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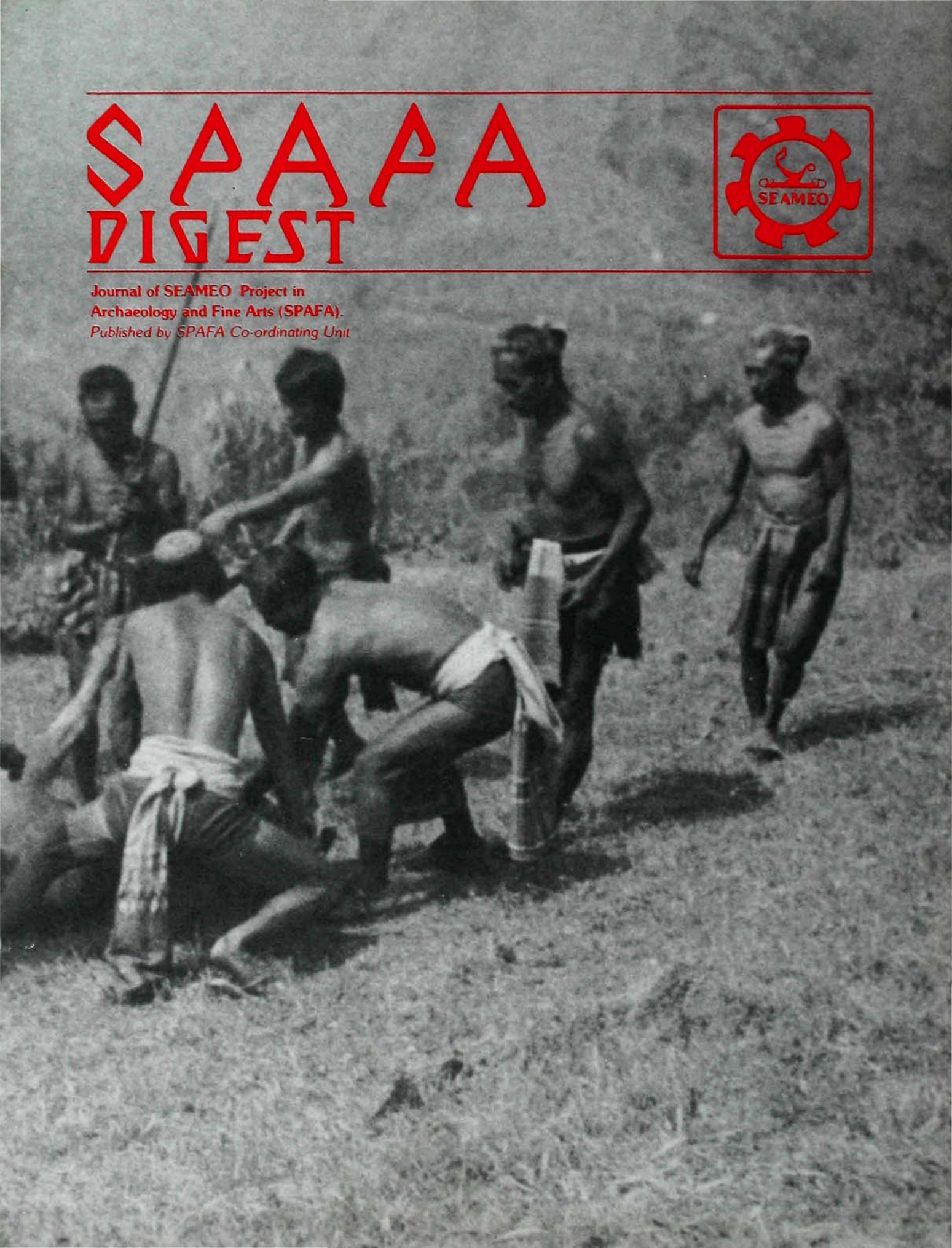

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SEAMEO

SPAFA Objectives

— 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 Asia through joint programmes in archaeology and fine arts.

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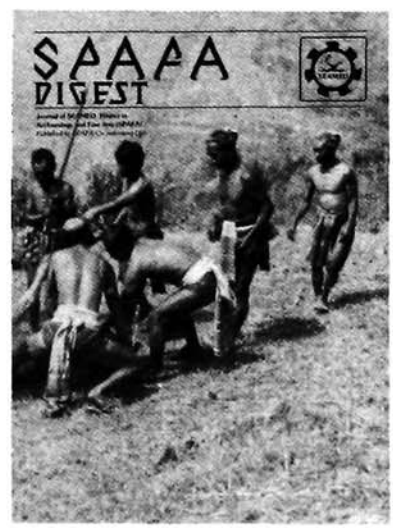
The Cover

This ceremonial activity was taken in Sagada, Bontoc, Philippines where participants to the Training Course in the Documentation of Ethnic music headed by Dr. Jose Maceda did their field work.



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New Data For Studying The Early Coastline In The Jambi Area

by E. Edwards McKinnon

Three things happened in Jambi in the late summer of 1982 which are of interest to students of the history of the former Sumatran polity of Srivijaya. These are, in chronological order, the discovery in August of a bronze *dipalaksmi* image at the village of Koto Kandis on the Sungei Niur[1], the northwesterly branch of the lower Batang Hari; the visit of participants in the SPAFA Consultative Workshop on Environmental and Archaeological Studies on Srivijaya to Jambi and Muara Jambi in September[2]; and, also in September as a direct outcome of the Workshop, the discovery of a previously unrecorded archaeological site at Muara Kumpeh Hilir (Suak Kandis). A report on the Workshop was published in the *SPAFA Digest* 2, in October 1982.

In my "Brief Note on Muara Kumpeh Hilir: an Early Port Site on the Batang Hari? (Edwards McKinnon 1982), I suggested that, although the discoveries of the bronze at Koto Kandis and the identification of a twelfth to fourteenth century site at Muara Kumpeh Hilir are of interest in themselves, these discoveries have a much greater significance. They call for a reassessment and, probably rejection, of Obdeyn's "gulf" theory and of his historical reconstruction of the ancient map of Sumatra which suggests that the coastline of Jambi and South Sumatra has changed considerably over the past fifteen hundred years (Obdeyn 1941, 1942a, b). Both Professor Wolters (Wolters 1979) and Dr. P–Y. Manguin (Manguin 1982) have published reconsiderations of the historical geography of the Palembang coast taking into account geomorphic data. At time of writing I do not, unfortunately, have access to the latest geomorphic data relating to the lower reaches of the Batang Hari, though I understand that geologists surveying alluvial gold-bearing deposits in the Batang Hari drainage basin have suggested that the last major geological changes in the area took place perhaps 7,000 years ago (Toh 1975). I am looking forward to being able to see the results of more recent geological research and how this may relate to the problem of early habitation in the lower reaches of the Batang Hari.

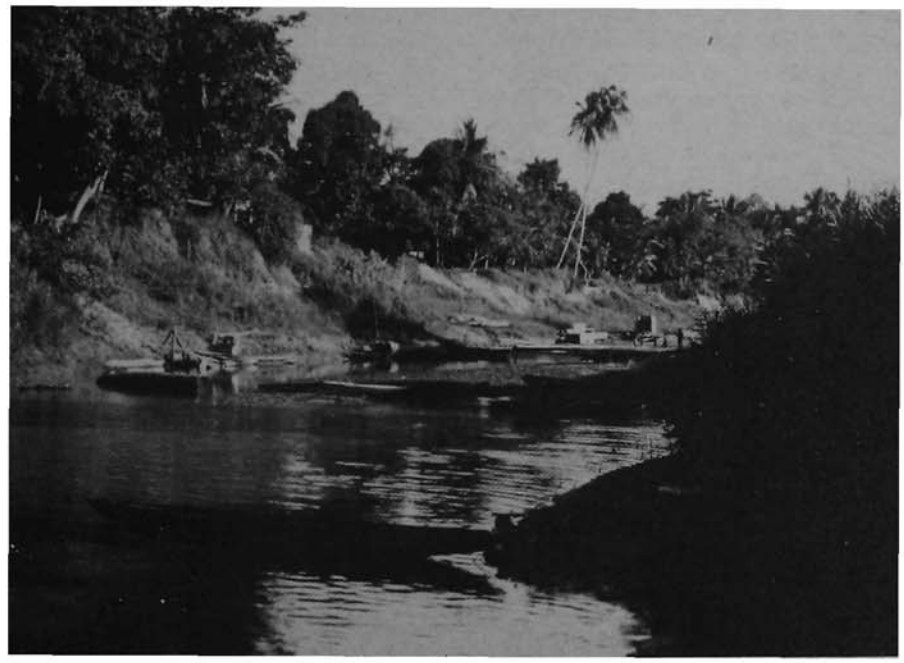
The author has a Ph.D. in Art History from Cornell University. He has done a lot of research in Indonesia.

Historical sources indicate that the lower Batang Hari was of considerable political and economic importance during late "Srivijayan" times (Wolters 1966). Historical data are now being confirmed by archaeological evidence.

Muara Jambi

After Schnitger's pioneering survey of the Muara Jambi area of 1936 (Schnitger 1973) and a visit by archaeologists in 1954 (Soekmono 1955), the Indonesian National Institute for Archaeology and the Directorate for the Protection and Development of Historical and Archaeological Heritage are at present carrying out a programme of survey, excavation and restoration at the Muara Jambi site. No less than forty brick-built monuments have been identified in an area covering some 1,000 hectares on the north bank of the Batang Hari. There are also the remains of brick-built structures on the southern bank, one of which at Kemingking Dalam has been partially excavated. The recoveries of statuary, ceramic sherds, and other artifacts during the excavations indicate a wide range of external cultural and commercial contacts, notably with Java, Thailand, Vietnam, India

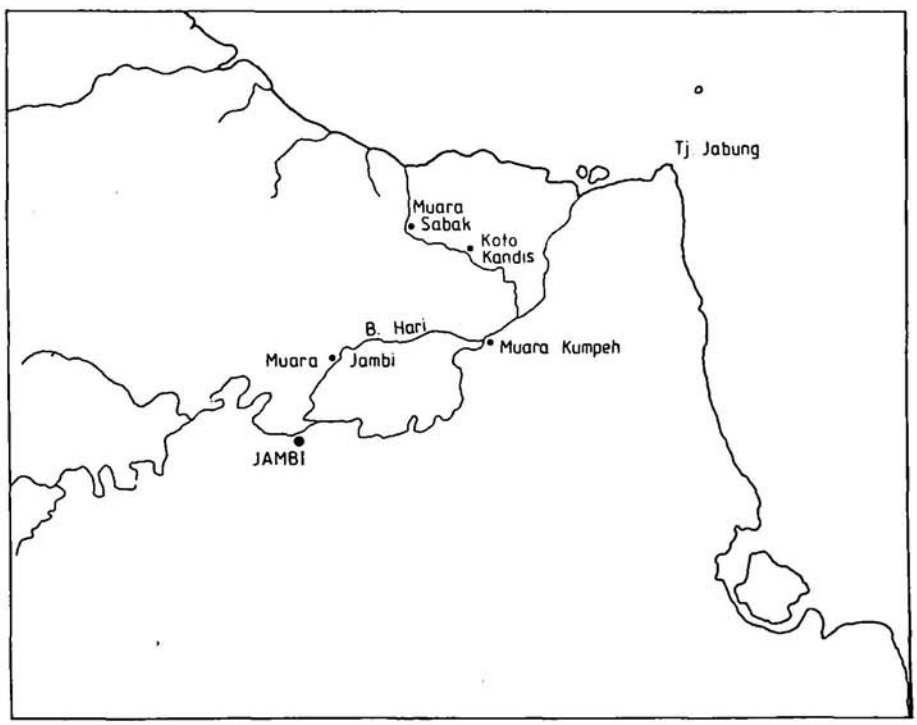
and China (Nazir 1978, 1981)[3] The Muara Jambi site is perhaps the most extensive and most important in Sumatra (Edwards McKinnon and Dermawan 1981). The sheer size of this site raises expectations that other, though perhaps less spectacular, archaeological evidence awaits discovery in the vicinity. This expectation is not unfounded, as evinced by the recognition of early sites at Muara Kumpeh Hilir and latterly at Koto Kandis.



The Batang Kumpeh at Muara Kumpeh Hilir: this section is canalized and joins the Batang Kumpeh proper with the Batang Hari.

Muara Kumpeh Hilir (Suak Kandis)

The discovery of twelfth to fourteenth century sherds and other archaeological debris at Muara Kumpeh Hilir some 50 km. below Muara Jambi in September 1982 was due to a fortuitous combination of circumstances. The long dry season of 1982, with a lower than normal volume of water in the river, together with low tide resulted in the exposure of sherd material in the river bank at exactly the time Abu Ridho of the Museum Nasional, Dr. P–Y. Manguin, and myself who were attending the SPAFA Workshop, arrived at Suak Kandis[4]. When, on the following day Abu Ridho and Tomi of *PUSPAN* returned to the site, they were obliged to wait for some time before the state of the tide revealed the sherd-bearing deposit. Had we been a few hours earlier or later, we would have been unlikely to have seen any trace of former settlement. Adam, who visited the lower Batang Hari to seek, unsuccessfully, for signs of "Hindu" occupation as long ago as 1921, concluded that if any such traces did exist they were presumably buried under the mud (Adam 1921). This is precisely what has happened.



The Lower Batang Hari

Miksic, in reviewing the problem of changes in sea level and coastal sites in Southeast Asia generally, has remarked upon the difficulty of locating such sites (Miksic 1978). Indeed, personal experience in Sumatra has shown that it is often only soil disturbance created by ditch construction or seasonal cultivation that affords the observer any opportunity of sighting traces of earlier occupation or cultural remains. The normally lush vegetation or sticky, inhospitable mud are bound to envelop and conceal everything. The one major exception to this is provided by river banks, where the scouring action of

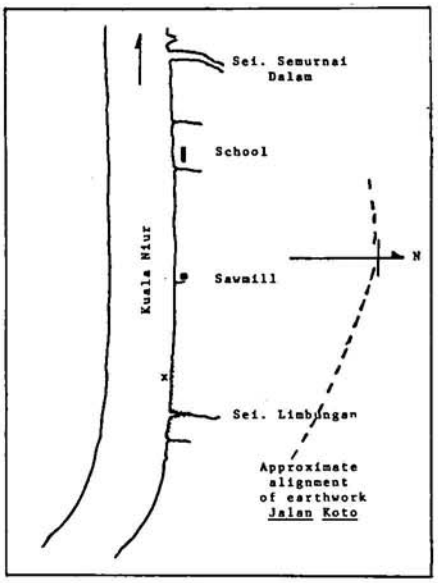
currents or tides may expose cultural remains imbedded in the soil and where the roots of recently fallen trees may, sometimes, expose buried remains before they are inexorably re-covered by a rank growth of grasses and creepers. The effectiveness of surveys and exploratory visits can be optimised by timing them to coincide with the duration of the local digging or planting season, or at such times when ditching is normally taken in hand.

