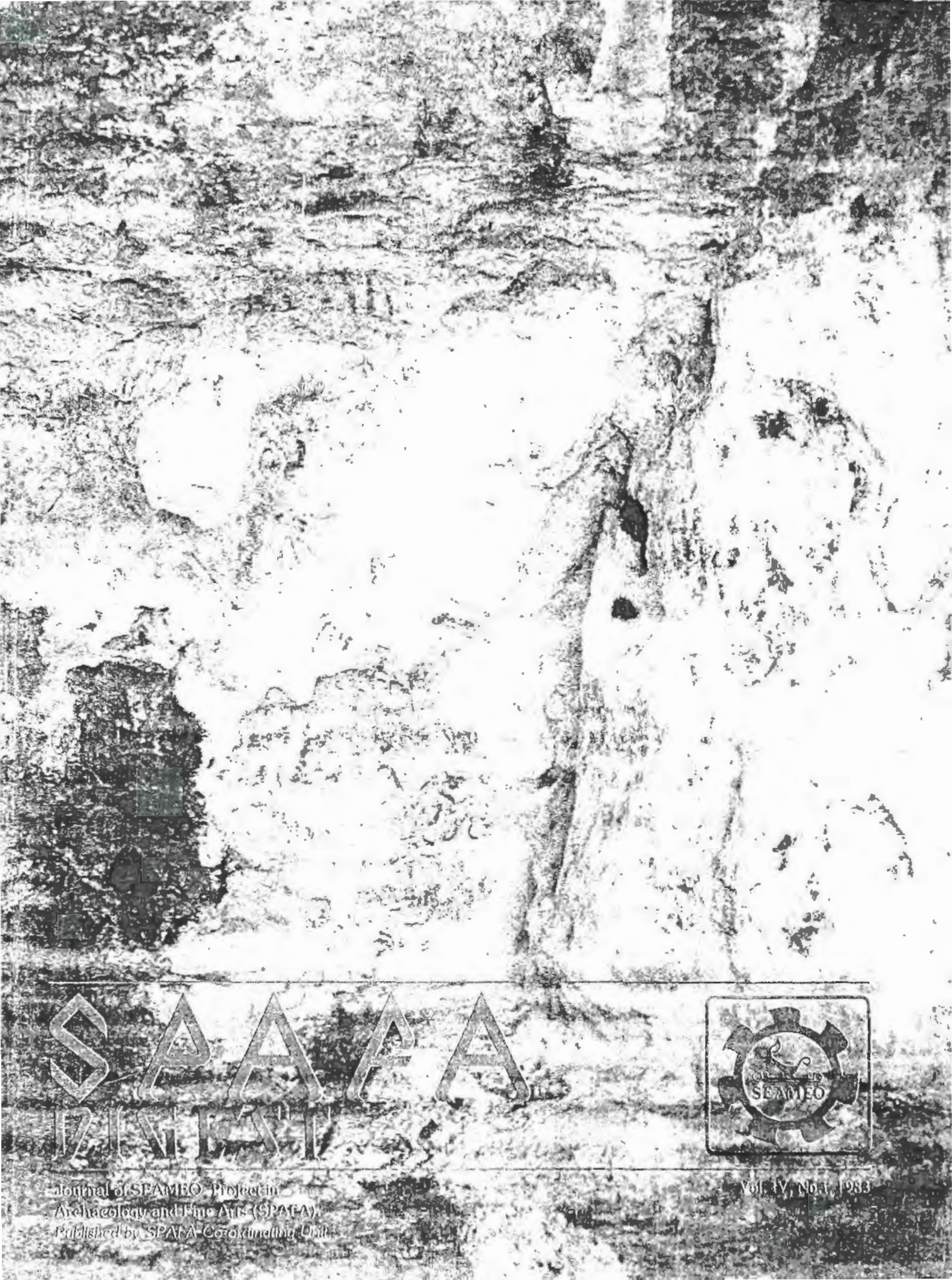


SPAFA DIGEST

Journal of SEAMEO Project in Archaeology and Fine Arts (SPAFA)
Published by SPAFA Co-ordinating Unit

Vol. IV, No. 1, 1983

SPAFA DIGEST

Vol. IV No.1 1983
ISSN 0125 - 7099

SPAFA objectives

The objectives of SPAFA are:

– To promote awareness and appreciation of the cultural heritage of the Southeast Asian countries through the preservation of archaeological and historical artifacts as well as the traditional arts;

– To help enrich cultural activities in the region;

– To strengthen professional competence in the fields of archaeology and fine arts through sharing of resources and experiences on a regional basis;

– To promote better understanding among the countries of Southeast through joint programmes in archaeology and fine arts.

Contents

The Cover

Boat-coffin burial site at Lamanoc Point, Bohol, Philippines. The site also contains one of very few known rock shelter paintings in the Philippines.

SPAFA Digest is published bi-annually by the SEAMEO Project in Archaeology and Fine Arts Coordinating Unit, Darakarn Building, 920 Sukhumvit Road, Bangkok 11, Thailand. This issue is edited by Felicitas C. Rixhon and printed by the Professional Publishing Co., Ltd. 2/2-3 Soi Kluaynam-Thai, Sukhumvit Road, Bangkok, Thailand. Tel. 392-9673.

The Identity of Thailand: Tracing Back the Past

by Pisit Charoenwongsa

Understanding a country as complex as Thailand is not easy. It requires some knowledge both of the past and the present — a comprehension of all the changes and forces that have given this country a civilization unique in its cultural and physical setting. It is unfortunate that the public and scholars alike have tended to accept oversimplified images and cliches about the people and society of Thailand without realizing that such judgments often lack an empirical basis. The fact that some scholars continue to present unsupported information about Thailand suggests either a lack of critical evaluation of scientific literature among scholars or a tendency to generalize among many who have researched and written about Thailand.

Archaeological data remain incomplete, and any reconstruction of Thailand's past inevitably involves some degree of speculation. According to noted British archaeologist Stuart Piggott, "We interpret the evidence in terms of our own intellectual makeup, conditioned as it is by the period and culture within which we were brought up, our social and religious background, our current presumptions and presuppositions, and our age and status." I hope in this essay to approach information about Thailand's past and present from an objective yet informed perspective and to present this little-known country in a clearer, more accurate light.

This is a combination slightly revised of two previous papers by the author; the first bears the same title as above and was published by the Fine Arts Department in a Diary entitled "Thai Cultural Heritage" for the years of 1981 - 86 ; the second is an introductory part to the Ban Chiang Catalog put out by the Smithsonian Institution et al. in 1982.

The author is a senior archaeologist at the Fine Arts Department of Thailand.

A Country Called Thailand

Facts about Thailand are necessary in any introduction to the country, known in the West at least as early as the 16th century, due to a widespread lack of awareness about the country and its change of names from Thailand to Siam and back again. This misinformation about Thailand extends to scholars as well, as I discovered one evening at The University Museum, University of Pennsylvania. At the end of a talk on Ban Chiang I gave there in 1975, a member of the audience confessed to me: "I hadn't realized that Taiwan had a site that fascinating." In addition to this problem of mistaken identity, the variety of names by which Thailand is known has also caused some degree of uncertainty in the public mind. Names which Westerners use interchangeably with Thailand include Sarnau, Xarnau, Sion, Ciama, Siam, Ansean, and even Asia. The Thai or Tai call the country the vernacular name, Muang Tai, Land of the Tai, or literally "Land of the Free." During the reign of King Mongkut in 1856, the region was known as Sayam or Siam until 1939, when the government issued its official English name as Thailand. The name was changed back to Siam in 1945 for political reasons, and Thailand was again revived in 1949 (Rong, 1973).

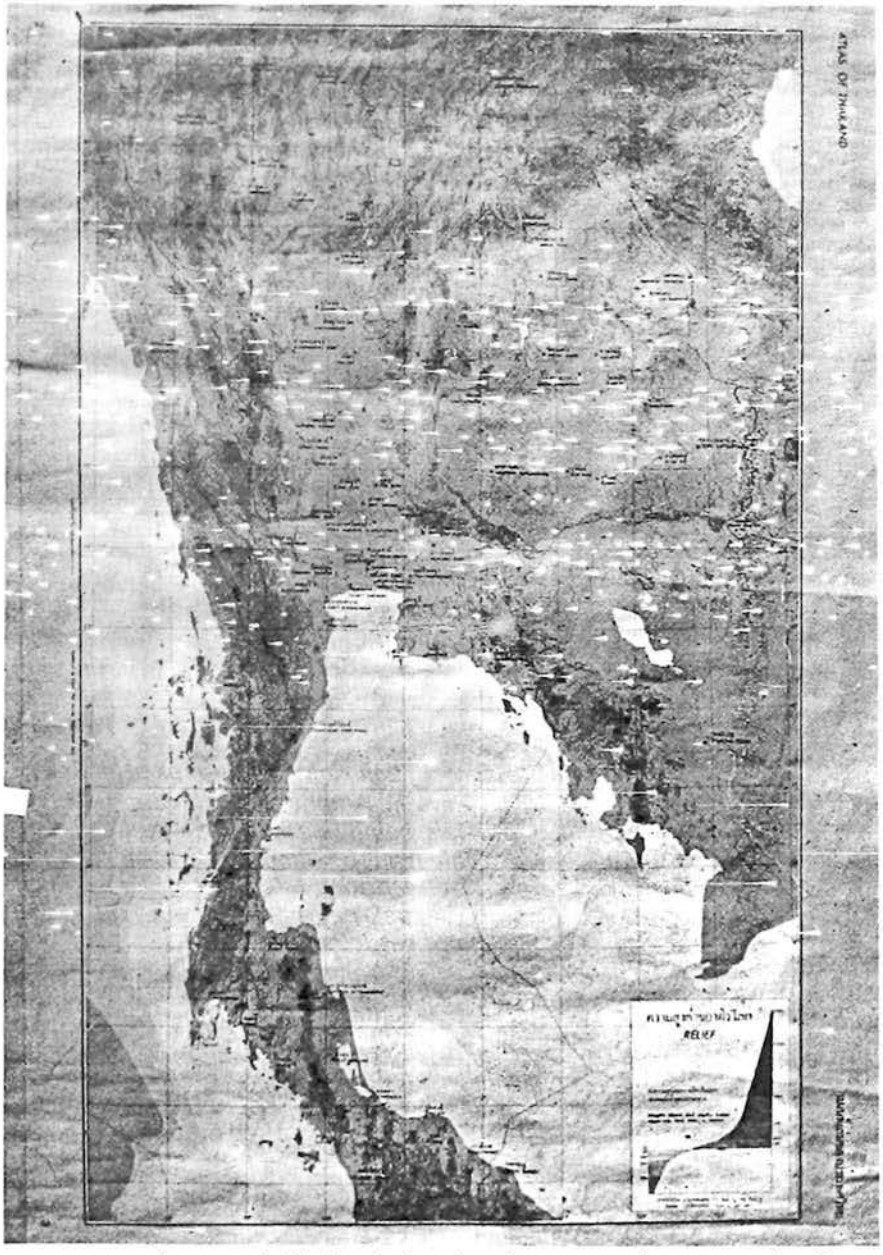
Land and People

Westerners, or *farangs,* view the shape of Thailand as the head of an elephant with its trunk pointing to the south. To the Thai people, however, the map of Thailand resembles the shape of an axe or a water scoop with which they were familiar thousands of years before they undertook modern agriculture. This axe-shaped country has an area of 513,000 kilometers, roughly equivalent to the size of France, Spain, or the state of California, extending from the latitude 5°37' to 20°27'N and from the longitude 97°22' to 105° 37'E Thailand's greatest length is 1,650 kilometers, its greatest breadth 800 kilometers; and it is bounded by the neighboring countries of Malaysia, Burma, Laos, and Cambodia, and by the Gulf of Thailand and the Andaman Sea.

Geologically, some structural areas can be distinguished. The northern region is characterized by a system of folded mountains, the northeast by the uplifting of the Khorat Plateau, and the central region by the Chao Phraya Basin. In

recent geological time, the southern region, part of the Malay Peninsula, was forcibly tilted slightly to the northwest. The western region is also characterized by hills and a high mountain range continuing from the western part of the northern region. The southeastern region, though it has flood plains of marine origin, is also rather mountainous especially in the east.

Except for the Chao Phraya Basin structural flood plains, though large, are extremely narrow. There are several main rivers forming a network that offer easy communication; their flood plains and low terraces provide the option of farming as a way of life. A hundred years ago, Bangkok was known as the Venice of the East because of its elaborate canal systems. As a tropical country, Thailand was, until recently, known essentially for its rich evergreen and deciduous forests. Now, many forests are much reduced due to unplanned expansion of agricultural lands and exploitation of lumber for building material, for illegal fuel, and of course, for export as a commodity. Upland forests no longer serve as climatic regulators or as soil and water conservators.



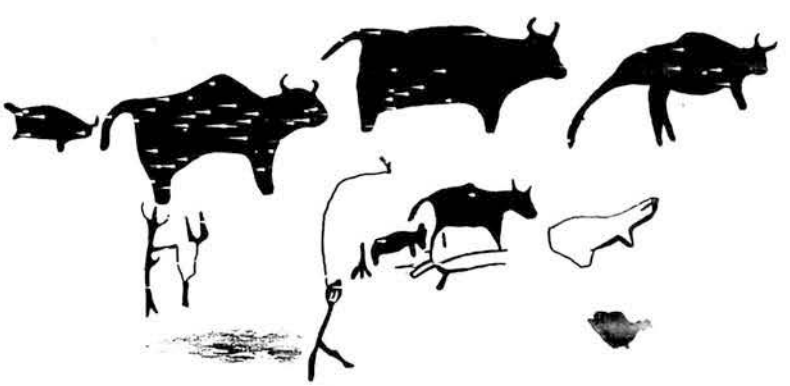
A map of Thailand showing the country's topography (from the Royal Thai Survey Department, 1976)

In general, Thailand has three seasons. The cool season, from November through February, corresponds to the northeast monsoon; in most parts of the country there is too little rainfall for agriculture during this season or the next. The hot season, from March to May, is dominated by hot winds and local storm systems that carry negligible rainfall. The rainy season lasts from May through October, corresponding to the southwest monsoon.

Thailand's population of forty-seven million people includes a variety of ethnic groups whose different cultures have been integrated harmoniously into one Thai culture. Each group has retained its identifiable regional characteristics and customs. Thailand has experienced less ethnic and racial discrimination than its many neighboring countries. Positioned centrally in Southeast Asia, Thailand has since prehistory hosted inter-regional movements and, hence, fostered interdependence among different peoples. Acceptance of obvious differences among its own people is an outstanding feature of the cultural character of Thailand. It is thus distubing to find the conception of Thailand among scholars as of a "loosely-structured society" (Evers 1969)

If the society is that ambiguously defined, one may wonder what holds the people together, and how did they meld into a nation-state. In fact, this widespread but mistaken notion, derived from a comparative study with Japanese society and combined with generalizations about the history of Southeast Asia, constitutes an inappropriate approach to serious research. Because different people have different histories and cultures, it is unwise and even dangerous to loosely compare various institutions to one another. Moreover, the theory below, a description of the

Thai people as viewed by yet another research team, indicates a lack of appreciation of Southeast Asian society: "Thais are better emulators than creators; better students than teachers; they have been borrowers rather than bearers of culture ... From many sources at many times the Thais borrowed cultural elements and have integrated them into their existing system, adapting them to match traits of their own character" (Moore 1984:3).



Top : A prehistoric rock painting (in red) excuted on a cliff nest to Maholan Cave in Amphor Phu Kradung, Chan - wat Loei, showing animals being hunted by a group of men, some of which probably can be identified as gorals and bantengs; others are not identifiable due to their state of preservation. Above : A rock painting at Tham Phu, Udon Thani, depicting a scene of cattle rearing.

Development of Archaeology

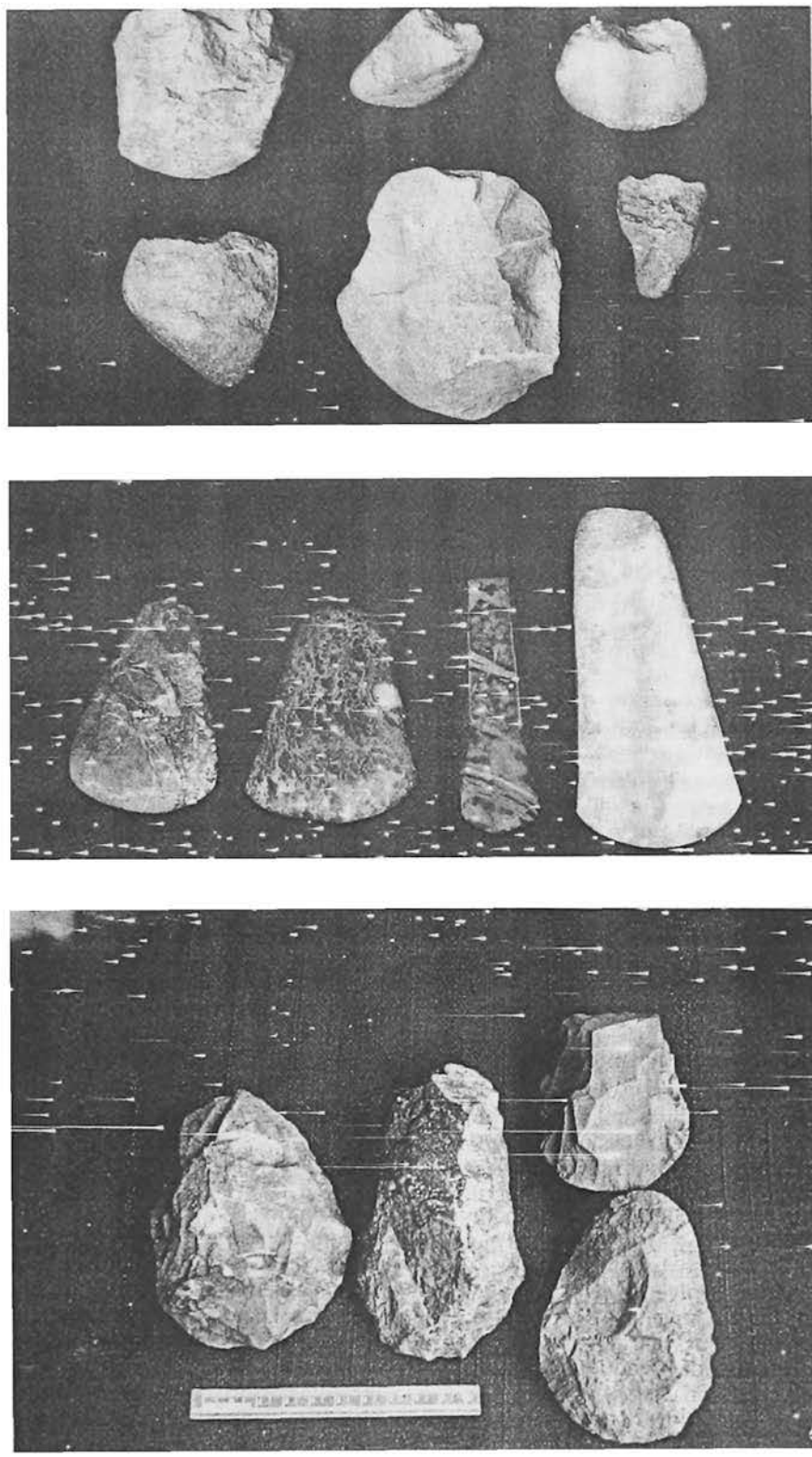
It is true that the past does not necessarily set a precedent or predict the shape of things to come. But the past can structure perceptions of the present and expectations of the future in the minds of policymakers. King Rama V (1868-1910) wrote about his predecessor's Royal Assignments in which *Borankadi* (literally archaeology) was included as a subject which the king attended in odd hour during peaceful times (King Rama V, 1932). Archaeology in the king's sense covered everything: ethnography, history, literature, and traditions. In 1907, toward the end of his reign, he established the Archaeological Club, three years after the inception of the Siam Society, which promoted and encouraged the study of the arts and sciences of Thailand. This interest in national heritage, achievements, and artifacts was continued by successive monarchs, including the present king. It is interesting to note that the first national museum in Thailand, which celebrated its hundredth anniversary a few years ago, grew out of a royal collection housed in the Royal Grand Palace. Partly because of the encouragement and advice of His Majesty, the King of Thailand, the site of Ban Chiang has become a multidisciplinary and multinational research program.

Yet as far as archaeology in the modern sense is concerned, interest among the Thai people seems to be more toward restoration of ancient monuments which are to a great extent identified with their religion, predominantly Buddhism. Prehistory seems remote indeed; it bears no direct concern with the present-day inhabitants of Thailand.

The Thai word for prehistory is of English origin; it was first used by Prince Damrong in the letters to his half-brother, Prince Narit, beginning in 1934. Information concerning the prehistoric population of present day Thailand was first recorded by a Frenchman about seventy years ago. It described rock paintings discovered in the south. Only a handful of Europeans resided in Thailand, mainly in Bangkok; most were members of the Siam Society and wrote articles on archaeological finds from time to time in the society's journal. Some started collecting polished stone adzes and soon acquired a greater number than the Bangkok National Museum. There was no serious professional study of archaeology until 1931 when Fritz Sarasin attempted his reconnaissance and test excavations of cave sites in north and central Thailand, searching for traces of earlier periods. As the country lies geographically between China and Indonesia where fossils of early hominids were found, Dr Davidson Black of the Peking University came during 1927-1928 to explore the possibility of northward migration of the pithecanthropus from or through Thailand to China, though no such evidence was ever found.

There were still no trained prehistorians among the Thais at this time. In 1931 when Professor Pietre Vincent van Stein Callenfells, director of the National Museum in Java, wrote the secretary to the king offering to train Thai officials in the field of prehistory, the offer had to be refused because the country then faced an economic crisis.

In 1947 the prehistory of Thailand made headlines because of the writings of H.R. van Heekeren, a Dutch archaeologist who had been captured by the Japanese during World War II, and who was one of the prisoners compelled to work on the construction of the Bangkok-Moulmein Railway. Van Heekeren found stone tools near Ban Kao on a river terrace and a number of polished stone adzes in neighboring areas that he believed belonged to the Paleolithic period. His reports were both scholarly and adventurous because of the strange

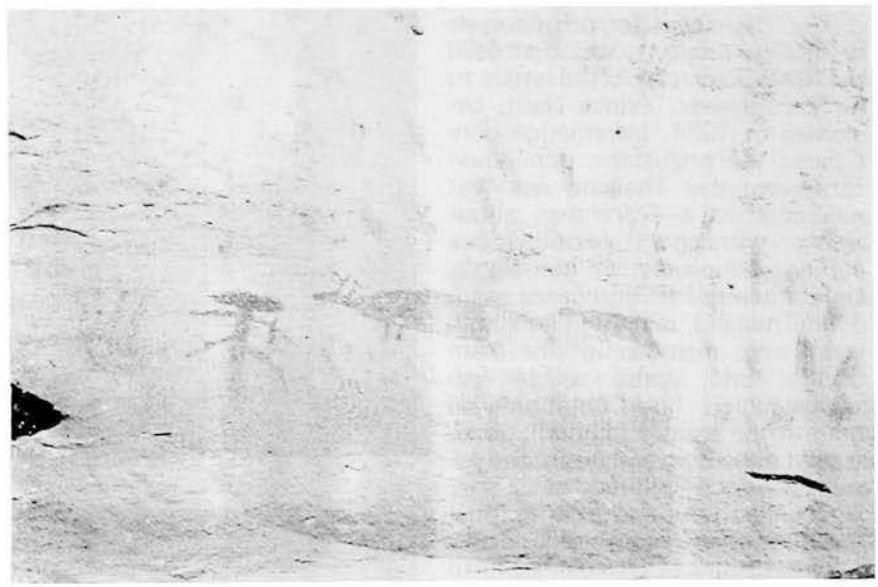


Forms of early cobble tools and polished stone adzes which are found widely distributed throughout the country.

circumstances surrounding his archaeological discoveries as a prisoner-of-war. One of his earliest reports appeared in an issue of the Illustrated London News in 1947, bearing the title "Stone Axes from the Railroad of Death."

