The Archaeological Site of Hoa Vinh near Phan Thiet, Central Vietnam

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THE SITE OF Hoa Vinh is situated near Kilometer 1692 of National Highway 1, between Phan Ri and Phan Thiet, and is 12 km north of Phan Thiet in a dune of white sand that reaches the highway (Figs. 1 and 2). Because of its very high silica content, this sand is a good basic material for glass-making and has recently been exploited by a small factory.

Hoa Vinh is a hamlet of farmers on the eastern side of the Phan Thiet plain. The ricefields stretch far to the west, to the foot of the mountains of the Djiring (Di Linh) region, and to the east are bordered by low dunes of white sand a few meters high. These white sand dunes are backed up to much more important rubefied sandy masses that sometimes reach over 100 meters high, making an eastern horizon of red hills that block the South China Sea from view. The area around Hoa Vinh is dry for several months of the year. The low rainfall in this region (1100 mm per year at Phan Thiet, 596 mm at Mui Ne, 622 mm at Phan Ri, 600 mm at Duong) does not favor agriculture, but has enabled the extensive development of salt fields to the north of Phan Thiet. However, during the rainy season the sand stores up water, and running water may be found at the foot of the dunes for most of the year.

Archaeological objects, found in the sand close to the surface (0.60–0.90 m), were collected in the quarry exploiting the sand for glass-making. The dune was bound together by sparse grassy vegetation whose roots buried themselves deep in the ground, sometimes even as far down as the sherd-bearing level; in stretching over the sherds, the roots often marked them with an irregular tracery of twisting lines (Plate I, *1–2;* Plate II, *2–3*).

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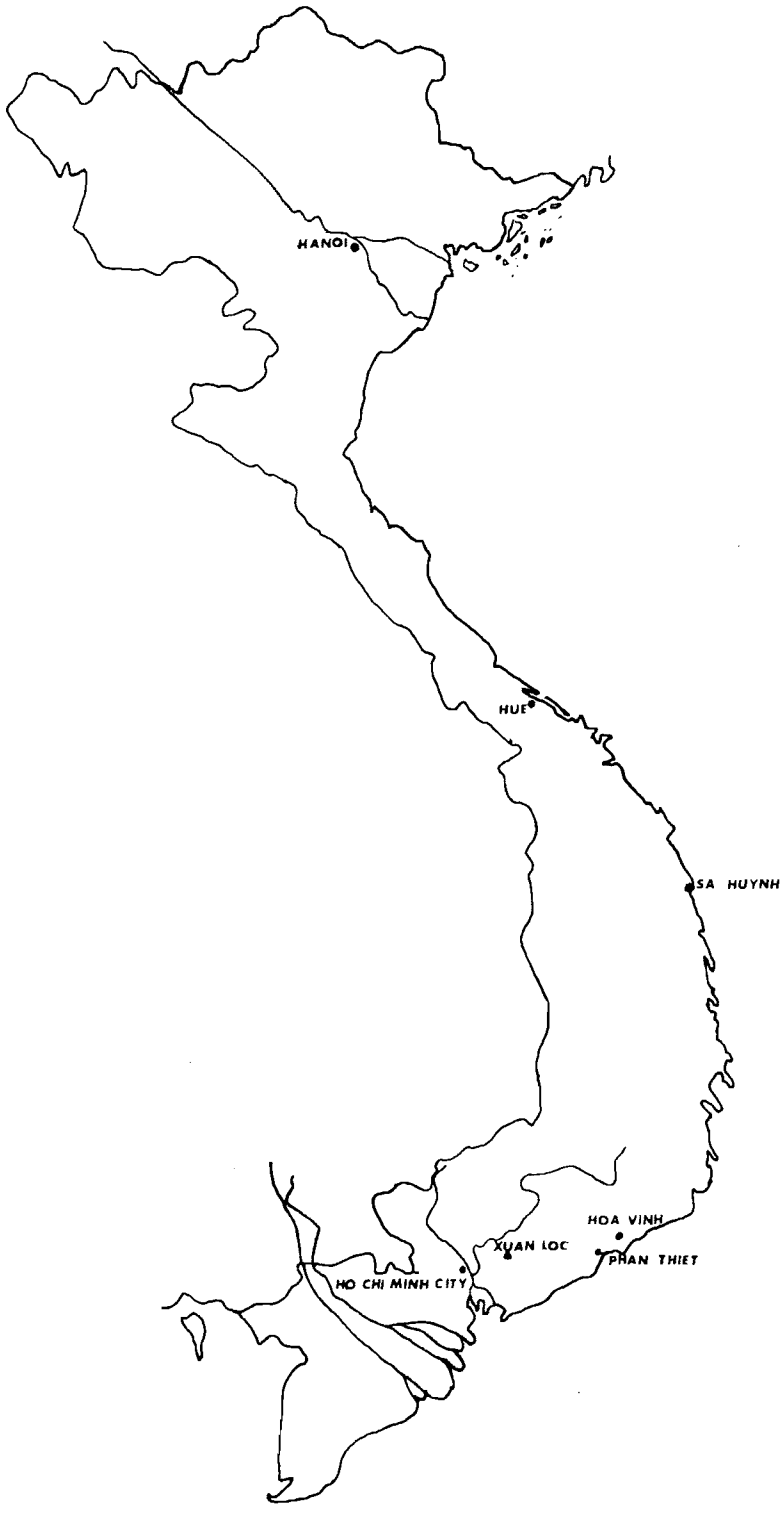


