

EXCAVATION OF AN SON: A NEOLITHIC MOUND SITE IN THE MIDDLE REACH OF THE VAM CO DONG RIVER, SOUTHERN VIETNAM

Nishimura Masanari¹ and Nguyen Kim Dung²

¹Center for Vietnamese and Inter-Cultural Studies, Hanoi National University, Hanoi, Vietnam

²Institute of Archaeology, Hanoi, Vietnam

ABSTRACT

The An Son site is located in the middle reach of the Vam Co Dong River in Long An Province, southern Vietnam. The site is a large mound, 170 m in maximum diameter and 6 m higher than the surrounding plain. Excavation in 1997 at the eastern edge of the mound revealed a 4 m depth of cultural deposit. Four major cultural phases were identified, all belonging to the second millennium BC. Typological classification shows no clear change in pottery shape or decoration from Cultural Period 1 to 4.

In the third phase, alternating hard earth floors and soft soil layers were revealed. Dug from the earth floors we found post holes, in use through several layers, around a hearth. These appear to have belonged to an earth-floored residence rather than a pile dwelling. The occupation appears to have been sedentary and associated with pottery production.

In the lowlands of Mainland Southeast Asia there are many such large mound sites with deep stratigraphy, dating especially from the second millennium BC, very similar to An Son in character of settlement and site structure.

THE AIMS OF THE AN SON EXCAVATION

An Son (An Ninh Tay Commune, Duc Hoa District) is located on a natural levée in the middle reach of the Vam Co Dong River, which runs from north to south in the western part of Long An Province (Figure 1). The site was originally excavated in 1978 and revealed a 4 m thickness of prehistoric cultural deposit (Le 1978). In 1993, the Long An Provincial Museum and the Vietnam Historical Museum excavated the Loc Giang site, located only 500 m from An Son. The excavated artefacts (Quang and Ngo 1994) from here were

mostly the same as those found in An Son. A single charcoal sample from the lower layer of Loc Giang was dated 3950±75 BP (uncalibrated: Vuong 1995). This is one of the oldest credible Neolithic dates from southern Vietnam (Bui *et al.* 1997; Nishimura and Vuong 1997).

However, in southern Vietnamese archaeology, chronological order in terms of a succession of cultural materials has not yet been established, and only radiocarbon dating can be utilized at present for chronological discussion. But, as manifested by the problems with dates for early bronze in northeast Thailand (Higham 1996: 7-13), radiocarbon dating is inadequate for detailed chronological order. And for intricate typological study we need well stratified data from excavations (Nishimura 2002).

Another aim of this research is to understand the structure of the An Son mound. The site is 170 m in maximum diameter and its height above the surrounding surface is more than 5 m (Figure 2). In Mainland Southeast Asia, examples of other such mound sites include Dong Dau (Le and Hoang 1983), Khok Phanom Di (Higham and Bannanurag 1991), Ban Na Di (Higham and Kijngam 1984) and Non Yang (Nitta 1991). But as for the structures and processes of formation of this type of site, no overall explanation has yet been offered. An Son is a good site for researching these problems of chronology and site formation.

THE EXCAVATION AND ITS RESULTS

We started the new excavations at An Son on 16 February 1997 and finished 29 March. Excavation Pit 1 was set out on the eastern side of the mound. Archaeological layers were excavated stratigraphically rather than by spit. Pit 1 was 32 m² in area and its long axis was set north-south. We added two small pits around it (TS 1, 2), and re-opened Pit 2 of the 1978 excavation on the top of the mound. Cultural strati-

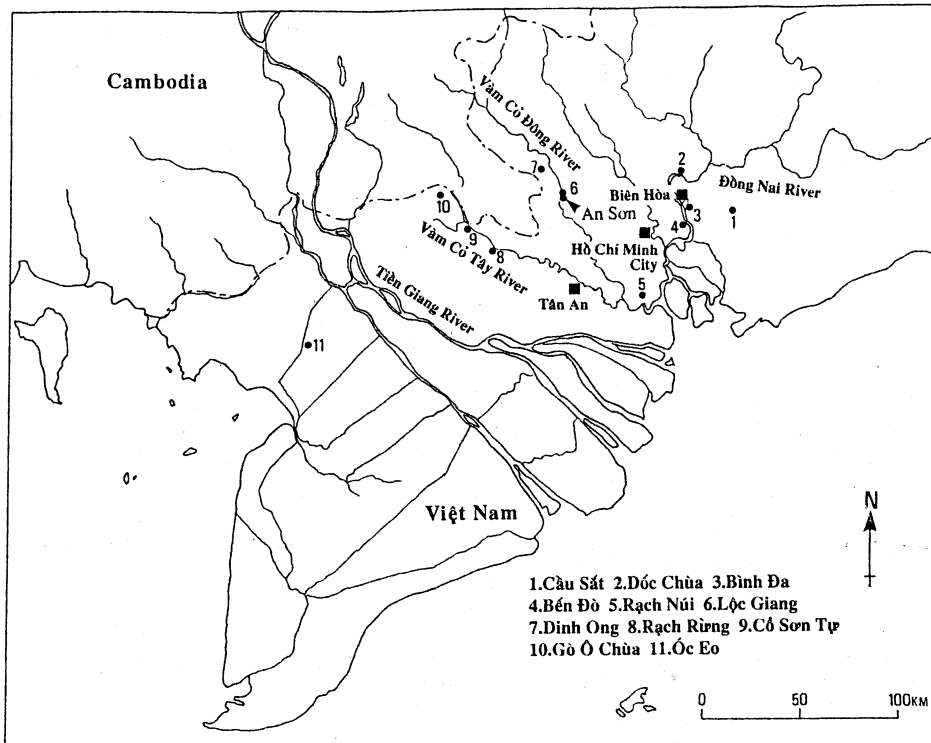


Figure 1: Site location in the southern part of Viet Nam.