The Council of National Culture met on March 4, 1953, to discuss the human skulls and stone implements recently discovered in a cave in Suratthani, Peninsular Thailand, and unanimously agreed on the importance of the finds to national heritage and toward the understanding of the history of mankind. Immediate study was postponed for lack of trained personnel. The council then recommended that the Thai Fine Arts Department be given responsibility for research and for training its staff to work in this new field of study. As a result, the Faculty of Archaeology, Silpakorn University, added prehistory to its curriculum in 1955.

At first, prehistoric information was received only through accidental discoveries and one or two preliminary surveys. Systematic research was unheard of until 1960, when a team of Danish specialists began working in Kanchanaburi in cooperation with Thai officials from the Fine Arts Department, who in turn gained considerable field experience. More familiarity with field work was gained by the Thais following subsequent joint expeditions with foreign colleagues: in 1963 with the University of Hawaii group led by Wilhelm Solheim and in 1966-1967 with a British team directed by W. Watson of London University. Now working on their own, the Thais have continued to engage in joint projects with colleagues from foreign institutions. Present projects include those with The University Museum, University of Pennsylvania; The University of London's Institute of Archaeology; The University of Otago in New Zealand; the Art Gallery of South Australia; and the Maritime Department of the Western Australian Museum. Each year foreign students have been granted permission to work and to carry out independent M.A. and Ph.D.-level research on Thai directed projects.



Cereal agriculture as depicted on a rock painting in Ubon Raithani

Through continued cooperation with able foreigners, a progressive increase in the quantity of research performed by Thai institutions and steady improvements in the quality of Thai researchers as measured both by publications and by advanced degrees from overseas universities, prehistory in Thailand has entered its adolescence and shows signs of future maturity. Breakthroughs appear increasingly probable as data and skills accumulate. It is likely that, before long, a better and more accurate image of the past in Thailand can be put together.

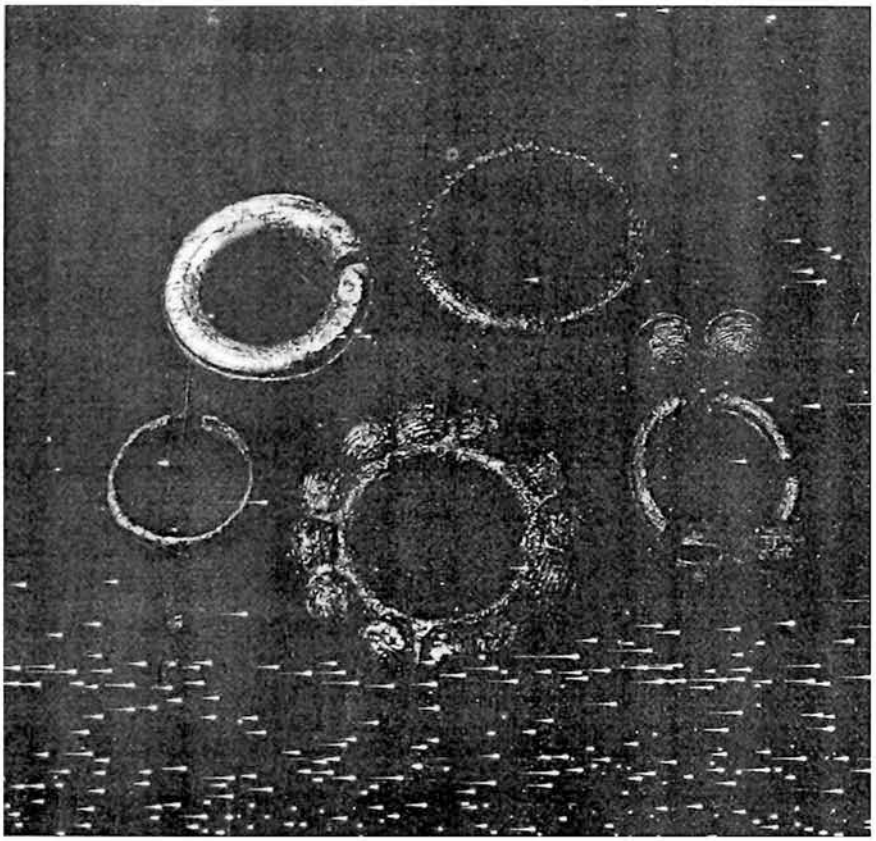
Hunting and Gathering Societies

Although Thailand is economically a comparatively poor country, it is undeniably rich in antiquity. As research continues, human history in Thailand seems to have begun earlier and earlier.

At various periods of glaciation and interglaciation in regions of higher latitude, Thailand experienced hardly any change in temperature, and was affected only in the oscillation of sea level which resulted in changes of landforms and of the biosphere. That the climate in Thailand remained fairly stable may be attributed to the fact that the glaciation took place at considerable distances from Southeast Asia. Man, however, seems to have readily adapted to these changes in geography.

During part of the Pleistocene and early Holocene, bands of hunter-gatherers were living in all regions of the country, exploiting rich natural resources in the vicinity of their camp sites and sometimes ranging far beyond them in search of certain game. This food-collecting economy was based on the hunting of game animals and the gathering of wild plant products. Ethnographic parallel suggests that such things as fruits, seeds, roots, leaves, insects, shellfish, fowl, small reptiles, rodents, etc. were gathered primarily by women and children while adult men were hunters of large game animals.

Around 12,000-8,000 years ago, some of the hunter-gatherers of Thailand began to adapt themselves to a new way of life. Chester Gorman's discoveries in Spirit Cave, Northern Thailand, throw much light upon this pre-agricultural way of life. In Layer I (12,000 to 8,000 years ago) only heavy tools of the earlier tradition were found. In Layer II (8,000 to 7,000 years ago)



Left : Certain types of bronze rings and bracelets. Right : Replicas for sale in shops at the site of Ban Chiang.

the presence of cord and netmarked pottery indicates the development of a great deal of new technology. Plant materials were apparently used to make cord and fish nets as well as to decorate pottery. We may infer that this facilitated the manufacture of fabric also. Flake blades found in this layer may have been attached to wooden handles to form sickles. Polished stone adzes appeared only in the upper layer.

Douglas Yen's list of 22 plant genera used by the Spirit Cave people includes edible fruits, vegetables, condiments, poisonous and oil bearing plants (possibly used as a source of light).

Early Farming Societies

Cereal agriculture may be safely placed between 6,000 and 7,000 years ago. Rice has been the staple food crop of Southeast Asia from that time to the present. Over a hundred species of wild rice can still be found in Thailand.

At the site in Ban Chiang, in the lowest laver (5,600 years ago), rice chaff was used in quantity as a temper in pottery. The quantity exploited tends to signify domestication of some sort, although morphological studies may not clearly distinguish wild from domestic forms at this phase of development. To present knowledge, the use of rice chaff and other plant stuff as deliberate inclusions in pottery is a tradition that continued into recent times.

These early farming populations were very advanced and must have evolved from a simpler and as yet unkown background. It is astonishing to find that around 2000 BC or earlier, the Ban Chiang and Non Nok Tha people had already acquired a knowledge of bronze casting techniques.

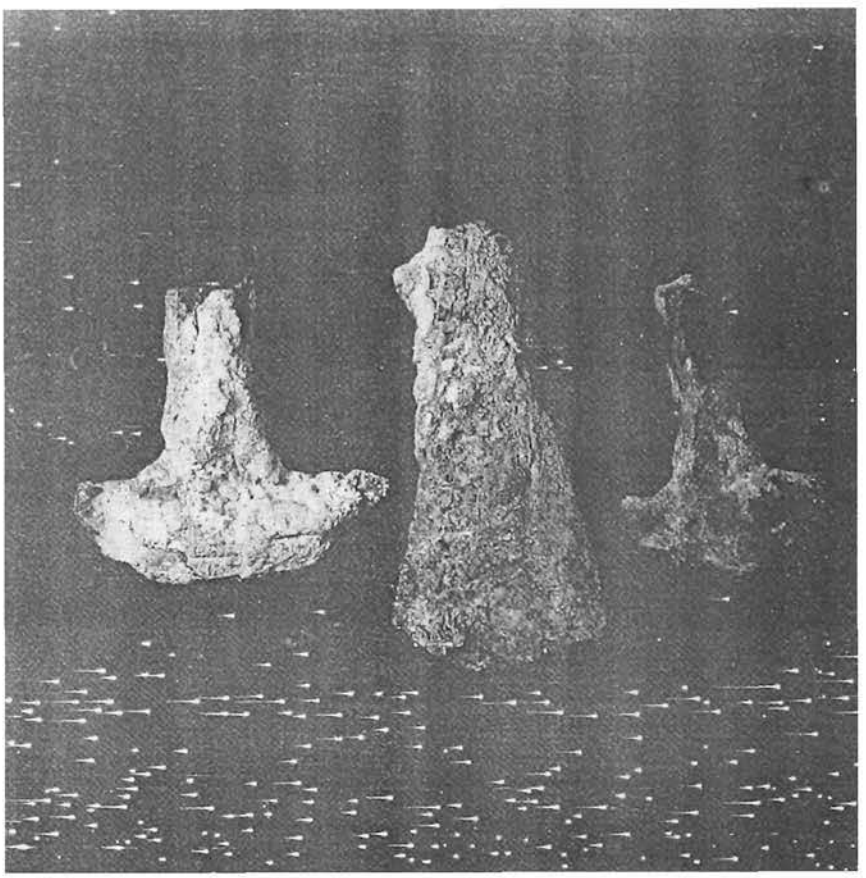
Early bronze implements and jewelry were made in forms similar to those made of stone, wood, shell and bone, whose use continued for some time after bronze was introduced. These items include arrowheads, fish-hooks, axes, rings, bracelets, hairpins, etc.

Startling as it is to discover the development of bronze technology at such an early date, it is even more astonishing to realize that iron metallurgy also appeared here centuries before it developed in other parts of the world. Iron blades cast on bronze sockets, as well as bimetallic jeweiry, were manufactured about 3,600 to 3,200 years ago.

Bronze and iron continued to be used into historic times. In quite recent times farmers were still producing their own metallic artifacts such as bells and spinning devices as well as vessels. Many of these are similar in form to their prehistoric prototypes.

The presence of post-holes uncovered at sites of this period seems to indicate that the dwellings of these peoples were not very different from those in rural communities in Southeast Asia at the present time.

Animal remains suggest that pigs, cattle, water buffaloes, fowl, and dogs were domesticated by the time that plant agriculture became dominant at most sites.



Types of iron tools found in many regions

Urbanization

A form of organization developed in Thailand at about the time of the beginning of the Christian era, possibly somewhat earlier. However, the way of life remained primarily agricultural, but with expansion of trade and communications. From 500 to 600 AD onward, defensive towns emerged as pseudomorphic states in many parts of the country. Most were cultural, religious and trading rather than "sovereign" empires or states.

Sukhothai, Chiangrai/Chiang Mai and Phayao, not to mention legendary cities claimed to be founded much earlier, became dominant centres of government in the north, in the 13th century AD. The administrative power shifted to Ayuttaya in the 15th century, and then to Bangkok in the 18th century.

It is clear that the agrarian state of Thailand grew out of its prehistoric roots. Its civilization evolved in a continuation of the patterns established by early agriculturists. Some of these may be picked out for special attention, such as farming techniques, handicrafts (pottery, carving, basket-making, etc.), bronze and iron metallurgy, pile-dwellings, and indigenous species of domesticated plants and animals. Today, people in rural areas still eat rice with their hands. Animism is mixed well with other religions such as Brahmanism and Buddhism. Worshipping of the Rice Mother Goddess (Mae Posop), for example, has never died. To these days, still, application of herbs and charms exists side by side with medical treatment in modern hospitals throughout the country.

This is Thailand, a country in which peoples of different ethnic backgrounds have melted their own cultures into one single system.

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The Boat-Coffin Burial Complex in the Philippines and its Relation To Practices in Southeast Asia

by Rosa C.P. Tenazas

A preliminary report on boat-coffin burial in the Philippines was read by the author in the divisional meeting on prehistory and archaeology of the 11th Pacific Science Congress held in Tokyo in 1966. Since then more data have been collected. The present paper is not intended to be comprehensive. However, a detailed report will be presented after a full analysis of associated skeletal materials which exhibit artificial cranial deformation has been made.

The phenomenon known as "boat-coffin burial" is a mode of disposal of the dead in hollowed-out pieces of logs generally in the shape of a boat. This was a widespread practice throughout Southeast Asia from prehistoric times and, in the Philippines at least, is known to exist in certain areas to the present.

This article is a reprint from the Philippine Quarterly of Culture and Society, Vol. 1, No. 1, March 1973, a University of San Carlos publication. The author is presently Assistant Coordinator of SPAFA.

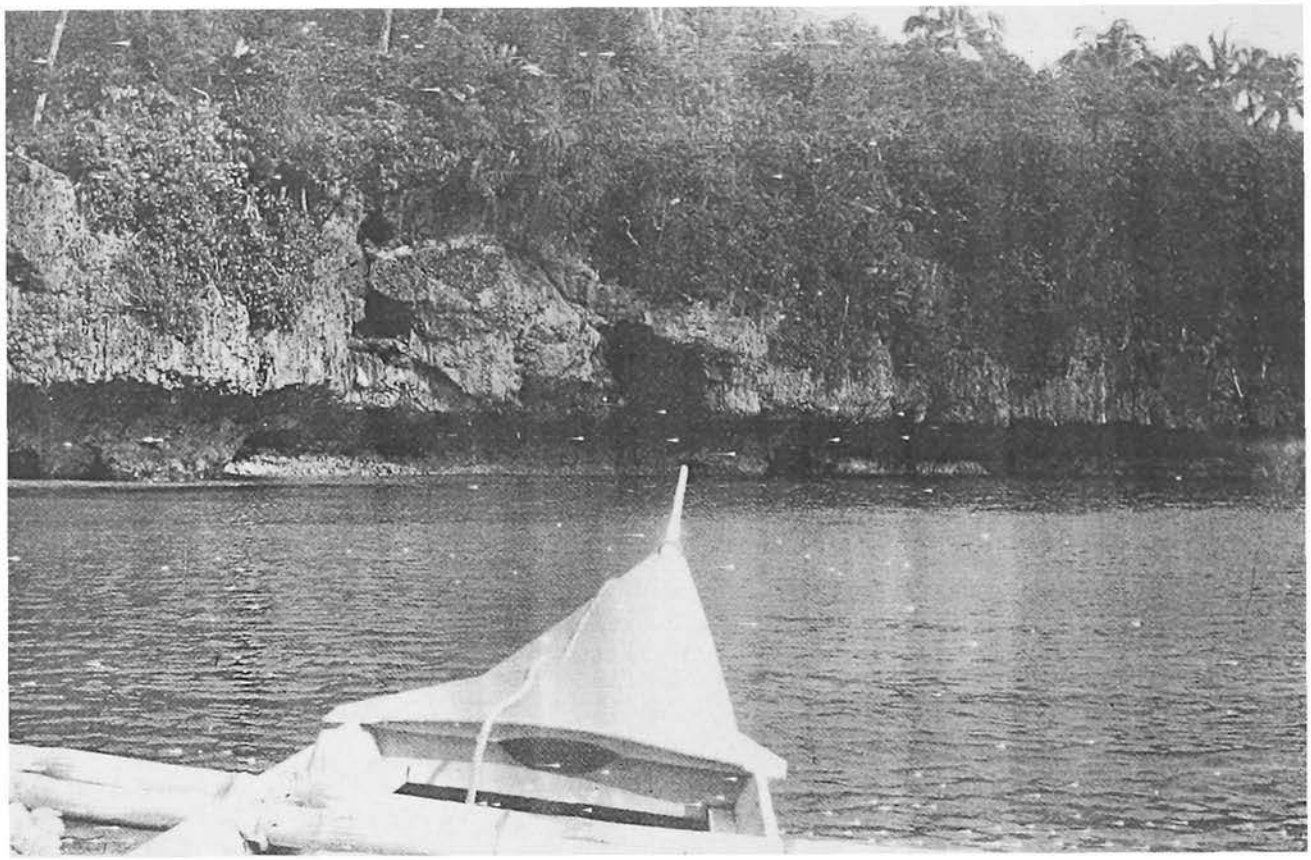
The practice of boat-coffin burial in the Philippines was briefly noted in earlier explorations by foreign scholars. However, the first mention of boat-coffin burial as such appears in Robert B. Fox's (1963) preliminary report of excavations in western Palawan. The earliest known archaeological explorations were conducted by Feodor Jagor and Alfred Marche in the late 19th century. Subsequent discoveries were made in the 1920's by American colonial officials. More systematic surveys such as the University of Michigan expedition headed by Carl Guthe and the explorations of H. Otley Beyer, the pioneer anthropologist/archaeologist of the Philippines (see Marche 1970, Guthe 1929, and Beyer 1947) followed.

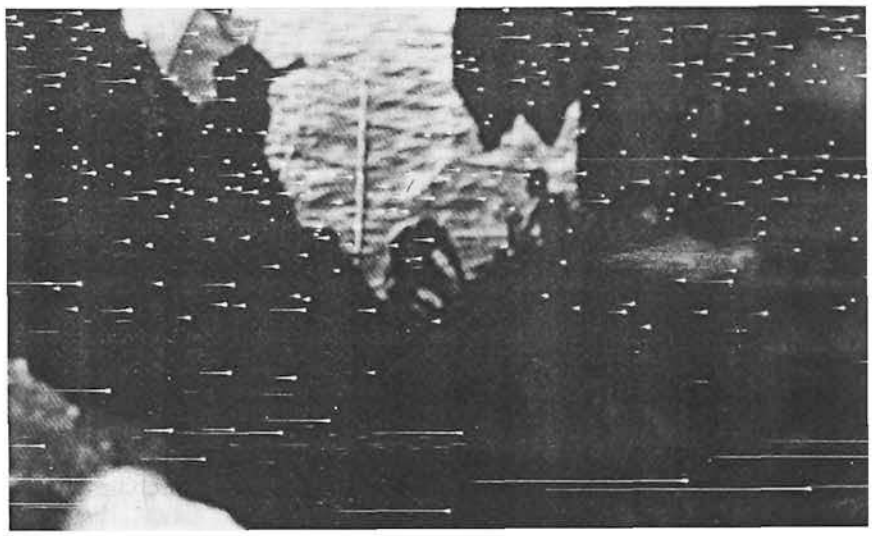
Previous to the present study, the distribution of boat-coffin burial in the Philippines had not been seriously considered. Neither had interest been sufficient enough to relate it to similar practices already reported elsewhere in Southeast Asia and Oceania (Doerr 1935; Vroklage 1936). In the mid 60's, simultaneous researches were carried out by the National Museum and the University of San Carlos in Cebu City on boat-coffin burial per se. The National Museum team explored the island group of Romblon province while the University of San Carlos team concentrated its researches on the islands of Cebu, Bohol, and neighboring islets. The researches themselves were a follow-up of surveys already reported by Beyer (1947).

Primarily on the basis of these researches and the summarized report by Beyer of earlier surveys (1947), at least fifty sites have been located. Forty of these are concentrated in central Philippines with the island of Bohol, so far, yielding the highest number of sites. The other islands in which boat-coffin burial is, at present, known to the author are: Mindanao, Luzon, Palawan, Negros, Panay, Marinduque, and Masbate. Type sites are caves and rock shelters, generally accessible from the sea.

Although early Spanish ethnography reports on large boats involving multiple burial, this type of burial has yet to be discovered. For instance, on burial customs among the Bisayans in central Philippines, a late 16th century account states:

> **In some places they kill slaves and bury them with their masters in order to serve them in the after life; this practice is carried out to the extent that many load a ship**





Top : Typical view of caves in limestone formations along the south and southeast of the island of Bohol containing boat - coffin burials. Above : View from the cave looking south

with more than sixty slaves, fill it up with food and drink, place the dead on board, and the entire vessel including the live slaves are buried in the earth (Quirino and Garcia 1958: 415 - 516).

Again, in the island of Bohol, it is said of a chief that he "had himself buried in a kind of boat, which the natives call barangay, surrounded by seventy slaves with arms, ammunition, and food – just as he was wont to go out upon his raids and robberies when in life (Blair and Robertson 40: 8-91)."

In the Rejang River area of Sarawak, Borneo, where the idea of a soul boat exists, certain structures for the repository of the dead are built. One type consists of a pillar or pillars into which niches are carved for the bodies of slaves and followers. In a hollow at the top is the jar which contains the bones of the chief (Roth 1968: 146-150).

Typologically, there are two kinds of burials: primary and secondary burial. In the first type the burial was made in wooden boat-coffin, if not in actual boat, and laid in a cave or rock shelter. Early ethnographic reports are not confined to descriptions of multiple burial. Instances of individual burials in boat-coffin are also mentioned. One account states that when a chief died among the Tagalog "he was placed beneath a little house or porch ... and afterward laid on a boat which served as coffin or bier (Blair and Robertson 7: 194). A more graphic description from Cagayan, Northern Luzon, is given by Quirino and Garcia (1958: 396):

> **They bury them in a hole two fathoms deep, four fathoms long, and a fathom and a half wide, where a *baroto* (boat) sawn in half (is buried): the lower half whole, and the upper (cut) in two pieces like doors; and a wooden piece through the same opening, two mats are placed on top and**

there they put small bits of areca nut, lime, betel nut. They put two, small blankets on each side of the deceased. Two tiny plates on each side. Small jars of oil and other fragrant oils. Two trays, one at the head and the other at the foot. Covering everything with earth, and later they build a shelter over the sepulcher.

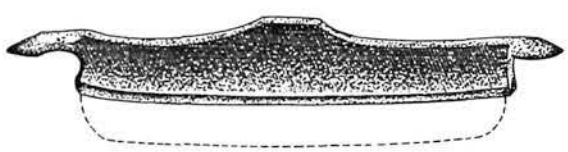
In secondary burial the skeletal remains, sometimes only the skull, were reburied either in miniature wooden boat-coffins or in jars. In one of the Batungan caves in Masbate, Warren Smith discovered along with a number of deformed skulls, a skull box carved with crocodile-head handles (Beyer 1947. 264-265). In 1881, Alfred Marche discovered an undisturbed secondary boat-coffin/jar burial cavesite in Marinduque. Inside he found piles of miniature wooden boat-coffins, averaging 90 cm in length and, behind these, stoneware jars of probable 12th-13th century Chinese export types also containing burials. His discoveries extended to the fact that multiple secondary burial as well as skull deformation was practiced (Marche 1970: 178-181). In the practice of secondary burial in boat-coffins, we see an overlapping of the widespread belief that the final journey of the soul cannot be effected until all the flesh has been removed from the bones.

The traditional boat-coffin later came to be replaced by a simple wooden coffin, cist grave, or jar. In Celebes, for instance, stone cist-graves are known as ***kalamba,*** meaning boat, while ordinary coffins carry the name ***bangka,*** another term they use for boat. In central Nias and in Sumba, boat terms for wooden coffins and stone urns are ***owo*** and ***kabang*** respectively, terms which also apply to wooden coffins in Kamera, stone urns in Lamboja in the Lesser Sundas (cf. Vroklage 1936: 727 ff.). In the north, in one of the islands of the Ryukyus, people have their coffins made in advance which they refer to as their boats (Kokubu and Kaneko 1962: 92).