Fig. 1. Hoa Vinh, Vietnam

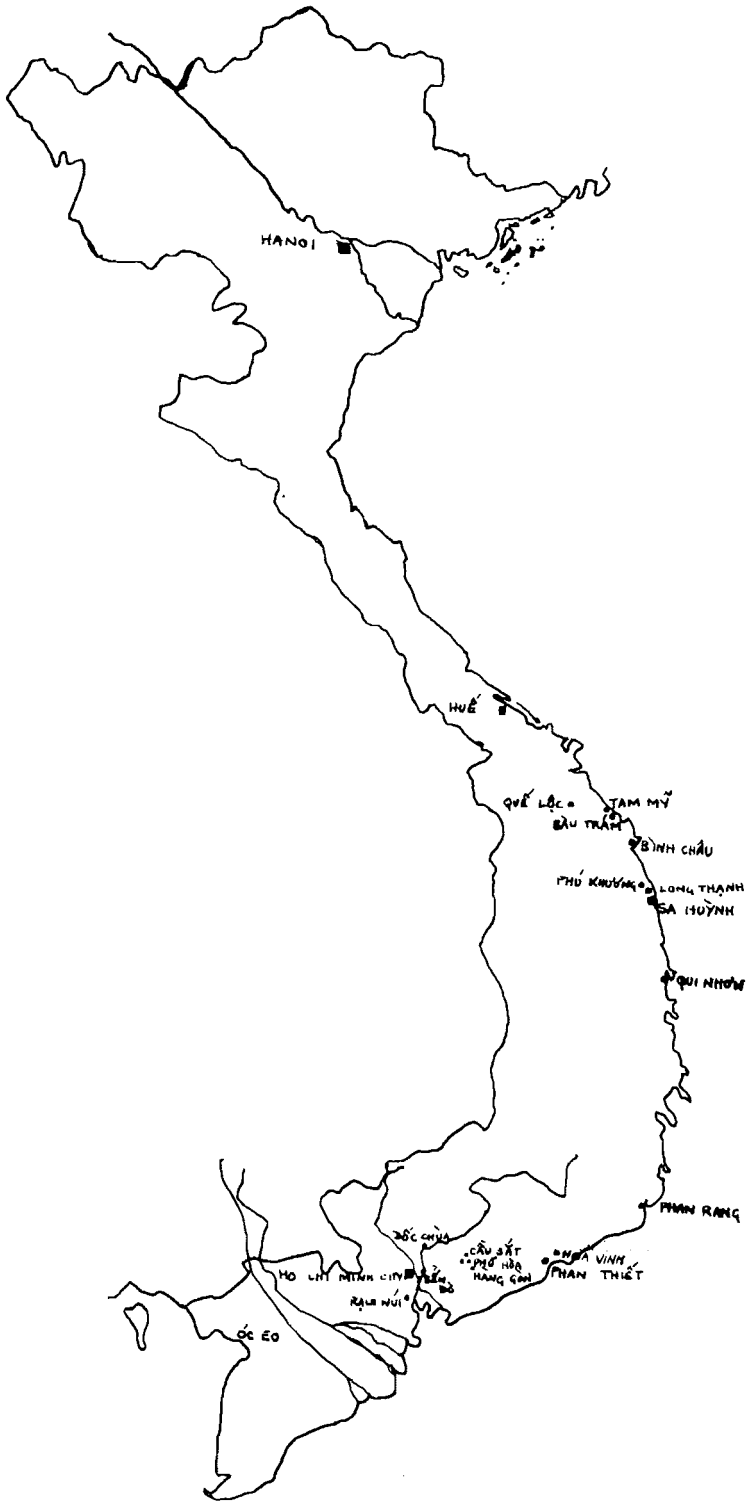


Fig. 2. Important sites in central and southern Vietnam

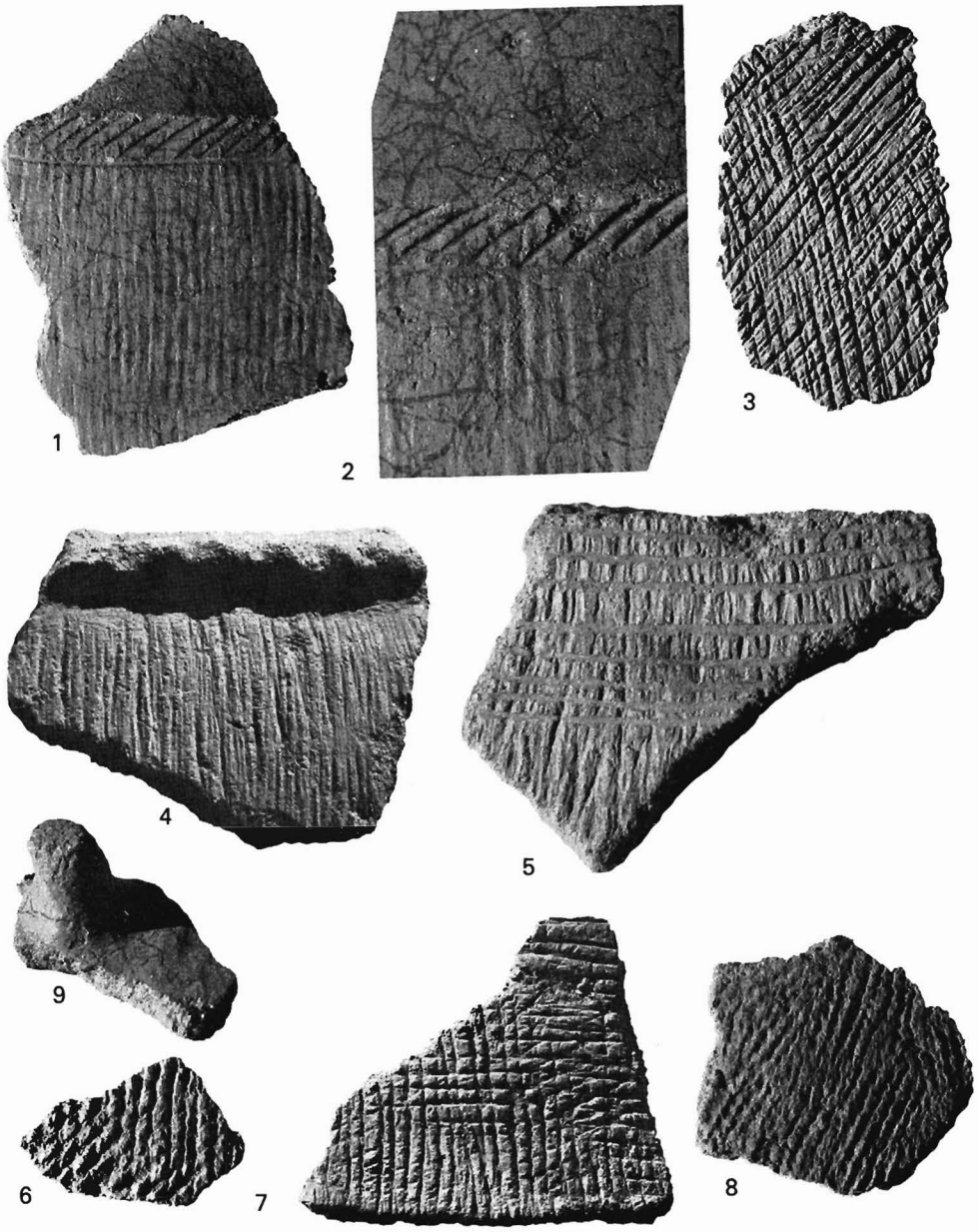


Plate I *1–2,* sherd of a large vessel, found in Jar 1. Note the marks left by the roots of plants. A red-brown pot whose body is rich in a mineral tempering (*1,* × 8/9; *2,* × 4/3); *3–8,* sherds collected in the fertile layer (slightly smaller than normal size). Pl. I, *4* shows a decoration in relief; *9,* stud which is probably a foot (× 2/3).