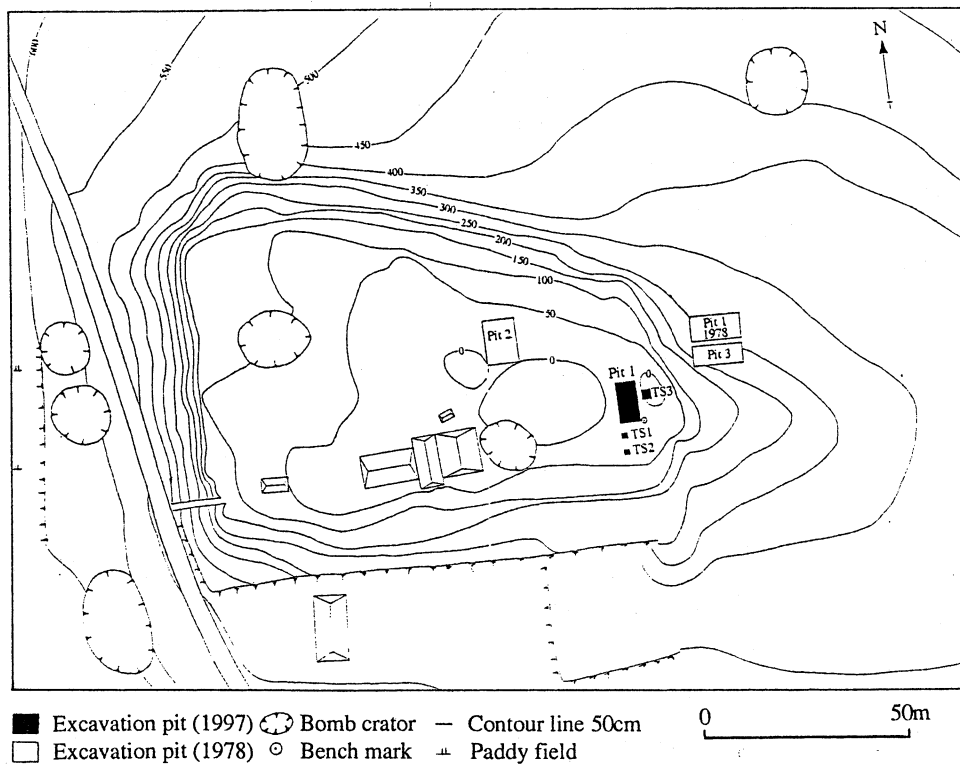


Figure 2: Topographical map of An Son.

graphy in our Pit 1 reached about 4 m in depth and was divided into the following units (Figure 3):

1. Layer Unit 1 (from layer 1-1 to 2-7). This is the uppermost series of layers, with cultural materials from the final period of the An Son assemblage as well as from the Oc Eo Culture and later periods. This unit was largely disturbed by later human activity.
2. Layer Unit 2 (from layer 2-7 to layer 2-21b). This consisted mostly of alternating hard compacted layers and soft loose layers. Both the eastern and western sections show that the layers are highest in the northern part of Pit 1 and slope downward gently toward the south. Generally, the hard clayey layers of this unit were reddish brown, yellow and white in colour, whereas the soft layers were dark brown or grayish black. The soft dark layers contain large quantities of sherds, bones, stone tools, baked clay, ash and charcoal. In the hard layers we found very little cultural material, but sieving revealed many small trampled fragments of mollusks, bones, sherds, stone flakes and baked clay. In this unit we found many post-holes and "ditch-like" hearths.
3. Layer Unit 3 (from layer 3-1 to 3-5) consisted of grayish sandy soil, without the alternating hard and soft layers. It was rich in potsherds and post-holes, but there were no ditch-like hearths, unlike Unit 2.

The hard earth floors and the hearths in Unit 2

Hard earth floors were identified in the lower part of Layer Unit 1 and all of Layer Unit 2 in the 1997 excavation, as well as in Pit 2 of 1978. Sometimes the layers were composed of several thinner sub-layers that could be peeled off one by one. Although the site is located on a natural river levée of sand we did not identify much sand in unit 3, so it is reasonable to conclude that soil was brought on to the site and either rammed or trampled flat.

From layers 13 - 21 within Layer Unit 2, in the eastern part of the excavation, we found hearths (Figure 4). Their plans were roughly circular or oval and they were surrounded by hard surfaces, forming depressions like shallow ditches. These hearths contained soft reddish brown soil with ash and charcoal, together with many sherds, bones, and baked clay rods in clusters. We frequently found white clay in blocks at the margins of the hearths, rich in calcium carbonate and perhaps derived from the burning and calcining of mollusk shells. In some layers, double hearths were found.

