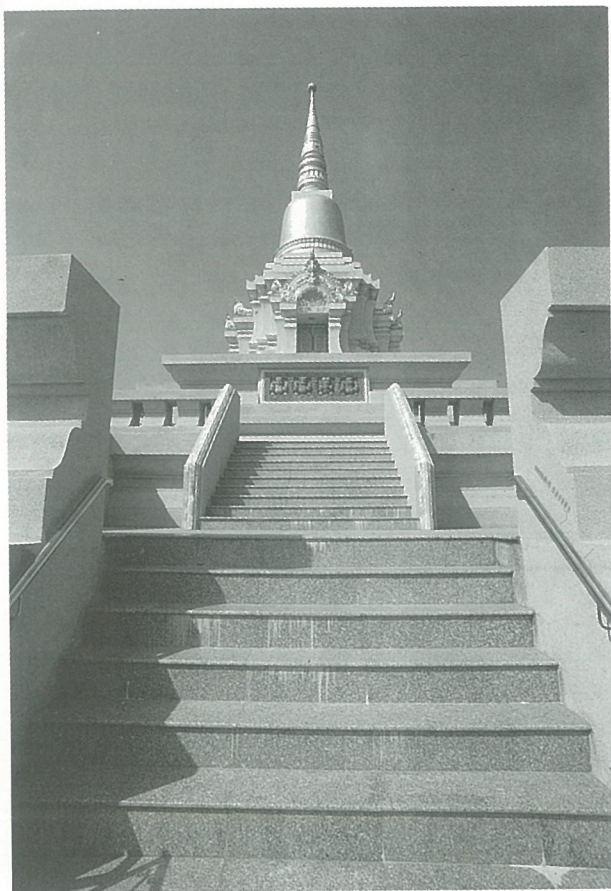
November 1998





**Chansean Museum**

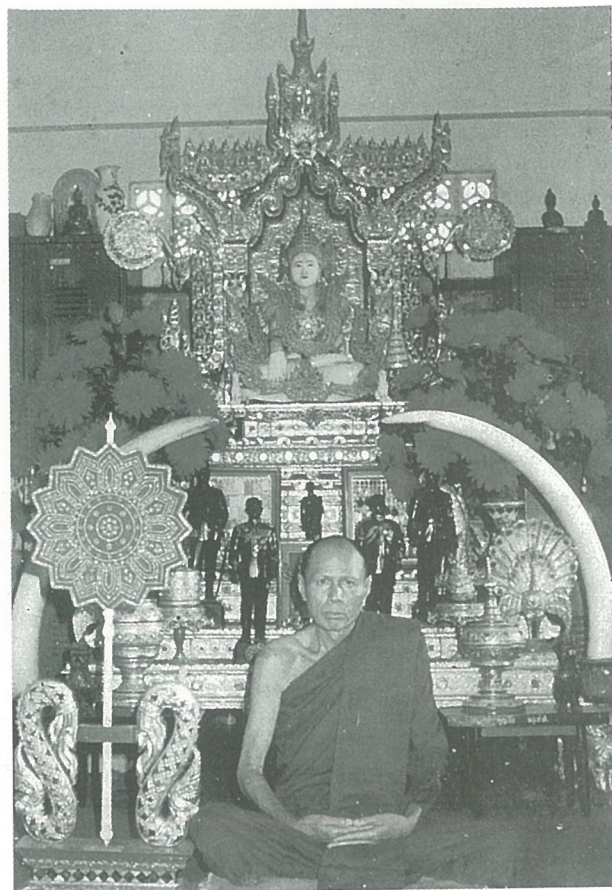




## The Chansean Museum

The establishment of the archaeological and anthropological museum of the ancient city of Chansean was initiated by the late abbot of the Chansean Temple, Phra Khru Nisaichariyakhun, who was commonly known as "Luang Pho Ode". The project was implemented and completed by Phra Khru Niwitthammakhan, the present abbot of the temple. The museum is located in the building of Phra Mahathat Chedi Si Chansean. This building, designed by Arch. Wanida Phungsunthon, a member of the Faculty of Architecture, Silpakorn University, Bangkok, is based on the principles of traditional reliquary tower architecture. The Director of the museum is Associate Professor Srisakra Vallibhotama of the Faculty of Archaeology, Silpakorn University.

Erected with funds donated by people from the Chansean community, the museum aims to provide informal education for the public and to promote the understanding and appreciation of the ancient civilization of Chansean. The construction and the management of the museum is entirely self-sufficient and receives no financial support from the central government. Thus, this museum is an example of a truly local museum of the people, by the people and for the people of Chansean.



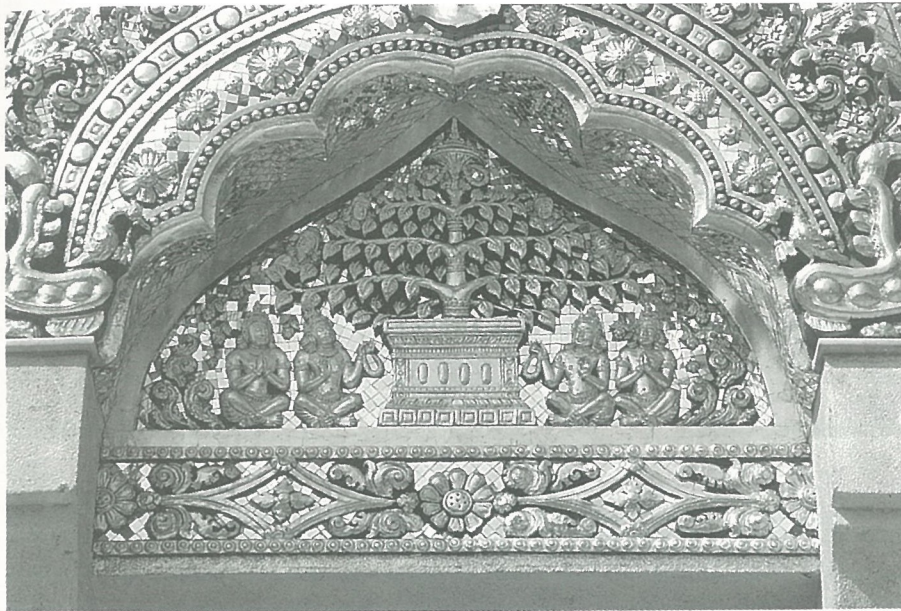
## Phrakhru Nisaichariyakhun

Phra Khru Nisaichariyakhun was born on December 28, 1917, at Ban Hua Khao, Tambon Takhli, Takhli district in Nakhon Sawan. Originally called Mr. Wisut Peanto, he was ordained a Buddhist monk by Phra Thammatrielokachan (Yod), a spiritual teacher from Khao Kao Temple of Phayuhakhiri district, at Huo Khao Temple of Takhli district, on May 21, 1938, and was named 'Panyatharo'. In 1941 he passed the examination of the first grade Dhamma graduate, and in 1950 he was appointed abbot of Chansean Temple. In 1973 he was promoted to be the Ecclesiastical District Governor. And in 1984 he received the title 'Phra Khru'.