In these circumstances local knowledge is useful. At Muara Kumpeh Hilir I was impressed by the villagers' observation that ancient postsherds, which they referred to as ***beling kuno,*** were exposed by low water at Tanjung Palancu at the mouth of the Batang Kumpeh. Enquiries made at Suak Kandis, three or four hundred metres upstream of the ***Muara,*** revealed that villagers were familiar with several locations in the area where sherds were to be found. Abu Ridho and Tomi were able to observe a number of additional locations on the north bank of the Batang Hari opposite Muara Kumpeh Hilir where late Sung and Yuan period Chinese sherds were exposed at low water.

In recent years extensive ***pasang surut*** irrigation channels for wet rice cultivation[5] have been constructed in the area between the Kuala Niur and the Kuala Berbak, the two mouths of the Batang Hari. The existence of channels such as these should create excellent opportunities for surface observations in the area of Simpang and Koto Kandis.

Koto Kandis

The village of Koto Kandis, a single row of wooden houses thatched with ***atap,*** stretches for about 1½ km. along the northern bank of the Batang Hari. It is situated some 116 km. below the modern city of Jambi and is 90 km. downstream of Muara Jambi. It is about 29 km. above the village of Muara Sabak which is itself some 12 km. from the sea.



Koto Kandis, on the Kualo Niur. X, findspot of the Dipalaksmi.

Immediately downstream of Koto Kandis, a narrow channel, the Sungai Semurnai Dalam, links the main channel of the Kuala Niur with the sea coast. Villagers indicate that the coast can be reached through this channel by small ***prahu*** in less than a day. Mangrove is much more in evidence along the banks of the Kuala Niur below Koto Kandis than it is above the settlement.

As in the case of cultural remains at Muara Kumpeh Hilir (Suak Kandis), there is little surface indication that Koto Kandis is an ancient site[6], unless one happens to land at low water. Other than a few sherds of late Sung or Yuan Chinese stoneware recently exposed following the construction of a walkway along the river bank, it is unlikely that any evidence of earlier cultural remains was exposed on the surface in the village itself. At low water, however, a profusion of sherd material can be seen littering the foreshore for a distance of up to 1½ km. or more, from the upstream side of the Sungai Semurnai Dalam to a point where the bank is again covered by mangrove, some distance beyond the Sungei Limbungan and a ditch known as Parit Tiga. On the landward side of the settlement, the remains of an earthern rampart known locally as the ***Jalan Koto*** is marked by a line of banana and other fruit trees.

The reason for the lack of sherd material on the surface is immediately apparent on examination of the river bank. A metre-thick layer of sticky alluvium overlies the sherd bearing-stratum, a layer of greyish sand which is exposed at low tide.

The sherd material, much of it well-preserved despite the wet conditions, appears to date mainly from the thirteenth or fourteenth centuries. Fine quality ***Ch'ing pai,*** grey-glazed stoneware and Fukien whiteware are much in evidence[7].

The foreshore in the vicinity of the point where the ***dipalaksmi*** was discovered about 100 m. south of the confluence of the Sungei Limbungan and the Kuala Niur has yielded numerous small fragments of gold leaf, gold wire and scrap. Some 25 m. behind the river bank, fragments of wafer-like bricks are to be found in a lime tree garden. A large brick measuring 30 X 18 X 7 cm. from this spot has been taken to the Museum in Jambi[8]. A number of beads, including those of carnelian and other semi-precious stones, have been found in this area.

The Dipalaksmi from Koto Kandis

The bronze ***dipalaksmi,*** discovered by chance by children playing on the river bank, is of considerable interest in itself. It is in the form of a female image standing 35 cm. in height bearing a spouted lamp in her left hand and a lotus blossom in her right. She wears Cola style dress, is bare breasted, and has a heavy necklace with a pendant suspended upon her chest. Hooded serpents rise from either side of her neck. Her hair is drawn back in the form of a

sanggul or bun. She wears an ornamental waistband and has heavy, plain anklets on each leg.

Bronze lamps and *dipalaksmi* in particular were commonly presented as gifts to Hindu temples by devotees. The Koto Kandis image would appear to be no exception to this practice. It is in late Cola style and probably dates from the late thirteenth or fourteenth centuries[9]. Whether it was cast locally or brought from South India cannot be ascertained[10], but its presence at Koto Kandis suggests a very close association between the lower Batang Hari and Tamilnadu in the period between the Cola raids of the early eleventh century and the destruction of settlements in this area in the late fourteenth century.

The Batang Kumpeh

Another consideration with a bearing upon the historical geography of the lower Batang Hari and the dating of settlement in the area below modern Jambi is the circumstance that the upper reaches of the Batang Kumpeh between Muara Kumpeh Hulu and about as far as Penarikan[11] appear to have been canalised[12]. When exactly this work took place is not clear. There are, however, indications that it could have been prior to the twelfth century. On a brief visit to Solok Sakean on this part of the waterway in 1978, I came across sherds of early Sung period (late tenth or eleventh century) Chinese stoneware on the west bank of this channel.

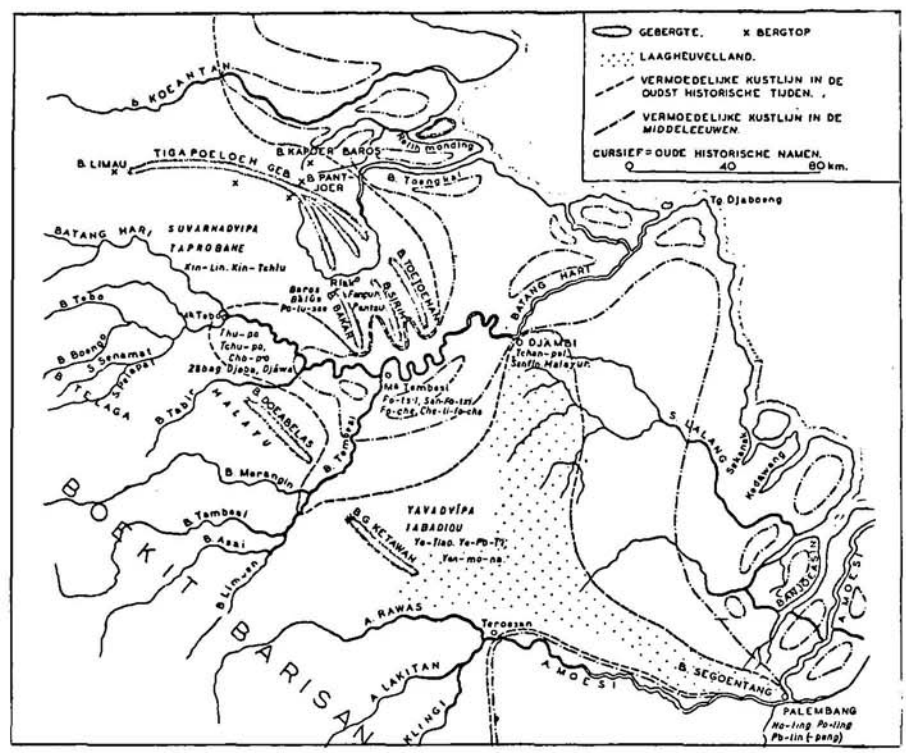
Aerial photographs indicate that the Batang Hari has changed course just below Muara Kumpeh Hulu. The main channel or a branch of the river may once have flowed more or less along the alignment of the present Batang Kumpeh. A possible explanation is that the canal may have been dug to connect settlements in the Batang Kumpeh area with the main stream of the Batang Hari or it may have served some other purpose, such as helping to alleviate flooding lower down. In effect, the Batang Kumpeh channel bypasses the Muara Jambi site which is itself intersected by a series of artificial channels[13]

Conclusion

The outcome of this new evidence is that Obdeyn's picture of a large gulf reaching inland as far as Jambi and Palembang in historical times is without foundation. The coastline of Jambi, like that of Palembang, appears to have changed relatively little since late Srivijayan times and, in all probability, very little during the past fifteen hundred years. Sites such as Koto Kandis and Muara Kumpeh Hilir were already occupied by about the twelfth century and possibly much earlier[14]

It is interesting to note also, that in addition to Muara Jambi, other Sumatran coastal sites appear to have come to an end about the same time. To my knowledge, sites such as Pulau Kompei in Aru Bay, Kota Cina near Medan, the Panei/Barumun complex (not strictly coastal but also affected about the same time), Muara Kumpeh Hilir and Koto Kandis all seem to have been deserted or have been destroyed in the late fourteenth century. One wonders whether this might not be related to the expansion of Majapahit interests into the Selat Melaka about this time[15]

Both Muara Kumpeh Hilir and Koto Kandis occupy strategic points in a network of riverine communication and neighbourhood associations. Further survey and research of the lower Batang Hari area should reveal the extent and duration of early settlement there. One cannot disregard the fact that upstream is the major archaeological site of Muara Jambi, associated with the ancient toponym Melayu,



Obedyn's reconstruction of the Palembang and Jambi Coastline in the earliest historical times and the Middle Ages. It has misled a generation of scholars. Recent assessment of the situation indicates relatively little change during historical times.

and known to be involved in ancient maritime trade from at least the eleventh until the fourteenth centuries.

Acknowledgement

I would like to express my appreciation to Professor O.W. Wolters for discussing an earlier draft of this paper and for several helpful suggestions.

Footnotes

1 The recovery of the bronze was reported in Kompas, 13 August 1982. It is now in the small museum at the office of the Department of Education and Culture in Jambi.

2 I am indebted to the Organizing Committee of the Workshop and to the Indonesian National Institute of Archaeology for the privilege of being able to participate in the Workshop in Palembang and Jambi last September.

3 Test pits excavated at Muara Jambi in September 1982 revealed numerous sherds of Chinese stoneware dating from the tenth or eleventh centuries up until the fourteenth century.

4 Information on tides in the Batang Hari is given in the *Eastern Archipelago Pilot.* Volume IV (1927), London: H.M.S.O.p. 165 which I quote, in extenso: *"The tides in Kuala Niur are mixed, diurnal and semi-diurnal, rise at spring varies from 2.1 to 3.7 m. and neaps from 0.2 to 0.7 m. The times of high and low water average about 1 hour for each 16 km upstream, but are naturally influenced by the water level of the upper river and the height of the tide. With low water level in the river (when the tide-gauge at Jambie shows less than zero) the maximum rise at Jambie due to the tide is...0.3 to 0.6 m., at Sekombong... 1.5 m., at Muara Kompe Ilir...1.9 m., at Simpang ...2.3 m. and at Muara Sabak... 3.7 m.*

When the water in the river is high (with the gauge at Jambie showing 4.6 m. [and more] the tide only causes a rise of 0.3 m. at Muara Kompei Ilir, of 0.9 m. at Simpang Tua and practically none at all at Muara Sabak...

The water level of the river in the various months of the year is very irregular; the lowest is from June to September, and the highest from December to April, although there are sometimes very low levels during the latter months. ...

The stream attains a maximum rate of 2½ knots as far up as Muara Kompe Ilir, and 4 knots at Jambie during floods, but not more than 2½ knots in ordinary circumstances."

5 *Pasang-surut:* a system used extensively by Bugis immigrants to South Sumatra and Jambi which makes use of the ebb and flow of the tide in the lower reaches of river.

6 The name Kandis happens to be mentioned in the *Nagarakertagama* as a toponym in Sumatra in the year 1365. It is listed along with Kahwas, Mangkabwa, Siyak, Rekan, Kampur and Pane in Canto 13, Stanza 1 (Pigeaud 1960; 3, 16). Pigeaud notes *"Kandis: Kandis a tributary of the Kwantan, near Koto Tua (according to Westenenk)"* (Pigeaud 1960; 4, 30).

7 I visited Koto Kandis on a trip down the Batang Hari together with Pak M. Nazir and Dr. Tim Babcock on 18th June 1983. We made a collection of sherds from the foreshore which are now in the care of Pak Nazir at the Museum in Jambi. A full analysis of the different types and varieties of ceramic material is still to be undertaken.

8 Given to Pak M. Nazir by the Kepala Kampung, Pak Jahari Uyup.

9 I am indebted to M. Jacques Dumarcay for discussing the dating and stylistic affinities of the image. Liebert notes: *dipalaksmi* (attribute) name of a lamp consisting of a tray for one wick, carried in hands by Laksmi the Genius of lamps (standing) – cast in bronze in one piece and often placed in shrines as a votive gift. The name derives from Tamil: *deva danam:* gifts to gods and *vilakku.* lamp (Liebert 1976, 81).

10 On another South Indian style votive image from Northeast Sumatra, see: K.A. Nilakanta Sastri (Sastri 1936).

11 Penarikan : from *tarik* to pull or haul, thus a portage.

12 I am indebted to Derek Holmes for discussing the topography of the Batang Kumpeh area and for confirming my suspicions that the upper end of the channel has indeed been canalised.

13 The names of waterways such as *Parit Sekapung,* the *Parit Joho* which links the east and west ends of the site and the *Terusan* which links the Sungei Amburan Jalo with the Sungei Berebang and Dano Lamo all imply human interference. *Parit:* a ditch or trench. *Terusan:* a canal cut to connect two rivers or avoid a long river bend (Wilkinson 1959, 1214).

14 It is interesting to note that a toponym Kompei or Kumpeh was known in Chinese sources as early as the seventh century (Wolters 1967, Edwards McKinnon and Sinar 1981).

15 Professor Wolters has noted that early Ming sailing direction ignored Jambi. The inference is that Jambi was no longer of any importance by the early fifteenth century (Wolters 1975, 35).

Postscript

In late August 1984, I had the privilege of accompanying Drs Bambang Budi Utomo (Tomi) of the ***Pusat Penelitian Arkeologi Nasional,*** Jakarta, Professor O.W. Wolters of Cornell and Nigel Wolters on a speedboat trip down the Batang Hari from Jambi as far as Kampung Laut on the Batang Hari estuary and to the Batang Tungkal. From Kuala Tungkal, we spent a day travelling upstream as far as Taman Rajo, a little below Pangkalan Dagang about three hours above Kuala Tungkal.