The post holes

In Pit 1, distinctive post holes were found cut from the surfaces of the hard layers. Their diameters ranged from 6 - 11 cm with depths from 7 - 50 cm. In the lowest layers of Layer Unit 2, some quite large double holes were found. The insides and surrounding surfaces of some post holes

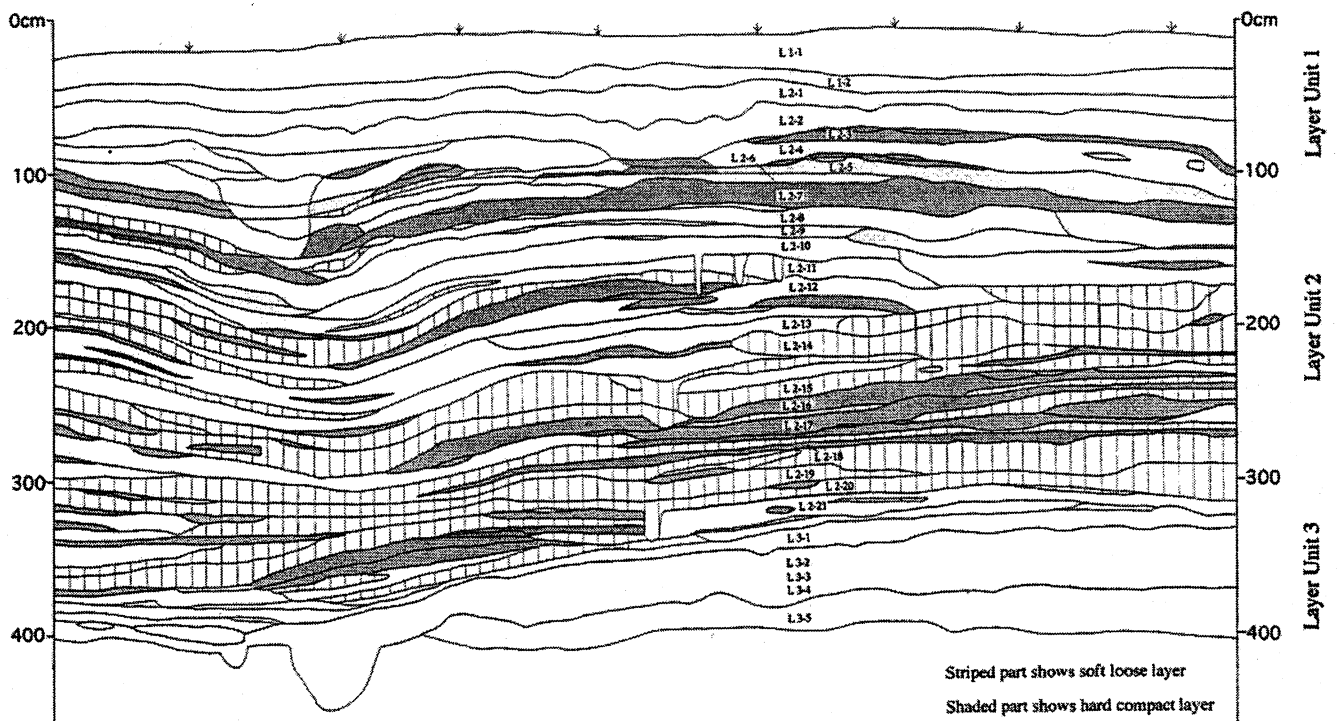


Figure 3: Section of the western wall of Pit 1 in 1997 excavations.

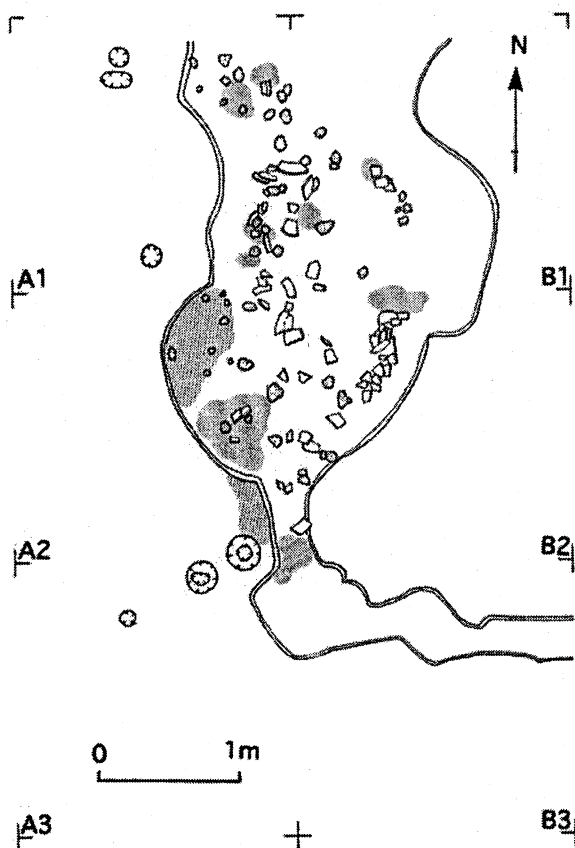


Figure 4: Ditch-like fire-place in layer 2-17.

were hardened by high temperatures, suggesting burning. Some post holes were repeatedly re-dug in the same position as the mound accumulated, and some were evidently reused for posts of differing diameters, to judge from fill cross-sections. Post holes were fewer in Unit 3. We did not come to a full understanding about the plans of the post hole settings, but they were mainly located around the hearths. Many in the lower floors were large in diameter and some as much as 40 cm deep. It is presumed that the posts belonged to dwellings with earthen floors, rather than dwellings raised on piles (as suggested by, e.g., Henriksen 1982), because of the locations of the hearths seemingly within the structures.

EXCAVATED MATERIALS

Pottery

Before typological classification, the excavated sherds were divided into sand tempered and fibre-tempered classes. The sand tempered sherds were often polished, usually black or brown in colour. The fibre-tempered pottery included many plant fibres and lime particles, the latter often including rice husks, suggesting the possibility of utilization of rice as a food. Much of the fibre-tempered pottery is oxidized and

reddish brown or yellow-brown in colour, but cores are often black and more friable than the sand tempered category.