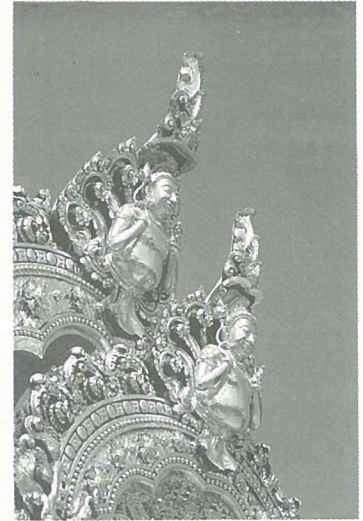
Phra Khru Nisaichariyakhun was a highly respected monk among Chansean people and was determined to make his temple a spiritual centre of the community. Thus, he initiated the idea of establishing a relic tower complex to enshrine the Lord Buddha's Relics, and to house an assembly of Buddhist monks and the Chansean archaeological and anthropological museum.

He passed away peacefully on July 17, 1989, when he was 72 years of age, having been a monk for 50 years.





Pediment above the entrance porch with Dvaravati-inspired gilded stucco designs depicting the life of the Lord Buddha.



Architectural decoration of the pediment above the entrance porch.



## The Phra Maha That Chedi Si Chansean Reliquary Tower

The architecture and decorations of the Phra Mahathat Chedi Si Chansean are based on original architectural structural principles of a *mandapa* with a *chedi* roof of the Dvaravati Period. The architect, Wanida Phungsunthon of the Faculty of Architecture, Silpakorn University was inspired by the Dvaravati stupa and used this inspiration to develop the new architectural design and plan. She has extensively applied and adapted into her new designs the architectural decorative designs of Dvaravati art that have been found at many archaeological sites of Chansean, as well as at other sites.

The Phra Mahathat Chedi Si Chansean Reliquary Tower consists of three main structures, the top, the body, and the base. These three structures serve three main

functions as follows:

The top is a bell-shaped form with a spired roof that houses the relics of Lord Buddha, important Buddha images and tablets.

The body is a square chamber that enshrines a sand-stone seated Buddha image under the *Naga*. It is a replica of a famous Buddha image of "Luang Pho Nak" from the Lopburi Period.

The elevated and extended base forms a large multi-purpose hall inside. The internal area is divided into two parts. The first part, in the middle, is devoted to religious ceremonies, and the second part, which surrounds the first part, is an octagonal form used as the exhibition areas of the Chansean museum.



Architectural decoration of the pediment above the entrance porch.

Carved sandstone in an image of a demon supporting the base, at the upper part of the base





## Inscription at the base of the Phra Maha That Chedi Si Chansean

### The Phra Maha That Chedi Si Chansean

Chansean, located in the basin of the Chao Phraya River, is one of the oldest ancient cities of the Dvaravati Period. This ancient city developed from a local community dating from the late metal age or about 2,000 years ago. It is the first community of this basin that had contact with India, and is contemporaneous with the city of U-Thong in the basin of the Thachin River and the city of Funan near the mouth of the Maekhong River. The evidence for this is seen in artifacts which are found in these areas and India, such as terra-cotta seals, fragments of decorative pottery, beads and other ornaments, all of which share many common characteristics.

The contact with India indicates that the Chansean Community was a Buddhist community from the beginning. Traces of Buddhism are evident in the ruins of religious monuments and *stupas* to enshrine the relics of the Lord Buddha, as well as in images of Buddha and other fetish that are seen at present.

Chansean was located on the banks of the grand river that flows from the Lawo region and continues toward many ancient cities which are now in the jurisdiction of Chainat and Nakhon Sawan provinces. Later when the river became shallow, transportation routes changed, and the ancient cities along the river were of less significance and forgotten. It was during the reign of King Rama V, with the introduction of steamboats and the development of river transportation, that Chansean revived. People from near and far came to settle here, building farms, temples, houses, markets and windmills.

The ancient city of Chansean was rediscovered primarily through aerial photos which led to systematic archaeological excavations and extensive archaeological research for the first time in Thailand. After the completion of the excavation, Chansean was left as it had been.

Realizing its significance as a prosperous Buddhist centre of the region in the past, Phra Khru Nisaichariyakhun, the abbot of Chansean Temple was determined to revive Chansean. He wished to build a Buddhist edifice in this temple that would serve three purposes. The top part would enshrine the relics of the Lord Buddha. The body would house a beautiful Buddha image seated under the *Naga* of the Lopburi Period, Luang Pho Nak, which would be the spiritual symbol of the community. The base would house the statue of Phra Khru Nisaichariyakhun and the museum of Chansean where artifacts found in this ancient city and the vicinity would be systematically displayed along with the history of the development of the Chansean community from ancient time up to the present.

The Phra Maha That Chedi Si Chansean Reliquary Tower has become a symbol of the prosperity of Buddhism in this region for more than 2,000 years and has greatly contributed to the study of the history, archaeology and anthropology of this old community.



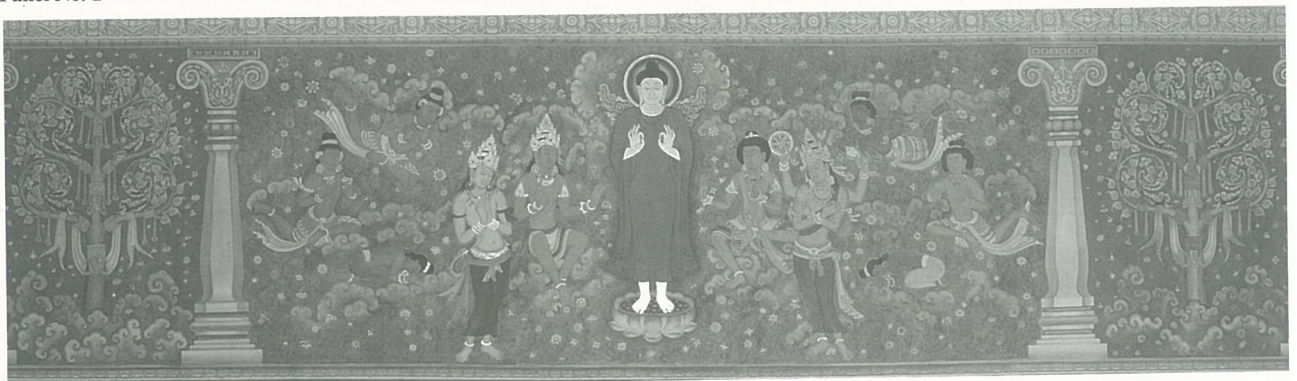
## Mural Paintings inside the Phra Maha That Chedi Si Chansean

The upper walls of the museum feature mural paintings of the life of the Lord Buddha executed by teachers and students of the Fine Arts Department, Ratchamongkhon Institute of Technology, Phochang Campus, with the kind assistance of Associate Professor Srisakra Vallibhotama. The theme of these mural paintings corresponds to the concept of the exhibitions in the museum.