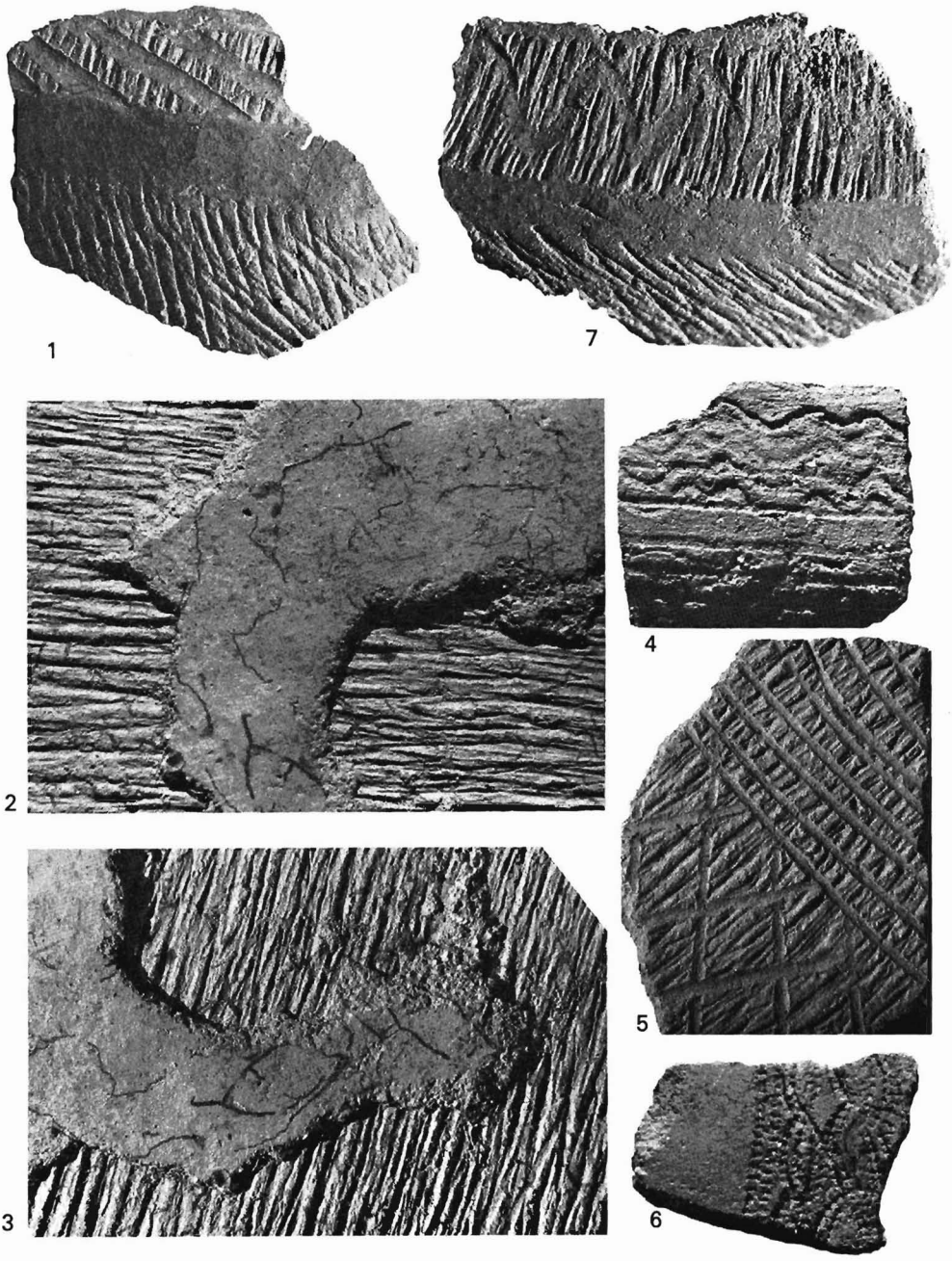


Plate II *1, 7,* carinated sherds (× 3/2); *2,3,* sherds of a big jar, showing that a fine layer of slip covered the basketry impressions; *4–6,* various sherds from the fertile layer (× 7/5).

History of the Discovery

In his study of the Sa Huynh site, Parmentier (1924:343, esp. n.3) mentioned that Sallet had given him information suggesting the presence, in the region of Phan Thiet, of a site analogous to those of Sa Huynh.[1] Janse (1961:111) was more precise in citing the discovery of carnelian beads[2] 12 km to the north of Phan Thiet near National Highway 1; he suggested that a jar-field could exist in the dunes at this spot. Malleret (1962: III, 172, n.2) again cited the discovery, but added no new information (see also Tan 1978:53, n.7). In 1971, during a geological study of the sand along the coast of southern Vietnam,[3] Henri Fontaine discovered a very great number of sherds in the quarry at Hoa Vinh and thought that this find might lead to the solution of the problem mentioned by Parmentier, Janse, and Malleret.

It was not until the beginning of 1975 that we began the excavation of this site (Davidson 1975:96 and n.24; Fontaine 1979:93), with the help of Miss Hoang thi Than of the Geological Service of Vietnam. However, the work was quickly interrupted by political events.

Although this first dig remained very limited, it allowed us to unearth objects that deserve description. Here, we describe first two jars found in situ, and then the material collected in the fertile layer as well as in the sand disturbed by quarrying activity.[4]

The Jars

The jars were found buried very shallowly at a depth very near to the ensemble of the fertile layer. Their upper part, being destroyed or badly damaged and incomplete, suggests that they once stuck out of the ground, or were partly exposed later, as a result of the wind blowing sand away. No objects were seen further under the jars, despite systematic digs.

Jar 1

This jar, located in the quarry's sandy cliff-face, measured 45 cm in diameter at the belly; only its lower part was preserved. It had a rounded base, and was covered with basket-weave impression (Plate III, *5-6*). The broken upper part showed a jumbled mass of sherds comprising fragments of necks of pots belonging to four different vases having rim diameters of 40, 39, 28, and 22 cm (e.g. Plate IV, *2*).

All the sherds collected from inside or around this jar belonged to large pots with rounded bottoms; they appear thick, but are relatively thin when compared with the large size of the pots. Two sherds are carinated (Plates II, *1, 7;* V, *4*). Most are decorated with the common basket-weave pattern; some with a series of simple chevrons (Plate VI, *7*). Some show basket-weave imprints bordered by a band of hatching framed by two straight lines (Plate I, *1-2*); other rare sherds show incisions forming angles between them (Plate III, *5-6*).