The basic technique of making pottery was use of a paddle and anvil technique, some sherds having cord or paddle marks. Shallow bowls and long necked rim were probably made by a coiling technique. Surface finishing included paddled decoration, simple smoothing, burnishing (only with the sand tempered pottery) and surface application of a red slip and organic resin. Some sherds appear to have been painted, although this could also reflect misidentification of burnishing (Brian Vincent pers. comm.). However, definite traces of red colour on the tops of rims, carinations and some cord-marked surfaces proved that application of a red paint or slip did occur. Thin-section analysis by Dr. M. Kasai (Nishimura 1996) of some surface-collected sherds from An Son and surrounding sites confirmed that a thin layer of material had been applied to vessel surfaces.

The four successive cultural periods were recognised by typological classification of the whole pottery collection. A more detailed chronological description is given in a recent paper (Nishimura 2002).

The First Cultural Period (Layer 3 - 5: the lowermost or earliest period) had only sand tempered, not fibre tempered pottery. One characteristic vessel form, a deep round bowl (Figure 5.11), was cord-marked all over with incised lines beneath the rim. This type also appeared in the fibre tempered class in the Second Cultural Period. Other forms that also occur in the later periods are the shouldered jar (Figure 5.1) and decorated pedestals (Figure 5.6). The former is decorated with incised "S" motifs between horizontal lines. In this early period, shoulders are rounded, not angular as in later periods. The pedestal has incised and rocker-stamped decoration and some specimens still retain red painting. The illustrated specimen has a wave-like design incised like the crests of waves, made by rocking a circular comb-like tool. This type of decoration is a little similar to that found in the early stage of the Late Neolithic, Phung Nguyen Culture of the middle reaches of the Red River Basin, northern Vietnam.

During the Second Cultural Period, a shallow bowl decorated by cord-marking with a wavy rim impressed by a cord-wrapped paddle (Figure 5.13) made an appearance in the sand tempered pottery. The shouldered jars now become more angular and have incised decoration over the cord-marking (Figure 5.2, 3). Pedestals have two or three bands of rocker-stamping within horizontal lines (Figure 5.7). The first fibre-tempered pottery now appears, and a round bowl is a common form (Figure 5.12). Shouldered and unshouldered jars in the fibre-tempered pottery were mainly cord-marked (Figure 5.18).

During the Third Cultural Period the shallow bowl with a wavy rim underwent change (Figure 5.14-17). The wavy part of the rim became smaller and the inside ledge dimin-

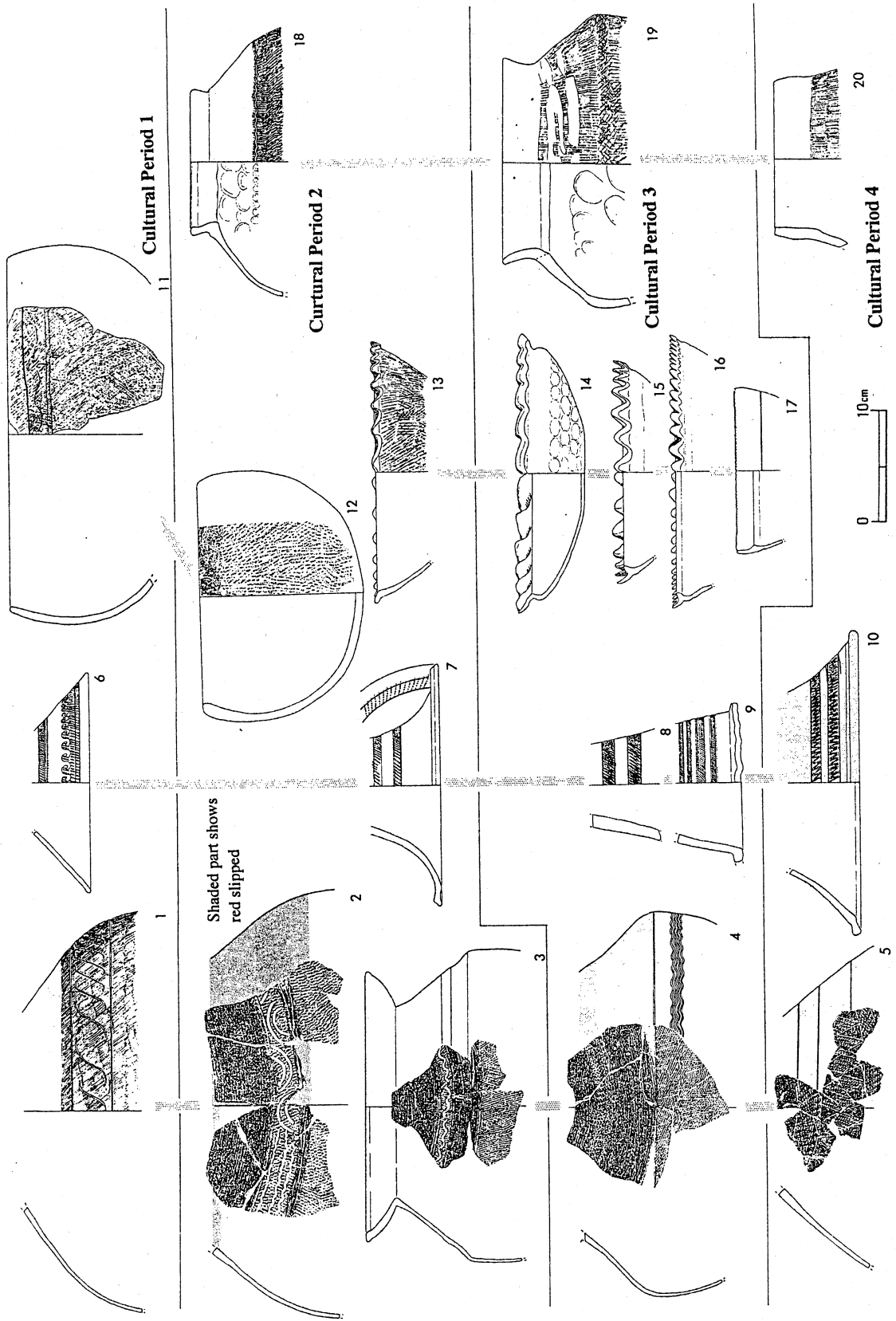


Figure 5: Main pottery types and their variations at An Son.