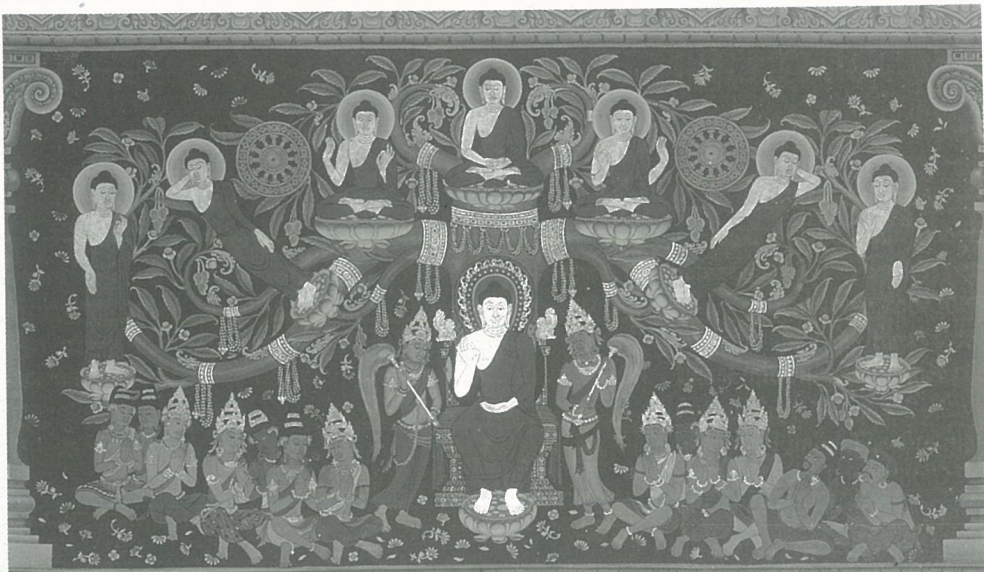
The theme of the mural paintings is the life of the Lord Buddha. This collection consists of eight significant episodes of the life of the Lord Buddha which are depicted on the eight panels of the eight walls of the octagonal hall. The first panel is set in front of the cast statue of the Luang Pho Ode and is followed one after the other, to the right hand side, by the other seven panels. The left to right movement is in accordance with the left-to-right circling of a Buddhist monument signifying the way of paying respect to the Lord Buddha.



Panel No. 1



Panel No. 7



Panel No. 5 (Middle)



### Panel No. 1

**Left** - Queen Sirimahamaya seated on the lotus, two elephants holding water jars to bathe her. This episode signifies the birth of Siddhattha.