Apart from the sherds, the jar contained beads and a piece of seashell. The beads included some 21 orange beads[5] (16 whole, 5 pieces) with the appearance of fired earth, a type well known from the jar-fields of the Xuan Loc region; 4 beads of sky-blue glass;[6] and 21 olive-green beads, a color peculiar to the Hoa Vinh site. The piece of shell, slightly curved, 35 mm long and 14 mm wide, has an elliptic contour with one end pointed (Plate

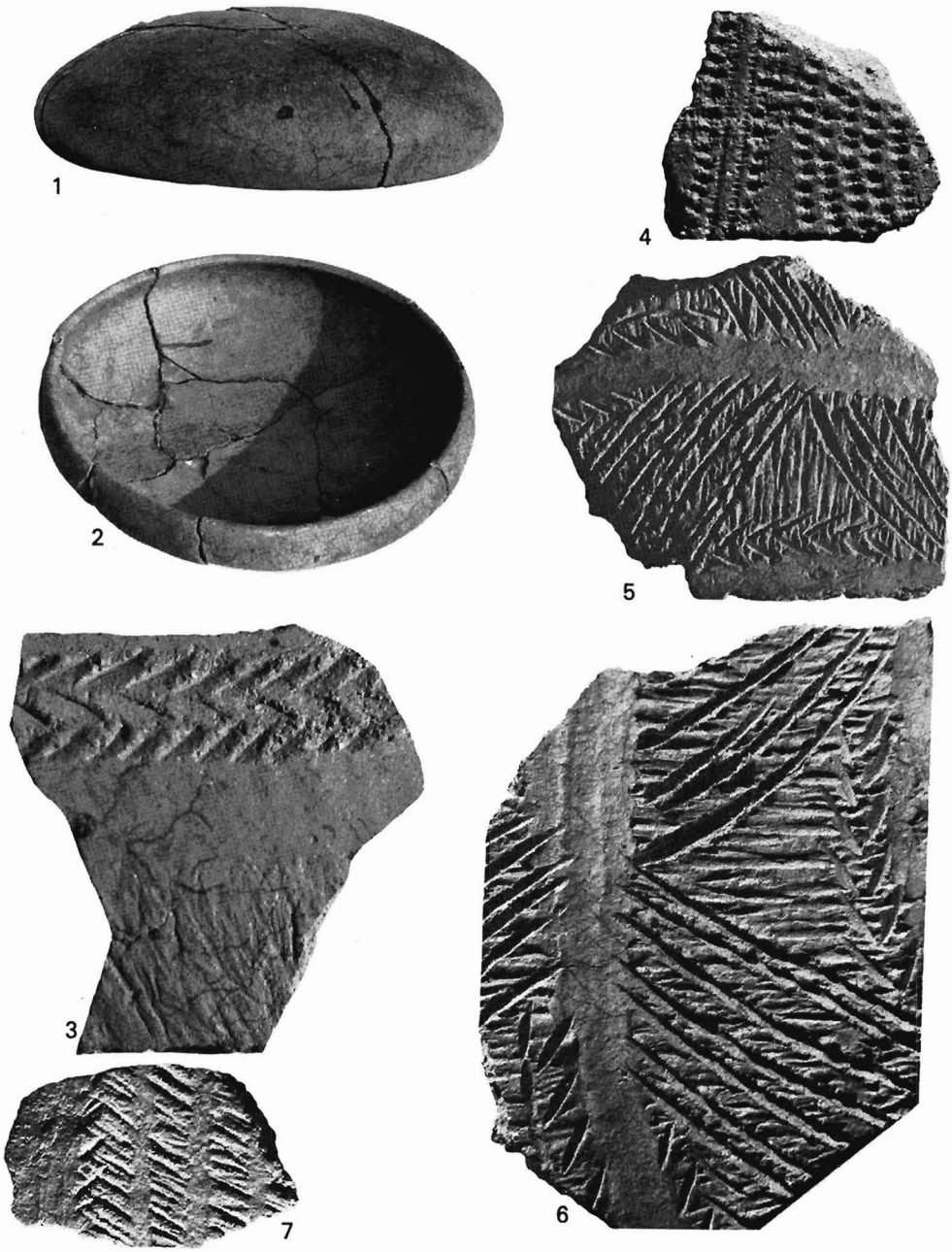


Plate III *1–2,* undecorated plate (or lid?) (× 1/3); *3,* red sherd with chevron design, made of a brown body paste rich in fine sand tempering. (× 4/3). See also Pl. IX, *5; 4,* red sherd with stippled decoration (× 7/10); *5–6,* sherd of Jar 1, decorated by basket-weave impression, then infill of this imprint, and finally incisions with lines forming angles (*5,* × 6/7; *6,* × 4/3); *7,* basket-marked red sherd with impressed parallel lines over the basket marking.