ished, until the form became a deep bowl with only minute denticulation on the lip (Figure 5.17). Decorative bands on the shouldered jars were mainly rocker-stamped by a comb-like tool or a serrated shell (Figure 5.4). The pedestals continue but become narrower and more funnel shaped (Figure 5.8, 9).

During the Fourth Cultural Period, the shallow bowls with wavy rims disappear and inverted rims with undulating lips are characteristic. One shouldered pot has geometric decoration of lozenges filled with rocker-impressions (Figure 5.5). A decorated pedestal has more coarse rocking and cross hatched incisions (Figure 5.10). The necks of some of the fibre-tempered jars become inverted and straight (Figure 5.20).

Tripod stove

Many fragments of large shallow bowls with tripod stands were also identified in all layers. This type of pottery functioned as a mobile fireplace, similar to the present tripod fireplace called a *karang* in the southern Vietnamese dialect. Most have fibre tempered fabrics.

Stone artefacts

Fifty complete or nearly complete stone axes and adzes were found in Cultural Periods 2 to 4 (Figure 6). Cultural Period 1 had only small fragments. Shouldered tools were predominant in the earlier Periods, but in Cultural Period 4 (the uppermost Period), except for one fragment of shouldered butt, all adzes were unshouldered. Morphologically, there is a very distinct typological change from Cultural Period 2 to 4.

Shouldered types A1, A2 and A3 (Figure 6.5, 7) and unshouldered type B-6 (Figure 6.2) are characteristic of Cultural Period 2, and types A4, A5 and A6 (Figure 6.1, 3 and 4) were only found in the third cultural period. Unshouldered types B1 and B2 (Figure 6.8, 9) are characteristic of Cultural Period 3.

Resharpener flakes and an absence of any unworked raw material or blanks suggest that all the stone axe-adzes were imported in finished form. Long An province is an alluvial plain with no bedrock, and suitable stone for adze-making can only be found in the upper reaches of the Vam Co Dong and Dong Nai rivers.

Lithophone (Figure 7)

A lithophone is a lithic xylophone (Condominas 1952), fragments of which have been mainly found in southeastern Vietnam (Pham 1997b). A large fragment was discovered on the surface of the site, of the same material as the complete ones found in the Dong Nai River reach (Nishimura *et al.* 1997). Trimming flakes of the same lithic material were found in the final stage of the Fourth Cultural Period (layers 1.1 to 2.2), and this may be supporting evidence for dating.