**Middle** - The birth of the Bodhisatava.

**Right** - The coming of age of Bodhisatava.

### Panel No. 2

**Left** - Bodhisatava accepting an offering of honey-sweetened rice.

**Middle** - Defeating the Mara army, Bodhisatava attains the enlightenment.

**Right** - The Lord Buddha protected by the seven-headed *Naga* (Muchalinda).

### Panel No. 3

**Left** - Wheel of Law, a symbol of the first sermon by the Lord Buddha.

**Middle** - The Lord Buddha giving a sermon to his first five disciples.

**Right** - Wheel of Law, a symbol of the first sermon by the Lord Buddha.

### Panel No. 4

**Left** - The Lord Buddha preaching to Yasodhara.

**Middle** - The Lord Buddha preaching to the wild elephant Nalagiri.

**Right** - The Lord Buddha preaching to Angulimala.

### Panel No. 5

**Left** - The Lord Buddha before performing a series of double miracles.

**Middle** - The Lord Buddha performing a series of double miracle under the mango tree.

**Right** - The Lord Buddha ascending to the Tavatimsa Heaven.

### Panel No. 6

**Left** - The Lord Buddha before giving a sermon to his mother.

**Middle** - The Lord Buddha preaching to his mother in the Tavatimsa Heaven.

**Right** - The Lord Buddha after giving the sermon to his mother.

### Panel No. 7

**Left** - The Bodhi tree.

**Middle** - The Lord Buddha descending from the Tavatimsa Heaven.

**Right** - The Bodhi tree.

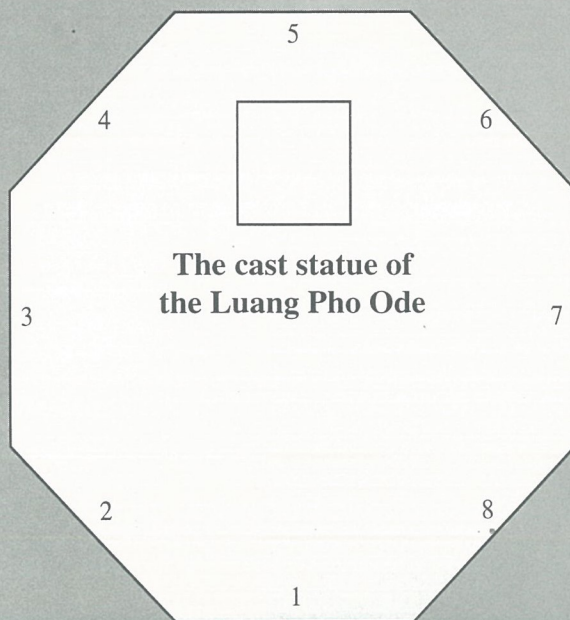
### Panel No. 8

**Left** - The royal relatives and angels on the *nirvana* of the Lord Buddha.

**Middle** - The *nirvana*.

**Right** - The royal relatives and angels on the *nirvana* of the Lord Buddha.

## Plan of the Murals of the life of the Lord Buddha

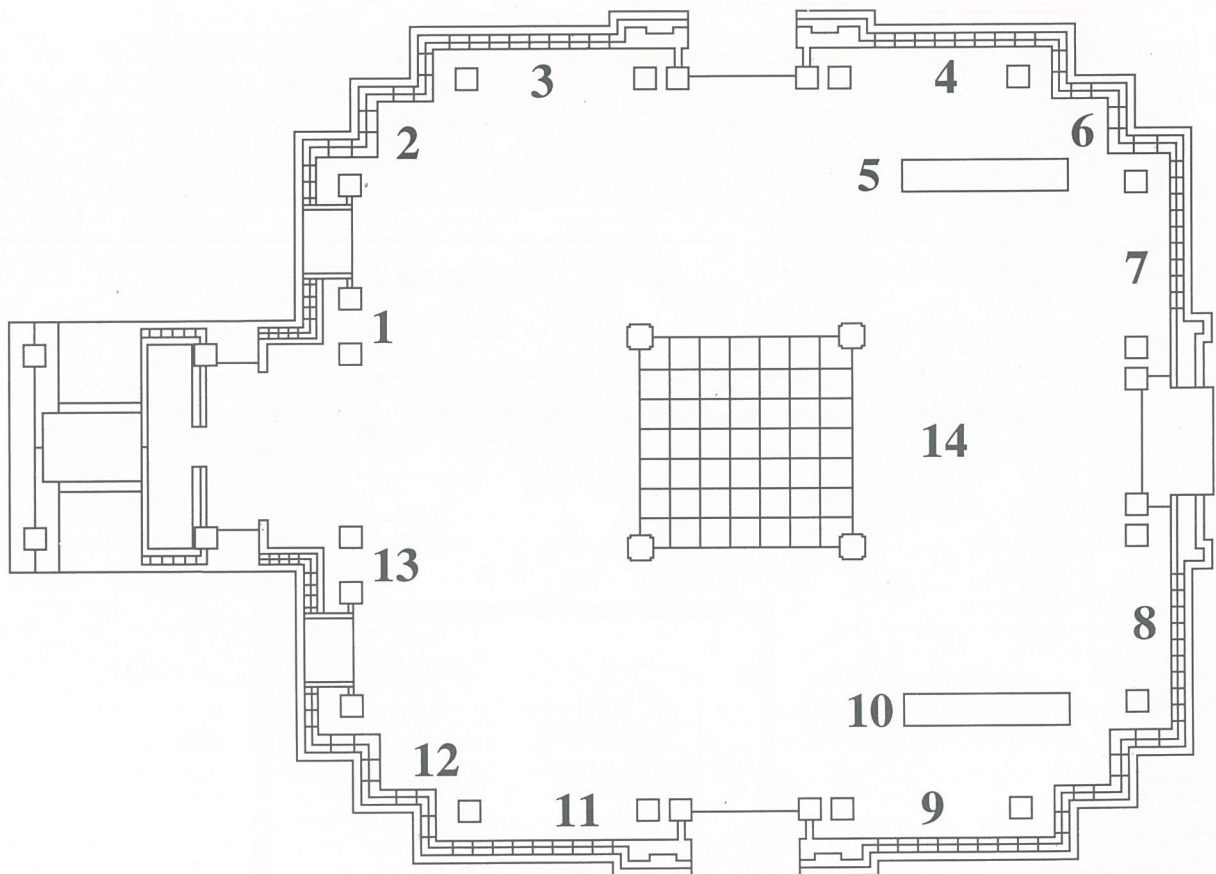




## Topics of the Exhibitions

1. Chansean and Location
2. Archaeology Study at Chansean
3. Development of the Local Communities in Lopburi-Pasak Basin
4. Urbanization in the Iron Age
5. Archaeological Excavation at Ban Maichaimongkhon
6. Chansean : The Early Urban Center in Lopburi-Pasak Basin
7. Chansean in the Funan-Supannaphum Periods
8. Chansean in the Dvaravati Period
9. Religion and Beliefs
10. Chansean's Way of Life in the Dvaravati Period
11. Chansean after the Dvaravati Period
12. Revival of Chansean
13. Local Wisdom of Grandpa Khun Duang-ngen
14. Environmental Changes in Chansean
15. Phra Khru Nisaichariyakhun

## Plan of the exhibitions in the Phra Maha That Chedi Si Chansean Building





## Admission :

The museum is open every day. Group visits are welcome. Please contact the museum to make arrangements in advance.