As long ago as 1937, Schnitger illustrated a bronze Aksobhya figure, then in a private collection, said to have come from Tungkol[1], north of Jambi. I assume that this is, in fact, Kuala Tungkal as no other village of this name in Sumatra fits this description. If this is correct, this discovery would suggest that further archaeological investigation are in order in the area of Kuala Tungkal which may, in turn, indicate the permanence of this coastline in late Srivijayan times.

At Taman Rajo, we saw a fortified village site where an assortment of fifteenth to sixteenth century ceramic sherds had been discovered together with other artifacts including an iron cannon. The sherds comprised mainly Chinese blue and white wares, Vietnamese and Thai Sawankhalok ware, together with fragments of local earthenware.

Enroute to Taman Rajo, we passed one or two villages situated in the lower, swampy course of the Tungkal. At Kampung Kelagian where we met the first signs of

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Sites of The Highest Possible Priority: Targets for Archaeological Reconnaissance in Thailand

by Pisit Charoenwongsa and Bennet Bronson

A list of sites was developed as an aid to members of the Research Section of the Archaeology Division currently engaged in various archaeological survey projects for the Fine Arts Department of Thailand. By offering it here to a wider public, the authors hope to stimulate discussion of such matters as well as to accelerate the pace of discovery.

It is essentially a wish-list, a compilation of the kinds of sites whose discovery would, in the authors' eyes, be of the greatest present importance and would open the most significant new lines of research. Not all potential discoveries of this sort have been included. To qualify for the list, a national site has to be plausible, non-obvious, recognizable, and capable of yielding useful information within a short time after it is found. This means that we have omitted discoveries which are abstractly possible but implausible, those which could not readily be identified without extensive excavation or by the use of instruments not currently available. Moreover it means that we have left out what many believe to be the real prizes of archaeological research in Thailand: the discovery and understanding of early states, economic networks, adaptive and social systems and the like. While we quite agree that these objectives are of great importance, we feel that they cannot be satisfactorily demonstrated by any single find or without massive long-term research and analysis.

On the other hand, we recognize that the list is still seriously incomplete in terms of even these restrictions. Criticisms and suggestions will be welcomed. The list is as follows:

1. **A site with flaked stone tools or human skeletal remains and bones of extinct species of animals in primary association.**

   Such sites have been hard to find in Southeast Asia; Java has produced solid (though non-primary) associations between human and extinct animal remains, but it has not yielded stone tools which are unchallengeably associated with these. In Thailand, the North seems the most logical place to look; a possible site of this kind has recently been reported in Lampang.

2. **A "Hoabinhian" shell midden.**

   Coastal shell mounds containing human bones, sometimes pottery, and large flaked stone tools once existed in substantial numbers in Malaysia, Sumatra, and probably southern Thailand as well. The great majority have already been destroyed by persons who burn the shell for lime. Two or three are known to survive in Sumatra, and a recently discovered mound is slated for excavation by the National Museum of Malaysia this year. Due to the controversial dating and cultural affiliations of such sites, the discovery of one in Thailand probably in the South or Southeast would be of major significance.

3. **A lithic period site producing only small flake tools, anywhere north of the Kra Isthmus.**

   It has long been believed that Southeast Asia was in early prehistoric times divided into two provinces: core and

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large flake-tool using area on the Mainland and a small flake-tool using area in the Islands. Now, however, a site producing nothing but small flake tools has been discovered in Krabi Province, showing that the two lithic provinces overlap. If more such sites are found in areas even further north, a number of theories will have to be reevaluated.

4. **A site of the "prepottery neolithic", one with overall ground and polished stone tools but without pottery.**

This does not include sites with flaked tools which have ground edges. Although true "neolithic" adzes are often considered to be relatively early in Southeast Asia, they occur in Thailand in association with metal and almost always in association with pottery. The question is whether they existed at all before the ceramic period.

5. **A mining site for metal ores of definite prehistoric date.**

Archaeological mining areas for copper, tin, iron and perhaps zinc (but not, as yet, lead) are known in several parts of Thailand. However, proving these are prehistoric has been difficult, since most mines were also exploited in more recent times. The discovery of a reasonable number of prehistoric artifacts, and no later artifacts, within the mines would constitute moderately convincing proof of a prehistoric date. This would be strengthened by finding a smelting site near the mining areas which contained residential debris of the same period.

6. **A prehistoric iron smelting site with large quantities of slag and enough associated pottery to make clear that the smelting activity does not date from later times.**

None of the slag when broken into small fragments should show areas of red glass or green inclusions; if those features are present, the slag probably derives from the smelting of copper rather than iron. The presence of iron ores, incidentally, is not proof that a site was used for iron smelting for such ores were often used as fluxes in the smelting of copper. A number of possible prehistoric iron smelting sites are now known in Central and Northeast Thailand. While many will undoubtedly prove to be quite late, a few may well be prehistoric. These include Kut Ta Phet in Lopburi Province and Phu Mun Bao in Kon Kaen, etc.

7. **Site with ethnic zoning, with two or more residential areas that appear to be contemporary but which show markedly different designs of pottery and other artifacts.**

At least two situations could produce a pattern of this kind: a prehistoric settlement where two groups with different occupational specialties coexist, as in the case of the hunter-gatherer groups who inhabit the fringes of agricultural settlements in several parts of modern Southeast Asia or a protohistoric or historic settlement with special quarters for foreign merchants, etc., as at 16th - 17th century Ayutthya. Both situations should be recognizable archaeologically and would be of major interest if found.

8. **A town or city-sized settlement of entirely prehistoric date. The site should cover at least 20 hectares and should be densely covered with habitation debris, all of it prehistoric.**

Almost all of the large settlements in Thailand that have been called prehistoric cities (for instance Phimai, Non Chai and Ta Khae) also were inhabited during the protohistoric and historic periods, suggesting that they may not have become truly large and densely populated until after prehistoric times. The discovery of a site abandoned before the close of the prehistoric period would resolve such doubts and would demonstrate that urbanization in Thailand probably occured independently of Chinese or Indian influence.

9. **A stone bead-making site, with microflaked bead blanks and debitage of carnelian, agate, and other varieties of chalcedony.**

The fact that certain kinds of etched carnelian beads are more common in Thailand than in India, traditionally supposed to be the source of most beads in world commerce, suggests that they might have been locally made during the protohistoric period. A site of this kind, if it exists, would be expected to be located not far from a source of suitable stone. Several sources for chalcedony have been located in Petchabun. A possible beadmaking site exists at Khao Si Vichai in Surat-thani.

10. **Site showing late prehistoric or protohistoric Chinese contacts in the form of bronzes, cast iron, and perhaps carved jades or ceramics.**

A number of poorly provenanced bronze dagger-axes in the Bangkok National Museum appear to be definitely Chinese and of late Chou/Zhou Dynasty date, 500-250 BC. A number of jades and bronze mirrors dating to the late Chou or Han (ca. 200 BC-AD 200) periods exist in private collections which are said to have been found in Thailand, and the Indonesian

National Museum possesses a good many Han glazed ceramic pieces claimed to be from Sumatra and Borneo. Many of these examples (including, perhaps, all of the Indonesian Han pieces) represent hoaxes, having been imported from China in recent times and sold with false provenances to collectors. No site in Thailand has yet produced such objects from a secure context; reports of early Chinese finds should be investigated carefully and critically.

11. Site showing contact during the late prehistoric or early protohistoric periods with India, the Middle East, or the Mediterranean.

Possible indicators of such contact include glass vessels, polychrome "eye" beads, coins, bronze objects, and burnished black or black and red finewares.

As in the case of ancient Chinese imports, most early objects from the West said to have been found in Southeast Asia are unprovenanced and often suspect as possible hoaxes. Indian finewares of the kind found at and perhaps made near Arikamedu have now been identified at Buni in Java and Tongku Lembu in Malaysia. As these are not famous and have no commercial value, the finds are undoubtedly genuine. Two Roman coins appeared at Oc Eo in Vietnam and were accepted by its excavator as actual finds. In Thailand, the best-known Roman find is the bronze lamp from Pong Tuk; despite the cloudy circumstances of its discovery, this too has been generally accepted as an actual find. Glass vessels and eye beads were important Roman exports. However, as these continued to be made and exported from the eastern Mediterranean area until much later times, their presence at a site should only be interpreted as showing indirect Roman contacts (probably through Indian merchants) when the site contains no material later than the 6th century AD.

12. Site north of the Kra Isthmus with T'ang Dynasty "Ch'ang-sha" and the so-called "Three-Colored" ware ceramics.

These are the only kind of Chinese glazed ceramic which, unlike the various grey-green and brown wares, can be identified easily and unambiguously as T'ang, made not later than 900 AD. Ch'ang-ware, common in Java and the Middle East but until recently not known anywhere on the Southeast Asian mainland, has now been found at Laem Pho near Chaiya. If it can be identified at a site in Central, Northeast or Northern Thailand, a minor but interesting puzzle will be resolved. If it cannot be found there, then it may be necessary to reevaluate the importance of Dvaravati as a node in the international trade networks of the time.

13. A pre-Sukhothai period shipwreck, underwater or in a coastal site.

Because they are easy to recognize and have commercial importance, most Thai underwater sites thus far discovered by or reported to archaeologists have been of the kind that produce glazed ceramics-e.g., of the 15th century and later. An earlier shipwreck site could have even greater importtance than those currently being investigated.

14. Glass making or working site*

Cullet is common; is it locally made or imported commercial glass cakes? What products were made from cullet? Stratified glass waste in addition to cullet and a furnace would answer some of our questions.

* **This information has been kindly added by Peter Francis, Society of Bead Researches.**

Postcript. . .

from page 8

higher ground, just over one hour above Kuala Tungkal, we discovered a few sherds of fourteenth century incised grey glazed stoneware and fragments of a brown glazed jar.

Unfortunately, we did not have time to explore the area around Kuala Tungkal itself. Like Kampung Laut and Muara Sabak on the lower reaches of the Batang Hari, there is a considerable expanse of mud exposed at low tide and a lesser amount of dry ground at high tide. The estuary itself is lined by mangrove.

An extremely brief visit to Muara Sabak failed to reveal any traces of antiquities. This settlement is situated where several streams and at least two small rivers enter the Batang Hari. It seems that here, too, further investigations might be of use.

It now appears that Koto Kandis is far more extensive than I had thought and extends further upstream than I indicated earlier. The use of aerial photographs may well reveal the actual extent of the site.

Late Sung and Yuan stonewares are to be found in profusion in the various ditches which cut across the site itself. A white stone *pipisan* (a grindstone used in the preparation of medicinal herbs and spices) bearing a single line inscription in Old Javanese letters and thought to date from about the tenth century[2], came to light just before our visit.

continued on page 19

Northern Thai Ceramics

by John Shaw

A report of recent finds at Kalong, Nan, Sansai, Payao and Chiengsaen

Little by little we are learning more about the kilns of Lanna, of which Chiang Mai was a capital of old, and it is becoming increasingly clear that the knowledge of how to make high fired, glazed stoneware was widely available in this Northern Kingdom. This widespread manufacture and use of glazed ceramics indicate a very high level of sophistication. It seems likely that the use was not confined to the *'laos'* or princes and the members of their entourage but that the wares were also used by ordinary people for religious and everyday purposes.

Dating remains a problem. The only certain fact is that the Northern Thai ceramics do not, as was previously thought, come after those of Sukhothai but that they are contemporary. Historical and circumstantial evidence would indicate that the main output occured during the 15th century, particularly during the reign of King Tilokarat, but that glazed ceramics were made throughout the period of the Mengrai dynasty and beyond, from the end of the 13th century[2] until, perhaps, as late as the 17th century A.D.

John Shaw is a lecturer at the Chiang Mai University, Chiang Mai whose major interest is ceramics.

The major kilns which produced most of the Northern Thai ceramics were found in the following places: Kalong, Nan, Sansai, Payao and Chiang Saen.

Kalong

Kalong was undoubtedly the most important centre of ceramics and every new accidental discovery of sherds by villagers seems to throw up a new style or type. Perhaps the most interesting recent finds have been:

1. A new group of kilns at Pa Sard in Payoom valley that mainly made thinly glazed green celadon dishes and bowls, sometimes, but not always, poorly glazed on the outside. Many pieces have simple lines incised in the base.

   The interesting feature of these Group IV Kalong wares is that the rims were not glazed and that they were fired lip to lip and base to base. This method of firing was used also at Sawankhalok[3], San Kamphaeng, Payao and Nan, and at all these kilns quite similar dishes were made. Very large pontils like those from the Wang Nua site were used to support the bottom piece of the stack at Pa Sard.
2. At Payoom, villagers found, at a depth of 3½ metres, what must have been a clay pit underneath a sandy streambed. It seems likely that the whole contents of one kiln firing was faulty and was thrown into this pit, undisturbed but in soft mud and water; over 200 pieces were retrieved some in almost perfect condition. Over 95% of the sherds were Group I raincloud grey celadons, the remainder had underglaze black decoration. Many interesting new shapes were found.
3. In January 1984 three groups of kilns were reported near Baan Pa Mued, Tambon Pa Ngeu, Amphoe Vieng Pa Pao. This extends the kilns beyond San Maket nearly up to Vieng Pa Pao. Group I monochrome and underglaze black wares were produced, also distinctive Group V brown wares and olive celadon oil lamps similar to those from the Paan kilns. In the area of the kilns are three, villagers say five, *Vieng* surrounded with a deep dyke between two earthen ramparts similar to Vieng

Kalong Group I: underglaze black decorated vase.

Kalong. The largest, Vieng Mon, is said to be 20 acres in area. Beside Vieng Mon is a water reservoir. Nearby is Vieng Rong Nari said to be 12 acres in area, and higher up is the smaller Vieng Haw. No bricks have been found in these Vieng. It seems likely that they are contemporary with the kilns.

Kalong Group I: Oil lamps

Nan

A new kiln site at Bor Suak in Nan Province has recently been reported by the Chiang Mai University Ceramics Research Centre and designated "The Nan Kiln Site"

This must have been a major centre of production as sherds litter a slope that rises gently from rice fields for a distance of over 500 metres. Most unfortunately, the whole area has been levelled by tractors hence no trace of kilns is found although saggars, glazed bricks and wasters prove their presence. It is to be hoped that the Fine Arts Department will investigate this site before all evidence has been destroyed. With advent of modern farming techniques, it can no longer be assumed that buried history can safely be left for the future.