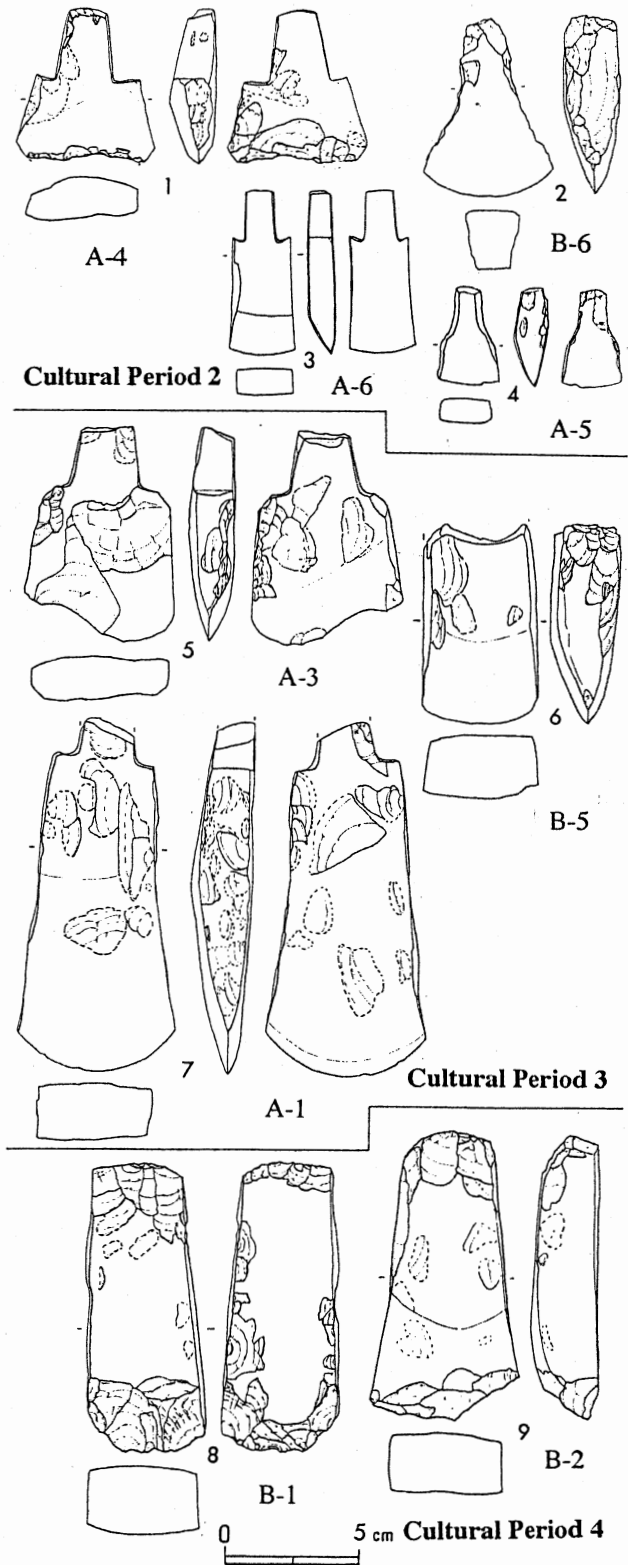


Figure 6: Variations of stone axe-adze at An Son.

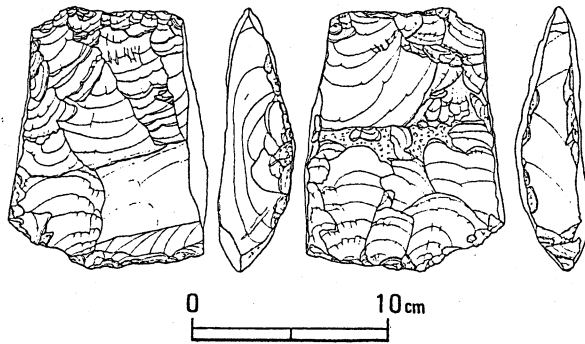


Figure 7: Fragments of lithophone (surface find).

Other finds

Bone and shell artefacts from An Son included needles, fish hooks, shell beads and polished tusks. Evidence of bone working was also found in the site.

Shells were concentrated in layers 2-13 to 2-21 within Unit 2. According to Dr. T. Kurozumi (pers. comm.), the majority are *Cerithidea obtusa* (*Oc Len* in Vietnamese). The bivalve *Polymesoda erosa* follows by weight. Both of these come from brackish water and they are unobtainable from the present environs of An Son, which is now 90 km inland but then much closer to the shoreline.

Site chronology and periodization

The An Son pottery is close to that from the sites of Loc Giang, Binh Da and Rach Nui, all located in the lowlands surrounding the Mekong Delta (Nishimura and Vuong 1997; Nishimura 2002). Thirteen radiocarbon dates have so far been processed, all in the second millennium BC.

While dates for Cultural Period 4 are not yet available, the An Son pottery assemblage and the radiocarbon dates of succeeding Bronze Age sites like Bung Bac (Pham 1997a) suggest that An Son was possibly occupied until around 3000 BP. The occupation period can be estimated at about 1000 years. It is reasonable to conclude that An Son and the other mound sites with deep stratigraphy, like Loc Giang, Binh Da and Rach Nui, belong to the Neolithic and are datable to the second millennium BC.

Are pottery production and the mound sites related each other?

During the 1997 excavation of An Son we found, throughout all layers, many baked clay rods and fired clay fragments (Figure 8) in clusters in the hearths. The rods are of clay mixed with sand, and some have prints of leaves and fibres. They

appear to have been fired. We suppose they are raw materials for pottery temper. The fired clay fragments are less compact than the baked clay rods. Generally they are not more than 5 cm in length and some are cookie-shaped, many having prints of leaves, stems and rice husks. Some have circular-sectioned concave grooves, indicating that they once adhered to bamboo or timber poles.

These baked clay rods appear to be part of the production sequence for "orthodox grog" (Vincent 1988), apparently used in manufacture of the fibre-tempered pottery at An Son. Similar kinds of fired clay fragments also occur in Yayoi settlements in Japan, and these also include stems or leaves (Kashiwabara 1997).

At An Son, many sherds appear to have been deliberately broken, at least to judge from our refitting research. In the lower part of Unit 2 we also found several coarse grinding slabs that might have been used to grind up sherds for temper. The pottery in the lower part of unit 2 frequently includes lime particles, probably produced from the burning of shell in the hearths in the site. All this evidence suggests that An Son could have been involved in the production of pottery using local material.

In the middle to lower reaches of the Vam Co and Dong Nai rivers, there are several other sites similar in structure to An Son. Co Son Tu is a small mound, 80 m in diameter, located in the middle reach of the Vam Co Tay River on the fringes of Dong Thap Muoi marshland. Small-scale excavation here (Nishimura 1996; Nishimura *et al.* 1997) revealed about 3 m depth of cultural deposit with a dominance (more than 90% of total sherds) of cylindrical stands and shallow bowls, mostly fibre-tempered. Go O Chua is located in the upper Vam Co Tay valley and is an elongated mound about 500 x 100 m in size. This site has a 2 m depth of deposit and unique tripod pottery stands are considered to have been produced on the spot because of the large

Table 1: C14 dates from An Son

No	Layer	Cultural Period	Material	Date (uncalibrated)	Lab. No
1	L.3-5	1	Charcoal	3990±190 BP	TKa-11541
2	L.3-5	1	Charcoal	3840±40 BP	TKa-11526
3	L.3-5	1	Charcoal	3780±120 BP	TKa-11817
4	L.3-5	1	Charcoal	3690±80 BP	TKa-11816
5	L.3-4	2	Charcoal	3820±70 BP	ANU-10880
6	L.3-3	2	Charcoal	3310±110 BP	TKa-11823
7	L.3-2	2	Charcoal	3310±90 BP	TKa-11824
8	L.3-1	2	Charcoal	3390±80 BP	TKa-11822
9	L.2-21B	3	Charcoal	3320±130 BP	TKa-11821
10	L.2-17	3	Charcoal	3370±80 BP	ANU-10881
11	L.2-17	3	Charcoal	3310±90 BP	TKa-11820
12	L.2-14	3	Charcoal	3200±90 BP	TKa-11822
13	L.2-12	3	Charcoal	3190±110 BP	TKa-11819