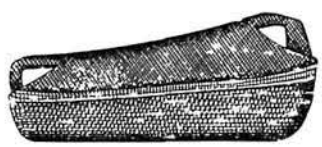
Generally, the boat-coffin in the Philippines is made of two parts (split-log fashion) carved out of certain species of hard wood. The lower portion is semi-circular in cross-section sometimes provided with perforated side projections for lashing the parts together. The lids or covers are carved like a saddle roof with ends curving upwards. Lizard heads decorate the projecting ends of lids seen in several Bohol and Cebu sites while the cro-

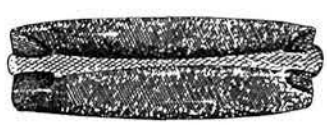
Boat coffin for primary burial Kuruswanan, Palawan. Robert B. Fox The Tabon Caves. p. 123, 1970.

Boat coffin lid, a specimen from the museum of Xavier University, Cagayan de Oro city.



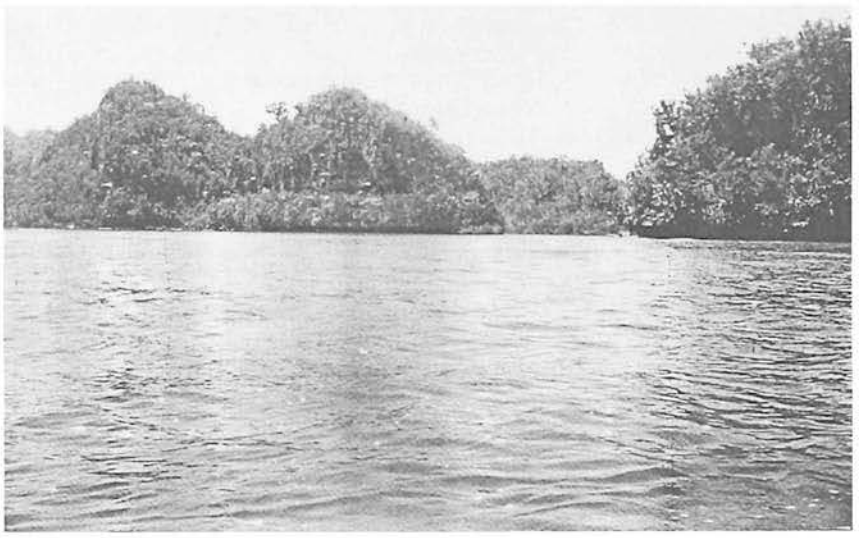
Lid of boat coffin with lizard head motif from Bituun Cave, Loay, Bohol.





Side and top views of a boat coffin with the stylized lizard form from the Tiangan grotto.

Stylized lizard coffin from Na-asug Cave, Lunsud Daan, Bohol.



Top left : Lamanoc Point Boat-coffin burial site with rock shelter painting in red hematite. The others : The rock painting from different views.

codile motif is favored in the Romblon sites. From two separate sites in Bantayan Island off northern Cebu and in a cave in Lamanok Point in Anda Bohol were collected small boat-coffins which are almost identical in the carving of their entire covers into stylized representations of a lizard. The average length of boat-coffins for primary burial is two and a quarter meters while boat-coffins for secondary burial measure only about ninety centimeters.

In Niah Cave in Sarawak, Borneo, a "ships-of-the-dead" chamber was discovered by the Harrissons (1958: 586 ff.). Scattered on the floor were what, at first, were mistaken for ordinary Dayak *perahus* or river boats. The carving on each was a "sabre-toothed dragon or tooth-bared crocodile." Against the wall were paintings in red haematite of representations of boats. In a tiny coral islet off the above-mentioned Lamanok Point site in Anda, Bohol, a rock shelter site was discovered by the author which yielded, perhaps, the first prehistoric rock painting in the Philippines. This is not to be compared to spectacular paintings which have been discovered in this part of the world. The paintings discovered in Bohol consisted of simple impressions of hands dipped in a mixture of red haematite. Natural concavities on the exposed limestone floor still bear encrustations of the red mixtures.

Up to the turn of the present century boat-coffin burial was known to be in practice among the Bagobo of Mindanao. Benedict (1916: 186-187) reports that :

> **It was formerly the custom when the datu died to carve the head and lid of his coffin into the shape of a crocodile's head. . . In ordinary burials, a conventional pattern of red or white cotton cloth is tacked on the black cloth that covers the sides and lid of the box, thus producing a highly schematic representation that is called *buaya*, or crocodile.**

It should be mentioned that the crocodile motif was also used among the Bagobo to ward off evil

spirits. In the Kinabatangan River area, North Borneo, boat-coffins with buffalo and lizard or crocodile designs were discovered by C.V. Creagh (Roth 1968: ccxi) who gave the following explanation:

> **Coffins ornamented with protruding heads of buffaloes or cows contained male skeletons, while figures of snakes, lizards, and crocodiles appeared to be used for the decoration of those of the women and children.**

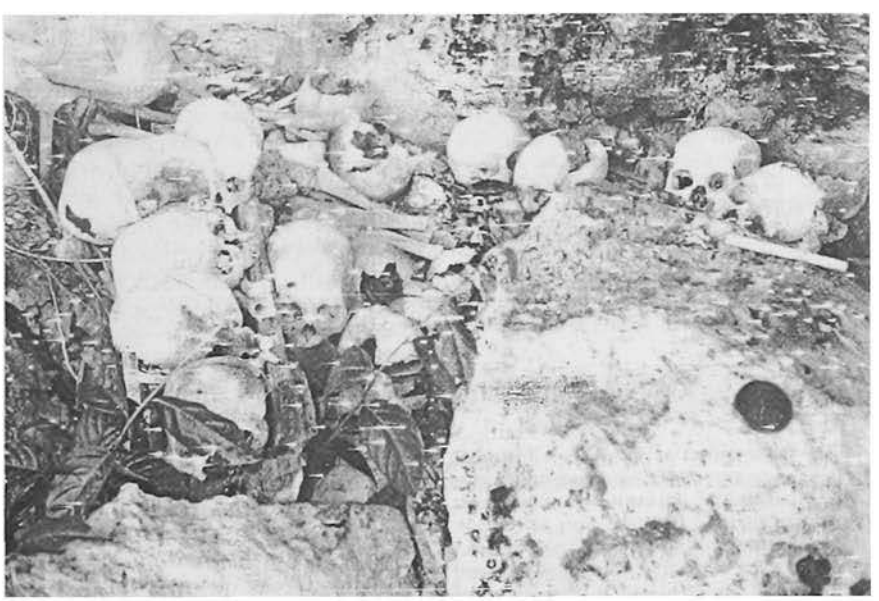
Due to the extremely disturbed condition of the sites investigated by this author, it has not been possible to make analysis along the same lines.

Skull Deformation

Of the known boat-coffin sites, at least seventeen have established association of artificial cranial deformation. Skull deformation, however, does not appear to belong exclusively to groups which practiced boat burial. From a privately dug 13th-14th century site in Liloan, Cebu, the author, in company with Leonisa L. Ramas and Margaret Sullivan, was able to collect five deformed skulls. Apparently the practice was also widespread among groups which practiced simple inhumation burial; two deformed skulls were previously collected by Ramas from a similar site in the island of Mactan off Cebu City. All the deformed skulls hitherto collected by this author were from definite boat-coffin burial sites in Cebu and Bohol. Additional information on site locations of artificial skull deformation can be obtained from Scott (1968:36).

It should be pointed out that the nature of the geography of the Philippines has not been favorable to cultural uniformity either in prehistoric times or the present (indeed this is also true of Indonesia and mainland Southeast Asia). Regional isolation resulted in a mosaic of subcultures each developing distinctively with occasional overlapping of one or the other associated trait. In a given cultural phase, say, the late Iron Age, contemporaneous groups with different burial traditions (e. g. jar burial, boat burial, simple inhumation burial and, perhaps, even cremation burial) practiced cranial deformation as well.

In the Philippine type of deformation, the anomaly is invariably situated in the frontal bone. It is fortunate that we are provided a partial explanation of the practice through analogy. The Melanaus of Sarawak, Borneo, have kept the traditional concept of a soul boat in



Right: A nest of deformed skulls observed from a boat-coffin burial site in Jilantagaan Island. Below : Two examples of cranial deformations practiced by ancient Filipinos who also practiced disposal of their dead in boat coffins.

connection with burial and, in addition, are also known to practice cranial deformation. The following is a graphic description by Aikman (Harrisson 1959: 85-86):

> **Among the female Melanaus a concave forehead was considered a sign of beauty and steps were taken to insure that the girls should conform to this ideal of Melanau beauty. While still in infancy the bones of the skull are subjected to pressure by means of an ingenious instrument known as *jah* or *api*. This instrument consists of a piece of hard wood about 2 ft long having holes bored through each end. First a cloth-covered weight is placed on the baby's forehead and on top of this weight is the hardwood jah. This is fixed to the infant's head by a cord extending through the holes at each end of the piece of wood and passing behind the head. The cords. . . are tightened by means of screws.**

Quoting from reports Roth (1968: 79-80) gives similar descriptions of the practice among the Melanaus:

> **It is considered a sign of beauty to have a flat forehead, and although chiefly practiced on female children, boys are occasionally treated in the same manner . . . I have often watched the tender solicitude of the mother who has eased and tightened the instrument twenty times in an hour, as the child showed signs of suffering. . . Before the child is twelve months old, the desired effect is generally produced and is not altogether displeasing.**

In another report it is said that :

> **The *tadal* (same as the jah). . . is only placed on the child's head during the time that it is asleep. . . Its use is first commenced when the infant is fifteen days old, and is continued until the third or fourth month. In the early stages only very slight pressure is applied, but gradually it becomes more and more severe. Only female children have heads flattened in this way.**

In archaeological context the only parallel of skull deformation known to this author is a single specimen from an urn burial in Anjar, West Java (Heekeren 1956: 200). Preliminary analysis of the deformed skulls collected by this author shows these to be of the female sex. The conclusion was based upon morphological observations following some of the criteria for distinguishing sex in skeletal material. Specialists are in agreement that, of all the parts of the skeleton, the pelvic bone yields the most reliable sexing information. When this is absent, a degree of reliability can be obtained from skulls by noting certain features such as: the round and sharply defined margins of female orbits as compared to the relatively low and indistinct borders of these in the male; comparative thickness of the male vault; pronounced supraorbital torus of male skulls as compared to moderate traces of these in the female; relatively slender and gracile zygomatic arches in female skulls; more developed mastoid processes in the male; and, finally, the general refinement of the female skull as compared to the male in terms of muscle attachments. Deformation unfortunately restricts the number of useful metrical recordings that can be obtained from the skull, cranial indices being of least value. Brothwell (1965) may be referred to for more information.

Lid of a boat coffin with the lizard motif being taken down from Bituun cave, Loay, Bohol

Ritual Uses of the Boat

There are at least three interpretations for the ritual use of the boat in Southeast Asia: as a means by which spirits of diseases are exorcised; as the shaman's vehicle in his search for the patient's soul; and its use in connection with the death ritual (Eliade 1964: 356 ff.). Since we are more concerned with the uses of the boat in connection with shamanism and the death ritual, we shall dispense with its use in the first category. Among contemporary marginal cultures in central and Southeast Asia which practice shamanism with strong cosmic orientation, the boat has become either a symbol for the cosmic axis or a substitute for the shamanic vehicle or the psychopomp. According to Eliade (1964:357), the idea of the use of the boat as a shamanic vehicle was an Indonesian innovation of the shamanic technique of celestial ascent. Thus among the Sea Dayak, when the shaman treats a sick person, it is believed that her soul goes up to the roof of the house and calls for her boat which is the rainbow (Wales 1957: 90-91). The Ngadju Dayak have a map of the afterworld which shows a soul boat traversing the sky by way of the rainbow while among the East Torajas the boat itself is interchangeable with the rainbow (Wales 1957: 98).

Boat coffin in Tiangan grotto in Jilantagaan island off northern province of Cebu: the form is that of stylized lizard.

The rainbow-bridge myth is familiar in early Philippine ethnography. In his Relacion de las Yslas Filipinas written in 1582, Loarca (Blair and Robertson 5: 129 ff.) writes on the death practices of the Bisayans:

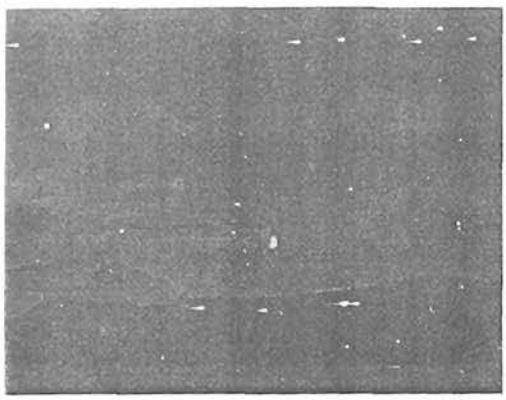
"The souls of those who are stabbed to death, eaten by crocodiles, or killed by arrows (honorable deaths) go to heaven by way of the arch which is formed when it rains, and become gods . . ." Further, it is said that "when the Yligueynes (inhabitants of Cebu and Bohol) die, the god Maguayen carries them to Inferno . . . in his barangay (boat)." The Tagbanua of Palawan also believe in a soul boat. According to them those who die in an epidemic are carried to the sky in ships-of-the-dead (Fox 1970: 114). Likewise, it is widely believed among the Bilaan of Davao in Mindanao that when the body starts to decay, it is time for the soul to sail away in a boat (Cole 1913:144).

It was previously mentioned that the motifs most frequently encountered in boat-coffins in the Philippines are the lizard and crocodile. An interesting interpretation of the beast, bird, and fish symbolism in Southeast Asia is given by L.G. Loeffler (1966). He states that in the tripartite view of the universe the underworld is represented by the fish (alternately, lizard, snake, or crocodile), the present world by the beast of sacrifice (buffalo, cow, pig, etc.), and the sky, by the bird. Alternately, the underworld as represented by the fish may also be conceived of as prenatal life while the bird symbol relates to the post-mortal state. The underworld symbols and the cosmic axis representations constitute what Raats (1969: 59-64; 87) calls the "horizon", where earth and sky meet.

The role of the boat symbol as an alternate to the rainbow is to connect the underworld with the skyworld. Since the bird represents the sky, the soul boats of the Ngadju Dayak are also shaped like hornbills (Loeffler 1966, after A. Steinmann: Das kultische Schiff in Indonesien 1941; see also Wales 1957: 90-91). Likewise, the Lhota and Konyak Naga bury their dead in hornbull-decorated coffins which they call boats (Loeffler after J.P. Mills: The Lhota Nagas, 1922 and H.E. Kaufmann: Deutsche Naga Hills Expedition 1939). At this point we recall the famous Dongson drums in which representations of soul boats carry bird-shaped men (Wales 1957: 58). Van Heekeren (1958) shows a drawing on a kettle drum recovered from Sumbawa of a soul boat filled with bird-shaped men. The bird, fish, and beast symbols are clearly represented here.

As a final illustration of the original meaning of the ritual use of the boat in connection with death, we have a Neolithic jar cover found in Tabon cave in western Palawan

Spirit boat on the jar cover from Manunggul Cave



An almost identical stylised boat coffin recovered from Na-asug Cave in Laugsud Daan, Anda, Bohol

(Fox 1970). In it are two figures sitting in a boat, the one behind (the shaman?) in the act of paddling the spirit of the deceased, represented by the figure in front with arms crossed over the breast, to the afterworld. This soul boat is presumed to originally have a mast (cosmic tree?). According to Eliade (1964: 357-358), the role of the boat in the ecstatic journeys to the afterworld, either to carry the dead or to search for the patient's soul, is manifested by the presence of the cosmic tree in the shaman's boat. An excellent illustration may be seen in Wales' (1957:91) figures of Ngadju Dayak boats-of-the-dead.

It has been suggested that boat-coffin burial was a development by riverine and maritime peoples of Southeast Asia who thought of the boat, alternately with the rainbow, as carrying the souls of the dead to the afterworld (Wales 1957:98). As the idea diffused farther to Oceania, it appears that a modification took place. Here the concept behind the canoe burial seems to be tied up with memories of distant migrations and of the subsequent return to the land of the ancestors. This idea is dramatically demonstrated in the orientation of the corpse when this was set out to sea in its canoe coffin: the feet point to the direction where the ancestors are believed to have come from (Doerr 1935: 746; Vroklage 1936: 755).

Boat-coffin burial in the Philippines is too complex to assign to it a single source of origin. The types encountered here are the result of the convergence of different traditions in the process of diffusion.

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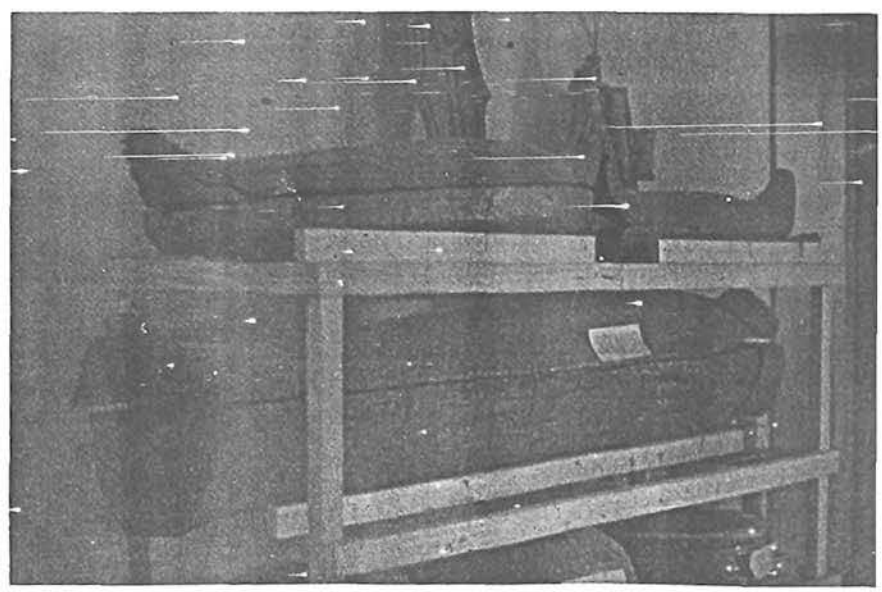
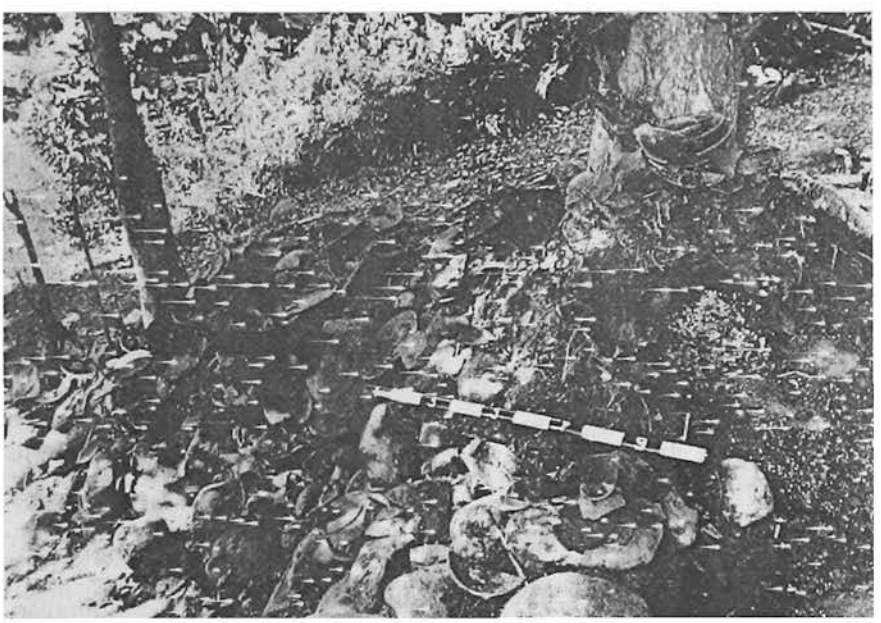
Samples of boat coffins in the collection of the museum, Xavier University, Cagayan de Oro, Philippines



Mountains and Caves in Art: New Finds of Terracota Miniatures in Kudus, Central Java

by Sri Soetjami Satari

Early in 1978 an archaeological team of the National Research Centre of Archaeology was sent on an expedition to the north coast of Central Java. They came back with a report that they had found many terracotta fragments in the village of Jurang, about 10 km. north of the town of Kudus. As a result, another team was sent to undertake an additional survey and excavation at Jurang, hoping to find the clue to the identity of the finds. Here follows the account of the research undertaken during a period of two weeks.



Site of finds at Jurang Kudus: earthenwares are found half-buried in the ground.

The Site and the Finds

Kudus, the capital town of the regency, was once the bustling centre of Moslem religious activities. Derived from the word *al-kuds* meaning holy or pure[1], Kudus is, according to Poerbatjaraka, the only town in Central Java bearing an Arabic name. However, Kudus must already have existed before the Moslem period[2]. Some of its archaeological remains still show traits of Hindu influence, such as the minaret of Kudus with its decoration of pottery dishes and the winged gateway.

A reprint of the Monograph No. 15 of the Bulletin of the Research Centre of Archaeology of Indonesia, Jakarta 1981. The author heads the Classical Department of The National Research Centre of Archaeology, Jakarta.

The 14th century Nagarakartagama mentions names of *simas* belonging to the Majapahit domains, among which is the sima Suci[3] which also means pure or clear. Some of the place-names may refer to Central Java. Since none of the names mentioned, including Suci, can yet be identified, even though Kudus and Suci have the same meaning, it would be rash to assume that Suci and Kudus are one.

Other towns in the area still retain their Old Javanese names such as Demak, Lasem, and Juwana. A thorough investigation of the geographical names mentioned in the Nagarakartagama is still to be done.

The terracotta miniatures are found on the slope of a hill which people called the ***punden*** (holy place) of Pundisari and is still considered to be sacred. On special occasions, such as a wedding celebration or when someone has just recovered from a serious illness, people make offerings in the form of earthenware plates or pots with covers containing coins and flowers. Thus, with the passage of time, a huge pile of earthen plates, half buried in the ground, was formed on the slope beneath a tree, near the place where the miniatures were found

Despite the promising surrounding, the results of the excavation proved to be very disappointing. Only a very small number of unidentified potsherds were dug out from the five excavation boxes measuring 2 x 2 metres. The team became convinced that the miniatures had actually originated elsewhere. From information gathered from the eldest man in the village, it came to light that they were transported from the surroundings of a nearby mosque which was rebuilt in 1940. The peculiar offering of plates also seemed to be a tradition at the place where a saint called Kyai Sukun was entombed.

About 90 large and small fragments of terracotta have been excavated and all are shaped in the form of hollow mountains or hillocks and made of bricks carved with caves and small holes. The following pieces are the most interesting finds in Jurang:

1. A fragment 37 cm. long, 33 cm. high and 19 cm. thick depicts a mountainous scenery. The large mountain top has collapsed, but two hill tops still remain, standing side by side. The base of the hills is decorated with a pair of caves, topped by a stylized intricately carved kala head. This kala rests on a bed of rocks indicated by small holes on the surface; behind the rocks, on the body of the mountains, incised lines are carved to denote creepers.

Above : Terracota depicting hills with floral decoration. Below : Terracota decorated with stylized kala head.