The body of a majority of pieces is black, sometimes red halfway through as if not fully 'cooked'. The exposed foot is usually fired red. The clay is rather rough with small white particles in it. The foot rim is low but neatly and squarely out. The pieces found are classified as follows:

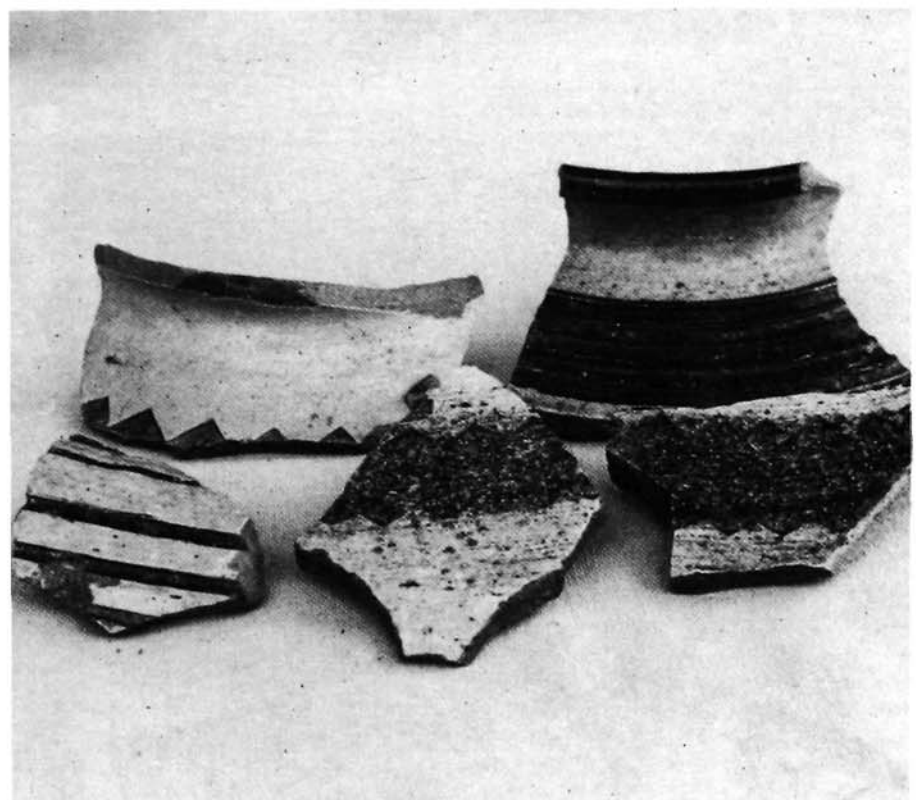
Group I. Plates with a surprising milky white glaze, rather streaky with the black body showing through where it is thinnest and with a green tinge where it has thickly pooled. Often, the glaze is stippled with black pin pricks and usually there is no crazing. Some pieces seem to have been scarcely glazed on the outside wall and whatever glaze there is has turned into an uneven dark olive colour; on others, the outside is as well glazed as the inside. On some pieces, a slip was probably used and a splash is occasionally found in the middle of the base.

A large majority of these plates have unglazed rims as they were fired lip to lip and base to base. One nearly perfect pair, stuck together, is in the Museum of Wat Chang Kham, Nan.

Group II: These sherds are much nearer to a true green celadon although some are finely crazed and others have a peculiar banded effect of different shades of olive green, yellow green and milky green, all rather dirty looking. This group seems mostly to have been made up of jars, some large but a majority less than 20 cm. high.

Group III: These are brown glazed wares often a golden brown, but sometimes almost black and occasionally streaky where the glaze has flowed unevenly down. These sherds seem to come from medium to large jars.

Group IV: Two large sherds from the same piece have dual glaze; the body, dark brown with bands of milky celadon on which little brown glazed 'seeds' have been stuck like a necklace.



Sherds from the Payao Kiln Site.

Group V: An unglazed roof tile has been found. Also in a well at the kiln site covered with a large stone, a great number of *'pra pim'* Buddha figures were found together, so it is reported, with moulds. However, sherds have not yet been seen in the area of the kiln site.

Perhaps the most interesting feature of these kilns is the large number of sherds from saggars. These are roughly and sturdily made with holes in the sides. The average diameter seems to be about 20 cm. and the height 10 cm. Saggars are unknown in other Thai kiln sites (with rare exceptions at Kalong and San Kamphaeng).

Five nearly perfect jars were found a number of years ago buried under a chedi near Nan. They contained bones and all had had a hole punched through the base. Three are Group II, a streaky celadon; and two brown, Group III.

Nan sherds have also been found at a site 30 kilometres beyond Na Noi in association with Sawankhalok celadons, Ming celadons, and Kalong underglaze black.

The Nan Chronicle, which unfortunately cannot be relied on, tells us that the founder of Nan later became King of Pukha leaving his wife to rule at Pua (the capital was later moved from Pua to Nan). Hearing that the country was only ruled by a Queen, Jao Ngarm Muang of Payao occupied Nan. Hence, the Queen's son was brought up at the court of Payao. He later rebelled and ruled Nan from 1320-1350 A.D.

In 1366, the present Nan became a capital. In 1397 the King of Prae attacked and killed the King, but the latter's brother escaped and went to stay with Phraya Chaliang. The following year, he returned with an army and drove out the King of Prae.

In 1432 the Chronicle records that King Intakaen escaped from prison and fled to Baan Tao Hai (the village of jar kilns) hence he went on to Muang Ram.

In 1448, Nan became a province of Chiang Mai and from then onwards until the Burmese conquest, it was ruled by Governors who moved frequently to other posts at Fang, Payao, Chiang Saen, Lampang, Terng and Chiang Mai.

The Burmese conquest did not seem to have affected Nan seriously until the very end of the 16th century, since we read of the Governor restoring Wat Chae Haeng and of the Burmese king of Chiang Mai ordering further restoration to be carried out in 1578 when he passed through Nan on his way to Luang Prabang.

The wares made at Nan bear a remarkable resemblance to those of Payao and almost certainly must have been made by the same school of potters. It has been thought that the Payao kilns were of an early date, possibly 13th century. This fits in very well with the Nan Chronicle account. It is also tempting to equate the kilns in Baan Bor Suak with the Baan Tao Hai to which King Intakaen fled in 1432. Two kiln sites one at Lampang and one at San Sai were discovered because the name of the village today is Baan Mor. Earthenware pots are not made in kilns and villages where such pots are made are usually called Baan Mor.

Unglazed Pots from Chiengsaen

Payao

Further surveys at Payao have shown that the extent of the kiln area is much larger than was previously thought. There were kilns under the main road just beyond Toke Kwak and sherds litter the verges. The kiln site originally reported has now been found to extend for a further two kilometres up to the Mae Nam Kwiang.

Large disc pontils with a hole in the middle and no feet have been found. A new group of wares has been found near the main road. These are brown glazed with a raised pattern in white slip. The most common design is bands with

Jar neck from the Sansai Kiln Site

saw-toothed edges although one piece has a simple animal design.

Sansai

In August 1983, Khun Kraisri Nimmanahaeminda found a new kiln site in Sansai at Huay Ma Leo. Like in the previously reported Sansai site at Wat Tao Hai, the main production was brown wares of poor quality. Enough celadon sherds were found to prove that these were also made in this site, however, their quality is not good and the glaze is similar to some San Kamphaeng pieces; some of the plates, too, have unglazed rims. The most interesting pieces are large jars with high collars and everted rims and dark brown glaze. The necks are left unglazed and on some pieces, the glaze removed in the bands around the shoulders.

Chiang Saen

Many distinctive sherds are found along the bank of the River Mekhong at Chiang Saen and a few nearly perfect pieces are in the Museum of Pa Ngao. These are high-fired unglazed wares with a grey body. Small vases and kendis are known. No kiln site has been found but as these wares are only known in the Chiang Saen area, it seems likely that they were produced locally.

Conclusion

As more information is brought to light by the Chiang Mai University Ceramic Research Centre, it becomes clear that glazed ceramics of high quality were in common use throughout Lanna from the 14th-17th century indicating a very high level of craftsmanship and a high standard of living.

1 This report is an updating for 'Northern Thai Ceramics' by J.C. Shaw, Oxford University Press, Kuala Lumpur, 1981.

2 A pilot excavation carried out by Chiang Mai University and the Fine Arts Department in April 1984 at Vieng Ta Garn, an old Haripunchai city, revealed glazed ceramic sherds at the lowest levels indicating that they may have predated the establishment of Chiang Mai by King Mengrai in 1296 A.D.

3 Excavations undertaken at the Sawankhalok Goh Moi site by the Fine Arts Department and the Australian-Thai Dating Project during the last 4 seasons indicate that 'Mon' wares of this type predate the better known Sawankhalok wares.

The Survey and Exploration of Shipwreck Site in Coastal Waters of Barotac Viejo, Iloilo

by Eduardo Ty Conese and Norman Nicolas

In reaction to various reports reaching the National Museum concerning a wreck site discovered on the coastal waters off Barotoc Viejo, a team from the Underwater Archaeology Unit was dispatched to the area to investigate. From the reports and information sources gathered in the vicinity, it appeared that the ill-fated boat might have been a merchant vessel whlch sank in Guimaras Strait between 1902 and 1914 bringing with it a sizeable load of tradegoods and other shipping materials. The discovery of the wreck site came about when the nets of the fishermen from Negros Occidental got entangled with the boat's remains. However, it could not be ascertained when this incident actually occured. Soon looting and illegal salvage operations by local fishermen and other individuals ensued. This prompted the Police and the local Coast Guard authorities to secure the area in an effort to avert further loss of materials possibly of archaeological value.

Upon arrival in the area, the team established contact with concerned authorities who in turn extended their full cooperation. First notified of the exploratory work to be done in Barotac Viejo was Lt. Col. Edmundo Laroza, provincial commander of the Philippine Constabulary, who facilitated our contacts with Lt. Pepito Palmares, Iloilo City station commander of the Philippine Coast Guard, and Mr. Romulo Barameda, Municipal Mayor of Barotac Viejo. The operation was facilitated through the untiring and valuable assistance of Mrs. Ana Huyong, Barangay Captain of San Juan, who was kind enough to offer her residence for the team's lodging.

Both authors are members of the underwater archaeology team of the National Museum, Philippines.

The Locality

Barotac Viejo is a rustic muni-

cipality located some 60 kilometers northeast of Iloilo City. According to a census of May 1, 1980, the place has a total population of 24, 095 people. Its land area, sprawled on rolling hills and plains, is covered with vast rice and sugar cane fields and dotted with fruit tree farms. Totalling 18, 121 hectares, its land area is bordered by the towns of Banate towards the southwest, Lemery up north, Guimaras strait in the south and northeastern portion.

During the arrival of the Spaniards in the 16th century, Barotac Viejo was already a thriving community of Malayan settlement called Gibuangan. Later the settlement was transformed into an "Alcadia" government ruled by the **alcalde mayor** in the beginning of the 17th Century. From thence up to the present, the place slowly progressed into a municipality that boasts of bountiful harvests such as rice, sugar cane, mangoes and other agricultural commodities. In addition, the people also depended heavily on fishing to augment their income.

Activities Undertaken

As soon as the team had settled and established their station in the Barangay Captain's residence in Barangay San Juan, preparations were made to initiate the search for the sunken vessel. The plan was to find and hire local divers who shall assist the museum personnel in locating and surveying the wreck site. Hiring of the divers was imperative since this would reduce the amount of risks involved in diving in an unfamiliar area. Moreover, local divers who had been to the site were indispensable in the speedy location of the wrecksite.

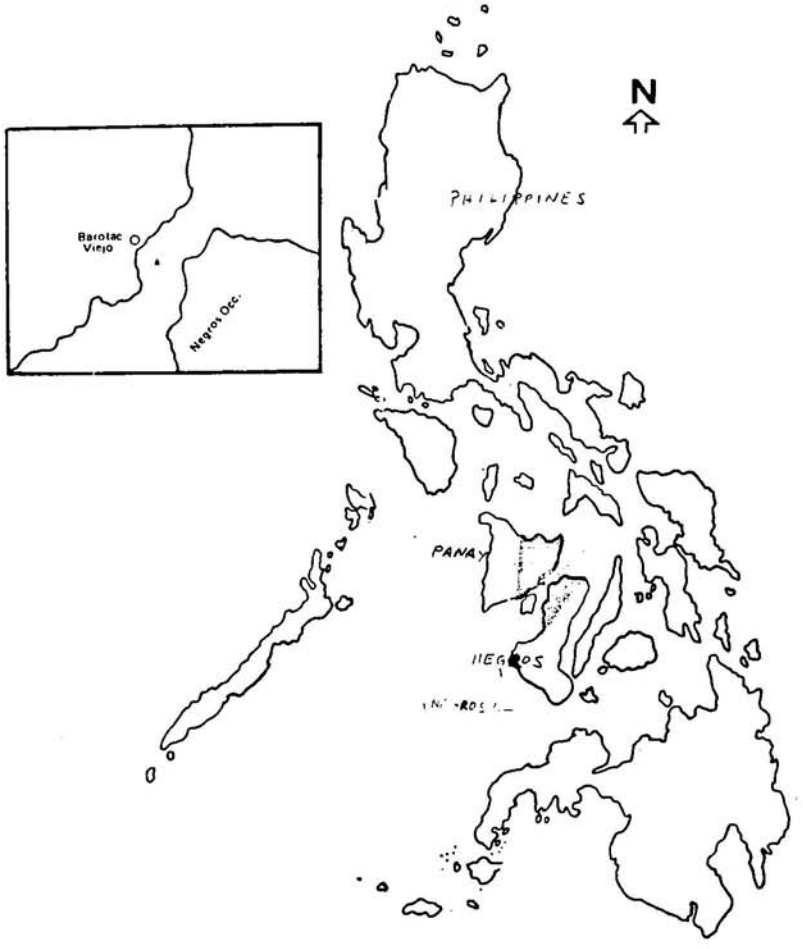
1. Barotoc Viejo Annual, 1981

In travelling in an open water like that of Guimaras, it was a common practice for sea farers to utilize terrestial navigational aids* for marking points or any particular area in the water. The first few attempts to locate the sunken vessel failed owing perhaps to the inefficiency of using such methods. Finally after several trips and dives in the area, the shipwreck was found.