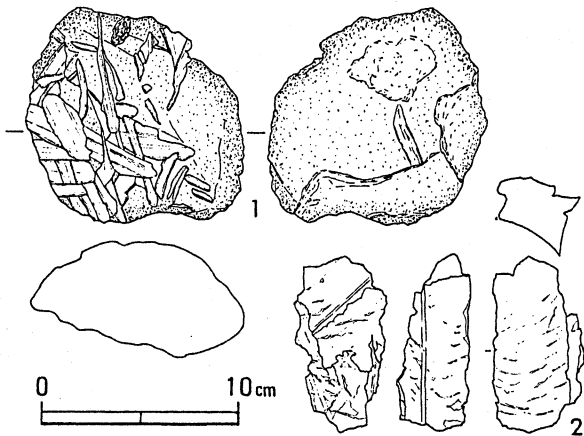


Figure 8: Baked clay rods from layer unit 2.

quantity in the assemblage (Ngo *et al.* 1998). The structures of layers at both Co Son Tu and Go O Chua are similar to An Son. Rach Nui and Binh Da, also dated to the Neolithic (Nishimura 2002), are also large mounds with similar layer structures to An Son. More than 90% of the pottery assemblage of Rach Nui was dominated by deep round bowls (Pham 1978).

Recent intensive archaeological excavation in the coastal area near Ho Chi Minh City revealed three mound sites, at Giong Ca Vo, Giong Phet and Giong Am (Vu *et al.* 1993; Vu and Dang 1997). The first two sites are Iron Age and have jar burials with Sa Huynh ornaments, whereas the last belongs to the Oc Eo Culture. All are located along the tributary streams in mangrove forest and their environs are absolutely unsuitable for stable agricultural production. At Giong Ca Vo and Giong Phet, one type of conical shaped jar was unearthed in great quantities resembling kiln waste. At Giong Am, there was a brick layered structure and many elongated cylindrical jars were found together with clay bars of the same fabric. These also related to pottery production. In sum these mound sites of the Vam Co and Dong Nai River reaches often show specialized production of some types of pottery.

As described above, the lower reaches of the Vam Co and Dong Nai Rivers do not have any lithic and metal source for prehistoric tool production because of the alluvial plain. The rarity of these other high-valued natural resources (except salt) might have strengthened specialized pottery production in the lowlands. Response to natural environmental variability causes craft specialization in a non-state society, and there is no need to search for a socio-evolutionary reason such as a linkage between craft specialization and state formation (Stark 1991). Kojo and Marui (2000) point out that the high occurrence of present

Khmer pottery making villages in the lower reaches of the Mekong River in Cambodia is possibly related to population pressure and the low carrying capacity of the land.

In other lowland regions of Mainland Southeast Asia, including the Khorat Plateau, there are many mound sites with deep stratigraphy such as Ban Na Di (Higham and Kijngam 1984; Vincent 1988) and Khok Phanom Di (Higham and Bannanurag 1991). Both of these sites are also considered to have been involved in pottery production. Nitta (1995) reported that the deep stratigraphy of Nong Yang in the Khorat Plateau was formed by heaping soil. It is difficult to suppose that only habitation activity formed such deep stratigraphy (i.e. Higham and Kijngam 1984; Higham and Bannanurag 1991). For example, some of the present settlements of the Red River Plain in northern Vietnam reveal more than 1000 years of occupation history (Nishimura and Nishino 2002), but they never have as much as 1.5 m thickness of occupation deposit without a heaping of soil.

While it is not yet possible to give a reasonable explanation as to why people heaped soil and made rammed earth floors in these lowland sites, it cannot be denied that pottery production and mound sites are related to each other and we need to study further about this issue.

ACKNOWLEDGEMENTS

We sincerely express our appreciation to Long An Provincial Department of Culture and Information and the Toyota Foundation (Tokyo, Japan) for financial support. Long An Provincial Museum kindly assisted with the research. M. Kasai (Institute of Yamanashi Cultural Property, Japan) kindly carried out thin-section analysis of sherds from the 1996 survey. T. Kurozumi (Chiba Prefectural Central Museum, Japan) kindly identified the shells. Nishimura acknowledges that discussions with T. Otsuka (University of Tokyo) and B. Vincent (University of Otago), and participation in the excavation of Go O Chua (led by Ngo The Phong), were also very helpful for understanding the prehistory of Long An Province.

The 1997 excavation team was as follows: Le Xuan Diem, Nguyen Thi Ha and Nguyen Thi Hoai Huong (Center for Archaeology, Institute of Social Science at Ho Chi Minh City); Nguyen Kim Dung (Institute of Archaeology); Bui Phat Diem, Vuong Thu Hong, Nguyen Phuong Thao, Nguyen Nhu Uyen and Do Thi Lan. (Long An Provincial Museum); M. Yamagata (University Museum of Tokyo University); H. Yoshida (Oita Prefecture Board of Education); and M. Nishimura (Center for Vietnamese and Inter-cultural Studies, Hanoi National University). Work on the excavated materials was carried out by Nguyen Kim Dung, Nguyen Phuong Thao, Do Thi Lan, Nguyen Tan My Trang, Tran Thi Cuc and M. Nishimura.