## For further information, please contact:

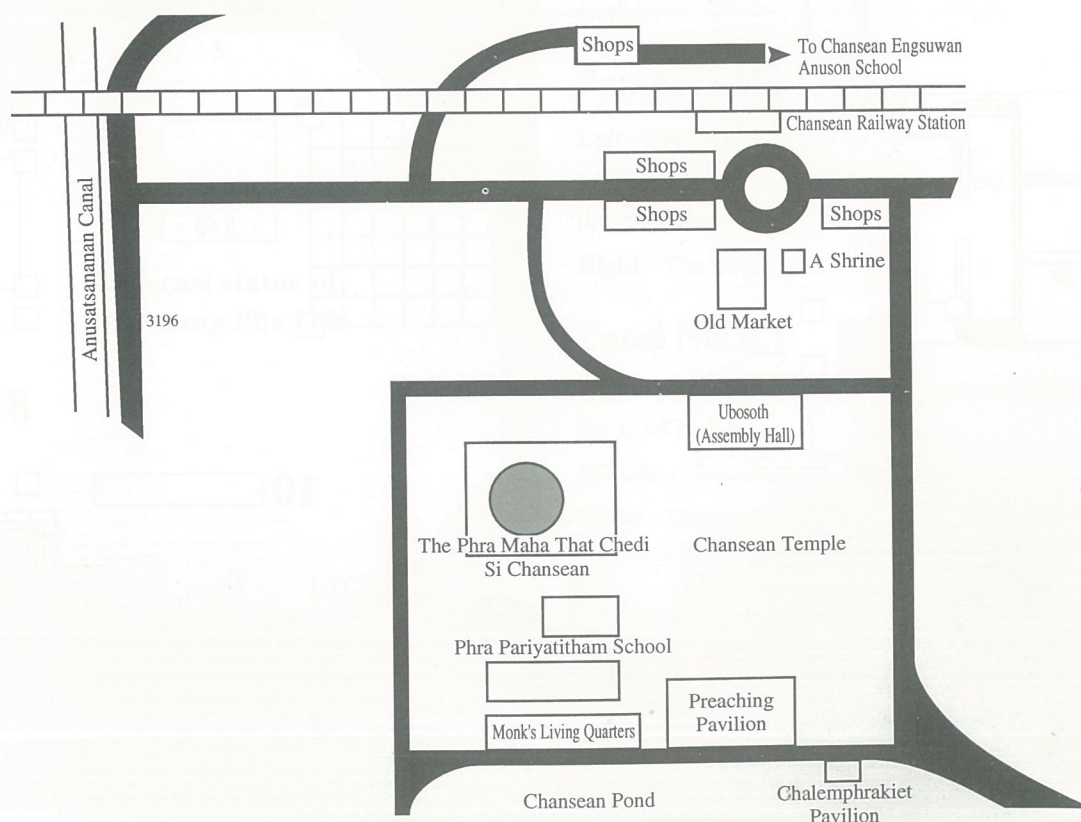
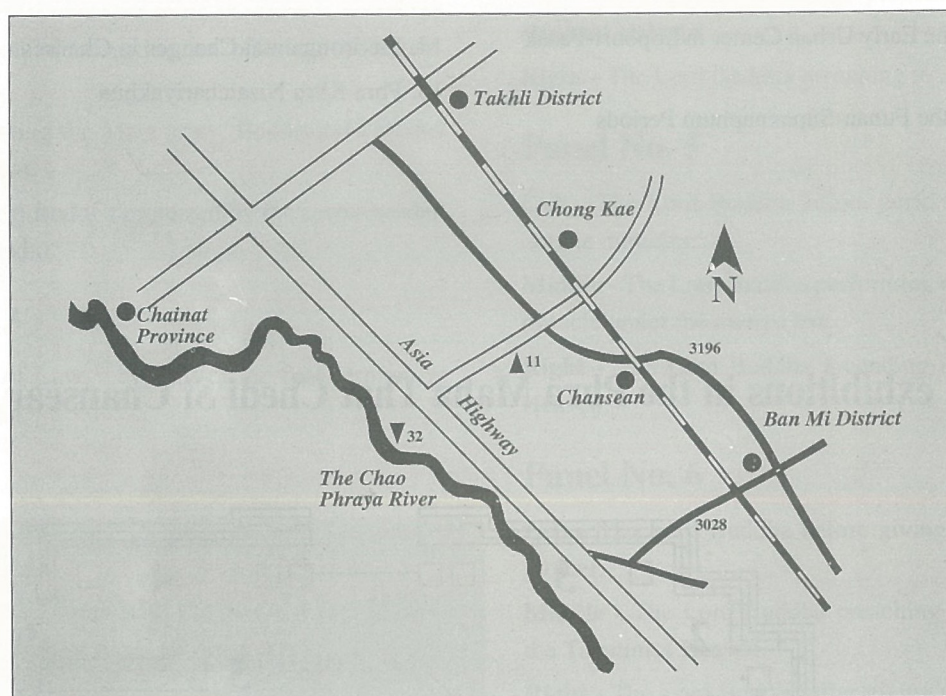
### Chansean Museum,

The Chansean Temple, Tambon Chansean,  
Takhli District, Nakhon Sawan 60260

Tel. (056) 339-115

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## Map to the Chansean Museum





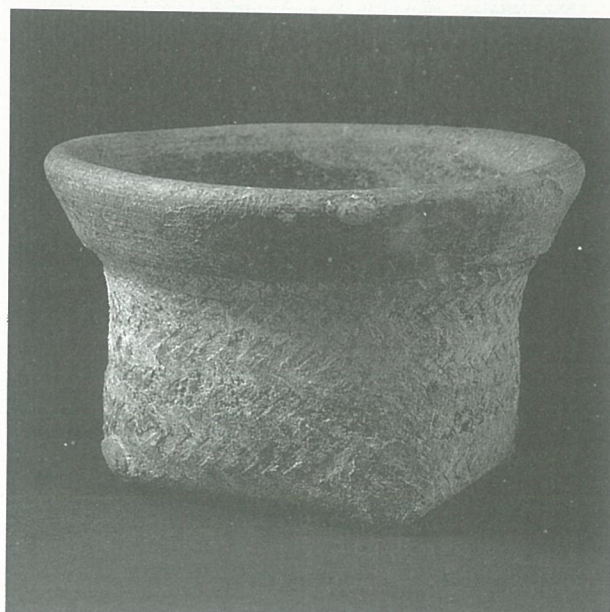


Chansean Museum





Terra-cotta buffalo with a round hole on its back for holding offerings to the dead, a Pre-historic tomb at the archaeological site of Ban Maichaimongkhon, near the ancient city of Chansean.



A pottery decorated with a pressed basketry like a saw-toothed design, commonly found in the pre-historic archaeological sites in the Lopburi-Pasak Basin.



Pottery in different forms, found at the pre-historic archaeological site of Ban Maichaimongkhon.



# **The Society and Culture of Chansean : An Early Settlement in the Lopburi-Pasak Basin**

## **The Chao Phraya Basin : Geography and the cultural and social development**

The geography of the Chao Phraya Basin in ancient times appears different from what it is today. Settlements of people during the 17th and 18th centuries B.E. (Buddhist Era) are found in the "old delta" or the areas between Angthong, Saraburi and Nakhon Sawan.

In this great basin, apart from the Chao Phraya River which originates from the four rivers in the north of Thailand, the Ping, the Wang, the Yom and the Nan Rivers, there are many other rivers which have their origins in the mountains and high lands. To the west there is the Thachin-Mae Klong River and to the east there is the Lopburi-Pasak River. These rivers form a fertile delta in the Chao Phraya Basin which is suitable for human settlement.

The survey of the areas along the Thachin-Mae Klong River, the Lopburi-Pasak River and their tributaries reveals many archaeological sites dating from the Metal Age to the Dvaravati Period. Today these rivers and tributaries are shallow and narrow. Similarly, the survey along the middle area of the Chao Phraya basin and the Noi River indicates that there was a settlement of ancient communities from north of Angthong and Saraburi and that in the area at the top of the delta, which covers the area of Chainat and Nakhon Sawan, there were a greater number of ancient communities dating from the Dvaravati Periods and the Metal Age than in any of the other areas. Geographically and culturally, there is evidence of significant communication and linkage between the areas along both sides of the Chao Phraya River.

Although the communities on the eastern and western Chao Phraya basin belong to the same periods, the Dvaravati and Pre-Historic Periods, their cultural patterns, which are considered from the utensils found which were used in funerals, tools, wares and ornaments, are unique in themselves. These cultural variations depend largely on particular characteristics of the location of the communities.

## **The western Chao Phraya Basin**

The important river in the area is the Thachin-Mae Klong River. Most of the ancient communities were located in the basin and used the river for transportation. Although they were an agriculture-based society, they had significant commercial contact with other communities.