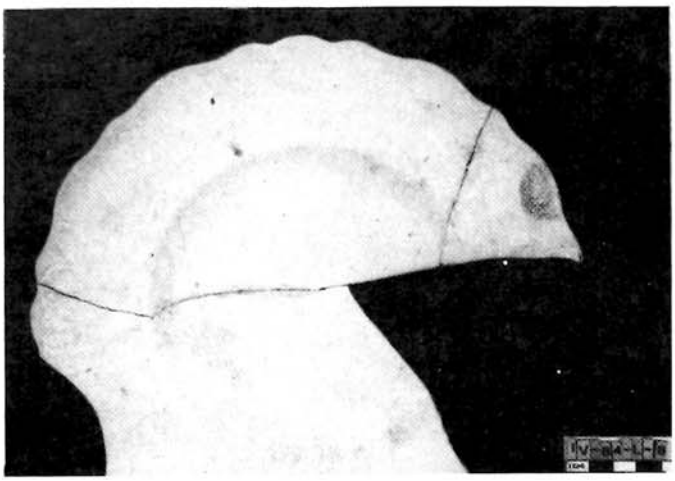
With the visibility approaching zero level (3-5 ft.), survey of the wreck proceeded in a slow and

*** Terrestial navigational reckoning is a method used when no standard navigational facilities such as radars, maps and compasses are available.**

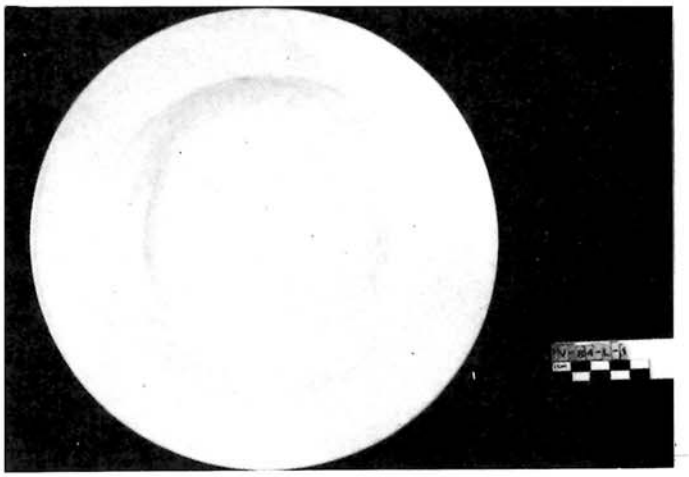
A search technique uses ropes to establish a desired direction to be followed.



Outline map of the Philippines showing the location of Barotac Viejo Underwater Archaeological Site.



Fragments of white shallow plate showing a wave-like design on the lip and a scroll with dashes on the inner lip.



Restored white shallow porcelain plate retrieved from the wreck site.

deliberate pace. The biggest problem was the lack of divers. Complicating this was the minimal air supply (air filling station was in Iloilo City) and at a depth of 95 ft. divers can only stay for 15 minutes to avoid going through decompression.

Found in the wreck site in different spots were pieces of porcelain and stoneware fragments. Most of the specimens came from an area which seemed to be the main deck of the sunken vessel. Other pieces were recovered from the muddy bottom. An on-the-spot examination of the specimens, position and condition indicated that the site had been previously visited or disturbed by man. Some of the freshly broken pieces were found inserted between one of the metal wheel locks and the hatch situated in the midsection of the vessel. The divers also observed that the hatch bore marks possibly obtained from looters who might have attempted to open it.

The vessel which was lying in an upright position with the hull half buried in the sand was examined and found to be almost entirely made of steel. An account of the specific structure of the ship's different sections could not be ascertained because of the limited visibility and time allowance for the divers. However, the divers were able to examine an exterior chamber of the ship midsection. The steel dome-shaped chamber was estimated to measure (4) four feet wide, (5) five feet in length and about 4½ feet high. It had a wheel locking system which the divers failed to open. Towards the section, divers also noticed another similar structure having a large steel hood about 1 inch thick.

Other Information on Survey Area

The wreck site is located about 5 kilometers southeast of Barangay San Juan, Barotoc Viejo under 95 feet of water (low tide) in Guimaras strait. By motor boat on calm seas, it takes about 30 minutes to reach the area where the island of Negros can be seen situated in the southern direction. Surrounding sea bed is composed generally of mud, silt and sand with very minimal marine growth and with some fish feeding on planktons and corals. The shipwreck can be seen lying upright but half buried and slightly tilted on its portside.

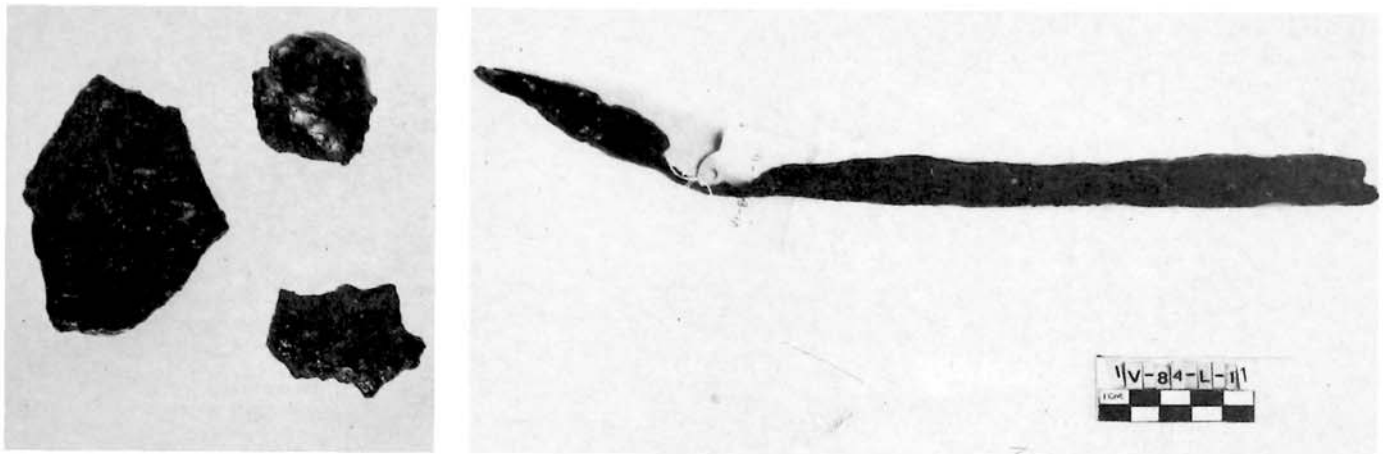
The enlarged trademark at the back of the white shallow plate fragments retrieved at Barotac Viejo wreck site.

Specimens Collected

25 pcs. of white glaze porcelain plate
2 pcs. of green glaze porcelain plate
4 pcs. of iron samples
31 pcs. – Total

Conclusion

From the evidence gathered, the wreck site in the water off Guimaras strait seems to be a merchant vessel trading in the nearby island of Negros, Guimaras and along the coastal areas of Panay. Most of the specimens collected bore trademarks showing that they were manufactured in Holland as well as in England. Other specimens of stoneware material can be associated with late swatow type. Other specimens re-



Pieces of metal slags, (left) and a piece of iron slag, (right) retrieved at the wrecked steel ship in Barotac Viejo.

ported from the wreck include porcelain and stoneware plates. bowls and jars. Others were drinking glasses and a lamp made of bluish crystalline materials.

According to an old folk who resides near the team's camp, his father had once told him that this wreck had sunk sometime in 1914, the cause of which he could only speculate on. He added that the ship was carrying cargo including carabaos, plates, match boxes, and other trade wares. He also mentioned during the interview that he was told that the vessel's name was "San Francisco".

As far as this investigation is concerned, it would have been more complete/accurate if more divers were available and the air supply was sufficient. But since this wreck is in all probability very recent/modern, this project has to wait until additional funds are made available.

Postscript. . .
from page 11

In conversation, the *Kepala Desa* of Koto Kandis suggested that there might be other ancient sites in the lower Batang Hari region. He mentioned specifically Parit Culam, a village on the Sungei Dendam, a tributary of the Batang Hari which it joins between Koto Kandis and Muara Sabak and at Koto Aur between Simpang and Suak Kandis. One would anticipate also, that a settlement existed formerly at Simpang (Lama), a strategic location which commands both branches of the lower Batang Hari and thus the access to all settlements upstream.

The remarks of Lt. S.C. Crooke, the first European to remark upon the antiquities of the Jambi area[3], are of interest in this connection. He observed:

> **"Kampong Simpang, 7 houses on the right, immediately above the separation of the Kwalla Saddoo (Kuala Berbak) and the Kwalla Niur, and 51 miles from Jambi. The Dutch had formerly on this spot a factory, defended by a field work, the traces of which are still visible near the village. The situation commands the navigation of the whole river but the ground is scarcely 6 feet above the greatest fall of the river, and is at its swelling subject to inundation. The site of an English factory is unknown" (Anderson 1971, 398).**

The *Encyclopaedie van Nederlands Indie* indicates, however, that the Dutch factory was at Muara Kumpeh (Suak Kandis), not Simpang. Was the earthwork seen by Crooke actually that of the English factory or some earlier defence work? Here again, it would seem that a survey of the area might well be rewarding. Crooke also remarked:

> **"The banks of the Kwalla Niur throughout are unhospitable from their lowness, and present one uniform character of wooded and impenetrable loneliness"**

We now know that these apparently "uninhabitable" banks had been abandoned for something like four hundred years prior to his arrival in the Batang Hari in 1820.

Footnotes

1. **Kuala Tungkal or Tungkal, Kecamatan Batang Hari.**
   0 49' S., 103 28' E.
   See: Schnitger, F.M. Archaeology of Hindoo Sumatra Leiden: Brill (1987) Plate XI. See also: Suleiman, Satyawati, *Sculptures of Ancient Sumatra,* Jakarta: Pusat Penelitian Arkeologi Nasional (1981) p. 10.
2. **Information from Drs Bambang Budi Utomo, following comment by Professor Boechari of Universitas Indonesia.**
3. **For a full account of Lt. Crooke's visit to Jambi in 1820, see: Anderson, Hohn, *Mission to the East Coast of Sumatra in 1823,* Kuala Lumpur: Oxford in Asia Historical Reprints (1971). Appendix pp. 389-405.**
   Judging form Crooke's report, it took his vessel some eight days to ascend the river from the mouth of the Kuala Niur to Jambi and six days to descend again to the sea, allowing for soundings and observations. A sketch map of the lower Batang Hari is included. There were no settlements between the mouth of the Kuala Niur and Simpang at that time.

Special Reports

Training in Underwater Archaeology in France

by Norman C. Nicolas

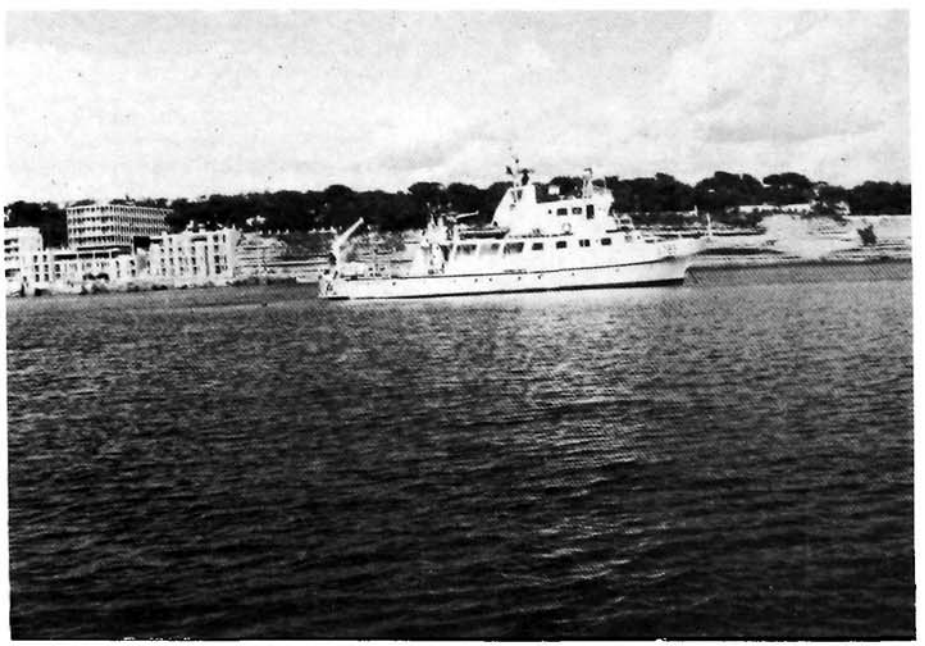
On the 27th of May 1984, this writer boarded the research vessel "L' Archeonaute" to participate in the archaeological excavation of ancient shipwreck sites submerged in the coastal waters of France. For a period of four months, while benefiting from a scholarship granted by the French government, this writer took part in the excavations under the supervision of the "Direction des Recherches Archeologiques Sous-Marines" (D.R.A.S.M.) of the Ministry of Culture. Such participation in turn served as a form of training in underwater archaeological research. Although much of the attention was focused on the technical aspects, there were not a few instances when the foundations of the methodologies applied and prehistorical background were vigorously discussed in order to get a better comprehension of what the study of marine archaeology necessitated.

Several sites were visited. Among the more significant ones were Plage d'Arles, Grand Ribaud D, Malban and Carry-le-Rouet. Their specific characteristics and the manner by which they were studied will be discussed in this report.

At the forefront of DRASM's operations is Director Patrice Pomey who specializes in naval architecture. Assisting him are two other archaeologists, Mssrs. Luc Long and Michel L'Hour. Providing the much needed technical support are Mssrs. Andre Vincente and Guy Dauphin, Chief diver of operations. Aside from this five-man team, other private individuals and government agencies like the "Marine Nationale" are designated by the Ministry of Culture to help in the excavation. Collectively, the diversity of the people involved in the researches plus the complexities presented by the physical condition of the wreck-sites provided an atmosphere that was conducive to learning the basics of the discipline.

L' Archeonaute

The research vessel "L' Archeonaute" is a 30 m boat which has been in the service of the DRASM



The research vessel L' Archeonaute at the Carry-le-Rouet site. Underneath the orange bouys lies the wreckage estimated to date back to the 2nd Century A.D.

Norman C. Nicolas underwent a four-month training on underwater archaeology in France mid of 1984. He is a staff member of the National Museum, Philippines.

for most of its projects for the past seventeen years. The vessel has five cabins which can accomodate 16 persons including the crew from the "Marine Nationale" who are in charge of navigating and maintaining the boat. It holds a photo laboratory, divers quarters, a decompression chamber and a large storage capacity on its lower deck for keeping the dredging devices and other equipment. On every mission, the boat carries with it two inflatable boats each powered by an outboard motor.

The trainee is taught how to operate a motorized inflatable rubber boat.

The Sites

Plage D' Arles. The site of Plage D'Arles is located some 100 kms northwest of Marseilles' central district (at Vieux Port where the L' Archeonaute docks) and lies at a depth of about 10 meters. More often than not, visibility in the area is very poor apparently caused by its proximity to the mouth of the Rhine river.