2. A fragment (length 28 cm., height 23 cm., 8.5 cm. thick) represents oblong cave-openings which decorate the base of the mountains, framed by straight stemmed curly floral top. The mountain top has the form of a stylized elephant head, beautifully carved. More than five fragments decorated in this manner have been found.
3. A fragment (23 cm. long, 25 cm. high, 24 cm. thick) represents a scenery of small mountain peaks. A five-pillared hanging structure on a platform seemingly squeezed between the mountains is carved on the slope It has a square roof with diamond-shaped tiles, but only the frontsides are carved. The four ridges of the roof with their uptilted ends are decorated with rib-formed ornamentations as we still see in Kudus today.

   These five-pillared structures are sometimes depicted on Hindu temple reliefs[4] and sometimes used as decorations on mosques built in the transition period such as Mantingan, Sendangan and Sendangduwur[5]. They represent a sacred building.
4. Another fragment shows traces of a platform with six pillars. Unlike the five-pillared structure, this one denotes a living quarter or a profane building[6] .
5. An interesting fragment forms a part of a side corner where a single mountain is depicted: two sides of the base are hollowed to represent caves. The caves are not carved at the base of the central mountain, but at the base of two hills, having respectively the form of a sitting owl or bull (part of the head is damaged) and an unidentified animal sitting *dos-a-dos* entwining their tails together .

6. Naturally shaped animals also enliven the scenery. A deer is seen sitting on top of a hill and another fragment shows a sporting dog leaping up toward the bushes.

Although throughly fired, not all of them are carved on the entire surface. A part of the terracotta which is supposed to be hidden from the public is sometimes deliberately left plain, or is left unfinished except for some incised outlines.

Based on these descriptions, we can conclude that:

1. All miniatures depict mountainous scenery or ***gunungan*** decorated with stylized floral patterns.
2. Parts of the gunungan consisting of hills or hilltops are sometimes shaped into animal forms, such as an elephant's head, a lion and other fauna which usually frame a cave, thus replacing the floral motifs.
3. The reliefs of fauna which are detached from their decorative function and depicted as living creatures in the woods are shaped in their natural forms.
4. The five-pillared structure represents a hermitage, whereas the six-pillared pavilion depicts a resting place.

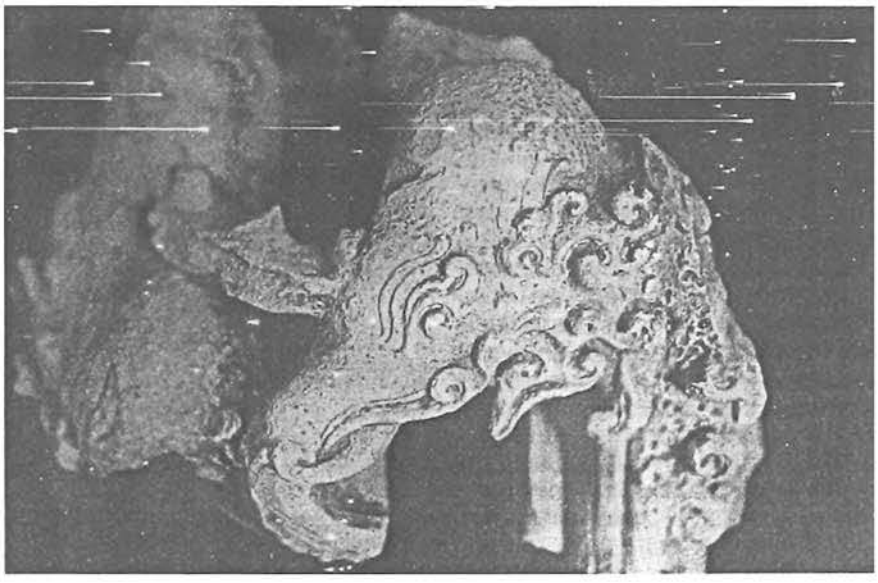
The questions that these evoke are: when were these terracotta miniatures produced, what influenced their form and style and what was their purpose? The answers require a deep penetration of the cultural and spiritual life of ancient Indonesia.

Cosmic Mountains

From the beginning of the first century, Indonesian culture has been exposed to Indian influence. Indian religious systems and values merged and fitted smoothly into the already formed Indonesian community. This influence extended also to other forms of religious expression such as language, architecture and the arts. The adaptation of the Indian culture in each region occured in different ways. Central Java for instance displayed a mastery in handling and modifying Indic-tradition and styles[7], whereas East Java showed more indigenous traits.

One common feature found throughout Asia was the importance placed on the role of the mountain which symbolized the cosmic mountain. The Hindus believed that the axis of the universe is centered around the cosmic mountain, called the Mahameru, on top of which stood the palace of Brahma. Indra, lord of the heavenly beings, had his grove on Mount Sitanta, on the slope of the Himalaya, whereas different classes of gods had their abode in rocks and cave houses. The caves were also places of worships, retreat and congregation[8]. The ancient Chinese thought the earth to be square and flat, marked by five divine mountains, placed at the four corners of the earth, and one at the centre. The gods were thought to walk on their summits[9]. The Cambodian believed that the mountain was the axis of the universe. It was symbolized by a temple built on top of a natural or a constructed mountain[10].

The Indian tradition regarding the cosmic mountain underwent some modification in Indonesia. The *candi* became a symbol of the cosmic mountain as well as the seat of the gods. A special form of the Mahameru with either five or nine peaks was much preferred. There even existed the legend on the transportation of the Mahameru to Java, the top of which became the nine-topped Mount Penanggungan[11]. A smaller replica of the



Left : A stylized elephant's head and a fragment of a pavilion. Right: A "hanging hermitage" looking over the hills

An armta container with a mountain-top shaped cover from Blambangan, East Java

nine-topped mountain was found at the bathing-place of Jalatunda. It had the form of a central spout surrounded by four medium-sized smaller spouts. Between the small spouts, four other still smaller columns were placed crosswise[12]

Mountain – shaped objects used for religious purposes were also found. In China there was the typical 'hill' jar, a burial pot from the Han period[13] having a cover representing the magic mountain. Religious significance expressed in arts and crafts can also be perceived, for instance, in the bronze water-jars and bronze ewers dating from the Singhasari period[14]. The water-jars consists of a globular body and a mountain - shaped lid decorated with rocks, whereas the ewer or the water vessel has a lid with many tiers suggesting the replica of Mount Mahameru. A *naga* spout and rock motifs complete the ornamenta - tions.

A similar example is provided by a terracotta amrta container from Blambangan, East Java. The body of the pot is decorated with hillocks and lotus plants shaped into five stylized garuda heads and with the figure of a hermit sitting in front of a cave. A mountain with many peaks tops the whole piece.

Mountain, rock and vegetation motifs were also a much preferred ornamentation of other objects, such as dagger sheaths, batiks, the gunungan for wayang performances, etc[15]

The religious value attached to certain kind of art objects seemed gradually to decrease at the onset of the Majapahit period. A terracotta miniature from Trowulan depicts a landscape with a hermit sitting in front of his hermitage and awaiting the arrival of a visitor. The latter is approaching through a path leading up to the hermitage. Round stones and trees adorn the scenery. The square base and the hollow interior is similar to those objects from Kudus. This piece must have graced some nobleman's abode, though. The sacred character of the artifact is obviously less when compared with the amrta vessels.

Majapahit Art

The period of the Majapahit empire corresponded with the bloom of the second phase of classical art when indigenous characteristics prevailed in architecture, sculpture, literature and other arts. It also witnessed the flourishing of 'miniature' art. Artists created small objects made of stone or terracotta, shaping them into figurines of men, animals, shrines and houses similar to those depicted on the terracotta of Kudus. Sometimes they were modelled in a very lively fashion.

In the Indus valley, where many terracotta figurines have been found, the objects were generally used for worship[16] Terracotta figurines and miniature shrines and houses were used in China as burial gifts[17] This seemed also to be the tradition in several places in East Java and Bali. In the surroundings of the stupa of Sumberawa in Malang and the cave of Siti Jedog, Blitar, both in East Java, for instance, were found terracotta figurines which appeared to be used as offerings for deceased persons[18] In Bali, people still offer figurines made of flour and terracotta during temple festivals. However, this practice has gradually declined, and the figurines have become mere decorative art objects.

However, no painting of the period survives[20] It is plausible that the absence of painting is due to the perishable materials that were used. There are, nevertheless, prehistoric paintings still in existence in other areas of Indonesia, such as the cave and rock paintings in South Sulawesi and West Irian?[21]Paintings from the Islamic period known as ***wayang beber*** or scrolls depicting puppet play stories also exist.

Kalangwan is a song in praise of nature[19] The beauty of nature has always attracted painters and poets not only of ancient Indonesia but of the world. We have ample proof of the existence of poems or *kakawins* from the classical (Hindu-Buddhist) period in which the poets lavishly glorify the beauty of nature in their songs.

The old Javanese poets used to roam the country-side with their writing instruments, consisting of the *tanah* (a kind of writing slate) and the *karas* (a board or tablet). In praising the beauty of the landscape, they frequently alluded to it as being in human or animal forms. Sometimes, they used the reverse allusion: the animals appeared as vegetation. In the **Arjuna Wiwaha,**

A terracota incense burner from Camara, Ceribon

The winged gateway at Sendangduwur, Lamongan, East Java

for instance, the mountain was described as an ascetic wearing a robe of clouds and a large cap resembling a breadfruit tree[22]. The charms of nature were not only sung by the poets, they were also carved on temple reliefs and sculptures such as at Prambanan, Panataran and other temples.

The tradition persisted in the ensuing period, when Islam religion and culture became integrated into the existing societies. Islam did not bring about much change in the cultural life of the people. Although mosques started to be built in the coastal area in the sixteenth century, the builders of these religious edifices still employed sculptors who used to do the carving of the temples. It was, therefore, not surprising to find several parts of a mosque or a tomb decorated with motifs which were popular in the previous period.

The stone medallions on the walls of the old mosque and cemetery of Mantingan, about 12 km. south of Japara, Semarang, are decorated with reliefs depicting mountainous scenery with fauna, flora and pavilions which remind us of Trowulan. Since orthodox Islam forbids the representation of living beings, only the plants retain their natural form. The animals are depicted in a stylized form and seem to mingle with the foliage surrounding them[23]

Similar decorations are found at the cemetery of Sendangduwur, Tuban, East Java, where they are carved on wood. Reminiscent of classical art are the winged gateways, which symbolize a flying garuda and at the same time a mountain and a tree of life[24]

The art of Majapahit expanded along the north coast of Java, where it is called the art of ***pasisir*** (coastal area)[25], and so similar artistic traits are found in Trowulan, Sendangduwur, Tuban, Kudus, Japara, Ceribon, and Banten. In the palace of Kasepuhan in Cirebon, for instance, we find a sculpture of a mountain of rocks as decoration. Sunyaragi has a rock garden where the rocks in some places are shaped like an elephant.

The elephant-rock which slightly resembles the elephant-shaped hills on the relief of Kudus is also found on a terracotta incense-burner from Ceribon The space between its legs are filled with reliefs of plants on hillocks. The legs look more like lotus tubers from which the elepant has pulled out a blooming lotus stalk.

Date and Function of Terracotta Miniatures

Before considering further the functional significance of the terracottas, we will place them in the sequence of art history in accordance with their physical features. On account of the landscapes depicted, adorned with pavilions, mountains and caves which are shaped into an animal or other creature form, the terracottas could be considered a continuation of the Majapahit art. The tradition must date from the hightide of the Old Javanese literary life, when the deer was inseparable from the hermitage's life and the dog from the hunting scenes in the woods.

For comparison, we will refer to some lines mentioned in Old Javanese kakawins, which range in date from the tenth to the eighteenth centuries. The relief of the 'hanging hermitage' which seems to be squeezed between the mountains will fit nicely into the following canto(sorandaka: 1939:1:5):

Liwat ing margasengkamanggih pajajaran/lilangungang kaaksi/ri wijil ing arka/ri agra ning parwata. . .

Its English translation follows:

Leaving the steep path behind, upon a recluse they came/how beautiful he looked, like peeping down on his surroundings it seemed/at sunrise/(when the sun) emerged (behind) the mountain-top. . .

The Arjuna Wiwaha (1926:11:2) also mentioned the existence of a resting pavilion: ***alas katemu sanggraheng tamuy an amalaku jawuh tanggaling kapat;***[27] translated as: In the woods they found a resting pavilion provided for the guests who might be caught in the rain while travelling in the rainy season.

Elephant-shaped rocks were common features in the kakawins, as shown in canto XV:9 of the same

poem:... *ring mapasir mapandan akarangs liman asemu leyep tininghalan.*[28] .The translation follows ... the beach, the pandanus shrubs, and the rocks resembling elephants were nearly too hazy to behold.

Aftificial mountains and caves were also known by poets as described in the Smaradahana, canto IV: 16: *Kulwan-kidulnya gainaga linurah hawanya. Endah gunungnna, ginawe minaha guhanya*[29]

It is translated as follows: in the southwest part was laid out a dry ricefield with a cleaned-up path. The (artificial) mountains and caves being beautifully shaped.

Since some animals are depicted in a natural manner, which Islam would never allow, the miniatures must have originated from the classical period. Some of their characteristics, such as the floral elements, are closest to the art of the sixteenth century Mantingan. Hence, it can be concluded that they were made in the late classical or the transitional period, the approximate date being the late fifteenth century.

This corresponds with the fact that the site of Jurang lies only about 12 km. south of Kudus, where the Islamic culture flourished in the sixteenth century, and only a few kilometres north-east of Demak, the first Moslem kingdom to succeed the Hindu kingdom of Majapahit.

Just as the Majapahit period miniatures depicting a mountain became a more decorative element for homes and other structures afterwards, the terracottas of Kudus must have also served a similar function. They were put inside a niche or against a wall to show only the ornamented part. The gunungan or miniature mountain, at first a symbol of the holy cosmic mountain, became a mere ornamentation, the dream of a poet made concrete by the hand of an artist.

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Continued on page 45

A Few Observations on the Use of Ceramics in Indonesia

by Satyawati Suleiman

In Indonesia the study of ceramics is still in its initial stage. Mr Orsoy de Flines[1] who started a collection of foreign ceramics before World War II wrote a few reports and a catalogue. Mr. Abu Ridho[2], who succeeded de Flines as curator of the ceramics collection at the Museum Pusat in Jakarta, prepared a few articles and the text of a large art album of the collection.

Local pottery has been mentioned and described by some prehistorians who made surveys and carried out systematic excavations. Dr. H.R. van Heekeren[3] was one of them. Many Indonesian archaeologists worked with and learned from him. When he was compiling his data on burial methods in prehistoric Bali and writing his doctoral thesis, Dr. R.P. Soejono[4], at present the head of the National Research Centre of Archaeology, studied under van Heekeren for many years. In his thesis, Dr. Soejono describes the earthenware pots which served as funeral furniture in graves together with other objects. Younger prehistorians are also studying ancient ceramics in great detail. It is now accepted that other fields of archaeology can also benefit from the study of excavated ceramics and ceramics sherds. Excavations recently carried out by the Classical Archaeology Division, headed by Mrs. Satari and by the Islamic Archaeology Division, headed by Mr. Hasan Ambary, have yielded many ceramic sherds which are now being intensively studied in order to date the excavated sites.

An attempt is made in this paper to collect data[5] that relate potsherds with the historical sites where they were found.

This is an edited version of the publication issued by the Pusat Penelitian Purbakala Dan Peninggalan Nasional in 1980. It came from a paper presented by the author at the Symposium on Trade and Pottery in East and Southeast Asia held in Hongkong on 4-8 September 1978.

The author is a Senior Researcher of the National Research Center of Archaeology of Indonesia. She is also the SPAFA Governing Board member for Indonesia.

Local Ceramics

Prehistory

Manufacture of earthenware pots had already started in the mesolithic or sub-neolithic stage (van Heekeren 1972)[6]. In this period, people had already settled on seashores, lakes or riverbanks, and in caves and rockshelters.

In the Gua Lawa cave near Ponorogo (Central Java), cord-marked potsherds were found at a great depth together with bone spatulas. These spatulas, says van Heekeren, were used for peeling wild or domesticated yams and tubers. There were also ill-preserved human skeletons, but the only funeral gift found was a necklace of drilled shells around a child's neck. It appears that at that stage pots made by the paddle and anvil method were not yet used as funeral gifts. Kitchen utensils were of course still in the form of leaves and bowls of coconut husk. Bamboo and gourds or, perhaps, large shells were used as water containers.

Progress in pottery manufacture started at the neolithic stage when people lived in permanent settlements and practiced agriculture. Van Heekeren found at Kendeng Lembu, East Java, polished stone rectangular adzes and a great number of plain potsherds. However, this site did not seem to have been a neolithic settlement but the site of a neolithic workshop; no traces of village life was found.

In Kalumpang, upstream on the Karama river N.W. Sulawesi, 706 plain baked brown potsherds were found with rectangular adzes, ground oval axes, spearheads, arrow

heads, knives, unfinished stone adzes and "planks", one stone bark cloth beater, etc. One sherd had incised stylized human figures.

During the Bronze-Iron Age which coincided with the first appearance of Indonesian toponyms in foreign records, around the beginning of the Christian Era, pottery was evidently used for burial purposes. Prominent people seemed to have been buried in flexed position in large jars, whereas common people were buried in earth. Van Heekeren investigated large ceramic jars found at Anyer (west coast of West Java). They contained skeletons and gifts of earthenware consisting of one jar, two 92 mm. - high dishes, and a globular bowl. In the same area, a systematic excavation he carried out yielded potsherds, probably belonging to urns, and fragments of human bones and skulls. This site was obviously an urn cemetery. Van Heekeren dated this graveyard back to the second or third century A.D. (van Heekeren 1958)[7].

Urn burials were also found in Sumatra, in Lesung Batu, Tebing Tinggi (S.W. Sumatra). The urns contained human bones, and in one of them was an empty brown-red beautifully polished jar. The decoration of the jar consisted of meanders and fishbone motifs identical with motifs on bronze objects.

In Sulawesi there were several sites of urn burials. In Central Sulawesi people were buried in stone urns, called *warugas,* which were found near stone statues. The dead were provided with pottery. A tall (111 cm.high) earthenware urn was found. It shows that secondary burials, wherein the remains of a person were first buried or kept in some place and afterwards put in an urn, were practiced in the place.

Van Heekeren also refers to a report by Schroder of 1912, concerning three earthenware urns found in the southwestern part of the island of Salayar. They contained broken human bones and ornaments: beads of semi-precious stones, a ring, three bracelets, an earring of bronze, and a few golden leaves (found only in one of the three urns).

A most important find was an urn cemetery in the island of Sumba. The urns were all globular jars, some with straight necks and mouths of varying width and others with necks curving outwards to a lesser or greater degree. Their covers were sherds, broken pots, inverted jars or bottles. The flasks were highly polished red or dark-brown with long slender necks. As the jars were decorated with motifs usually found on bronzes, van Heekeren dated this cemetery to the bronze-iron age, though quadrangular stone adzes were discovered among the funeral gifts. A spindle indicating the practice of weaving was also found. There were many skulls among the human remains, which was proof of a secondary burial.

In Gilimanuk (Bali), Soejono (1977) excavated graves filled with skeletons. Among the funeral gifts were bronze axes, ornaments and earthenware pots. The excavations were conducted several times throughout a period of more than ten years.

... the pots were associated with death and life (lotus plants) rising from death.

History

Local pottery was still produced and used in the period when there were already contacts with India and China and foreign ceramics were already finding their way to Indonesia, though still sporadically. On reliefs of 9th century temples in Central Java, for example on the Borobudur and Prambanan, local pottery is seen used as water containers. A famous scene on the Borobudur relief is of women fetching water from a pond. They carry small round pots on their heads. The Buddha, in another scene, is presented milk in a pot by Sujata before he reaches Nirvana. Another shows pots being stacked in a shanty (Bernet Kempers 1977)[8], and on one other, pots being made by hand.

Excavations on temple compounds also yielded earthenware pots. The sacred spot of the compound has a buried pot as a temple depot. Also on eastern Javanese reliefs, local pottery are depicted as water containers. Trowulan, the site of the ancient town of 14th century Majapahit, still has earthenware pots in the soil. One excavation produced a bottomless earthenware pot which had been the top of a well. Trowulan is also famous for its terracotta figurines and ornaments which at one time embellished the houses of Majapahit.

The statues from the Majapahit period which were intended as images of worship of deceased kings and queens had lotus plants rising from pots flanking the royal figure[9]. In the case of Singhasari royalty, lotus plants were seen rising from their tubers. It appears that the Majapahit statues had representations of Chinese pots, apparently *martavans,* which in Kalimantan are still used as containers of human remains. Perhaps the pots were associated with death (pots) and life (lotus plants) rising from death[10]. On ancient mosques in Java, the *mastaka,* the top piece of their many-tiered roofs, was made from terracotta[11].

Modern Times

Though modern technology has entered Indonesia, local pottery is still produced and used in large quantities. In the markets, there are always stalls which sell large earthenware pots as water containers. Dishes are often still cooked in earthenware pots *(kendil).* Certain dishes, such as the *gudeg,* a curry of young jackfruit specially popular in Yogyakarta, are said to taste better when they are cooked in an earthenware pot. The *serabi,* a kind of pancake, is baked in an earthenware pan with a lid. The *ikan pindang* is fish cooked in large earthen-

ware pots and kept inside for sale. Incense burners are also made of clay, and so are flower pots. The kendil still keeps the drinking water cool in many households.

Ceramics are used in all aspects of a man's life. When a child is born, the placenta is placed in an earthenware pot and buried. It is considered to be the younger brother or sister of the newborn baby. In weddings in Java, when the bride and groom meet in the ceremonial way, the bride has to wash the feet of the groom. She pours water perfumed with flowers over the groom's feet from an earthenware kendil after he has stepped on an egg. Before a funeral, earthenware pots are broken and shattered on the path where the body has to pass before entering the funeral carriage.

For sacrifices, earthenware pots are still used. Sometimes only the potsherds are offered, as in the "copper offering" in West Java. This offering is given when a house is about to be built particularly when the ground slopes southwards. As the south is associated with Kala and the red colour, everything has to be red. Flowers are offered on a red-copper plate, together with a red chicken and sherds of red pottery[12]. Local ceramics, besides being household utensils, are therefore also associated with tradition, sacred places and sacred situations.

Foreign Ceramics

Foreign ceramics have been found all over Indonesia. A great number of foreign ceramics, even a few Han, are in the Museum Pusat in Jakarta. They have been described by De Flines (1949 and 1974) and by Abu Ridho (1977). It seems that a great number were found in the islands where the much desired commodities were produced or traded such as benzoin and camphor in North Sumatra, pepper in South Sumatra, gold in Central and West Sumatra, spices in the Moluccas, and sandalwood and other aromatic woods in the islands east of Bali.

Foreign ceramics were said at first to have been used for barter or as presents to prominent people. Only later were imported ceramics used as household utensils such as plates, bowls, vases, incense burners, etc. These were then the cheaper ware.

In some places, ceramics were used for burying the dead. This practice was found at Kalimantan where whole cemeteries with martavans were excavated[13]. These martavans, originally used to ferment cassava or rice *(tapi)* or to contain food or water, were associated with death in the tradition of the prehistoric Indonesian ancestors. It was also used in Sulawesi but only for kings and prominent people.

In Java, imported porcelains were used specially for decoration. Tiles were inserted in walls as decoration in ancient Majapahit (found in Trowulan, see Abu Ridho)[14]. The walls of the mosques at Demak also had decorative tiles. In Cirebon, porcelain dishes were affixed to the walls of the buildings on the Sitinggil compound of the ***keratons*** of the Sultan Kasepuhan and Kanoman. On the walls of 14th century Candi Panataran in Blitar, East Java, are medallions with decorative motifs mostly of mythical animals; this could have been influenced by the trend of using imported dishes for decoration[15]. The habit of inserting porcelain dishes in walls is still prevalent in some temples of Bali.