The geography of the western Chao Phraya Basin is mountainous. The Tanon Thongchai and the Tanaosi Mountains lying from north to south have good natural resources and contain forests from which products were made which were in high demand from overseas markets. The demand for these products was a leading factor in the social and cultural development of the area, as it was an incentive for people from other localities to settle there.

Some of the important archaeological sites are the site at Khok Phlap in Tambon Pho Hak, Bang Phae district, Ratchaburi and the site at Ban Don Ta Phet in Phanomthuan, Kanchanaburi Province, where a variety of beads, bronze and iron utensils dating from 1,700-2,300 years ago were found. These artifacts indicate communication by sea between this area and north and central Vietnam and India.

U-Thong ancient city, which is now in Suphanburi Province, had been a seaport for more than 1,700 years up to the Dvaravati Period. Most academics believe that U-thong was contemporary with Oc-eo ancient city, a seaport of Funan State in the south of Vietnam, during the 8th and 9th centuries B.E. up to the 12th century B.E.

Nakhon Chaisi is another ancient city of the Dvaravati Period in the Thachin Basin. It was famous for its sea trade. After the 13th century B.E., it attained a high reputation and finally replaced U-Thong as a major seaport. During that time sea trade was very prosperous in this Basin, as was Mahayana Buddhism.

Khu Bua was an ancient city in the Mae Klong Basin. It was a very large city, and like Nakhon Chaisi, it was a center of culture, sea trade and transportation.

The social and cultural development of many communities in the western Chao Phraya Basin, especially ones on the sea coast, is largely based on geography.



The cities that were built were large commercial ports and acquired artistic and cultural influences from many sea going civilizations. The society became a multicultural and political ethnic group before being formed into a state. Similar characteristics are not found in the communities of the eastern Chao Phraya Basin.

## **The eastern Chao Phraya Basin**

The important rivers in this area are the Lopburi and Pasak Rivers. The geography of the area is very high and has many mountains. The plain is not completely flat, but rather wave-like, which is not good for building large cities as was done in the western area. In fact, from the Pre-Historic Period to the Ayutthaya Period, there was only one big seaport on this eastern side. It was Si Mahosot, an ancient city in Khok Pip district, Prachinburi, located in the Bang Pakong Basin. For this reason, Buddhist art and cultures which travelled along the sea routes, did not develop and prosper on the west side as it had on the east side. However, it cannot be inferred that the ancient communities in the Lopburi and Pasak Basin had no significance at all.

In fact, the social and cultural development of the communities in the Lopburi-Pasak Basin is more sophisticated and longer-lasting than that of the east side. From the Pre-Historic Period to the early Historic Period the communities had been even more glorious. Although the land was not fertile, there were natural mineral resources such as copper and iron. From the Pre-Historic to the Ayutthaya Period, people settled in the area and established industrial communities.

It is evident that communication existed between these in-land communities and the communities on the coast about 3,000 years ago because a number of ornaments made from sea shells have been found.

Also, during the Metal Age, there was communication between the ancient communities in the Lopburi-Pasak Basin and those in the Korat Basin, which were located near the origin of the Chi River and the Mun River in the jurisdiction of Khon Kaen and Nakhon Ratchasima respectively. There was a migration into the Lopburi-Pasak Basin because of the abundance of copper and iron. Traces of artifacts and funeral objects dating from 2,500 years ago were found in this area.

Later in the Dvaravati Period, it is evident that the ancient industrial communities developed the technology of casting and smelting ores. Many of these ancient cities such as Si Thep, Sap Champa, Dong Marum,

U-Taphao and Chansean were built with moats surrounding the cities.

The ancient communities in the eastern Chao Phraya Basin originated from these first metal industry communities and the migration of pre-historic, Dvaravati and Lopburi communities from the northeast into the upper Chao Phraya Basin. The development of culture and society in this area was more complex and sophisticated.

## **Chansean as a community of the Iron Age**

The Chansean ancient community was located on the border between the low plain of the Chao Phraya and Lopburi Basin, and the wave-like plain of the Lopburi-Pasak Basin. The establishment of this community represents the expansion of human settlement in the Metal Age from the wave-like plain to the lower plain, which has a completely different ecology.

In the wave-like plain and the stepped plain of the Lopburi-Pasak Basin, there were a number of scattered pre-historic communities in the Bronze and Iron Ages. Most of the communities of the Bronze Age were found in the same area as those of the Iron Age. This shows a pattern of continued settlement in this area from the Bronze Age to the Iron Age.

People in these communities did not earn their living solely from farming, but also from smelting metal and casting bronze. Many communities were located in areas that had copper as well. However, in Khok Samrong district where the Sam Yod, Khao Phra and Wong Phrachan Mountains are, there were communities that did not have the technology for producing iron tools and glass ornaments. Most of the ornaments were made out of sea shells. These communities of the Bronze Age are believed to have had economic exchanges with communities in the Daeng and Ma Basin in north Vietnam. Their tools, bronze ornaments and some pottery share the same characteristics and style. This indicates land communication with foreign countries from the coast of Vietnam through the northeast across the Phetchabun-Dong Phrayayen Mountains towards the Lopburi-Pasak Basin not less than 3,000 years ago.

The Bronze Age communities had developed continuously into the late Metal Age or the Iron Age and expanded into the low plain. The most important characteristic of the Iron Age community settlements is that many of the small and large communities formed them-



selves into community networks. The towns or large communities were the centers, and the villages, or smaller communities were subordinate. Villages, or small communities had simple social structures, were located near water resources and plains that were suitable for self-sufficient farming, or near resources of natural products and ores. Towns, or larger communities had a more complicated social structure with different ethnic groups attaining greater wealth and economic standing according to the status of their career. Usually the towns were located near plains suitable for rice planting and near important land and water transportation routes, or both.

The growth and sophistication of the society of the Iron Age can be seen in the characteristics and styles of artifacts made of iron and bronze, tools, utensils and bronze ornaments. The products were beautiful and the quality was very good, evidence of their high technology.

Some bronze tools such as weapons and everyday-used utensils were replaced by iron. However bronze was still used for making beautiful objects, especially objects that were used in religious rites and rituals. Stone, bone and shell ornaments were replaced with precious stones such as Aket and Carnelian, glass and terra cotta. The variety of forms and styles reflects the sophisticated function of each tool.

Their society had developed from a simple to a complex one. However, the increase in population and the more complicated social structures that resulted, inevitably led to discrimination and inequality, and the rise of social classes.

The above data indicate that the people of the late Iron Age who migrated to the low plain were not primitive or uncivilized farmers. They were sophisticated in the uses of high technology to produce beautiful ornaments, bronze utensils, and iron tools in a variety of forms and for a variety of functions.