The shipwreck is believed to be of Dutch origin and is assumed to have sunk sometime in the early 18th century. This assumption was based on the number "1713" inscribed on some of the lead ingots found on the site. Other finds included wooden barrels containing iron bars of excellent quality; iron plates; cannon and musket balls; pieces of ceramics in the form of pipes and probably plates.

The trainee (left) is being instructed by Mr. Guy Dauphin on the manner of cleaning and maintaining diving gear and dredging equipment after a dive.

Work on the site consisted mainly of dredging the rear section of the wreck. For two weeks, archaeologists cleaned sand and mud off the cavity of what was believed to be a portion of a bilge pump. With the use of a water dredge, the cavity was worked on to have a better idea of the manner of construction of the pump. But owing to poor visibility, (ave. of 10 - 15 cm) clearing that section was practically done by feeling with the fingers. However, there were a few instances when visibility permitted the photographers to take clear shots of the entire surface of the wreck.

Grand Ribaud D. According to Antoinette Hesnard, chief of the mission, the finds in the wreck at Grand Ribaud D indicate that the vessel could have been a Roman ship which sank during the 1st or the 2nd century A.D. The site is located near the coast of the Province of Toulon and under 21 m of water. Here researchers found large pieces of "Dolia" and broken amphorae of Pompeian clay among the rocks about 100 m from a small craggy island.

So much had to be done here on a span of six weeks that on any given day as many as 20 individuals (archaeologists, professional underwater photographers and divers, and student-apprentices) pulled their resources together in working on the site. The mission chief had certainly a difficult time getting the group excavation organized. However, it was not only she who was presented with a problem. The cook also had his hands full preparing for the whole assembly in addition to the crew. Likewise, the divers had not found the work easy either. While dredging or recording data, it was required of a diver to keep his or her feet pointing towards the surface with only the hands touching any part of the wreck so as to avoid unnecessary disturbance of the site.

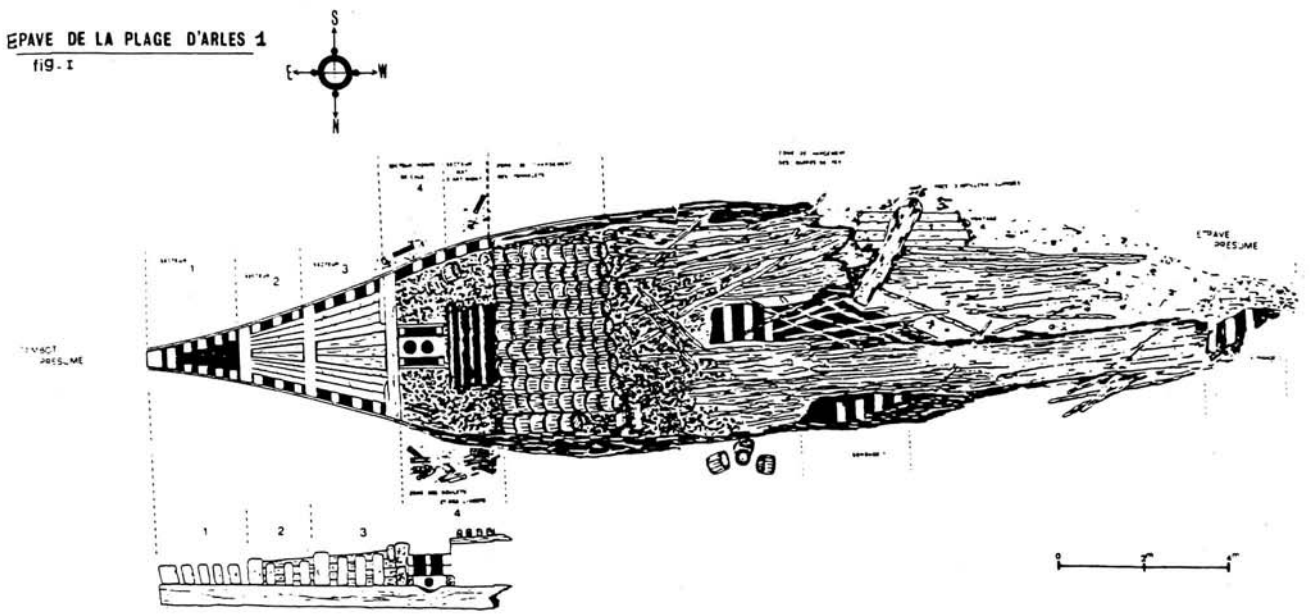
Unlike the wrecksite at Plage d' Arles, Grand Ribaud D had better working conditions as the visibility (18 m) and the temperature (20 C) were relatively fair. Even the current was almost negligible. However, there were days when operations had to be postponed because of strong winds coming from the north.

Two types of dredging equipment were used here: the water dredge and the airlift. Both have their distinct advantages arising from the difference in the principles by which they operate. The water dredge which is easy to maneuver sucks up the overburden through displacement of sea water effected by a pump mounted on the boat. The airlift operates by forcing air down into the water and into a long tube thereby creating a sucking force as the air bubbles rush back to the surface. Although the airlift has more dredging capacity than the water dredge, it is rather difficult to manage and could be dangerous at times. In one occasion, an archaeology student apprentice had to be hospitalized after his arm had got caught into the intake tube. This happened as the student tried to intercept a specimen being sucked by the airlift and in the process got his arm caught by the suction effect. Fortunately, he suffered no serious injuries.

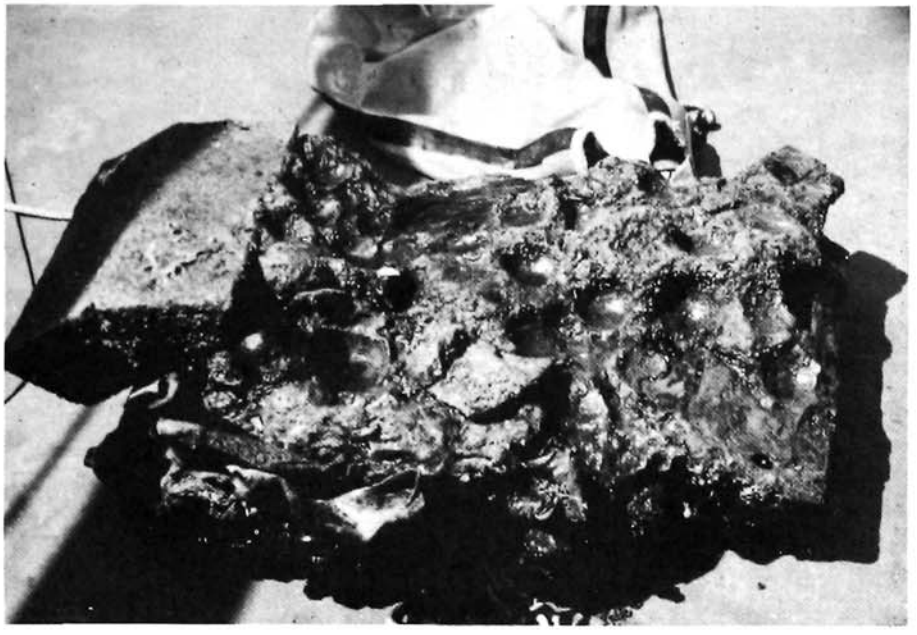
The usual routine in excavating a site comprises a number of phases. First, a certain area was cleaned. After this, all prominent artifacts were numbered and then photographed in situ. When the photography was completed, every specimen was placed on a plastic bag together with a slip of waterproof paper indicating its exact location. At the end of the dive, all the bags were collected and placed in an iron basket that was then bouyed up to the surface by lift bags. To haul the artifacts from the water and then on to the board, a power crane was used.

Analysis of the finds was done by a combined team of archaeologists using a computer to facilitate retrieval of information. Prior to this the data had first to be sorted out, identified, and given a code for feeding into the computer. In this particular mission,the chief of the mission adjudged the results satisfactory although much still had to be uncovered.

Malban. The site of Malban is located at the northwestern coast of the country where the temperature of the water is about 15° C during summer. Here, archaeologists Michel L'Hour and Luc Long investigated a wreck strewn with tons of cold metal-lead. Incribed on the lead ingots were Roman numerals which were found to be the weight of each piece. On some ingots were other inscriptions which were believed to be the names of the manufacturers. Recovery of the lead materials proved to be a diffi-



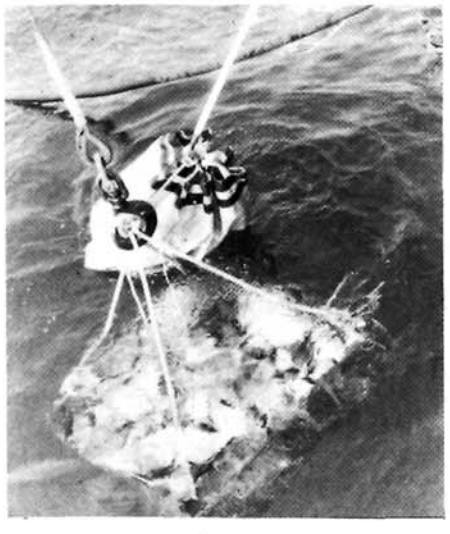
Plage d' Arles Wreck. Antibes 1984 Objects Metalliques sur les epaves antiques.



A mass of iron and stone retrieved from "Plage d' Arles" site. The circular depressions measuring about 10 cm. were formed by cannon balls.

The trainee at the, Carry-le-Rouet' site. On the bottom left is an iron mesh basket where finds are collected.

cult task as each weighed an average of 80 kgs. One piece tipped the scale at 142 kgs. Aside from the lead ingots, no other archaeological materials have been discovered so far. As the investigation also was still in its primary stages, very little historical conclusions could be drawn.



Artifacts being brought up at the 'Grand Ribaud D' site. A power crane is used to mount heavy materials on to the boat.

To reach the site, the research team traveled some 5 kms from the shore on three inflatable boats. On this project, the service of the L'Archeonaute could not be utilized for several reasons. First, the site was relatively distant and to deploy the ship and its crew to the area required a fair number of logistics preparations. Secondly, the site was located on shallow water peppered with huge rocks that presented a navigational hazzard for a vessel of that size. Finally, and evidently the most important factor at the time, the crew had gone on vacation.

The team commenced the research by clearing the wreck of tall sea grass and sand. When the first layer of ingots had been made visible enough for photography, numbers were assigned on every specimen. A different set of numbers were attached to the newly exposed ingots as each layer was removed. Following this process, the heavy chunks of metal were brought to the campsite where each of them was examined and the extracted information recorded. Supplementing the records for future reference were plaster casts made of the inscriptions on each ingot.

Carry-le-Rouet. The materials at Carry-le-Rouet, a site near a small port west of Marseille, were mainly composed of large blocks of stone and pottery sherds. Until the termination of the training period, the work on the area consisted of clearing the wreck with the use of a water dredge and photographing sections of the cleared portion. At the moment, the archaeologists are still trying to find a definite answer to the origin and intended destination of the stone blocks. One assumption of their function was for building fortifications in certain places in ancient Marseille.

Summary

Several decades ago, the study of marine archaeology was a discipline known only to a handful of individuals who regarded the vastness of the sea as an excellent source of valuable information of man's unrecorded past of adven-

continued on page 25

Chiang Mai University Ceramics Research Project

by John Shaw

With the single exception of China, no country in the world has a richer ceramics tradition than Thailand. Pottery has been found at stone age sites 10,000 years old in the area of Spirit Cave in the Province of Mae Hong Sorn in the north of Thailand. The great Baan Chiang ceramic and bronze culture started 5,500 years ago and flourished for 3,000 years. The Davaravati and Haripunchai Kingdoms produced, over 1,000 years ago, beautiful unglazed pottery. The 1,000 year old glazed ceramics of the Khmer Empire were almost all made at Baan Kruat in Buriram Province of Thailand. Next came the superb wares produced in Sukhothai and Lanna (Chiang Mai) between the C14th - C16th A.D. The main known ancient kiln sites of Thailand are: Sukhothai- Sukhothai-town; Sawankhalok (Pa Yang and Goh Noi); Khmer - Baan Kruat; and Northern Thai - Kalong, Sankamphaeng, Paan, Nan, Payao, Sansai, Lampang. However, the art of making glazed stoneware was lost to the Thai people until the beginning of the present century. Now, once again, Thailand is a leading producer and exporter of glazed ceramics and the industry is mainly centered around Chiang Mai and Lampang.

This is the second article of John Shaw in this issue of the SPAFA Digest.

Kalong Wares in the Ceramics Museum, Chiang Mai University

With this rich heritage of ceramics past and ceramics present, it is fitting that Thailand should have established the first Ceramics Research Project in Southeast Asia. No better place could have been chosen than Chiang Mai where old kiln sites from the days of Lanna lie buried close to modern kilns, many of which work as once they did five hundred years ago.

Chiang Mai University became interested in ceramics for two very different reasons. The Chemistry Department wishes to help upgrade the modern pottery industry. With the support of the Japanese Government, a Silicate Technology Centre was set up with first class laboratory and small scale manufacturing facilities where glazes and clays can be analysed and improved, new techniques and firing methods tested and students from within and without the university taught. Courses can be short, teaching only basics of the potters' craft, or long and deep giving instruction on glaze and clay chemistry, throwing, turning and moulding, kiln engineering as well as the artistic aspects of ceramics. The Center has very

sophisticated equipment including electron-microscope, X-rays, DTA (differential thermal analysis), softening point measuring equipment, etc. and is now actively involved in the study and analysis of ancient ceramics.

The Physics Department is also keenly interested in the study of old ceramics and plans soon to set up thermoluminescence and carbon 14 dating facilities.

The other approach to ceramics came from the Faculty of History which has set up its own Research Project including a working museum with an excellent representative selection of Northern Thai ceramics and pieces from Sukhothai-town, Sawankhalok, Khmer, Vietnam and China. These are mostly broken pieces but all are precisely identified, first into the kiln complex and then, if possible, into the individual kiln where it was made. The wares of each kiln site are then subdivided into types i.e. Kg 1 shows that the piece is decorated with an underglaze black pattern and comes from the Payoom group of kilns in the Kalong complex. Collectors or archaeologists can therefore bring pieces they have found to the Project Museum and compare them with sherds from the various kiln sites. It is planned to extend the sherd library to cover, not only Thai and Khmer wares, but also wares from other kiln sites in China, Vietnam, etc.

The History Department is now teaching ceramics as part of the Archaeology syllabus. Students work at the Silicate Technology Centre and they visit kilns both modern and ancient and are encouraged to take part in excavation projects and do their own research at home, as well as learn the history of ceramics.