Foreign ceramics are among the heirlooms kept by Indonesians. They receive the same treatment as krisses and lances; at set times, they are taken out of storage and given a bath in water perfumed with flowers.

Since when have foreign porcelain pieces been used for daily and ceremonial purposes in Indonesia? Does the presence of great numbers of porcelain sherds reveal the presence of the Chinese or is it only an indication of an intensive trade with China? These are the questions which will be discussed presently.

Ceramics Reveal the Past

Ceramic pieces when whole are, of course, nice to behold, but they cannot tell us where they were originally used in Indonesia after having arrived from abroad. In the course of time they could have changed hands several times. In only a few places, such as South Sulawesi, have ceramic pieces been dug out from the soil.

Ceramic sherds, if found in great numbers on ancient sites, can help date the site and reveal certain aspects of the economic or social life in the past. We have selected for discussion three areas where many ceramic sherds have been found and where actual research and excavations have been carried out. They are: South Sulawesi, Palembang and Riau and the eastern part of the north coast of Central Java.

In Java, imported porcelain wares were used especially for decoration.

South Sulawesi

In 1948, Orsoy de Flines analyzed ceramics and ceramics sherds found in several parts of South Sulawesi. Most of the finds could be dated from the 13th till the 18th century; one, however, belonged to the period before the 10th century. In Bone, bowls, boxes and dishes from East China and Thailand manufactured in the 14th and 15th centuries were found. A small urn (half porcelain, oblong box) contained the remains of bones. The urn came from Fu-kien in the second half of the 16th century. In Watampone, 10 per cent of the sherds were originally from finer pieces from Central and Eastern China — porcelain and porcelain-like earthenware from the 14th and 15th centuries of Lun Tsuan old Te-hua, Ying-tsing and Tze Tseu. "No ceramics for commoners", was de Flines' comment[16].

A systematic excavation was carried out in 1970 by Uka Tjandrasasmita at Takalar. The dig was sponsored by a group of distinguished persons interested in the study of porcelain, several of whom later on joined or helped to found the Ceramic Society. Though not so many objects were found (the ceramics being inexpensive wares), the conclusion drawn from the research was quite important. It proved that the ceramics found indeed served as funeral gifts and were buried together with the bodies.

Until that time illegal excavators had dug up pots, in the process scattering the human remains, thereby, dissociating them from the funeral gifts. The ceramics from this site were from the 15th-16th centuries A.D. and included Sawangkhalok and Annamese as well as Chinese wares. As the skeletons were furnished with inexpensive wares, it was inferred that commoners were buried in these graves. Prominent people were usually buried in jars as noted in the jar-burials in Anyer [17]

In South Sulawesi, however, the bodies were buried in foreign ceramic pots, a status symbol in South Sulawesi. Van Vuuren in 1912 found urns in which the ashes of Buginese kings were buried even as late as the 14th century[18] The cremation of Buginese kings is mentioned in historical manuscripts, written by the Buginese themselves. The Buginese, though lacking inscriptions on stone and copper, have left many manuscripts which they called *lontaras.* They recorded everything in their diaries and chronicles, from administrative measures, political events, to wars and marriages. The Chronicle of Wajo (Noorduyn 1955), a principality in South Sulawesi, recorded that a king was cremated lying on top of his shields. For this reason, he received the posthumous name of *Matinroe rikannana* (he who is resting on his shield). It mentioned that the ashes were afterwards put in a pot. "It was perhaps the last cremation of a Wajo souverain", according to Noorduyn[19] since the Islamization of North Sulawesi had then begun. Moslems do not cremate their dead, but bury them.

... ceramics were ... also used to mark the closing of a treaty between two kings.

Hadimuljono, an archaeologist now in charge of the conservation and safeguarding of the antiquities of South Sulawesi, saw in Soppeng, on the grave of a deceased king, a ceramic piece as a tombstone. According to him, ceramics were in the past also used to mark the closing of a treaty between two kings. They were broken as an oath was sworn. The words spoken were: "If this treaty is broken, so will the party breaking the treaty be destroyed for seven generations" (Hadimuljono 1978)[20]

The presence of many ceramics and fragments in the area clearly indicates the existence of a thriving trade with China. As Sulawesi was on the way to the spice islands (Moluccas), the sandalwood islands and China, it was natural to expect a thriving seaport at South Sulawesi. Though the people knew no Sanskrit, they had the advantage of possessing their own written characters with which they could keep their accounts and write their diaries, chronicles, etc. The principalities of South Sulwesi might have been mentioned in the Chinese annals, but if so, the transcriptions of their names remain to be investigated.

Palembang and Riau

Though these two places do not form one area, we have nevertheless taken them together since they are both associated with the ancient 7th century Srivijaya Empire. G. Coedes[23] identified Palembang as the ancient site of 7th century Srivijaya (Cheli-fo-che) for most of the inscriptions were found there. Though many scholars have accepted his view (Krom[24], De Casparis, Wolters) a few still seek the ancient site in another place. Moens[25], referring to I-tsing's information that in the city of Srivijaya a man cast no shadow at noon, located it in Muara Takus near the equator (0.20 N.W.) which fit the description. Roland Braddell[26] located Srivijaya in the Malay Peninsula, while M.C. Chand[27] thought it was in Southern Thailand, in the Chaiya area.

In 1974, a team composed of Indonesian archaeologists and three archaeologists from the University of Pennsylvania, including B. Bronson, carried out a systematic excavation in several spots of Palembang where they expected to find evidence of 7th century habitation, especially in the form of ceramic sherds. The results were negative for testpits at Bukit Seguntang, Air Bersih, Geding Suro; and Sarangwati yielded only Ming porcelain of the 15th-16th centuries[28].

A trial excavation carried out by the same team near the site of Muara Takus (Riau) produced similarly meager results. Again there were no 7th century ceramic sherds.[29] The same results were obtained by a team from the Pusat Penelitian Purbakala (The National Research Centre of Archaeology) in 1976; only Ming porcelain sherds were found.[30]

Does this mean that Srivijaya was neither in Palembang nor near Muara Takus? Could there have been another reason for the absence of the debris which should have been left behind by a city inhabited for centuries? Should there have been excavations on other spots as, for example, on the bank of the Musi river? Should one look in the mud or water for towns and villages situated on river banks are flood-prone? Even one flood can destroy a whole area, as we still see happening in Sumatra. Is it right

"... why [did] evidence of commercial contacts with China and India appear so late".

to expect Chinese and other porcelain as early as the 7th century?

We have some thoughts to bring forward. Perhaps the thousand monks who, according to I-tsing, were studying in Srivijaya at the end of the 7th century were not Chinese, but Indonesians. They could have used bamboo and leaves as plates for their meals[31], and coconut husks, seashells, gourds, and bamboo as containers for their water. Neither did they build stupas of brick for in a tropical rain-forest area wood was used. Hence, the sanctuaries and monasteries were made of wood with grass and palm leaf roofs as those in Bali. The "cells" for the monks would have looked like the very simple and modest wooden huts on stilts which one still encounters in a few *pesantrens* (Islamic boarding schools) in North Sumatra (South Tapanuli). Our survey team happened to pass by a very large pesantren at Purba Baru, South Tapanuli, in July 1978. Some 2000 students lived there. Every two students shared a hut where they cooked, studied and slept. Another pesantren of the same style was found at Padang Lawas in 1975.[32] The compound, with the same kind of modest huts, was located near Biaro Bahal I, a brick temple which dates back to perhaps the 13th or 14th century.[33]

The monastery or monasteries of Srivijaya, having been built in the same simple style, would not leave much debris, nor would the "city" which was either on the bank of the river or even on the river. The people would have lived in the same way as the people of Sungsang, a village partly on the water and on the riverbank on the mouth of the Musi, 90 km. from Palembang. We visited Sungsang in July 1978. As regards Muara Takus (Bernet Kempers 1959 pl. 198), the brick temples we see now are not necessarily the same as those of the 7th century. The main compound could have been somewhere else; in the 7th century one would expect wooden buildings for temples and monasteries. Again, even though Muara Takus was the sacred place for worship and pilgrimages, the capital was not necessarily there. In Java, the capital of the 9th century Sailendra kingdom was perhaps not near the Borobudur but rather in the plains of Prambanan. In 14th century Majapahit, the royal palace was near Trowulan while the king went to pray at sanctuaries in Malang and Blitar. Another possibility is that the capital of Srivijaya was not always in the same place.[34]

The Northeastern Part of Central Java

Orsoy de Flines wrote a report in **Oudheidkundig Verslag** (1941-1947) on a research he carried out in 1940 in some places at the Northeastern part of Central Java. The areas where the survey was made consisted of the Kabupatens of Blora, Rembang, Pati, Jepara, Kudus and Grobogan. These enquiries were the result of a request by Dr. Stutterheim, a former head of the Archaeological Service, to examine the soil around the legendary area of Medang Kamulan (Medang) in the eastern part of Grobogan.

The results were negative: there were only a few ceramic sherds of the 9th to the 10th century. Surprisingly, however, numerous sherds were found in the teak forest, datable from the end of the 8th till the 11th century. In some villages in the same area, there were many finds; in other places very few. Some finds were Chinese and others, Annamese and Sawangkhalok. The sherds could be dated from the 9th to the 17th century. This evidence leads to the conclusion that the whole area had been inhabited for a long time.

The problem of the age of these settlements was taken up in 1975[35] A team comprising archaeologists from Indonesia and the USA carried out excavations in the area of Rembang. They examined 50 sites and assembled 40 collections of local and foreign ceramics. There were four groups of foreign ceramics: late T'ang-Sung, late Sung-Ming, Ming and some Ch'ing, Ch'ing and European.

The authors of the report wondered "why evidence of commercial contacts with China and India appeared so late". In Thailand and South Vietnam such contacts were intensive as early as A.D. 200 when large cities like Oc Eo had already begun to develop. Is it possible that Indonesia lagged 400-500 years behind the mainland? (p. 112c). The team after researching the Binangun site thought that this part had been involved in foreign trade since A.D. 700.

> **"It is located in an area which is not good for farming. The team members believe that the Binangun complex of sites was an ancient trading port. It is the first to be located anywhere in Java that can be dated to the early or middle first millenium" (p. 112d).**

The Rembang teams also regarded the presence of numerous sherds of local ceramics as an evidence of settlements. However, Binangun, which is located on a defensible hilltop and an area of flatland on the eastern and northern side of small bay west of Gunung Lasem (Rembang Report 1975: d), was reported by Orsoy de Flines (1941 - 1947) to be poor in foreign ceramic sherds.

The area surveyed by De Flines, including Rembang, is indeed an interesting part of Central Java. There are toponyms which remind us of Chinese and local records. Waru is a name similar to that transcribed as Po-lu-kia-se[36], the place situated in the east towards which the ancestor of the king of Ho-ling moved his capital. It was read as Waruh Yasik while Pelliot thought it to be Waruh Gresik or beach of sand.

Laram Kulon[37] in Kudus is the

same name as Luaram in the inscription of Airlangga of 1041. It stated that the Palace of King Dharmawangsa was attacked by the enemy king of Wurawari who came out from Luaram. This attack, which destroyed the palace, could have been sponsored by Srivijaya through a local King of Java (Coedes 1968: 144). Wurawari is a place in the Pekalongan area (Schrieke 1957 a: 211cf).

Foreign Ceramic Sherd Dating

Two important problems arise from the finds of foreign ceramics in this area: Does the absence of early Chinese ceramics imply the absence of ancient trade ports before the 10th century? What is the relationship between Java and Srivijaya?

We indeed wonder why in general the foreign ceramic sherds, particularly those from China, appear so late in this part of the country. Was there no trade with China? But the Chinese annals included embassies from the Indonesian Archipelago, unless of course all the famous toponyms such as She-li-fo-she, Ho-lo-tan, Ho-ling, She-p'o, etc. were outside Indonesia and perhaps on the Malay Peninsula. Evidences of some kind of contact with India since the 5th century exist. They are in the shape of the 5th century inscriptions of Kutai and West Java, early statuary and, later on, the fine architecture and sculpture of Central Java and the inscriptions of the 8-9th centuries which sometimes mention foreigners from India or Mainland Southeast Asia.

The discovery of some ceramics of even the Han period and many of the T'ang period all over Indonesia is not enough proof of the existence of either early settlements in the area or trade with China. Wolters' book on the fall of Srivijaya, referred to by Hall (1970: 61-62) contains some explanation.

> "Dr. O.W. Wolters has recently attempted to interpret the evidence by means of what is known of the changing patterns of Asian trade, and especially the growing importance of Chinese overseas voyages. Dr. Wolters observes that, until the end of the eleventh century, China was dependent on foreign ships in the commerce with the Nanyang. Trade had to be carried on according to the 'tributary' system laid down by the imperial court in its dealings with individual foreign states. That is, trade with China was not open and free to all merchants, Chinese or foreign. It was restricted to the 'Tribute' missions, sent to the emperor by his vassal barbarian rulers, or at least by the so-called vassals".

Dr Wolters suggests that the importance of Srivijaya lays in its role as an entrepot needed by merchants trading to and from China.

> "All this changed during the period of the Southern Sung (1127-1278). Their dependence upon seaborne trade led them to open the trade to the Nanyang with Chinese vessels. There was a great expansion of the Chinese mercantile marine and Chinese vessels began to trade directly with Southeast Asian ports. Chau Ju-Kua, for instance, mentions in 1225, that Chinese merchants were visiting Java, while another source mentions that they were visiting the Gulf of Siam. Others followed their example and we hear of Tamil and Cairo merchants trading directly with North Sumatrans for camphor."

... the importance of Srivijaya lays in its role as an entrepot needed by merchants trading to and from China.

It shows that prior to the 12th century, the trade in the archipelago and perhaps even to China was mostly in the hands of Indonesian traders and navigators. They probably used their own earthenware and when clay was lacking (as on the Polynesian islands), leaves, wood, bamboo, and gourds[38] as containers; it is probably why early Chinese porcelain sherds were not found in the ancient sites.

The presence of early foreign ceramic sherds in some areas does not, however, imply the existence of Chinese settlements. Boechari[39] points out that in Java foreign merchants were engaged in international trade. The following were mentioned in an inscription: Chams, Khmers, Thais, Burmese, Ceylonese and Indians from several regions of India (the so-called ***wargga kilalan,*** foreign settlers). Notice that no Chinese was mentioned among them.

Airlangga who ruled East Java 1019 to 1049 maintained a policy of balance of power with Srivijaya. In this atmosphere of peace, he promoted seaborne trade. His inscription specified the following foreigners[40], Kling, Aryya, Simhala, Pandikiria, Dravida, Campa, Remen, Kmir (and in another place: Karnataka). Here again we see no Chinese on the list. Apparently at that time, there were no Chinese settlers yet, though there might have been a few Chinese traders. Krom thought that the trade was in the hands of Chinese (Krom, 1931: 226).

The presence of numerous Chinese ceramic sherds in a later period would, on the other hand, indicate the existence of a Chinese colony called "Kota Cina" or "pecinaan".

Relationship between Java and Srivijaya

Having concluded that there were indeed ancient ports on the north coast of Central Java, we will now discuss the relations between Java and Srivijaya in the light of the ceramic sherds on the north coast of Central Java. The general assumption is that Srivijaya was a "maritime" kingdom and Java an "agrarian" one, a view we cannot share. How could a maritime kingdom live without a fertile hinterland or how could an "agrarian" kingdom such as the Sailendras' in

Central Java live, be wealthy and build magnificent monuments without the revenues of a seaborne trade? It was not from rice alone that they built up their wealth.

Inscriptions, most of which were found in the same part of Central Java where temples and statues were found, could not be the sole source of information on the past. Without the study of ceramics, the knowledge based on these sources would be incomplete. The sherds may supplement the data which are still lacking on the political and economic life of Central Java.

A very important historical problem has intrigued many scholars: the sudden transfer of the centre of power from Central to East Java. A brief account of the political development in Central Java between 732 and 930[41] is needed to clarify this aspect.

A very important historical problem has intrigued many scholars : the sudden transfer of power from Central to East Java.

Two dynasties or two branches of the same royal family ruled during these two centuries. The family started with King Sanjaya, a follower of a "Hindu" cult who issued an inscription in 732 when he erected a lingga on Mount Wukir. A few decades later, the Sailendra inscriptions began and continued until about 830. The Sailendras, in contrast with Sanjaya and his successors, were Buddhists; and they were associated with the Borobudur and other magnificent sanctuaries. The "Hindu Sanjayas", though in a lesser position of power, still cooperated with them in their temple building.

Pramodhawarddhani of the Sailendra dynasty married in about 830 a prince of the Sanjaya family, Rakai Pikatan. Her younger brother Balaputra was expelled from Java after he led a war against her and her husband. Rakai Pikatan became king of Suwarnadwipa and his name appeared in an inscription on copper found on the old site of the extension he made to the monastery in Nalanda. (De Casparis, 1956).[42]

After Rakai Pikatan, several kings in Central Java were either his descendants or their successors. Their inscriptions appeared until the beginning of the 10th century. Then suddenly after the last inscription of 929, no Royal charters appeared from Central Java; instead, the first inscriptions of King Sindok turned up in Eastern Java. Several scholars speculated the reasons for this sudden transfer of royal power. Van Bemmelen[43] attributed this to a volcanic eruption at the time when Dharmawangsa's palace was attacked by the King of Wurawari who came from Luaram. Schrieke[44] considered the exhaustion of the population who had to carry the burdens of excessive temple building as the cause of the transfer of cower eastwards. De Casparis[45] suggested that the reason was a fear of the Sailendras, who had been expelled from Java, and the consideration that trade would be more profitable in the Brantas Delta which was nearer the spice and sandalwood islands. According to De Casparis:

> **"East Javanese merchants went to Eastern Indonesia exchanging Javanese rice and other products with spices and sandalwood. They took them to Srivijaya, where they met foreign merchants, and exchanged their wares with foreign goods, such as gold, silk and porcelain from China, robes from India, incense from Arab countries, etc. This kind of trade made East Java prosperous".**

De Casparis overlooked one point. If the Sailendras were feared, how could the merchants from Eastern Java trade with Srivijaya, which was ruled by the Sailendras?

Moreover, Java and Sumatra ware always struggling for hegemony and competing for the trade with China. Their missions never overlapped, as Wolters remarked[46] Srivijaya (She-li-fo-che) sent missions from 670 to 742, Java (Ho-ling) in 640, 648 and 666, and again as Ho-ling from 768-818 and afterwards, as She'-p'o from 820 till 873. Srivijaya (San-Fo-ts'i) sent missions from 904 to 983 and often thereafter. There were six missions between 960 and 988. A mission then came from Java in 992, after which the missions ceased for another 100 years. Then Srivijaya sent missions between 1003 and 1008. The absence of missions from Java (873-992) occurred when the transfer of capital took place and the kings from Sindok to Dharmawangsa ruled East Java. The reasons for this transfer of power could have been a natural disaster and politics.

Boechari (1976) agrees with van Bemmelen that the eruption of Mount Merapi caused the transfer. He disagrees, however, on the dating of the disaster. Van Bemmelen associates the disaster with the *pralaya* which destroyed the palace of Dharmawangsa in 1016/1017. Boechari places it around 930, the time when the inscriptions came to an abrupt halt in Central Java.

We agree with van Bemmelen regarding the eruption of Mount Merapi, but with Boechari as regards the period of transfer of the keraton to East Java. The Candi Sambisari[47] which is in the plains of Prambanan serves as a proof. It was excavated in 1969 from about four meters of volcanic ashes. The style of its ornaments and statues is characteristic of the period of the Prambanan temple or a little later. Other indications that an eruption of Mount Merapi had covered whole areas with lava or ashes came from observations by geologists. When Mount Merapi erupts, fertile areas, villages, and roads can be destroyed in a minimum of time. Even now, when we drive to the Borobudur after an eruption, we

can see how roads and bridges have been damaged, but with modern equipment new roads and bridges can be easily rebuilt , not so in the 10th century. The road connecting the capital, which was perhaps in the plains of Prambanan with the busy trade ports on the north coast of Central Java, was destroyed and remained so. The inscription of Mantyasih, protected by the *patihs,* indicates the existence of that road. Boechari suggests that the road connected the Kedu plains with the north coast via Parakan (Boechari 1976-9).

We suggest that after the destruction of this road, the harbour princes, now independent from the suzerainty of the kings in the interior, became free to trade with Srivijaya. They were on a friendly footing with the rulers of Srivijaya, or to put it more strongly, they were still loyal to the Sailendras.

The kings, who were the successors of Sanjaya, could no longer enjoy the revenues of the seaborne trade. This was why they had to transfer the center of power to East Java. Their presence there would not imply a heightened trade on the eastern islands. It is possible that the harbour princes of the north coast of Central Java prevented them from trading with these islands. The harbour princes were the people who sent the commodities to Srivijaya, which sent missions to China.

The interruption in Java's trade with China lasted until 992, when a Chinese merchant arrived in China with three Javanese ambassadors and their retinue on board. This first mission after more than a century seems to coincide with the agressive attitude by King Dharmawangsa towards Srivijaya. The Ambassador from Srivijaya who happened to be in China could not return to his country as it was occupied by Javanese troops from 990 till 992. One Javanese ambassador who arrived in the Chinese capital in 992 informed his hosts that his country and San-fo-ts'i were always at war with one another.

The gap of one century in the China trade could also have been caused by the monopoly of the Central Javanese harbour princes in league with Srivijaya. This could be why ceramic sherds are found on the northeastern part of Central Java. It would not have been the case if the prosperous trade had been entirely transferred to Eastern Java.

Conclusion

The presence of many ceramic sherds in one place indicates the existence of settiements perhaps even a Chinese settlement.

The absence of ceramic sherds prior to the Sung dynasty (1127-1278), for example in Sumatra, does not mean that there were no settlements. The Indonesians made use of bamboo, coconut husks, wood, gourds and shells for their household utensils. A Chinese source recorded that P'o-Ni had no clay, and therefore the inhabitants made use of bamboo and palm leaves for cooking purposes. (Krom, (1931), p. 236).

Ceramic sherds are very useful in the dating of sites, and in determining the trade and political relations of Indonesia at that time.

The use of local and foreign ceramics for ceremonies shows that Indonesians consider these wares as objects to ward off evil influences and in the case of foreign ceramics as status symbols.