This is a new concept. In previous studies such as the excavation report by Mr. Brennet Bronson in 1968, it had been concluded that the ancient city of Chansean was an Iron Age culture and that communities were just small farming societies. However, this recent study shows that some communities in the Chansean area were more highly developed and complex. Ban Maichaimongkhon, which is about two kilometers east of the ancient city of Chansean, was one of the largest communities of the Bronze and Iron Ages and was a part of the pre-historic communities of the Metal Age in the Lopburi-Pasak Basin. The discovery of iron tools in this area, which share

the same forms as those found at the archaeological site of Ban Don Ta Phet in the western Chao Phraya Basin, shows vividly that there was communication both within communities in the same basin and between communities of different basins.

It also shows the correlation between the development of new technologies and specialization, which suggests the economic structure of a complex society, not a simple society. Chansean was not a small farming community but was a society based on highly technological development, specialization and growth.

In the pre-historic Iron Age (2,700-2,300 years ago), Chansean was already a well-established community. By the Funan Period, it had developed into a city with moats and was contemporaneous with the ancient cities of U-Thong and Ok Eao in Vietnam (the 10th - 11th Century B.E.). Chansean started to decline in the Dvaravati Period (the 12th Century B.E.) and had lost its significance completely by the early Dvaravati Period.



# Technology for Iron Production of the Pre-Historic Period in Thailand

The point in controversy about the technology of iron production in Thailand is whether it was original or adopted from other cultures. The two hypotheses are as follows:

1. Iron was a by-product of the discovery of copper, which was a composition of bronze, apart from tin. In many archaeological sites, copper ores and iron ores were found in the same area. Therefore, like smelting copper, a technology for producing iron may have been developed by local people.

2. The technology of smelting iron ore came from India about 2,600 years ago. Indian used a forging technique, which was different from the technique used in China. China, in fact, became interested in iron about 2,300 years ago and used a casting technique which was a more advanced technology. However, no evidence of this casting technique was found in Thailand. Only smelting and forging techniques similar to those in India have been found in Thailand. Therefore, the application of Chinese technology in the Pre-Historic Period is less probable.

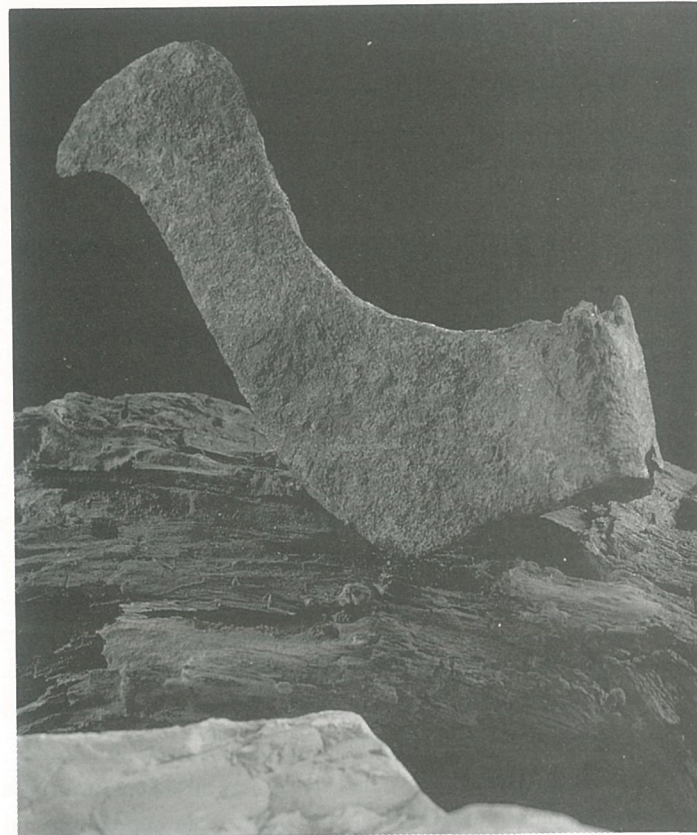
Today it is believed that the evidence supporting the second hypothesis is more reliable and thus more probable.

The procedure of producing iron tools in the Pre-Historic Period in Thailand can be described as follows:

1. Smelt Hemantite from the mountains into iron ore.

2. Through the bloomery process, burn the iron ore at 800-1,200 degrees Celsius by using charcoal as a fuel until the ore melted and formed a bloom. Discard the impure part or slag.

3. Forge the bloom into a shape and form the tools and utensils. Strengthen the mass while forging by cooling it down gradually by leaving it in the ash pile or a heated charcoal pile. (referring to the analysis of the iron tools from the archaeological site at Ban Don Ta Phet in Kanchanaburi).



A knife with a pointed end like a bird's beak, similar to the outstanding iron tools found at the pre-historic archaeological site of Ban Don Ta Phet, Phanomthuan district, Kanchanaburi.



A knife with a pointed end like a bird's beak and blade made of iron, found at the pre-historic archaeological site of Ban Maichaimongkhon.





Arrows made of iron,  
found at the ancient city  
of Chansean.

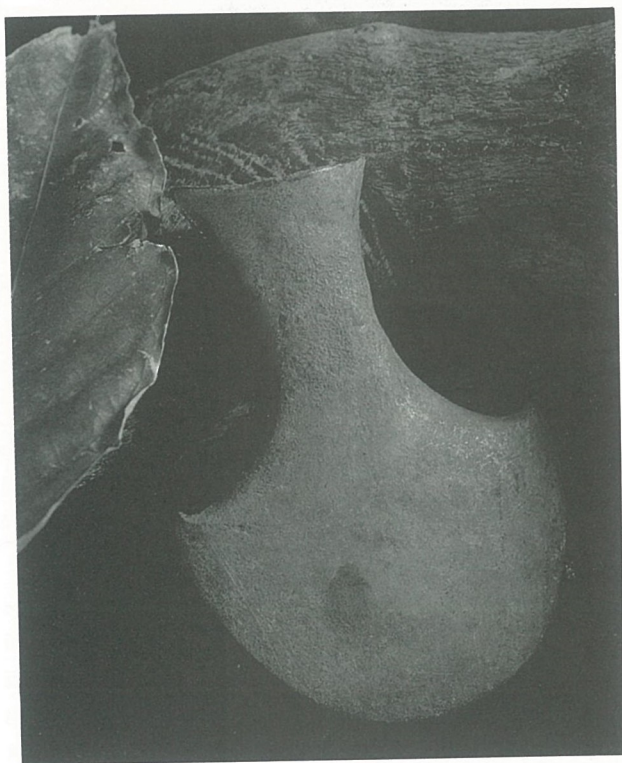


Damaged spears and axes with a hole in the handle made of iron, found  
at the pre-historic archaeological site of Ban Maichaimongkhon, two  
kilometers away from the ancient city of Chansean.