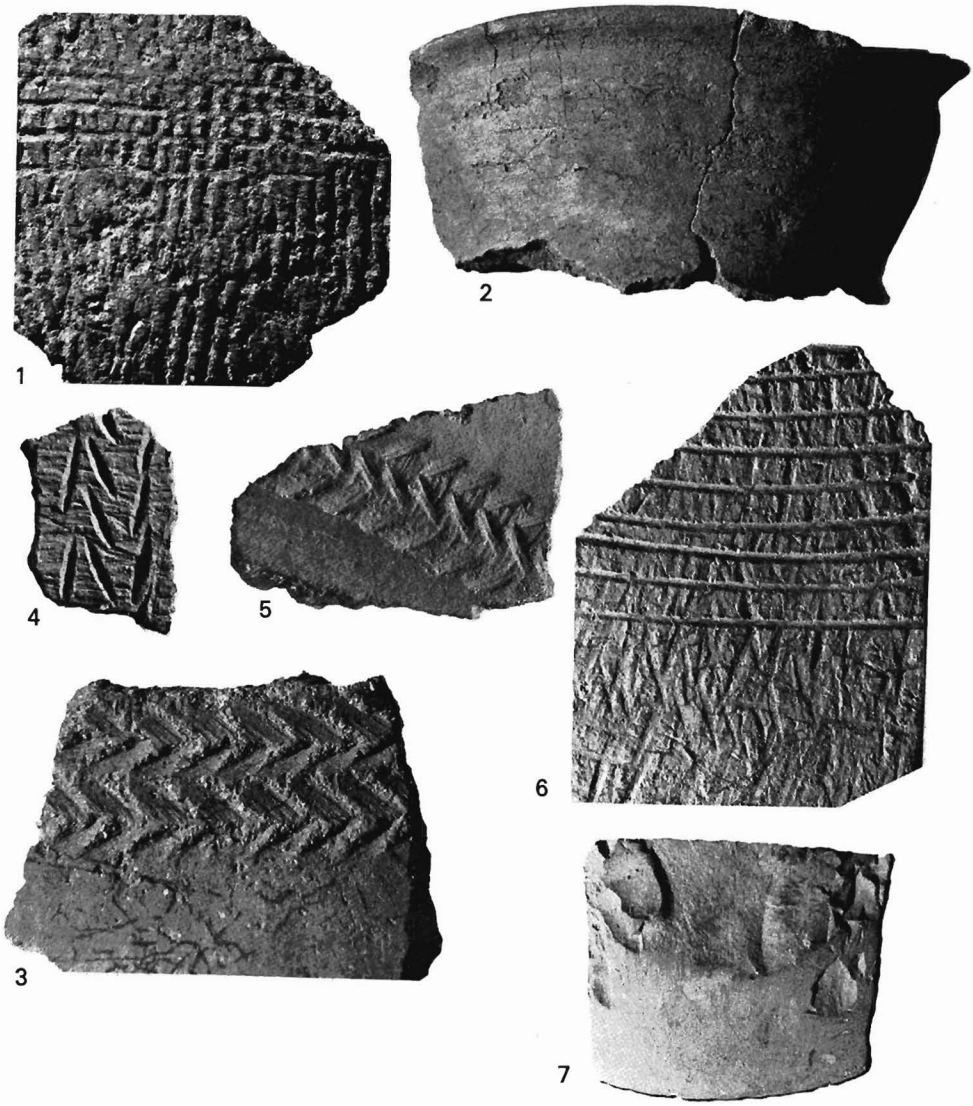


Plate IV *1,3,4–6,* decorated sherds; *2,* sherds found in Jar 1; *7,* adze found in the fertile layer (× 4/3).