Notes

1 Orsoy de Flines: 1941-1947; 1948;1949;1972.
2 Abu Ridho : 1977;1978.
3 Van Heekeren: 1958;1974.
4 Soejono: 1977.
5 Dates also obtained from *Martavans in Indonesia,* a publication of the Ceramic Society of Indonesia.
6 Van Heekeren, *Stone Age in Indonesia,* p.151.
7 Van Heekeren, *The Bronze—Iron Age in Indonesia,* p. 80-89: Urn cemeteries.
8 Bernet Kempers, 1977, p.1. 175, 176s (Mendut) P1. 179, Prambanan, p1, 177 Bernet Kempers (1959) pl. 289-291, 322. (Trowulan).
9 Bernet Kempers, *Ancient Indonesian art* pl. 248. Portrait statue of a Queen of Majapahit. From Chandi Rimbi.
10 We wonder whether in Majapahit the ashes of the kings and queens were interred in martavans or other foreign ceramics, as were the ashes of chiefs in Kalimantan and Sulawesi. Soekmono in his dissertation: "Candi, Fungsi dan pengertiannya" (1976) holds that the ashes were thrown away in the sea like in Bali, but having seen the urns of the kings of Cambodia in the Royal Palace in Phnom Penh, we wonder whether the kings of Majapahit had followed the same custom. This would explain the appearance of the martavans, flanking the portrait statues of the Majapahit period (14th-15th century). In this case, the ashes were kept in urns and not in the temples. It would explain the absence of human ashes in the stone boxes with nine holes which were put in the shaft under the statue in the cult temple.
11 Uka Tjandrasasmita, *The Islamic Antiquities of Sendangduwur* p. 10. However the mastaka of Sendangduwur was made of copper.
12 Mme Viviane Sukanda-Tessier (1977) p. 1228: "Le triomphe de Sri en pays soundanais.
13 De Flines (1949) p. 37-38; S. Adyatman 1977.
14 Abu Ridho, (1977) pl. 88. *Berita Penelitian Purbakala* no. 1 (Denmak) pl. 122.
15 Bernet Kempers, (1959) pl. 282.
16 De Flines, 1950, p. 12. The appearance of fine porcelain in Bone makes us think that Bone could have been the most important part of Sulawesi for centuries. We wonder whether the toponym spelled as P'o-Ni by the Chinese, thought to represent Brunei in Northwest Kalimantan, was actually Bone in Southwest Sula-

wesi. The description of the country and people suits Bone well. For example: "lacking earthenware they cooked in bamboo and palm leaves; they sent a letter on a leaf to the Emperor"(Krom 1931) p. 236. The king had a fleet of 100 warships (Krom 1931) p. 305. They were skilled in arithmetic and accounting (p. 399). The facts are in accordance with this information: the Buginese have been sailors for centuries, they have their own script and their manuscripts are called "lontara" which means, leaf of the tal (palm). Accounting would not be surprising for a trading and sailing nation. Cooking in bamboo and leaves is still practiced in Sulawesi. In an article by Grace Wong (1978) on blue-and- white porcelain appears a list of ports visited by Chinese ships when the eastern sea route already existed:

Sanyu, Ma- ri, Hai- dan (in the Philippines), and afterwards: Bo-ni and Mao- luo- ju (Moluccas). In another source: San-dao, Ma- li lu, Su-lu (in the Philippines), Dong- chong-gu- la (Tanjungpura? or Dong-gala?), Wan- nian- gang(P'o-Ni), Wen-lao-gu (Moluccas) and Wen-dan (Banda?)

The impression that P'o-ni was Bone in southern Sulawesi is strengthened by its location between the Philippines and the Moluccas.

17 Van Heekeren; (1958) p. 88.

18 Van Heekeren, (1958) p. 80.

19 Van Heekeren, (1958) p. 84. Noorduyn, (1955) p. 92. Hadimuljono 1972 p.7 mentions the posthumous name of a raja of Bone: La Tenrirawe Bongkangngeri Gucinna "who sleeps (lies to rest) in a pot". (From Sejarah Wajo (1963) and Sejarah Goa (1967) by A.A. Patunru.

20 Hadimuljono p. 12. He mentions other uses of ceramics also.

21 Nagarakertagama, canto 14: 4.5. Pigeaud (1960) I,p.12. Contacts with Java could have been existed even earlier, and in the period of the Hindu and Buddhist Kings of Central Java, (8th-10th) century. We suspect that the inscriptions in Old Malay were written by princes with "foreign" blood, who did not necessary hailed from Sumatra, but perhaps from Sulawesi. The Buginese could have been the mercenaries at sea for the Javanese kings and could have intermarried in the princely families.

22 see A.C. Kruyt 1933 p. 422-494.
Sulawesi is a good example of a society which developed its own patterns of religion and statecraft without being "hindunized".Also the concepts of gods and divine powers of the kings were original and perhaps like those in Polynesia.

23 Coedes: The Indianized States of Southeast Asia.

24 Krom, (– 1931), De Casparis, 1956.

25 Braddell: Notes on Ancient Times in Malaya – (1951), p. 1 – 27.

26 Moens, 1937.

27 M.C. Chand: paper presented to the International Association of Historians on Asia. (IAHA) Sixth International Conference. Yogyakarta, Indonesia, 1974.

28 Archaeological Research in Sumatra (1974)

29 Laporan Penelitian Arkeologi di Sumatra – 1973.

30 Report still in press. (Berita Penelitan Arkeologi).

31 Like the people of P'o-Ni in the 10th century-Krom (1931), p. 236.

32 Survai Sumatra Utara. 1976. pl. 14.; it could have been the same place where the ancient Mahayana Buddhist monastery once stood.

33 Biaro Bahal I. Survai Sumatra Utara pl. 16. Bernet Kempers-(1959) pl. 223.

34 The capital of Srivijaya could have been moved several times in the course of centuries. Natural disasters or destruction by the enemy caused the rulers to look for another place of residence. Moreover it was considered ill luck to remain in the same place where a disaster had happened. Perhaps they had, like the Javanese kings, also believed in cycle : see Boechari 1977 who refers to Schrieke (1957) : Ruler and Realm in Early Java.

35 Laporan Penelitian Rembang 1975.

36 Krom, (1931), p. 145. Coedes (1968) p. 90, 107, 301.

37 Krom (1931) p. 239, 240. Boechari locates Luaram in the area of Madiun as there is still a place with that name.

38 National Geographic Magazine, December 1940. p. 745 (opposite coloured illustration) "Provisions for sea: Roots, fruits, nuts, dried fish and water-filled gourds enabled the Polynesians to survive passages as long as two months".

39 Boechari, (1977) p. 7.

40 Krom, (1931) p. 264.

41 Inscripties uit de Cailendra tijd.

42 De Casparis (1950) compares on p. 133 the list of the Sanjayavamsa with that of the Cailendravamca. The princes of the Sanjaya dynasty are mentioned in the inscription of King Balitung, A.D. 907. Krom 1931 p. 187.

43 Van Bemmelen, (1974), The attack on Dharmawangsa's keraton was for a long time thought to be 1006 until Damais revised the date to 1016/1017. L. Ch. Damais, BEFEO (1952) p. 64 n. 2.

44 Schrieke (1941), 1957 b.

45 De Casparis:(1950) and (1958): "Erlangga".

46 Wolters (1967) p. 214.

47 Sri Kusumobroto: "Preliminary Note on Sambisari". 1969.

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Sangalok Wares

by Natthaptra Chandavij

Sangalok is the name given to a kind of Thai ceramics which was produced during the Sukhothai period from about late 13th to late 15th century AD in the area of the present Sukhothai province. "Sangalok" is supposed to be a corruption of the name of an ancient city "Sawankalok", now a district of Sukhothai province.

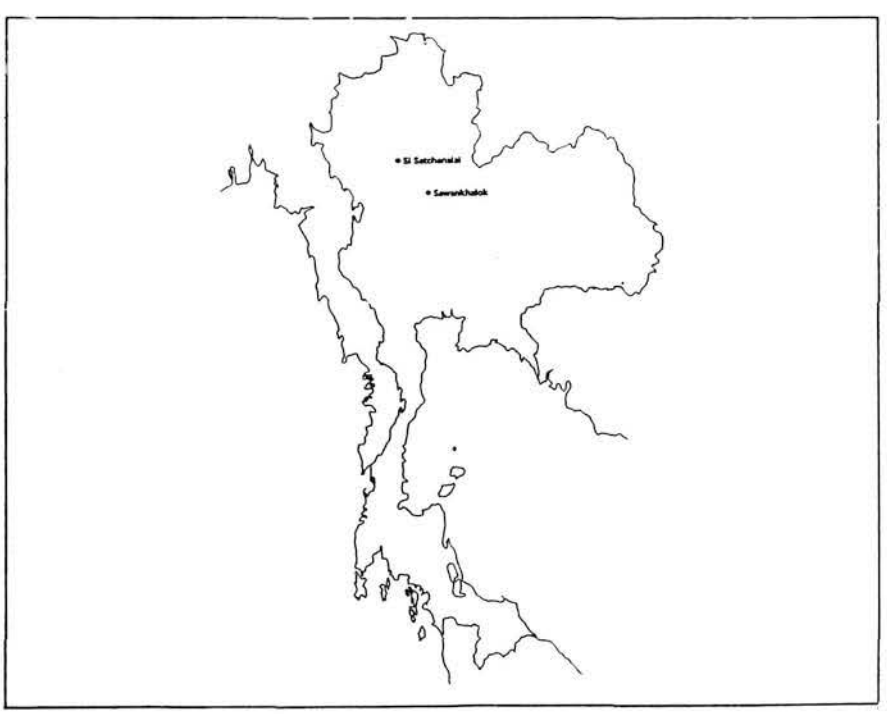
The kiln sites of Sangalok ware are situated at latitude 17° 47' 36" There are two important sites:

1. Sukhothai kilnsite is in the old Sukhothai district and produced plates and bowl with white glaze and underglazed black designs with the patterns of fish in a circle, fish and weeds in a circle and discs.
2. Koh Noi or Payang kilnsite is in the Si Satchanalai district. In this area there are two sites one called *Tao Yak* (Tao means "kiln"; Yak means "guardian" or "demon") which produced architectural figures and decoration. The other, sited about 1 kilometre from the former is called Tao Payang It produced many kinds of objects with green or celadon glaze, creamy white glaze brown glaze whilst also producing objects with painted underglaze black and overglazed gold brown designs.

Formerly, it was thought that the objects with dark brown glaze were produced separately in other kilns, called the Chaliang kilns "Chaliang" is the old name of Sawankalok which during the 15th century was merged with the old Si Satchanalai city to form the city of Sawankalok. Later, Sawankalok was again divided into two districts: Sawankalok and Si Satchanalai. However, excavations and sherds wasted during firing show that the brown glazed objects were fired in the same kiln at Payang as the other kinds of celadon or white wares.

A paper presented during the SPAFA Workshop to Standardize Studies on Ceramics of East and Southeast Asia held in Cebu City on 15-20 February 1983.

The author is the curator of the National Museum, Bangkok.



A map of Thailand showing the kiln sites

Both Sukhothai and Si Satchanalai kilnsites are called Tao Turiang. Turiang is supposed to be a corruption of the name "Fuliang", an important kilnsite in Ching-te-chen in China.

Description of Wares

The ceramics from the Sukhothai kilnsite are not of good quality. The claybody is stoneware but rather rough with painted slip before glaze. Three basic design were used: a fish in a circle, a fish and weeds in a circle and discs painted in underglaze black.

The Sangalok wares from Si Satchanalai kilnsite have a good quality - the claybody was delicate and the colours ranged from red to white grey. Many patterns of flowers, fish and weed, phoenix, spiral etc. were represented and done with high craftmanship. They were glazed straight to the body without slip.

Construction of Sangalok kilns

Sangalok kilns usually were constructed with bricks in an arched ovoid form. They were semilar to the kilns of Jingdezhen in Kiangsi, China, but much smaller. The kiln was divided into three parts – the front for fire, the centre for the wares and the rear for the chimney. However, some kilns were also constructed with clay. Excavations revealed the presence of many styles of kilns.

The wares or objects ready for firing were placed in the kiln by resting them on long supports fixed in the floor. Other were piled with clay discs having 5 - 6 spurs inserted in-between. Traces of these spurmarks appear on the Sangalok plates or bowls except the one on top. This peculiar feature is very common in the Sangalok wares of Sutkothai kiln; rare in wares from the Sawankalok kiln. In both kilnsites, the potters never used saggars for firing the wares as was practised in China.

Styles

Many styles of Sangalok wares produced for different purposes exist, for example:

1. Wares for religious purposes specifically for Buddhism in the form of images of Buddha and his disciples and models of stupa;
2. Architectural decoration in the forms of door-guardians (demons), rooftiles, divinities, finials, balustrades, etc;
3. Utensils for daily living such as plates, bowls, bottles, jars, covered bosees, kendis, lamps, stemplates, etc;
4. Toys or ceremonial objects such as figurines, warriors, water droppers, mother and child figures, erotic figures, man and cock figures, chess pieces, animal figurines, etc.

Types

The claybody of Sangalok wares is stoneware, fired at the temperature of about 1150-1280°C. The various types are classified according to their glaze and decorative designs: green or celadon glaze, dark brown glaze, creamy-white glaze, white glaze painted with underglazed black designs, white glaze painted with overglazed gold-brownish designs, white glaze with inglazed gold brownish designs, and semi-stoneware painted with red enamel on slip.

The Sangalok wares have a close affinity with those produced in Lopburi and China. Each style is described below.

1. Lopburi style

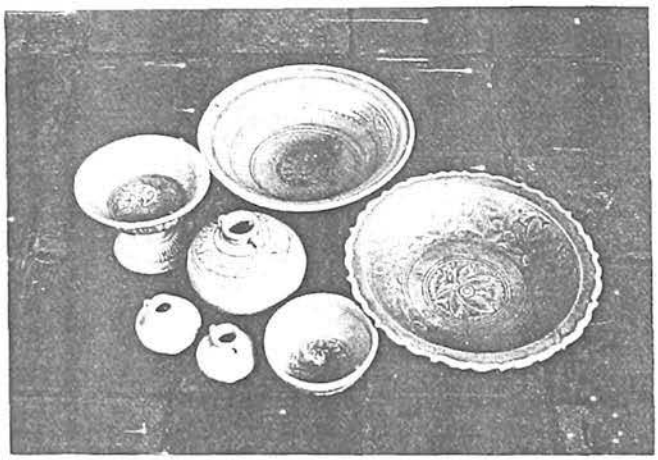
Lopburi ware is also known as Khmer ware. It can be seen in the form of animal figures and large vessels which were used for the storage of dry food or water. All of these objects have the characteristic brown glaze.

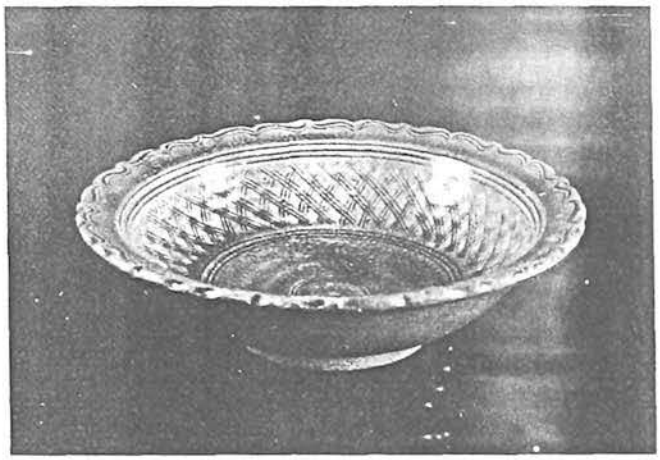
2. Chinese style

The wares are in the form of celadon plates with everted rims similar to those produced in China, at the Longquan kilns, during the Yuan dynasty (14th century A.D.). Other forms are the pear-shaped and gourd-shaped bottles.

This similarity shows that the Sukhothai Kingdom had a relationship with its neighbouring areas and countries.

Samples of the Sangalok wares





Archaeological Projects 1980-1983: Department of Anthropology, Silpakorn University, Bangkok

by Pornchai Suchitta

Since late 1979, some staffmembers from the Department of Anthropology, Silpakorn University, Bangkok, Thailand, have been actively engaged in four major archaeological projects. These projects may be summarized as follows.

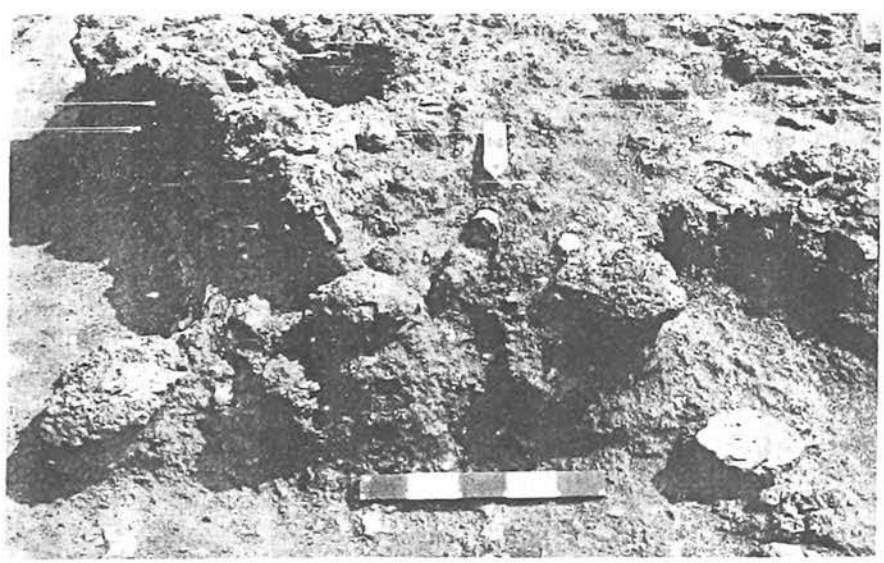
Project i

The first project, "The History and Development of Iron Smelting Technology in Thailand," was conducted as a Ph.D. dissertation submitted to Brown University last November 1982 by Pornchai Suchitta.

A survey was made in locating and identifying the remains of ancient iron smelting operations and the technology involved at various ancient settlements located in the central and lower northeast regions of Thailand. More than fifty sites were identified. Major attention was focused at Lopburi province, central region, where an archaeological excavation was carried out at an ancient iron smelting village dated to ca. 6th century A.D. based on C-14 analyses. An approach called ethnotechnology by the researcher covering ethnohistory, ethnoarchaeology, ethnography and documentary research was used to discern the obscure iron smelting practice in Thailand through time.

This research revealed that since the prehistoric time in Thailand iron use was known and we assumed that the knowledge of iron making was also known. A concrete evidence of iron smelting in Thailand came from the site of Ban Di Lung, Lopburi province. A survey at this village revealed that the ancient smelters built their furnaces on mounds or slightly raised ground which eventually became higher as a result of frequent iron smelting operations. The hypothesized shaft type of furnace, a superstructure as seen from the archaeological data, was built of clay supported by wooden frames while it was in its constructional stage. Tuyeres made of clay tempered with pebbles from laterite rocks were inserted into the

Remains of 6th century A.D. iron smelting furnace at Ban Di Lung, Lopburi Province, showing tuyere fragments with large chunks of slag on the outer edge of the feature (scale = 50 cm.).



Dr. Pornchai Suchitta is a lecturer of anthropology in Silpakorn University. He had participated as official delegate from Thailand to a SPAFA activity.

Remains of tuyere fragments showing slag wetted ends, vitrified and reduced areas along the sample; also shown are slag samples from the excavation at Ban Di Lung, Lopburi province (scale = 30 cm).

furnace. Bellows, most probably made of bamboo as seen today, were used to induce the air into the furnace via the tuyeres. Evidence of the use of preheating the air via the tuyeres at such an early date suggests the possibility of an indigenous practice of this technology.

The iron ore used for smelting at Ban Di Lung was mainly hematite, probably procured from the area of Khao Thab Kwai Mountain about 40 km. away from the site. Charcoal with a low fixed carbon content was used as fuel in smelting iron ore. The slag was tapped off the furnace as evidenced by the physical appearance and the location of the slag found. The temperature reached in the furnace was probably above 1200°C with the aid of preheating the air as evidenced from tuyere fragments indicating vitrified and reduced areas. There is no clear evidence of flux use in iron smelting at Ban Di Lung. Unfortunately, no iron bloom was found from the excavations.

The research also covers an historical survey on the role of iron and its technology as practised in Thailand from the historical period up to the present. Also, an ethnohistorical enquiry was conducted at Bho Luang village in Chiangmai province where resided the Lawa people. The Lawa used to smelt iron for their own benefit. Utilizing the basic smelting operation, they produced relatively good iron bloom with 0.28% of carbon content.

This research was kindly supported by the Ford Foundation and the Wenner-Gren Foundation for Anthropological Research. A copy of this dissertation will be available in 1984 through the University Microfilms International.

Project II

The second project, "The Survey and Study of Archaeological Sites in the Lower Mun-Chi, Lower Northeast Thailand," was carried out at the beginning of 1981 by Srisakara Vallibhotama (team leader), Put Veeraprasert, Pornchai Suchitta, and W.J. van Liere who joined part of the survey. The report of the survey was prepared and submitted in 1981 to the Netherlands Engineering Consultants (NEDECO) as a feasibility study for the Mekong Project, Bangkok.

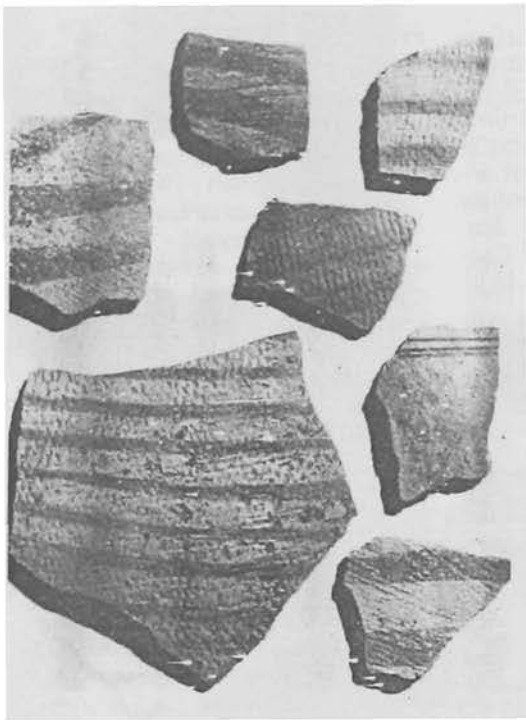
The main purpose of this project was to locate and identify archaeological sites located along the tributaries of the Mun and Chi Rivers or Mun-Chi basin which covers area in the provinces of Mahasarakham, Burirum, Srisaket, Surin, Roi-et, Yasothon and Ubon Ratchatani. During the survey, surface collection of ancient artifacts especially potsherds was carried out at all of the identified sites.

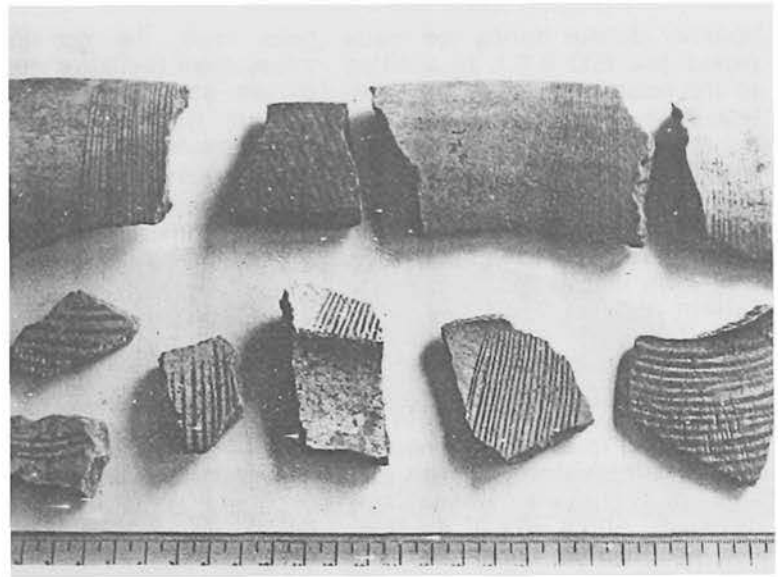
The survey team was able to identify 199 archaeological sites (prehistoric and historic) in the surveyed area. About 35% of the total historic sites revealed that these sites are surrounded by ancient moats ranging from single to triple in construction and some by earth walls.