As Chiang Mai University becomes better known as a centre of ceramics so, it is hoped, will more people come to study the sherds, pots or information, all of which will be classified and recorded so that an increasingly detailed picture of the ceramic past of Thailand can be built up.

The aim of the Project is to gain greater knowledge and understanding of the ceramics of Thailand; to provide a regional centre of information available to all; to preserve as many ceramic pieces as possible; to spread awareness of the importance and beauty of Thai ceramics; to attract the support and interest of people within and without the University; and to teach the history of ceramics.

For futher information please contact The Ceramics Research Project, Department of History, Humanities Faculty, Chiang Mai University.

The other Kalong Ware collection in the Ceramics Museum

Training . . . from page 23

tures and misadventures. Owing to the intricacy of working under a totally unfamiliar environment, progress in the development of proper techniques of archaeological research had often been painstakingly slow. Recently, however, as the problems of exploring the depths of the sea have been cut down to manageable proportions, the interesting facets of this modern science continue to draw concern for the systematization of methods of preserving the patrimony.

Meanwhile, for this writer, participation in the archaeological excavations proved to be a rewarding experience in terms of learning a great deal about the proper means of treating shipwreck sites. During the four months of working closely with archaeologists, the writer gained added expertise in the handling of, as well as the principles of how the equipment and devices worked that contributes towards the improvement of the accuracy of interpreting the information presented by the finds. Through this training, the writer likewise learned of the various problems that exist in underwater research and how these problems could be preempted or diminished by careful attention and determination. But more importantly perhaps, he develops the correct attitude towards learning and actually performing the work of the enlightened archaeologist.

For these invaluable experiences and training, the writer expresses his gratitude to the organization which was primarily responsible for this training, SPAFA.

A List of Southeast Asian Radiocarbon Dates, Part 1: Indonesia

by Bennet Bronson and Ian Glover

Introductory Note

This list is the first of a series that will appear in the next few issues of the SPAFA Digest.

The C-14 dates tabulated here are based on all published data of which the compilers are aware and on much unpublished data as well. Several specialists have checked through this or provided information. These include G.J. Bartstra, Peter Bellwood, Binky Dalupan, Bob Ehrich, John Hastings, Chui-Mei Ho, W. T. Mook, R.P. Soejono and Joyce White. Many omissions and errors undoubtedly remain, however. The compilers take responsibility for these.

Unpublished dates for Gilimanuk were provided by the National Center for Archaeology Indonesia and the Biological-Archaeological Institute in Groningen.

Sites are listed alphabetically within each subdivision; dates for each site are arranged chronologically. The "period" is that indicated by the objects found in association with the sample, not necessarily the one that makes most sense in view of the date. The comments are, as far as possible, the excavator's own.

Dates in the "BP" column are in years before present and use the 5568 half-life. Dates in the "BC/AD" column have been corrected or "calibrated" according to tree ring-based correction factors. As presented, these have a standard deviation of one sigma except when marked with a star, when they have a s.d. of two sigma. The one sigma calibrations are based on as-yet unpublished tables distributed by Henry Michael in April 1982. The starred two sigma calibrations are those published by Jeffrey Klein et al. in 1982 in *Radiocarbon* vol. 24, no. 2.

Bennet Bronson is with the Field Museum of National History, Chicago while Ian Glover is connected with the Institute of Archaeology.

Site	Lab.no.	Date BP	Date BC/AD	Period	Page
INDONESIA (CENTRAL)					
Batu Edjaja 1. Sulawesi Selatan.					
	ANU-392	920+275	805-1380 AD	Pre-Metal Ceramic.	
Mulvaney & Soejono 1970:30. Charcoal. 1st cave, depth of 75 cm., assoc. with points, flakes, backed blades, & pottery said to be related to Kalanay tradition.					
Batu Edjaja 2. Sulawesi Selatan.					
	ANU-393	–+–	(modern)	not clear.	
Mulvaney & Soejono 1970:30. Charcoal. 2nd cave, with microliths, arca shell-impressed sherds, and 19th century coins.					
Leang Burung 1. Sulawesi Selatan.					
	ANU-390	3420+400	2320-1325 BC	Pre-Metal Ceramic.	
Mulvaney & Soejono 1970:31. Charcoal. From trench outside cave, at depth of 150 cm., assoc. with stone tools and pottery.					
	ANU-391	2820+210	1335-795 BC	Pre-Metal Ceramic.	
Mulvaney & Soejono 1970:31. Charcoal (?). From trench inside cave, at depth of 270 cm, assoc. with stone tools and pottery.					
Leang Burung 2. Sulawesi Selatan.					
	GRN-8649	31260+330		Later Lithic.	37
Glover 1981:16. Shell (freshwater). Cave, Layer II. Levallois flakes and points. For all LB2 shell dates, subtract 1300-1500 years (see ref.).					
	GRN-8292	28150+200		Later Lithic.	38
Glover 1981:16. Shell (freshwater). Layer IV-V. Levallois flakes & points, fauna, molluscs.					
	GRN-8650	26650+200		Later Lithic.	39
Glover 1981:16. Shell (freshwater). Layer IV. Levallois flakes & points, fauna, molluscs.					
	GRN-8293	23300+140		Later Lithic.	40
Glover 1981:16. Shell (freshwater). Layer V. Flake industry with Levallois technology, much fauna, many molluscs.					
	BM-1493	20150+250		Later Lithic.	41

Site	Lab. no.	Date BP	Date BC/AD	Period	Page

RC 1982:247, Glover 1981:16. Shell (freshwater). Trench 10, Sq D, Spit 19, Layer IIIa. 'Broadly consistent with other dates for shell from LB2'.

I-9096	1665+80	225-460 AD	Later Lithic (?)	42

Glover 1981:16. Charcoal. From scatter above base of sterile red earth that seals prehistoric deposits.

I-9891	1275+135	595-895 AD	Later Lithic(?)	43

Glover 1981:16. Charcoal. From base of sterile red earth that seals prehistoric deposits.

Ulu Leang 1. Sulawesi Selatan.

GRN-8648	10740+50		Later Lithic.	44

Glover, pers. comm. Shell (freshwater). Cave, Sq. FG 7 south, Layer II, shell sample 1. With small flake & blade tools.

GRN-8290	10560+50		Later Lithic.	45

Glover, pers. comm. Shell (freshwater). Sq. C7 north, Layer II, shell sample 5. With small flake & blade tools, pig.

GRN-8647	8895+50		Later Lithic.	46

Glover, pers. comm. Shell (freshwater). Cave: Sq. FG 7 south, Layer VII, shell sample 5. Anomalously old for this square.

GRN-8291	8785+45		Later Lithic.	47

Glover, pers. comm. Shell (freshwater). Sq. J 6 south, Layer IV/V, 80-90 cm. from surface. With flake & blade tools.

ANU-606	7170+650		Later Lithic.	48

Glover 1976:21. Charcoal. Sqs. C 6 & 7(13-14), Layer I/II, depth 110 cm. Below backed blade/microlith/pottery level.

ANU-394	5740+230	4920-4415 BC	Later Lithic.	49

Mulvaney & Soejono 1970:32. Charcoal. Cave: Sq. C 2(5), Layer VII, depth 50 cm. Below backed-blade/microlith/pottery level.

PRL-231	4390+110	3355-2910 BC	Pre-Metal Ceramic.	50

Glover 1976:21. Charcoal. Sq. C 2(3), Layer VII-2, depth 20-30 cm, Layer I? With microliths, pottery.

HAR-1734	4050+90	2870-2525 BC	Pre-Metal Ceramic.	51

Glover, pers. comm. Charcoal. Cave, from cemented breccia on wall. 'Should represent a late phase'.

PRL-230	3550+130	2160-1700 BC	Pre-Metal Ceramic.	52

Glover 1976:21. Charcoal. Cave: Sq. C 2(2), Layer VII-2, depth 10-20 cm. Assoc. site microliths, pottery, domesticated rice.

SUA-1080	1490+210	310-655 AD	Pre-Metal Ceramic.	650

I. Glover, pers. comm. Charcoal. From hearth in J 9 (7-8) with small flake tools, bone, shell, domesticated rice. Contaminated?: should be ca. 4000 BC.

INDONESIA (NORTH)

Leang Balangingi. Talaud Is., Sulawesi Utara.

ANU-1714	950+130	895-1240 AD	Iron Age.	53

Bellwood 1978:278. Charcoal. From 20-30 cm. level, assoc with Leang Buidane-like ceramics and (intrusive?) glazed chinese sherds.

Site	Lab.no.	Date BP	Date BC/AD	Period	Page

Leang Buidane. Talaud Is., Sulawesi Utara.

ANU-1516	510+80	1325-1450 AD	Iron Age.	54

Bellwood 1978a1. Collected from scatter in top sealing layer over jar burials with bronze, molds, carnelian, glass.

Leang Tuwo Mane'e. Talaud Is., Sulawesi Utara.

ANU-1717	4860+130	3865-3500 BC	Later Lithic.	55

Bellwood 1978:261. Shell (Turbo). Top of Layer 3, Trench H9. Dates preceramic chart blade industry.

ANU-1515	4030+80	2800-2520 BC	Later Lithic.	56

Bellwood 1978:261.Charcoal. Base of Layer 4, P/Q sector. Dates 1st appearance of pottery at site.

ANU-1715	990+100	895-1200 AD	Iron Age.	57

Bellwood 1978:261. Charcoal. Lower part of Layer 2, P/Q sector (50-60cm). 'Early Metal cultural period' at site.

ANU-1716	530+70	1325-1435 AD	not clear.	58

Bellwood 1978:261. Charcoal. Trench H9, from area disturbed by deep pit.

ANU-1514	410+60	1430-1620 AD	Iron Age.	59

Bellwood 1978. Charcoal. Upper part of Layer 2. 'Late Period' Ceramics different from pre-metal periods.

ANU-1513	250+70	1530-1800 AD	Iron Age.	60

Bellwood 1978:261. Charcoal. Upper part of Layer 2. 'Late Period' Ceramics different from pre-metal periods.

Paso. Sulawesi Utara.

ANU-1517	7530+450		Later Lithic.	61

Bellwood 1978:246. Charcoal. Upper lens in trench C16 within preceramic shell midden, with obsidian.

ANU-1518	7360+310		Later Lithic.	62

Bellwood 1978:246. Charcoal. Lens in trench C16 near base of preceramic shell midden, with obsidian.

INDONESIA (SOUTH)

Filimanuk. Bali.

GrN-7129	2020+165	195 BC-65 AD	Bronze Age.	654

W.G. Mook & R.P. Soejono, pers. comm. Charcoal;. Open cemetery site, apparently without iron. Sector XXII, square B, spit 6, 70 cm. Assoc. with beads, pottery.

GrN-7130	2000+70	155 BC-40 AD	Bronze Age.	655

W.G. Mook & R.P. Soejono, pers. comm. Charcoal?. Sector XXII, square A, spit 8, 90 cm. With beads, pottery, bone, and bronze fragments.

GrN-7131	1965+50	33 BC-55 AD	Bronze Age.	656

W.G. Mook & R.P. Soejono, pers. comm. Charcoal? Sector XXII, square A, spit 11, 120 cm. With pottery, bone.

GrN-7127	1940+115	40 BC-85 AD	Bronze Age.	660

W.G. Mook & R.P. Soejono, pers. comm. Charcoal?. Sector XXI, square A, spit 12, 110 cm. With pottery, animal bone.

GrN-7133	1890+100	10 BC-230 AD	Bronze Age.	658

Site	Lab.no.	Date BP	Date BC/AD	Period	Page
	W.G. Mook / R.P. Soejono, pers. comm. Charcoal?. Sector XXII, square C, spit 15, 160 cm. With pottery, bone.				
	GrN-7128	1859+55	30-225 AD	Bronze Age.	661
	W. G. Mook & R.P. Soejono, pers. comm. Charcoal?. Sector XXII, square A, spit 14, 150 cm. With pottery, bone, animal teeth, a pounding stone, & a bead.				
	GrN-7125	1725+80	210-425 AD	Bronze Age.	653
	W.G. Mook & R.P. Soejono, Pers, comm. Charcoal?. Sector XX square A, spit 5 60 cm. Assoc. with beads, bones, and shell implements.				
	GrN-7126	1650+55	240-450 AD	Bronze Age.	659
	W.G. Mook & R.P. Soejono, pers. comm. Charcoal?. Sector XX, square A, spit 6, 70 cm. With pottery, bone fragments, animal teeth.				
	Leuwiliang. Java Barat.				
	ANU-1109	4370+1190	4430-1440 BC	Bronze Age.	63
	Sutayasa 1979:69. Charcoal. Offering place with unclear stratification. Much (non-artifactual?) obsidian, gold, bronze, etc.				
	ANU-1110	1050+160	850-1190 AD	Bronze Age.	64
	Sutayasa 1979:69. Charcoal. See preceding entry.				
	Pejaten. Java Barat.				
	ANU-1520	2250+200	885-410 BC	Bronze Age.	65
	Sutayasa 1979:69. Charcoal. Trench II, 50-60 cm. depth. Assoc. with bronze-casting moulds, corded sherds, some polished stone adzes.				
	ANU-1519	1830+250	155 BC-445 AD	Bronze Age.	66
	Sutayasa 1979:69. Charcoal. Trench VI, 50-60 cm. depth. See preceding entry.				
	INDONESIA (SOUTHEAST)				
	Bui Ceri Uato. Timor Timur.				
	ANU-327	220+80	1535-1930 AD	Later Lithic.	67
	Glover 1972:70. Charcoal (& ash). Cave: concentrated sample from Horizon IV, 1.4m deep. Probably contaminated.				
	ANU-325	-+-	(modern)	Later Lithic.	68
	Glover 1972:70. Charcoal. Scattered sample from lowest horizon, 1.4m deep. 'contaminated'.				
	Liang Toge. Flores, Nusatenngara Timur.				
	GX-209	3550+525	2655-1340 BC	Later Lithic (?)	69
	Jacob 1967:79. Bone. Human ('proto-negrito') burial with flaked stone tools.				
	Lie Siri. Timor Timur.				
	ANU-236	7270+160		Later Lithic.	70
	Glover 1969:108, 1972:70. Charcoal. Cave: scattered sample over 7 sq m just above bedrock, Horizons I-III.				
	ANU-171	6635+140	5710-5315 BC	Later Lithic.	71
	Glover 1969:108, 1972:70. Charcoal. Hearth at depth of 60 cm: pre-dates appearance of pottery and domesticated fauna: Horizon Vb.				
	ANU-172	3545+120	2125-1745 BC	Pre-Metal Ceramic.	72
	Glover 1969:108, 1972:70. Charcoal. Dispersed sample 10-20 cm deep, Horizon VIb: assoc. with occasionally decorated pottery.				
	ANU-235	3530+90	2100-1720 BC	Pre-Metal Ceramic.	73
	Glover 1969:108, 1972:70. Charcoal. Hearth, 20 cm below surface, Horizon VIa: related to sample in ANU-172, 173.				
	ANU-173	2660+110	895-775 BC	Pre-Metal Ceramic.	74
	Glover 1969:108, 1972:70. Charcoal. Scattered, at depth of 10-15 cm, Horizon VIb. See two preceding entries.				
	ANU-324	1030+70	895-1045 AD	Pre-Metal Ceramic.	75
	Glover 1972:70. Charcoal. Scattered sample 10-15 cm below surface, Horizon VIa.				
	Uai Bobo 1. Timor Timur.				
	ANU-414	3470+110	1965-1680 BC	Pre-Metal Ceramic.	76
	Glover 1972:70. Charcoal. Cave 1: at depth of 70 cm, Horizon IIIa.				
	ANU-326	2450+95	785-410 BC	Pre-Metal Ceramic.	77
	Glover 1972:70. Charcoal. Cave 1: at depth of 60 cm, Horizon IIIb.				
	ANU-237	2190+80	405-155 BC	Bronze Age.	78
	Glover 1969:110, 1972:70. Charcoal. At depth of 50 cm: close to a copper ornament and assoc. with flint tools, pottery, & bones of pig, Horizon IIIc.				
	ANU-332	350+60	1450-1635 AD	Bronze Age.	79
	Glover 1972:70. Charcoal. Cave 1: scattered sample in Horizon V, 30-40 cm deep.				
	Uai Bobo 2. Timor Timur.				
	ANU-238	13400+520		Later Lithic.	80
	Glover 1977a:47, 1972:70. Charcoal. Cave 2: charcoal from hearth in Horizon I, 4.5 m deep &.2 m above bedrock.				
	ANU-328	7010+125	6125-5520 BC	Later Lithic.	81
	Glover 1972:70. Charcoal. Cave 2: hearth at depth of 260 cm, in Horizon IV.				
	ANU-187	5520+60	4440-4355 BC	Later Lithic.	82
	Glover 1969:111, 1972:70. Charcoal. Cave 2: hearth in Horizon VII, 160 cm deep: assoc. with earliest pig bone at site (pre-pottery.).				
	ANU-239	3740+90	2340-1980 BC	Pre-Metal Ceramic.	83
	Glover 1969:111, 1972:70. Charcoal. Cave 2: hearth in Horizon IX, 100 cm. below surface: assoc. with decorated pottery.				
	Uai HA IE. Timor Timur.				
	ANU-174	240+60	1535-1800 AD	not clear	84
	Glover 1972;70. Charcoal. Cave: 10 cm below surface.				
	INDONESIA (WEST)				
	Kampung Sukajadi Pasar. Sumatra Utara.				
	SUA-1107	7340+360		Later Lithic.	651