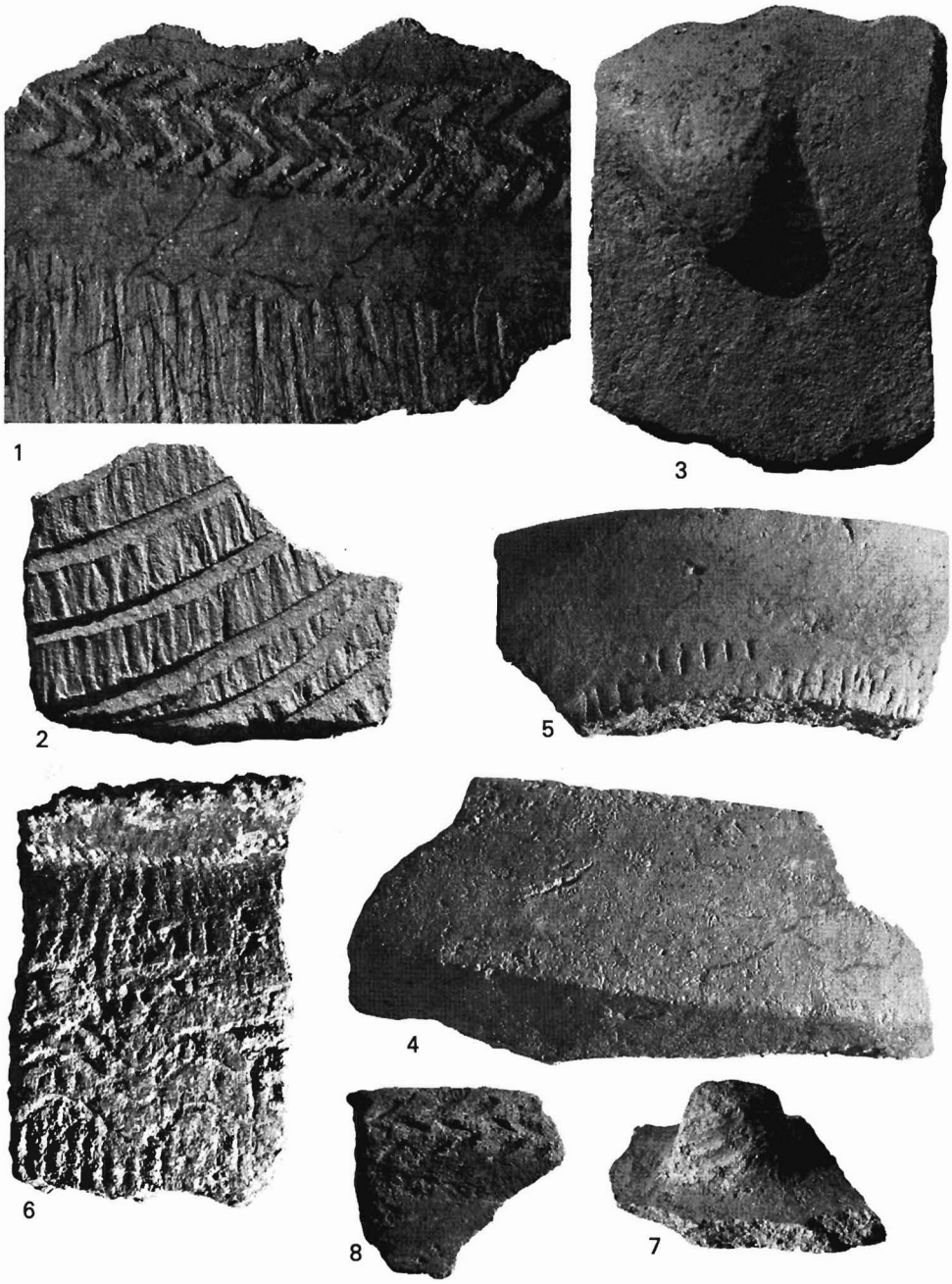


Plate V *1,2,5,6,8,* sherds (slightly larger than normal size); *3,* sherd with stud (normal size); *4,* carinated sherd (× 3/2); *7,* sherd with stud (?foot of vessel) (near normal size).