REFERENCES

- Bui Phat Diem, Vuong Thu Hong and M. Nishimura 1997. Research achievements of the archaeology before "Oc Eo Culture" in the lower Vam Co river Basin, southern part of Vietnam. *Journal of Southeast Asian Archaeology* 17:72-8.
- Condominas, G. 1952. Le lithophone préhistorique de Ndut Lieng Krak. *Bulletin de l'École Française de l'Extrême Orient* 45:359-92.
- Henriksen, 1982. The first excavated prehistoric house site in Southeast Asia. In K.G. Izikowitz and P. Sørensen (eds), *The House in East and Southeast Asia*, pp. 17-24. Copenhagen: Scandinavian Institute of Asian Studies *Monograph Series No. 30*.
- Higham, C. 1996. *The Bronze Age of Southeast Asia*. Cambridge: Cambridge University Press.
- Higham, C. R. and R. Bannanurag. 1991. C.F.W. Higham, and R. Thosarat (1993) *The Excavation of Khok Phanom Di: A Prehistoric Site in Thailand* vol.1. London: Society of Antiquaries.
- Higham, C. and A. Kijngam. 1984. *Prehistoric Investigations in Northeast Thailand*. Oxford: BAR *International Series* 231.
- Kashiwabara, T. 1997. Pottery manufacturing in the Early Yayoi Period. *Mizuho* 23:42-51 (in Japanese).
- Kojo, Y. and M. Marui. 2000. Khmer pottery making in Chanlak Dai, southern Cambodia. *Anthropological Science* 108-1:1-19.
- Le Xuan Diem. 1978. Khai quat An Son. *Nhung Phat Hien moi ve khao co hoc Mien Nam Viet Nam* (New discoveries of archaeology in southern Vietnam), pp. 51-80. Hanoi.
- Le Xuan Diem and Hoang Xuan Chinh. 1983. *Di chi khao co hoc Dong Dau*. Ha Noi: Nha xuất Ban khoa hoc xa hoi.
- Ngo The Phong, Bui Phat Diem, Vu Quoc Hien and Ngyuen Dieng. 1998. Bao cao xso bo khai quat di chi Go O Chua, xa Hung Dien A, huyen Vinh Hung, tinh Long An. *Nhung Phat Hien moi ve khao co hoc nam* (New discoveries of Vietnamese archaeology in the year) 1997:255-9.
- Nishimura, M. 1996. Excavation at Co Son Tu in 1996. In *Preliminary report of the archaeological research in Long An Province, the first season in 1996*. Report submitted to So Van Hoa Thong Tin Tinh Long An.
- Nishimura, M. 2002. Chronology of the Neolithic Age in the Southern Vietnam. *Journal of Southeast Asian Archaeology* 22: 25-57.
- Nishimura Masanari and Nishino Noriko. 2002. Archaeological study of the settlement formation in the Red River Plain: a case of Bach Coc and the surrounding. *Paper collection of the Vietnamese peasants' activity, an interaction between culture and nature*. IIAS, Leiden University:16-27.
- Nishimura, M. and Vuong Thu Hong. 1997. Preliminary study on the pottery decoration in the lower Vam Co river basin. *Journal of Southeast Asian Archaeology* 17:78-91.
- Nishimura M., Nguyen Duy Ty, Vuong Thu Hong and Bui Phat Diem. 1997. Tham sat Co Son Tu (huyen Vinh Hung, tinh Long An). *Nhung Phat Hien moi ve khao co hoc nam* (New discoveries of Vietnamese archaeology in the year) 1996: 245-50.
- Nitta, E. 1991. Archaeological study on the ancient iron-smelting and salt-making industries. *Journal of Southeast Asian Archaeology* 11:1-47. Nitta, E. 1991. Archaeological study on the ancient iron-smelting and salt-making industries. *Journal of Southeast Asian Archaeology* 11:1-47.
- Pham Duc Manh. 1997. The Bung Bac Archaeological site, Southern Vietnam. *Journal of Southeast Asian Archaeology* 17:60-72.
- Pham Quang Son. 1978. Khai quat khao co hoc di tich Rach Nui (Can Giuoc-Long An). *Nhung Phat Hien moi ve khao co hoc Mien Nam Viet Nam* (New discoveries of archaeology in southern Vietnam), pp. 97-130. Hanoi.
- Quang Van Cay and Ngo The Phong. 1994. *Bao cao khai quat di chi Loc Giang* (Duc Hoa, Long An). Vien Bao Tang Lich Su Viet Nam.
- Stark, M. 1991. Ceramic production and community specialization: a Kalinga ethnoarchaeological study. *World Archaeology* 23(1):64-78.
- Vincent, B. 1988. *Prehistoric Ceramics of Northeastern Thailand*. Oxford: BAR *International Series* 461.
- Vu Quoc Hien, Dang Van Thang, Trinh Can and Le Cong Tam. 1993. Di chi Giong Am, Thanh Pho Ho Chi Minh. *Thong Bao Khoa Hoc Bao Tang Lich Su Viet* 1993:59-74. Hanoi.
- Vu Quoc Hien and Dang Van Thang .1997. Excavation at Giong Ca Vo site, Can Gio District, Ho Chi Minh City. *Journal of Southeast Asian Archaeology* 17:30-44.
- Vuong Thu Hong. 1995. Hai nien dai C14 qua di chi Loc Giang. *Nhung Phat Hien moi ve khao co hoc nam* (New discoveries of Vietnamese archaeology in the year) 1994:199-204.