Site	Lab. no.	Date BP	Date BC/AD	Period	Page
	R. Clough & I. Glover, pers. comm. Charcoal. Shell midden -//- 'Hoabinhian.' Hearth about 2/3 from top. Core tools, antler, wood, shell, bone tools & debris.				
	SUA-1107	260+100	(modern)	Later Lithic.	652
	R. Clough & I. Glover, pers. comm. Wood. Shell midden -//- 3. The mound is under commercial exploitation for lime, hence sample probably represents disturbance.				
Tianko Panjang, Jambi (Sumatra).					
	P-2250	9950+130		Later Lithic.	85
	RC 1977:222, Bronson & Asmar 1976:136. Charcoal. Cave. From scatter in square B, 135-161 cm. Assoc. with obsidian flakes but below pottery. Non agricultural?.				
	P-2249	9300+120		Later Lithic.	86
	RC 1977:222. Bronson & Asmar 1976:136. Charcoal. From scatter in Square B, 119-130 cm. Same assocs. as P-2250.				
	P-2248	8940+120		Later Lithic.	87
	RC 1977:222. Bronson & Asmar 1976:136. Charcoal. From scatter in Square B, 94-116 cm. Same assocs. as P-2250.				

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SPAFA Affairs

SPAFA Holds Special Formulation Meeting

The meeting was held in Airlanga Hotel, Jogjakarta, Indonesia.

SPAFA held a Special Formulation Meeting to draft SPAFA's Third (2nd 5-Year Plan) Development Plan in Jogjakarta, Indonesia, from May 20-27, 1984.

In the Third Development Plan, training programmes in preservation and conservation of ancient monuments which had been temporarily suspended in the current phase of operation would be resumed in Indonesia through the SPAFA Sub-Centre for Archaeological Research with the cooperation of the Directorate for the Protection and Development of Cultural Heritage. This time the new area of focus would be on restoration of brick monuments. The concern for the preservation of this category of the cultural heritage would be extended to living monuments, i.e., monuments which continue to serve the religious needs of people to the present. In Indonesia as well as in Thailand, the Sub-Centres would be undertaking activities in the areas of research and development of ancient cities.

At the Sub-Centre for the Performing Arts in Indonesia, the focus would be on techniques of documenting the traditional performing arts to culminate in a workshop scheduled to be implemented at the SPAFA Thai Sub-Centre.

The SPAFA Thai Sub-Centre will continue to offer training courses in underwater archaeology following the continuing need for this type of training by the member countries. Thailand also would be initiating new courses such as techniques of bronze casting and preservation of painting, especially mural painting.

In the Philippines, the Sub-Centre for Prehistory would continue its emphasis on training courses in the more sophisticated analyses of archaeological data. The Sub-Centre, moreover, would be undertaking a workshop on underwater archaeological research to complement the training courses which had been started at the SPAFA Thai Sub-Centre since SPAFA's inception in 1978. The SPAFA Sub-Centre for

The Thai delegates

The delegates from Indonesia.

The Philippine representatives

Fine Arts in the Philippines would be undertaking community-based programmes with emphasis on the fine arts' role in socio-cultural development.

SPAFA's third phase of operation would be witnessing a closer integration of related activities both in prehistory/archaeology and in the fine arts at the Sub-Centres in the three SPAFA Member Countries.

The SPAFA Special Formulation Meeting was attended by the SPAFA Governing Board Members as follows: Mr. Bastomi Ervan, for Indonesia; Dr. Alfredo E. Evangelista, for the Philippines, and Khunying Aree Kultan, for Thailand. Also present were the SPAFA Sub-Centre Directors and the SPAFA Chairman of the National Steering Committee for Thailand. These were: Dr. R. P. Soejono, Director for the SPAFA Sub-Centre for Archaeological Research and Mr. F.X. Sutopo, Director of the SPAFA Sub-Centre for the Performing Arts in Indonesia Dr. Jesus T. Peralta, Director of the SPAFA Sub-Centre for Prehistory and Professor Virginia F. Agbayani, Director of the SPAFA Sub-Centre for the Fine Arts in the Philippines; and M.C. Subhadradis Diskul, SPAFA Chairman of the National Steering Committee in Thailand.

Representing the SPAFA Co-ordinating Unit were Miss Suchitra Vuthisatira, Co-ordinator, and Dr. Rosa C.P. Tenazas, Assistant Co-ordinator.

SPAFA Conducts 8th Governing Board Meeting

The SPAFA 8th Governing Board Meeting was held at SEARCA in Los Banos, Laguna, Philippines. As well as deliberate upon and give approval to the SPAFA Third Development Plan (1986-1991) among the important matters taken up in the agenda, the Meeting was an occasion to meet the new SPAFA Governing Board Members.

Mr. Bastomi Ervan from the Directorate General of Culture took over as the new Indonesian Governing Board Member upon the retirement of Mrs. Satyawati Suleiman early this year and Mr. Taveesak Senanarong, former Deputy Director of the Fine Arts Department, succeeded Khunying Aree Kultan as Governing Board Member for Thailand upon the latter's retirement in September. Dr. Alfredo E. Evangelista has continued to be the Governing Board Member for the Philippines.

Attending in their capacities as ex-officio Members of the Board were Dr. Adul Wichiencharoen and Miss Suchitra Vuthisatira, SEAMES Director and SPAFA Co-ordinator, respectively. Also present was Dr. Rosa C.P. Tenazas, Assistant Co-ordinator of the SPAFA Co-ordinating Unit.

Mr. Remi Sibille, Assistant to the French Consultant to SEAMES, Mrs. Savitri Suwansathit of the Ministry of Education, Thailand, and Professor Virginia F. Agbayani, Director of the SPAFA Sub-Centre for Fine Arts in the Philippines, were present as observers.

Personnel Exchanges Among Sub-Centres

Four programmes of personnel exchanges were conducted in 1983 and 1984. A Thai expert in restoration of ancient monuments, Mr. Veera Rojpojchanarat of the Division of Archaeology, Fine Arts Department, participated at the *SPAFA Consultative Workshop on Restoration of Ancient Monuments* that was held in Jogjakarta, Indonesia, from August 2-7, 1983. This workshop was designed to exchange information on the different tests and experiments tried out in connection with restoration and conservation of monuments as well as to discuss problems relating not only to ancient but also living monuments.

Another Thai expert, Professor Sone Srimatrang, Faculty of Decorative Arts, Silpakorn University, lent expertise in the area of documentation of the traditional arts at the Philippine *SPAFA Training Programme on the Extension Education for Art Teachers* in April 1984.

The participants visited Wat Prasing in Chiang Mai.

A very old and traditionally perfect-formed Vihara in Wat Pra That Lampang Luang, Lampang.

The Hill Tribe village in Doi Pui, Chiang Mai exhibited its handiwork.

The Silpakorn University students were taught Indonesian dances by Mr. Ben Suharto.

A dance performance followed the Labanotation exercise.

The visiting experts exchange views.

A programme of field trips to Early Man prehistoric sites in Central Java viz: Sangiran, Trinil, Patjitan and Sambungmacan, was organized by the SPAFA Sub-Centre for Archaeological Research. Prehistorians from the Philippines and Thailand joined their Indonesian counterparts in discussing future SPAFA programmes and activities in prehistory.

The participants in this programme included: Dr. Alfredo E. Evangelista (concurrently SPAFA Board Member) and Dr. Jesus T. Peralta, (concurrently Director of the SPAFA Sub-Center for Prehistory) Assistant Director and Curator of the Anthropology Division of the Philippine National Museum, respectively; and Dr. Pornchai Suchitta of Silpakorn University and Mr. Pisit Charoenwongsa of the Archaeology Division, Fine Arts Department of Thailand. The Indonesian counterparts were: Dr. R.P. Soejono, Director of the National Research Centre of Archaeology (concurrently Director of the SPAFA Sub-Centre for Archaeological Research) and Dr. S. Sartono, Head, Laboratory of Palaeontology, Institute of Technology, Bandung.

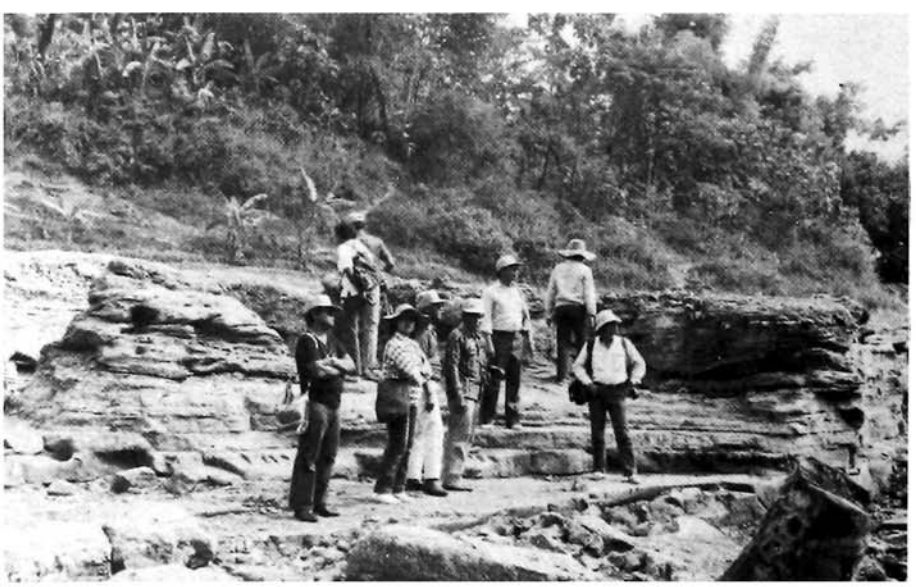
An exchange programme was designed to specifically address the needs for an up-graded curriculum in arts education. Six experts participated, two from the Philippines and four from Thailand. Professor Virginia F. Agbayani, Director of the Sub-Centre for Fine Arts(concurrently Director of

Inspecting some finds is a part of the activities.

the National Arts Centre) and Mrs. Ginny Dandan, artist and art instructor at the University of the Philippines comprised the Philippine representatives. The experts from Thailand were: Professor Anuvit Charoensupkul, Vice-rector for Acadamic Affairs, Silpakorn University; Asst. Professor Sone Srimatrang, Faculty of Decorative Arts, Silpakorn University; Asso. Professor Aree Soothipunt, Department of Arts and Culture, Sri Nakharinwirot University; and Mr. Thongchai Rakpathum, College of Fine Arts, Fine Arts Department. For this purpose, the experts visited institutions in Ratchburi, Ayutthya and Northern Thailand.

Another exchange programme in the Fine Arts focused on the traditional performing arts (TPA). The objective was to discuss the state of teaching-learning of the TPA at all levels of education. The group of experts made up of two from Indonesia and six from Thailand who visited various performing arts institutions in Bangkok and the surrounding areas were as follows: Dr. Soedarsono of Gadjah Mada University, Jogjakarta; Mr. Ben Suharto, Indonesian Dance Academy, Jogjakarta; Dr. Surapone Virulrak, Dean, Faculty of Communication Arts, Chulalongkorn University; Asso. Professor Denduang Phumsiri, Faculty of Arts, Silpakorn University; Mrs. Sathaporn Sonthong, Division of Music and Drama, National Theatre; Mr. Chaturong Montrisart, College of Dramatic Arts, Fine Arts Department; Mrs. Somboon Suksanguan, Dance-Drama Section of Suansunandha Teachers College; and Miss Saovanut Bhuvanit, Department of Dramatic Arts, Chulalongkorn University.

The participants went on a field trip to Sambangmacan, Central Java.



Another view of the pre-historic arts in Central Java.