Examples of prehistoric findings include polished stone adzes and axes, and various types and kinds of earthenware pottery found in the area of Kaset Wisai district, Roi-et province. Another site which is located at Non Yang, along one of the tributaries of the Mun River, Chumphonburi district, Surin province, was identified. Charcoal sample was obtained from the exposed stratigraphy (excavated) of this site in association with painted potsherds in stripes dated from C-14 analysis to be 3000 ±250 B.P. This unique painted earthenware in stripes (dark red or brown) on the body with painted lines on the inner flared rim is widely distributed in the Mun-Chi basin. So far it has not been reported to exist in the upper northeast region or the Sakon Nakon basin. In addition to this unique painted pottery, pots with painted lines on the flared rim containing human bones were also found at many sites, for example, at Ban Ya Wuk, Surin province. The excavation at Ban Ya Wuk is expected to be continued this summer 1983.

Other significant findings include evidence of the spread of Khmer culture into the Mun-Chi basin as seen from art objects and temples. These are found in the area of Tha Tum district, Surin province, passing Tung Kula Ronghai to Ku Phra Ko Na at Suwanaphum district, Roi-et province. From there, it spreads up to Lam Nam to Roi-et and Mahasarakham provinces.

Moreover, traces of ancient salt





Left: Examples of earthenware potsherds painted in stripes found throughout the Mun-Chi basin, e.g. at Ban Non Sung, Rasisisalai district, Srisaket province. Right: Examples of fine painted parallel lines on earthenware potsherds found at various sites in the Mun-Chi basin, e.g. at Ban Tha Klang, Kamalasai district, Kalasin province.

making at various historic sites starting from Kaset Wisai to Suwannaphum districts, Roi-et province, were revealed. A good example comes from the area along the Lam Nam Sieo where many high mound settlements are located which show that salt-making was possible till recently. Various types of potsherds such as the glazed Khmer stoneware of Lopburi period were found at these ancient settlements.

Metal smelting/working is also evidenced from the presence of slag in great quantity. The survey reveals more than 40 ancient metal presumably to be iron smelting/working sites located within the ancient settlements distributed in the seven provinces surveyed. Examples include Ban Ya Wuk, Surin province; Ban Tha Nain, Suwannaphum district, Roi-et province; Ban Khok Muang, Satuk district, Buriram province; Ban Don Klua, Rasisalai district, Srisaket province; Ban Bung Kae, Mahachanachai district, Yasothon province; Ban Si Suk, Nuang Noi district, Ubon Ratchatani province; and Ban Khe Lhek, Phayak-khaphumphisai district, Mahasarakham province.

Slag samples from these sites were chemically analyzed. The test revealed that the average iron (Fe) composition by weight in the samples is above 35%. This is expected in ancient iron smelting operations where a high percentage of iron is left in the slag. The findings of these metal operations, presumably iron, at many ancient settlements suggest that metal work and use were important activities which might have contributed to and enhanced the trade network among those who smelt iron and those who do not.

Project III

The third project is another archaeological study and survey of the Nam Songkhram Basin, upper northeast Thailand. The team is composed of Srisakara Vallibhotama (teamleader), Put Veeraprasert, and two more staffmembers who joined part of the survey, i.e., Pornchai Suchitta and W.J. van Liere. The report was submitted in March 1982 to the Netherlands Engineering Consultants (NEDECO) as a feasibility study for the Mekong Project, Bangkok.

The area under investigation covers the Nam Songkhram River and its tributaries such as the Huai Pla Hang, the Huai Nam Yam, the Mong, the Nam Kam and the Huai Luang. Special attention was focused on the riverine areas which are located in the provinces of Sakon Nakon and Udon Thani.

The main purpose of this project, which is similar to the Lower Mun-Chi Basin Project, is to identify and locate archaeological sites in the Nam Songkhram basin in order to discern their cultural significance prior to their further annual destruction due to the inundation in the area in addition to the diggings by the villagers as pot hunters. The annual flooding in the basin comes from the high water level in the Mekong River which has Nam Songkhram as one of its tributaries.

It is apparent from the survey that this region, as it is geographically separated from the Korat Basin of the Mun-Chi drainage system by the interruption of the Phu Phan Range, is no doubt another cultural area within the northeast region of Thailand. What makes it distinct from the Korat counterpart

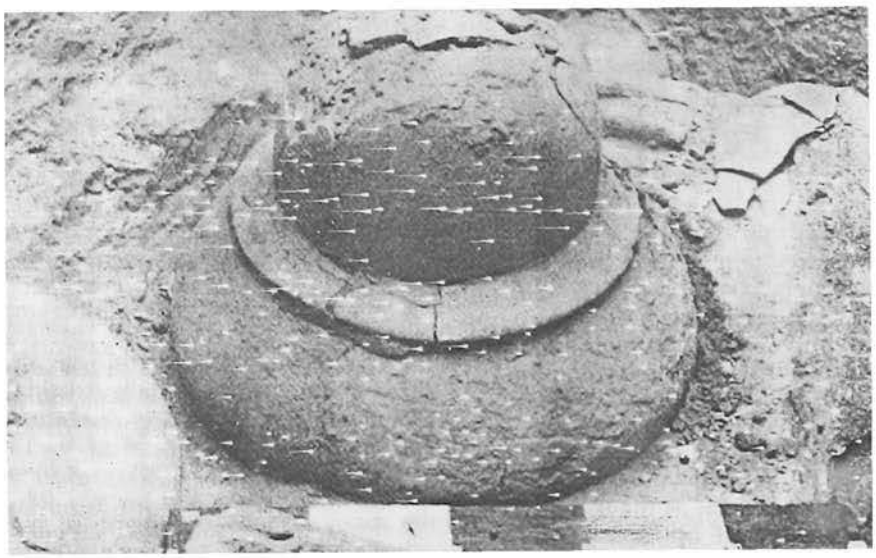
become obvious during the metal period (ca. 500 B.C.). In addition to the ceramic tradition, the Songkran Basin people practised primary burial, e.g. Ban Chiang, for the dead from the beginning until the late protohistoric time. This is in contrast with the Korat Basin tradition, particularly that of the lower Mun-Chi basin, that developed a general pattern of secondary burial sometime during the metal period continuing until the historical time.

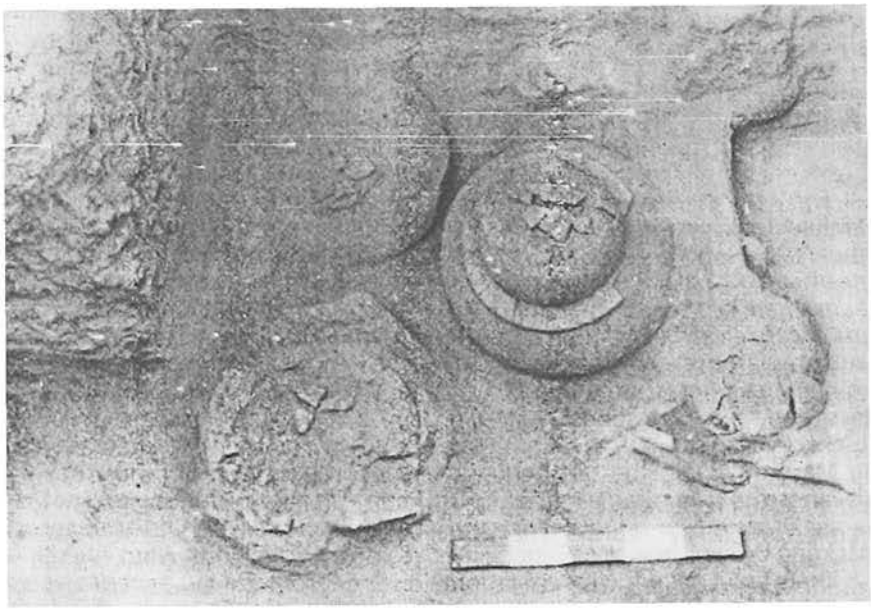
The survey team was able to identify and locate 172 archaeological sites (prehistoric and historic) in the surveyed area of the Nam Songkram. About 45% of the total sites identified have the Ban Chiang type of painted pottery. A dense concentration of the Ban Chiang culture is located in the flooded plain southwest of Hai Pla Hang and south of Huai Nam Yam. Despite the controversial proposed date of the early Ban Chiang culture, i.e., 3600 B.C. by Gorman and Charoenwongsa 1976, the survey team felt that more excavations should be carried out at another major sites for comparative dating such as at Ban Phon Sung, Sawangdangdin district, Udon Thani; at Ban Tung Chuak, Waritchaphum district, Sakon Nakon province; and at Ban Phanna, Swangdangdin district, Udon Thani province. It appears from the ground surface survey from the latter site that this ancient site had a continuous occupation from the prehistoric time up to the recent historic period as evidenced from the presence of ancient sema stone (ca. 10th century A.D.), Khmer-like potsherds (ca. 11th-12th century A.D.), and Laotian temple (ca. 18th century A.D.).

It is hoped that future systematic excavations in this area would shed more light concerning the development of prehistoric culture or cultures in northeast Thailand.

Project IV

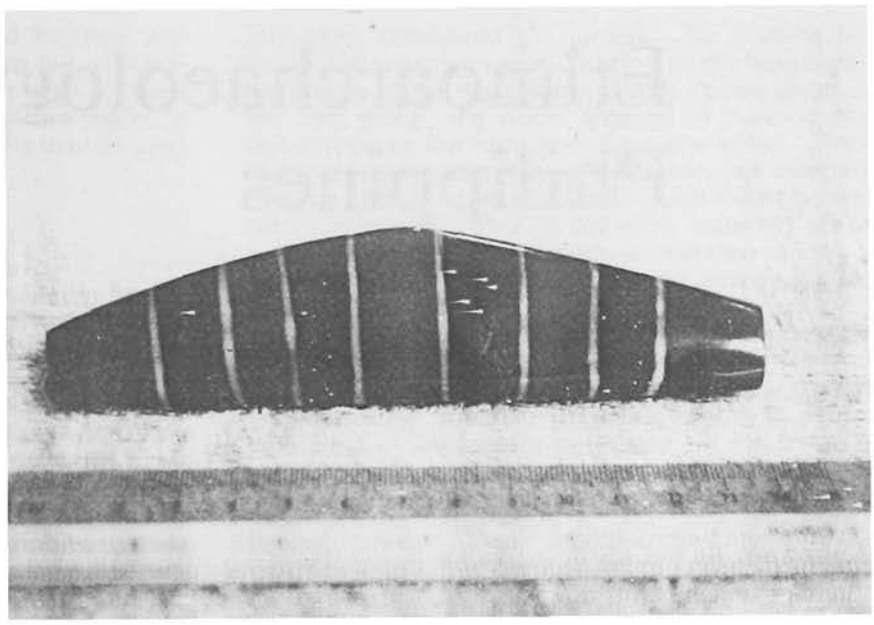
The fourth project which is in progress deals with an archaeological and historical study and survey of riverine adaptation along the Jorakee Samphan River and its tributaries, Suphanburi province. The archaeological survey and excavations are directed by Pornchai Suchitta and the historical survey part of this project, by Suebsang Phrombun from the History Department, Thammasart University, Bangkok. This project is funded by the Thai Kadi Institute.



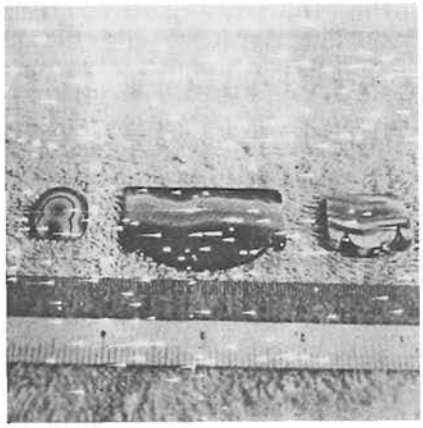


Excavation at Ban Yu Wuk, Surin province, showing a group of burial pots with human skeletal remains inside and outside the pots (scale = 50 cm.)

NL-1'82 : showing the exposed stratigraphy with shell remains at Ban Na Lao, Uthong district, Suphanburi province



Etched carnelian bead found by a villager in a burial near U-thong district, Suphanburi province



Left: NL-II'82 : a polished stone adze was found in situ at 90 - 100 cm. depth at Ban Na Lao, U-thong district, Suphanburi province. Right : Agate beads in various forms and colours found by a villager near U-Thong district, Suphanburi province

Archaeological test excavations were conducted last October 1982 in the area of Ban na Lao and Ban Jorakee Samphan, U-thong district, Suphanburi province. The aims are to discern the stratigraphy and its associated artifacts, to trace the cultural development of this area and its chronology from the prehistoric era up to the present, and to compare the data from these excavated sites to other known archaeological sites in the nearby areas and abroad such as India. The villagers reported that etched agate and carnelian beads which appear to have been imported from India around the early centuries A.D. had been found in ancient burials at various places especially in U-thong and nearby districts.

Our test excavations reveal artifacts such as polished stone axes, various types of earthenware potsherds, a few glass beads, and fragment of stone ornaments. At about 75 cm depth animal bones were found in association with a burnt area with pieces of charcoal around. Charcoal samples from this layer were sent for C-14 analysis. Other major faunal remains include a great quantity of fresh water shellfish which is usually found below one meter depth. At present the excavated data are still being analyzed. It is hoped that a preliminary report will be out by the middle of 1983.

Final Remarks

Further work is being carried out on these four archaeological projects described here. These include metallurgical study and pottery analyses on samples from various archaeological sites. The Department of Anthropology hopes to publish the final reports from these studies and surveys in the very near future. In addition, further excavations are planned around the middle of this year; a return to the ancient site at Ban Ya Wuk, Surin province is expected. It is hoped that the data from these general surveys would shed some light on future excavations in discerning the obscure cultural development in the northeast and central regions of Thailand through time.

Ethnoarchaeology in the Philippines

by P. Bion Griffin & Agnes Estioko - Griffin

Why an archaeologist would spend fourteen months living in untamed jungles with bow and arrow hunter-gatherers demands some sort of explanation. Readers of Archaeology Magazine may well already have some hint of the reasons if they recall articles over the past couple of years on a type of archaeological research dubbed "ethnoarchaeology." Bill Rathje of the University of Arizona discussed his study of modern garbage in Tucson, Arizona and showed how this highly original use of contemporary materials answered questions about patterns of human behavior in both the past and the present. Roderick McKintosh of the University of California, Santa Barbara, applied a study of West African mud-walled house construction and decay to similar archaeological sites. Recently, Douglas Sharon and Christopher Donnan of the University of California, Los Angeles integrated a knowledge of the use of hallucinogenic cacti in modern Peru with ancient use. These articles all exemplify a drive to plumb the depths of archaeological knowledge by better exploiting the ethnographic or living cultural record.

As the more primitive or traditional cultures of the world disappear under modern development, anthropologists are aware that they know very little about the how and why of these people and must select very specific research topics in the short time available. They seldom, however, undertake topics of utility to archaeologists, who always use ethnographic knowledge to devise models of past societies. Archaeologists have increasingly chosen to study isolated, traditional or nonindustrial peoples, seeking answers for problems unique to archaeological data and interests. Even now these scholars are in the field among Kalahari desert !Kung San bushmen, western Pacific sailing traders, Polynesian atoll dwellers and peasant villagers in the Old and New Worlds. As ethnoarchaeologists, they seek to explore the nature of archaeological data, to learn the relationships of material and nonmaterial culture, to discern generalizations about patterned human activities and to describe the natural and cultural aspects of how an archaeological site is formed.

A reprint from Archaeology, Vol. 31, No. 6, 1978.
P. Bion Griffin is Associate Professor in the Department of Archaeology at the University of Hawaii, Manoa campus in Honolulu. Agnes Estiolo-Griffin is an archaeologist for the Division of State Parks, Recreation and Historic Sites, State of Hawaii.

We decided to conduct an ethnoarchaeological investigation of humid tropics hunters and gatherers in northeastern Luzon, an area of the Philippines. From 1974 to 1976 our hosts were the Agta Negrito, from the Spanish meaning "small Blacks," who are forest nomads in the Sierra Madre. These hunters subsist on the flora and fauna of interior jungles, rivers and coastal reefs. While they are somewhat known to anthropologists, their way of life, thousands of years old in Southeast Asia, is an archaeological blank. Most archaeologists have chosen to concentrate on either the remote mid-Pleistocene fossil man sites or on the temple remnants of much later civilizations. Beautiful ruins such as Ankor Wat in Cambodia drew more archaeological attention until the work of Wilhelm Solheim of the University of Hawaii demonstrated the potential of research into agricultural origins. About ten years ago, then, several excavators decided to look at prehistoric hunters, focusing on their acquisition of agriculture or on their trade networks with more settled groups. By studying the Agta, we sought to provide an ethnoarchaeological model, for use by archaeologists, of one style of adjustment to hunting-gathering in wet, seasonal jungles. We were especially interested in describing the interaction of environment, settlement and subsistence and tried to find ways in which nonmaterial culture, such as social organization, is reflected by the material. These data include the usual terms of archaeological

inquiry — arrowhead style, size and location and distribution of trash in campsites. From this information we also hoped to offer ideas about what it means to be a hunter in a jungle, as opposed to a desert or tundra, and to suggest how these insights may be used in archaeology.

Who Are the Agta?

The Agta of the Philippines are not among the untouched, unknown recluses of hidden jungle caves like the famous Tasaday of the southern Philippines who were discovered few years ago. They are proficient, aggressive exploiters of the major and minor game animals found the length of Luzon and have traded with lowland farmers for generations. Early American anthropologists visited these people shortly after the United States took over the Philippines at the turn of the century. Still, due to their warlike customs and the difficulty of travel along the Pacific coast, the Agta have enjoyed, until today, varying degrees of isolation and traditional subsistence. Beginning a few decades ago, Agta close to the towns of Palanan and Casiguran increasingly planted small plots of corn, sweet potato and cassava. Deeper in the mountains they chose to remain seminomadic, preferring to trade wild pig and deer meat for corn, thereby avoiding the drudgery of farming.

The Agta are not a Stone Age society. Through trade they now depend on steel knives and tools for sharpening arrowheads, on aluminum cooking kettles, on cloth instead of bark and on such luxury goods as tobacco, glass beads and gin. Before World War II an outsider, including another Agta, might be shot on sight. Since then, the Agta have come into frequent contact with strangers. Today, anthropologists are welcomed warmly, with keen anticipation of gifts of ***noblesse oblige.*** Most Agta are still intimately knowledgeable about the biology, topography and climate of their territory. First and foremost hunters, second gatherers of wild plant foods and third traders-horticulturalists, the Agta depend on wild game to such an extent that in the remotest locales women also hunt. More and more Agta are favoring a shift to dependence on grain staples for which they exchange meat. In the last five years, we have observed that even the most nomadic Agta are trying to stake a claim of land by putting in rainy season gardens.

Research Method

In order to systematically observe and record the lifestyle of the Agta, we first designed a strategy and specific models. "Activity sets" in which all activities were defined and placed in their environmental context allowed us to focus on the interaction of environmental and cultural behavior. A specific activity, for example, might be "the one day hunt with dogs." In recording the hunt, the date, weather, terrain, unique forest conditions and game sought are relevant to an understanding of the environmental influences considered by hunters. To describe the Agta's behavior, we noted location of the base camp, placement of the temporary camps, composition of the task group, the hours engaged in hunting, the technology of the hunt and the game killed. Since dividing up activities is usually arbitrary, we carefully detailed each in order that activity sets might be properly compared. Thus information collected about butchering, an activity often undertaken during a hunt, is separately listed so that it can later be studied separately.

The environment itself does not determine Agta settlement and subsistence strategies but forms a guide in which their way of life must be adjusted to the realities of climate and general terrain of a montane jungle. Seasonality is perhaps the major factor met by the Agta. They adjust to a wet-dry cycle, following the resultant changes in the animal populations and the forest flora. Human, animal and plant populations all subsist as structured by the cycle of cold, heavy rains and wind storms, followed by hot, dry months and occasional typhoons. The mountains of eastern Luzon receive intense rain generated by the northeast monsoons and seldom enjoy sunny weather between October and February. Typhoons

"Activity Sets" ... allowed us to focus on the interaction of environmental and cultural behavior.

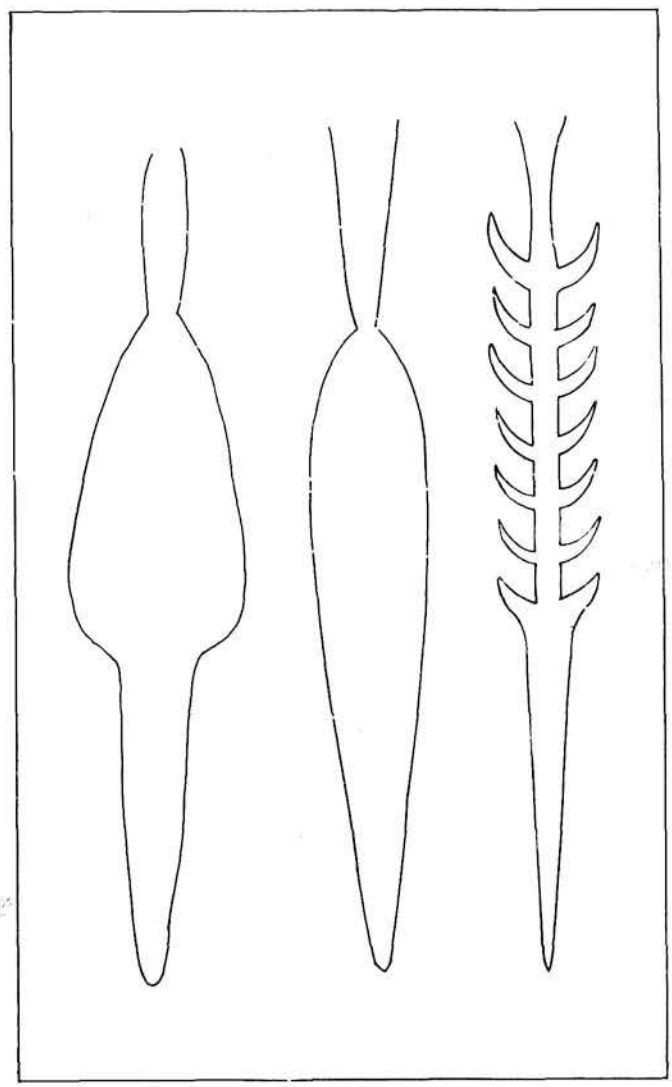
and less severe rain storms usually flood the streams and rivers, making them impassable and unfishable. The rains do, however, enrich the productivity of plants and thereby aid the animals that live on fruit, roots and seeds. The major game animals of the Agta are wild pigs, deer and monkey. Pigs are most desirable, especially during the rainy season when they are fat. Both Agta and Paranan, the Malay Christian farmers who live downriver from the Agta and trade with them, desire the layer of fat from which lard is extracted as a dietary supplement during the cold, unhealthy monsoon season. Since the forest plant community is provident in fruits, roots and seeds during the rains, animals are both unwary and well fed. Deers find abundant fallen fruit along previously dry streams and monkeys are extremely fortunate in collecting fruits from trees and vines.

The dry season is more pleasant and permits travel. Unfortunately, the forest is less productive and with the diminishing rainfall, streams dry up and game animals range far in search of plant foods. Pig, deer and monkey become lean and are constantly on the alert, listening for hunters. During the heat of the day all game tend to rest in hiding spots, waiting for the cool and security of nightfall before foraging. Occasional rains, however, allow maintenance of fruit bearing

plants throughout the summer and diminish the ecological effects of severe seasonality. Agta subsistence patterns, and most importantly hunting strategies, conform to the pressures of this environment. As successful hunters, the Agta have created a specialized hunting technology and numerous techniques for securing game. Simply put, the hunting patterns depend primarily on the condition of the forest and wild pig and deer. During the dry season, when one cannot quietly stalk through the deep woods, and when alert male pigs will readily charge an offending bowman, two types of hunting are usually advantageous. It is most important to hunt in groups of three or more assisted by several dogs. A single hunter, or any Agta especially capable of controling dogs by voice, sets off to a predetermined location where he or she releases the dogs, which will hopefully drive deer or pigs to ambush points. Waiting archers attempt to kill passing animals. A frequent alternative is to hunt singly or in pairs at night, "jacking" with a three battery flashlight strapped to the head. This technique involves spotting a deer at night with a strong light; the deer stops and gazes fixedly at the light and is easily shot. The method, which is illegal in the United States, owes its existence to western influences on the Agta and their unique adoption of modern objects. Less profitable night hunting was practiced with or without torches before the advent of the flashight. Other strategies include ambush of game from concealment adjacent to fruit trees, along game trails and at drinking spots.