A Mold for a bronze axe, found at the pre-historic archaeological site of Ban Nong Yai.



A bronze axe, stored at the Temple of Chansean, the source is unknown.



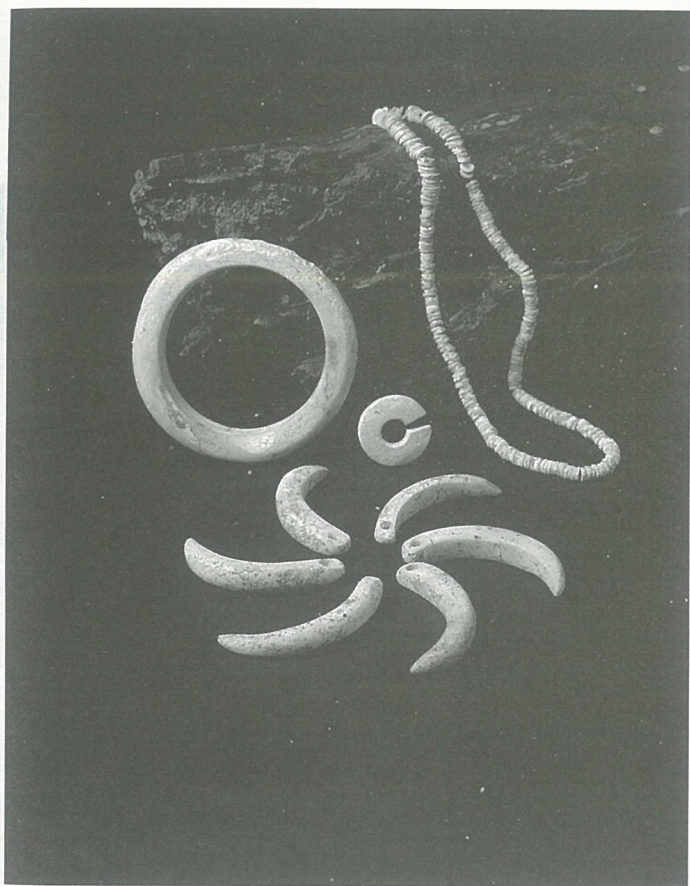
Stone bracelet with holes, cut into concave shape at two places and fixed back again, found at the pre-historic archaeological site of Ban Nong Yai.



# The Archaeological Excavation at the Ancient city of Chansean and other Ancient

## Communities in the Vicinity

During the three decades of the survey and study of the archaeological sites in the eastern Chao Phraya Basin from north of Lopburi Province to Bung Boraphet Lake in Nakhon Sawan, many important archaeological sites have been found and valuable data about the development of these pre-historic ancient communities in this area have been discovered.



Ornaments made of sea shells : an earring, a bracelet, bead necklace. Ornaments imitating the form of a tiger tooth, found at the pre-historic archaeological site of Ban Maichaimongkhon.

The ancient city of Chansean is one of the most important archaeological sites, because it was the pilot project of the excavation of pre-historic archaeological sites in Thailand using a methodology proposed by an American archaeologist. This discovery was the starting point for precise research into pre-historic archaeology from the Metal Age to the early Dvaravati Period. This project has contributed greatly to the study of archaeology in Thailand.

The study of the development of the ancient city of Chansean can be divided into four phases as follows:

### Phase I : The Discovery of the Ancient City of Chansean

The first phase involved a primary study of the map and aerial photos taken by Professor Nij Hinchiranan and his team, who surveyed this ancient city many times in 1966 and published many articles, all of which are important references for the study of Chansean.

An official survey by the Department of Fine Arts was made in 1966 by an archaeology team led by Mr. Chin Yu-di and Mr. Somphon Yu-Pho. A survey map and report were made and a number of artifacts were collected and registered.

This survey in 1966 has led to a series of systematic surveys, studies, and excavations of the archaeological sites in the eastern Chao Phraya Basin.

### Phase II : The Excavation at Chansean (1968-1969)

The excavation at Chansean was a cooperative project between the Division of Archaeology of the Department of Fine Arts and the Museum of Pennsylvania University, and was co-directed by Dr. George Dells and Mr. Somphon Yu-Pho, with Mr. Brennet Bronson as the field-director. The excavation was executed over six months time in two phases, one in 1968 and the other in 1969.

The methodology and techniques used in this survey and excavation, introduced and applied by the American archaeologist team to the excavation project, were innovative at that time. The technique was to study the layers of earth, to use carbon 14 to determine the date



of the artifacts, to analyze the pattern and style of the pottery, to take photographs and to carefully draw every detail of the artifacts as references for further study.

The excavation at Chansean was very successful. It revealed the development of the ancient communities from beginning to end, as well as their communications with external communities such as those in the northeast and in the western Chao Phraya Basin and with contemporary communities in the central region.

However, the archaeological team admitted that there were many questions that could not be answered and that a more thorough study had to be made to insure a reliable explanation about some artifacts. For this team, the excavation at Chansean was an introduction to the study of the Proto-History of Thailand.

### Phase III : The Research on Ancient Metal in the Central Plain

Referring to the archaeological excavation at Ban Tha Khae in Muang district of Lopburi in 1979 and 1983, executed by the National Museum of Lopburi and the Division of Archaeology of the Department of Fine Arts, it is evident that there were many small pre-historic agricultural-based communities that developed into large copper production-based communities and were contemporary with communities of the Dvaravati Period.

The Project of Archaeology in Thailand (Central Region) also made extensive surveys of contemporary archaeology sites in the central region and discovered that there were many pre-historic archaeological sites in the Lopburi Basin where traces of a copper industry were found.

In 1984, a research project entitled, "Ancient Metallurgy" focusing on the origin and development of the use of metal in Thailand, was executed by the Department of Fine Arts and the Museum of Pennsylvania University. In 1986 research on metallurgy at archaeological sites in the area of Wong Phrachan Mountain in Lopburi Province was executed. This project was co-directed by Dr. Vincent Pigott and Asst. Prof. Surapol Natapintu.



A seal on terra-cotta depicting men riding horses and waving their hands. The Pallava inscription reads "Vishnu and Siva Gods", found at the ancient city of Chansean.



A seal on terra-cotta depicting a man climbing a palm tree, found at the ancient city of Chansean.



A seal on terra-cotta depicting a figure, found at the ancient city of Chansean