As dry season activities, these styles of hunting are carried out both near and far from the base camps where women and children reside when not in a hunting camp. Hunting with dogs often is restricted to a single overnight trip. Long distance hunting is common when little danger of flooding is present; men, and occasionally women, may be gone from home for a week or more, depending on kills. Trips of long duration are never undertaken alone; natural and supernatural dangers are too great. A group of three to five hunters is the rule. Dogs are seldom taken on long trips since food may be lacking and they may have to be carried across the wide rivers or could be too easily lost in the remote, unpopulated jungles. The hunters live on fresh meat and fish, honey and perhaps a root or two. Game may be rough butchered at the kill site and smoke dried at a special hunting camp. Rules of butchery vary among the Agta groups in Isabela and Cagayan provinces, but division of shares generally follows drying and may await final distribution at home. Since excess weight must be discarded, some bones are left in the hunting camp, along with the specialized features of the camp itself – a smoke drying wooden rack, large hearths and rudimentary shelters.

The equipment of dry season hunting is similar to that of the rainy season. Most sensitive to variation in game are the arrows used by the hunters. The Agta names, such as *pangal, palsok* and *gahaygay,* of these objects are based on point styles and functions. Arrows can be divided into two categories – those of simple construction including a one-piece metal or wood point fastened to a reed shaft and fletched with three or four feathers, and arrows of a more complex design. The complex arrows are of multiple component construction, usually with a metal head, metal barbs to the rear of the cutting points and are connected by a line to a hardwood shaft. These arrows, in their heaviest foms, are made to most effectively kill pig and deer, while the lighter models are used for monkey. The idea is to impale the animal and secure the arrow point internally by the barbs. The line plays out and as the animal flees the shaft catches on plants, bringing the line up taut, causing internal damage and death.



Agta arrows: left, a palsok used for general purpose; middle, a kinamangan used to hunt deer; and right,a gahaygay used for shooting wild boar and large deer.

As archaeologists, it is important to note that different types of arrows are game specific; a monkey arrow, for example, would seldom be used on another animal. Of equal interest is that considerable variation in use is found with each type of arrow. In the rainy season, when stalking pig and deer to within a few yards is possible, much heavier points are used. The power of close-in shots and massive projectiles enhances the killing probability in all except heart and head shots. Other variations in arrows can be explained by the strength of the archer or by personal and group preferences. Younger hunters, for example, are not expected to draw a heavy bow or throw the arrows with large points. Interestingly, our observations have revealed that overall various groups of Agta have strikingly different notions as to the relative effectiveness of the specific arrow barbing styles. Personal preferences, then, play an important role in the archaeological record.

The weather conditions of the wet season make hunting more difficult for the Agta, with the hot weather turning to cold, miserable rains. Rivers turn from fish laden and easily crossed streams to raging currents, carrying uprooted trees, boulders and brown sediment of flood speed. No swimmer, however accustomed, may enter such water. One can literally see the erosion of the mountains as heavy rains bring landslides into rivers, which transport the stones and sediment toward the Pacific. To the occupants of the river bank and forests, special adjustments are in order. Pig and deer, restricted by high water, roam less widely. With the forest floor soaked, hunters singly or in pairs stalk their favorite prey, wild boar, looking for the largest, fattest target. Most hunting is conducted during a single day, although one-night campovers are known, especially if a moderate break in the rainfall occurs. Stalking, night hunting and ambush are other hunting techniques used at this time. Dogs are useless; they hate the cold, refuse to swim and have trouble following scent. While hunters also dislike and suffer from cold rains they hunt actively since pig fat is essential in the diet especially during cold months.

Settlement Patterns

Settlement patterns follow both the seasonal cycle and the considerations of hunting. Although in the past the distribution of wild plant foods may have exerted more influence on residence and subsistence, today forest collection of roots, fruits and greens is a relatively minor activity. Meat buys the corn and rice that have replaced roots. The demands of hunting rather than gathering therefore strongly affect size, distribution and movement of family and group residences. Agta live in small clusters of family units, usually made up of three or four lean-to's, each occupied by a married couple and their unmarried children. Rainy season and dry season differ markedly in most respects. During the height of the rains, some tendency for consolidation exists. Group size

Settlement patterns follow both the seasonal cycle and the considerations of hunting.

may enlarge to about six families, although the nucleation is shortlived. Houses are placed in different settings; in the dry season lean-to's are found on the dry portion of riverbeds, usually on a cobble or gravel base. Later, rains flood these spots, often leaving several feet of water over the old campsite. During the wet season dwellings must be on high ground, above flood limits. Site location is further complicated by limited space, since camps cannot be adjacent to steep hillsides or old trees. Landslides are a constant threat and because the Sierra Madre lies in the heart of the Philippine typhoon belt, tree blow-downs are also a hazard. As a result, the Agta have only a few selected, safe, rainy season campsites which are used at least once every few years.

The campsite location must also conform to game distribution and to the range limits of each hunting group. This could be several kilometers along a river and may include several sites on small tributaries. Hunting can extend past this central focus, however, and may include regions seldom used for residences. Parties of hunters often camp in very remote, rugged terrain days from contact with Agta or non-Agta. Among the most nomadic Agta groups, whole families are known to join their males on these expeditions. The women dig roots and find honey and fish as a supplement to pig and deer meat. These hunting camps differ little from a base camp, since women usually take the time to build a lean-to adequate to shelter the family from rain, sun and wind. In addition to the residential lean-to's considered "home," seasonally specific camps are established for specialized subsistence activities. The placement, configuration and activity remnants all help the archaeologist and ethnographer understand their context in the overall Agta settlement and subsistence system. In the dry season, for example, "honey camps" are occasionally used. One or two families may make forays of three or four days' duration high on the mountain slopes, where they collect honey in quantity and return to a base camp. Typologically, these honey camps are similar to the base camp with good quality lean-to's built by the women. A similar situation is typical of the rainy season, when women frequently process the starch of the sago-like palm tree ***caryata cummingii.*** If the trees to be felled are beyond an easy hour's walk, the whole family may transfer while one or more trunks have their starch extracted. "Sago" camps are always close to a stream,

The Agta have demonstrated the viability of an economy based on pursuit of large game, supplemented by roots and other plant foods.

beside which women build a dry season shelter which is placed on a platform of saplings or bamboo, indicating a wet season setting. The Agta split the trunks, remove the pith and collect the starch. Other purposes for alternative camp constructions include visitation to friends or trade partners among the Malay farmers, overnight shelter while traveling or brief shelter while collecting specialized rattan, plant medicines or other forest resources.

Archaeologists investigating the remains of hunter gatherers try to locate, describe and interpret special activity areas and habitation remains. If temporal or seasonal assignment of the site can be made, comparison among sites is often useful, since variation tells more about the full range of activities. For example, the special hunting camps found far in the mountain interior should and do have features that distinguish them from family residence camps. They are usually distinguished by location, the simplicity of shelter, a relative abundance of specific bones and the presence of a large hearth away from the shelters. Honey camps, even when combined with hunting activities tend to have an unusual quantity of honey collection-related paraphernalia. Finally, the base camp, even if occupied only for a few days, is the scene of numerous activities reflecting the "permanency" of residence.

A full range of subsistence Agta activities can be discerned by analysis of both these outlying and base camp remains. The base camps of the two main seasons are occupied for a longer duration than the functionally specific camps and are used for a wide range of activities, including those found at the specialized campsites. Butchering of game, for example, occurs throughout the year at base camps. While one may expect different frequencies of certain bones in hunting camps and base camps, only careful quantification reveals the pattern. Arrow manufacture occurs only in base camps, since selected anvil stones placed nearby the hearth and the necessary steel hammer, chisel and files are too heavy to carry. Residues of arrow repair are also found around the lean-to's. Especially common are fragments of broken arrow shafts, bits of metal left in the process of shaping a point, resins and cordage and feather debris. Evidence of womens' and children's presence invariably include fragments of cloth, toys made of native materials and the by-products of mat and basket manufacture. The charred remains of wood and shell in fireplaces where shellfish were heated to convert them into lime for use in betel nut chews can be spotted outside the immediate lean-to environs. Betel nut chews are an Agta addiction, consisting of lime, various leaves, the nut of the betel palm *(Areca catechu)* and leaf tobacco.

Conclusions

The evidence that enters the archaeological record is much greater than what might be recovered at some considerably later date through excavation. We have not yet investigated through digging any of the problems of the preservation and visibility of the data which have been observed firsthand. Instead, we sought to show how subsistence activities, settlement features and the natural environment interact to produce the patterns of behavior advantageous in the humid tropics. These conclusions can then be put into a framework applicable to the archaeology of Southeast Asia. In fact, several of the interests now guiding archaeological inquiry both on the mainland and in the islands include such attempts to understand the range of economic resources exploited by hunters and the relative dependence on larger game animals, plant foods and trade goods. The appearance and nature of hunters' interactions with non-hunters is also critical in understanding the interethnic relations over several thousand years of prehistory. Additionally, the use or lack of domesticated plants and animals is a factor in understanding tribal existence.

Our work, although far from complete, has shown that the Agta were dependent on large game animals, suggesting this phenomenon as a viable alternative throughout prehistory in a tropic setting. Until our research most anthropologists specializing in hunting-gathering cultures argued that hunters, especially in the humid tropics, were more gatherers and scroungers than killers of game.In addition, women were believed to have collected the bulk of the daily food from the wild plants available in the jungle. We now know that bow and arrow hunting, even without the use of steel points, was a highly productive alternative. The Agta have demonstrated the viability of an economy based on pursuit of large game, supplemented by roots and other plant foods. The hunting emphasis comes as a surprise; its existence will allow the modeling of far different adaptations than had once been thought likely. At the same time, archaeologists, learning of Agta hunting success, are likely to be increasingly cautious in overzealously seeking any one model for humid tropics hunting. For example, when the Agta are compared with the Tasaday, a small group of collectors in the southern Philippines, one finds great similarities in subsistence strategies, group organization and adjustment to environment. The Agta demonstrate one pattern of seasonal adjustment

in placement of residences, size of residence group and in use of functionally specific activity sites, all reflecting great dependence on acquisition of game for protein. The Tasaday, who range out of a permanent cave home and operate in single family gathering units, pay far less attention to seasonal considerations. While climate, topography and available resources vary, neither Tasaday nor Agta adaptations are determined by these differences. Instead, a long history of adjustments, including contacts with other societies, have led the respective cultures to their rather different configurations. The lesson for archaeology is clear, and though already known, perhaps adhered to only with difficulty: humid tropics hunting and gathering cultures can vary in their exploitation of the environment and hence in systems of organizing their cultures.

How and to what may this ethnographic research be applied? Archaeology must have, and seems to be developing, a greater interest in the variations of and changes in prehistoric human behavior. We now realize that neither simplicity nor backwardness typifies either ancient or modern Southeast Asian hunting cultures. Differences between the past and present do exist, but successful adaptation to the environment and skill at hunting large game are no more or less unusual in the Asian tropics than in preagricultural Europe and Africa. Instead, a multitude of economic strategies operated over the tens of thousands of years in prehistory, as is still the case today. The archaeologist, utilizing ethnographic data from many of today's living sources, can devise new approaches for testing the ancient cases. From these, and from the insights gained through excavation, better and fuller explanations of the stability of hunting systems and the significant shift to horticulture and trade may be gained.

For Further Reading on the Agta: J. Allen, J. Golson and R. Jones, editors, ***Sunda and Sahul: Prehistoric Studies in Southeast Asia, Melanesia, and Australia*** (New York 1977), contains one paper on the Agta, plus other generally well written papers on archaeology and ethnography; John M. Garvan, "The Negritos of the Philippines," edited by H. Hochegger, ***Wiener Beitrage zur Kulturgeschichte Und Linguistik,*** Band 14 (1964), out of date anthropologically, but containing many details on most aspects of Negrito life.

On ethnoarchaeological studies in general: Richard A. Gould, editor, ***Explorations in Ethnoarchaeology*** (Albuquerque, New Mexico 1975), an excellent collection of the best up to date scholarly papers reporting recent ethnoarchaeology; Karl Hutterer, "Reinterpreting the Southeast Asian Palaeolithic," ***Cultural Ecological Perspectives on Southeast Asia: A Symposium,*** edited by William Word (Athens, Ohio 1977), a brief yet comprehensive paper providing an adequate introduction to the subject; John E. Yellen, ***Archaeological Approaches to the Present: Models for Recontructing the Past*** (New York 1977), a highly readable monograph discussing ethnoarchaeology among the Kung San hunter-gatherers of the Kalahari desert of Botswana; D.E. Yen and John Nance, editors, "Further Studies on the Tasaday," ***Panamin Foundation Research Series*** (Makati, Rizal, Philippines 1976), is of limited interest to archaeologists, but the paper by Yen gives a good synopsis of what is known about Tasaday subsistence practices.

The Boat Coffin. . .
continued from page 24

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SPAFA Activities

Consultative Workshop on Archaeological and Environmental Studies on Srivijaya

Another consultative workshop on Environmental and Archaeological Studies on Srivijaya was organized by the SEAMEO Project in Archaeology and Fine Arts (SPAFA) Thai Sub-Centre and the Co-ordinating Unit. The meetings were held in Bangkok and Southern Thailand: Surat Thani, Nakhon Sri Thammarat and Songkla on 29 March to 11 April 1983.

Additional research proposals to shed more light on the Srivijaya problem were recommended for implementation during the workshop. Suggestions emanating from the workshop are summarized as follows. From Indonesia, the following were recommended for follow-up action: geology and morphology of flora and fauna of Sumatra; the maritime trade routes in South India, Sri Lanka and Java; the distribution of numismatics and currency as well as their roles in economic exchange; a more detailed study of the inscriptions associated with Srivijaya; identification of religious artifacts such as votive tablets and stupikas and their role in the belief system of the societies which created them; the musical instruments associated with Srivijaya; the architectural styles of houses and their functions in society; and the pre-islamic funeral practices and architecture.

The Philippine participants intended to do a follow-up on studies they already proposed in the preceding consultative workshop.

H.E. Dr.Kasem Surisumpundh, Minister of Education and Culture, Thailand, officially opened the workshop. Welcome speeches were also given by Khunying Aree Kultan, Director of the Thai SPAFA Sub-Centre; Prof M.C. Subhadradis Diskul, Chairman of the SPAFA National Steering Committee; and Miss Suchitra Vuthisathira, SPAFA Coordinator.

These focus on Srivijaya character of the Indian images found in the Philippines and a comparative study of coastal riverine communities in Southern Thailand, Indonesia, Malaysia and Southern Philippines.

Thai delegates recommended the broadening of the scope of the Srivijaya study. They suggested an extension of the multidisciplinary approach already being launched such as from the perspectives of archaeology, ethnohistory, cultural history, paleo-ethnography,

Upper left : Thai official delegates - Prof.M.C. Subharadis Diskul, Dr. Thida Saraya, Mr.Kemchati Theppuchai and Dr.Pornchai Suchitta. Lower left: Philippine and Indonesian delegates - Dr. Juan Francisco, Mr.Benjamin Han, Mrs.Satyawati Suleiman, Hadiyati Endang, Mr. Machi Suhadi, and Mr. Pieter Ferdinandus.

demography etc. The Thai participants would like to look into the relationship between the data they already have and their use as evidence for the existence of the Srivijayan Empire. This would require a more intensive study of the known archaeological sites, the type and source of the trade items found in the ancient settlements in South Thailand, the types and kinds of medium of exchange used in trade, and the role of the various kinds of forest products and their relations to the localities that produced them.

Dr. Pierre Y. Manguin, French consultant from Ecole Francaise d'Extreme-Orient, Paris, articulated the need to shift survey and excavation work of shipwrecks from the east coast of the Gulf of Siam to the east coast of Peninsular Thailand. His recommendation was based on the fact that artifacts recovered from reported wrecks from the latter area generally were of earlier vintage, and that settlements there were more important in relation to the Srivijaya studies.

Objectives

The workshop was convened not only to discuss new research proposals but also to present the findings of the on-going studies on Srivijaya and to exchange information on methods of analyses that have been employed by the people concerned. These activities were envisioned to provide the participants/researchers maximum exposure to a variety of materials and situations associated with the Srivijayan studies that will facilitate comparative researches, to make them aware of other useful methodologies that they can adapt in their own work, and to make easier the collation of data which will go into the final report.

Archaeologists who have been involved in the initial studies on Srivijaya since 1979 and other scholars who have conducted researches related to this subject matter participated in the workshop. They were as follows: Indonesia – Mrs. Satyawati Suleiman, Mr. Machi Suhadi, Mrs. Sri Hadiyati Endang Sukatno, and Mr. Pieter Eduard Johannes Ferdinandus; Philippines -- Dr. Juan R. Francisco and Asst. Prof. Benjamin A. Han; Thailand – Prof. M.C. Subhadradis Diskul, Mr. Preecha Nunsuk, Asst. Prof. Dr. Thida Saraya, Mr. Khemchati Thepchai, and Dr. Pornchai Suchitta.

The experts/consultants who came were Prof. Tatsuro Yamato, Mr. Shoji Ito , Dr. Pierre-Yves Manguin, Dr. J. Dumarcay, Dr. John N. Miksic, Prof. Janice Stargardt, Prof. Dr. Prasert Na Nagara, Assoc. Prof. Srisakra Vallibhotama, Asst. Prof. Thiva Supajanva, and Asst. Prof. Dr. Suebsang Promboon.

Training on Analysis of Prehistoric Pottery Conducted

A training course in the Analysis of Prehistoric Pottery was conducted by the Anthropology Division of the National Museum of the Philippines under the auspices of the Southeast Asian Ministers of Education Project in Archaeology and Fine ARTS (SPAFA).

The training activities included lectures, actual manufacture of earthenware potteries, field training at a pottery-making village and analysis of sherds from Thailand and the Philippines. Dr. William G. Solheim II from the the Department of Anthropology, University of Hawaii directed the course.

The lectures provided the 9 participants from the three SPAFA member countries a comprehensive view of the Southeast Asian prehistoric pottery. They focused on the various aspects of pottery production and the methods used in their analysis, measurement, description and classification. Lecturers, aside from Dr. Solheim, were staff-members of the National Museum.

A part of the training was devoted to the manufacture of pottery. It enabled the participants to become familiar and to experiment with the various materials used for surface treatment of earthenwares which were employed even during the prehistoric times. The materials included shells, bamboos, corded paddles, finger impressions, animal bones, etc. Mrs. Ludy Solheim supervised this portion of the workshop.

Field work was conducted in Barangay Bulala, Vigan, Ilocos Sur, one of the seven barangays in the area engaged in pottery manufacture. The trainees witnessed the complete process of pottery manufacture from the gathering of the raw materials to the distribution of the finished products. They also undertook a survey which gave them information on the number of people and household involved in this small industry, the way pottery-making skills are passed from one generation to the other, the division of labor by age and sex, the different tools used in pottery-making, and the different steps involved in the firing of potteries.

The group also visited a number of stoneware manufacturing factories, ***burnayan*** as it is called in the Philippines, where jars, jarlets, bricks and potteries are being produced in large quantities. The method of firing used in these places differ from that of Bulala – the items are fired in large kilns whereas the latter uses open firing.

Following the method taught by Dr. Solheim, the participants analyzed the sherds from the Philippines and Thailand. The analysis involved both macroscopic and microscopic methods and used as basis a description of the various

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Standardization of Studies on Ceramics of East and Southeast Asia, Focus of Workshop

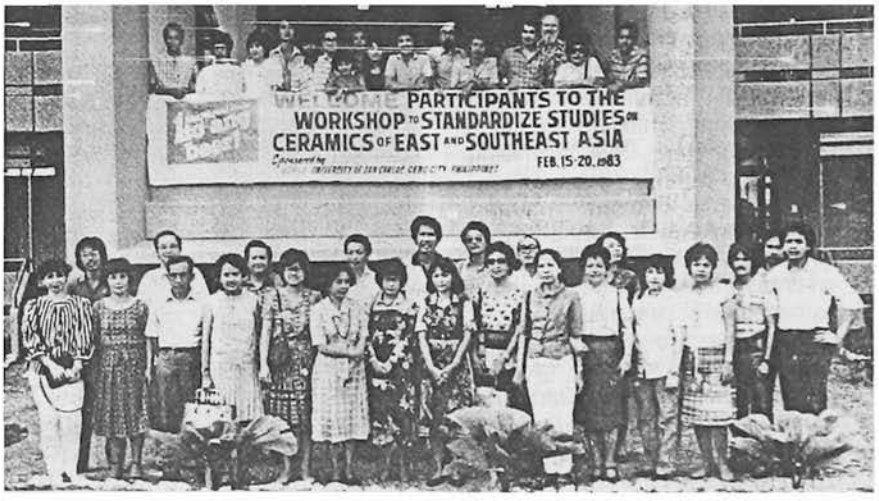
A description of the ceramic finds in various excavations in the region was the entry point of discussion of the country reports and contributions of various consultants in the SPAFA Workshop to Standardize Studies on Ceramics of East and Southeast Asia held in Cebu City on 15-20 February 1983.

The workshop was hosted by the University of San Carlos in Cebu City. It was organized by the SPAFA Sub-Centre for Pre-history in the Philippines in conjunction with the SPAFA Coordinating Unit. The workshop aimed to standardize studies on export wares which have been recovered from archaeological context, to prepare a syllabus for a training programme in ceramics of East and Southeast Asia and to provide information and documentations on the sources of ceramic materials.

Archaeologists, museum personnel and other scholars who have undertaken some researches on excavated export ceramics attended the workshop. They were as follows: Indonesia – Sri Sujatmi Satari, M Th Naniek Harkantiningsih and Abu Ridho; Philippines – Leonisa L. Ramas, Artemio Barbosa and Jaime Reyes; Thailand – Phasook Indrawooth, Boviornvet Rungruji and Ratchanee Bannanurang; and Malaysia - Lucas Chin.

Those who acted as consultants/ resource persons were: Rosa C.P. Tanazas (SPAFA Coordinating Unit); Alfredo Evangelista, Jesus Peralta, Wilfredo Ronquillo, Mamitua Saber and Marcelino Maceda (Philippines); Sumarah Adhyatman (Indonesia); Tsugio Mikami and Meitoku Kamei (Japan); Natthapatra Chandavij (Thailand); and Wilhelm Solheim II(USA).

Above left: Dr.Alfredo Evangelista, SPAFA Governing Board member for the Philippines, declares the workshop officially open. Below: The meeting in session and the participants to the workshop.



Training. . .
continued from page 56

sherds recovered from a number of archaeological sites in the two countries. It took into consideration the color, temper, surface treatment, form, sherd count and weights, extent of oxidation, description of inclusions and the general sherd condition. The results of the analysis along with the information gathered during the field work were written up at the end of the training.

The participants were as follows: from Indonesia – Agung Sukardjo, R.M. Susanto, and L. Kade Citha Yuliati; from Thailand -- Praphid Choosiri, Janya Manavit, and Alisa Ramkomut; and from the Philippines – Alejandro Almendral, Artemio Barbosa and Cecilio G. Salcedo.