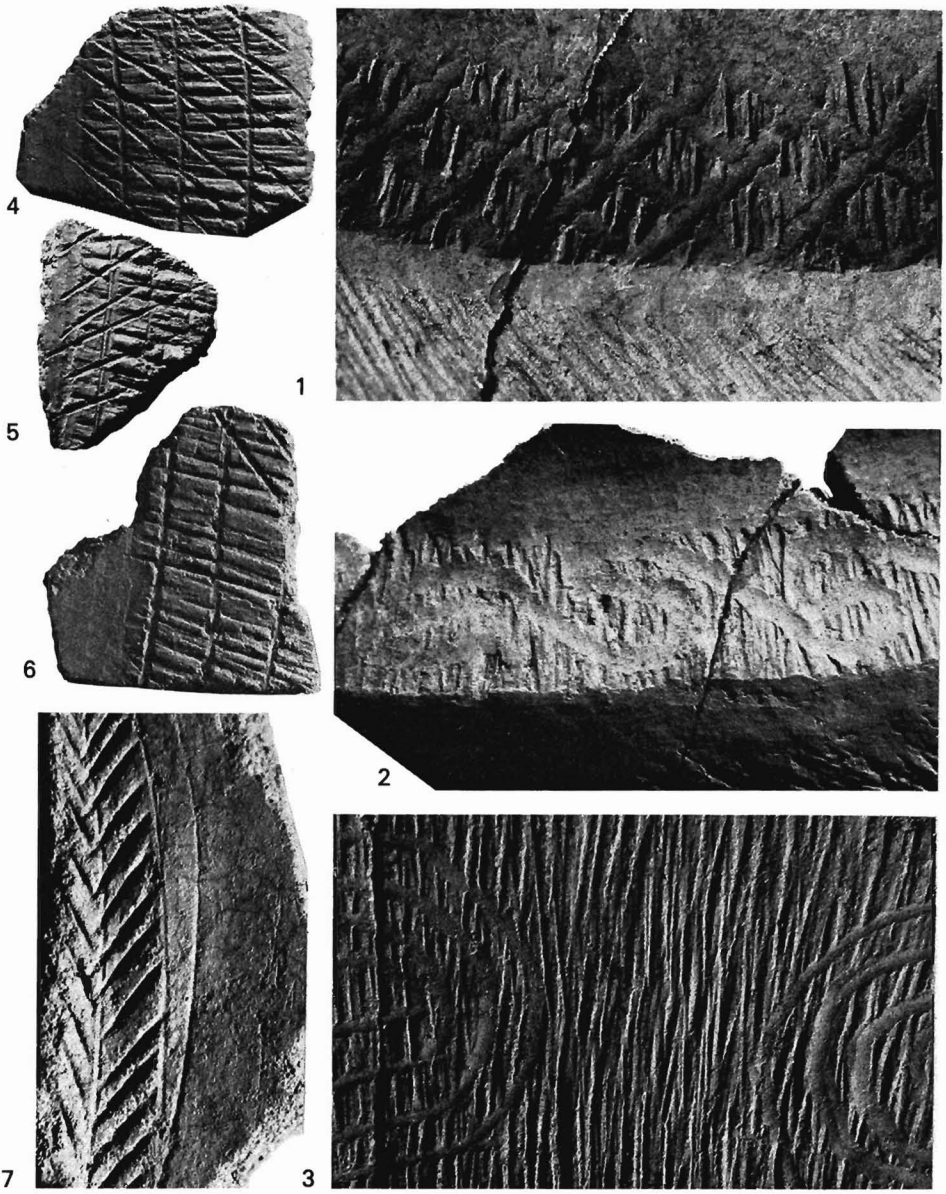


Plate VI *1–2,* sherd of the pot in Fig. 12; *3,* sherd of the pot in Fig. 13, the body of which is made with lots of sand for tempering (× 4/3); *4–6,* sherd of an orange-red vessel some 3–6 mm thick (× 11/8). Lots of sand used for tempering; *7,* sherd of Jar 1, which contained other sherds of the same decoration (× 3/2). Lots of sand used for tempering of the body, like most of the bodies of Hoa Vinh pots.

VII, *6*). Its use is not self-evident; could it, perhaps, have been a body ornament, or a little tool for tracing lines on pots before firing them?

The contents of this jar are poor, being made up solely of sherds without complete pots, of glass beads unaccompanied by carnelian or agate beads (cf. Fontaine 1972*b*: 438ff.), and of a shell fragment of little apparent significance.

Jar 2

Buried under a layer of sand 60 cm thick, this jar was excavated entirely from its original position in the quarry face (Plate VIII). It had lost part of its neck, the pieces of which could not be recovered in the immediate vicinity. This round-bottomed jar is 63 cm in diameter at its widest point, and 40 cm high. It is richly decorated above a plain band near the belly with scallops, chevrons, parallel lines, and basketry impressions; below the plain band it has only a basket-weave pattern. Its sides are from 4 to 7 mm thick, which is relatively thin.

As a result of the weather and the movement of the sand, this jar was broken into several large pieces, but was otherwise quite well preserved. However, its outward appearance was misleading—inside were only one piece of wood-charcoal and a few little sherds scattered throughout the whole of the sand infill (Plate VIII, *4*). This great poverty of contents suggests that it may have been dug up on an earlier occasion. Thirty-five sherds were collected above this jar; 57 others were found around it. No whole or largely complete pot was seen. The sherds belong to various differently decorated vessels: some smooth, others decorated with string or basket-weave impressions, and still others with series of chevrons, though this last motif is rare.

MATERIAL SPREAD THROUGH THE FERTILE LAYER

Sand, being a substance that moves under the wind's action, could place objects of different periods in association, in the course of its various displacements. In one place, a modern glass bottle had sunk down almost as far as the fertile layer, but this is an exceptional case and the risks of mixing appear very unlikely.

The objects have usually been collected in situ in the fertile layer, and much more rarely in the shifted sand at the foot of the quarry cliff; in the latter case, prudence imposes a certain suspicion about such objects. In the fertile layer, sherds are numerous (e.g., Plate II, *4-6*). However, other objects have also been collected:

1. A fragment of a ring made of grey-black slate (Plate VII, *1-2*) that had lost some of its thickness because of the cleavability of the rock. The ring is 8 mm thick, with an outer diameter of 78 mm and an inner one of 21 mm; the sides of its central hole are covered with streaks and starbursts of shock, showing that it was hollowed out with a pointed instrument (Plate VII, *8*).

2. A stone polisher, 7 cm thick and 18 cm long, showing two largely concave zones made during use.

3. A short stone adze, 35 × 40 mm, with a cutting edge 38 mm long, and 12 mm thick at its thickest point (Plate IV, *7*).

4. Two orange beads with a fired-earth appearance. This type of bead is very common in the jar-burial fields of the Xuan Loc region.

5. A spindle-whorl (Plate VII, *7*)[7] of truncated cone shape, with a slightly curved base,

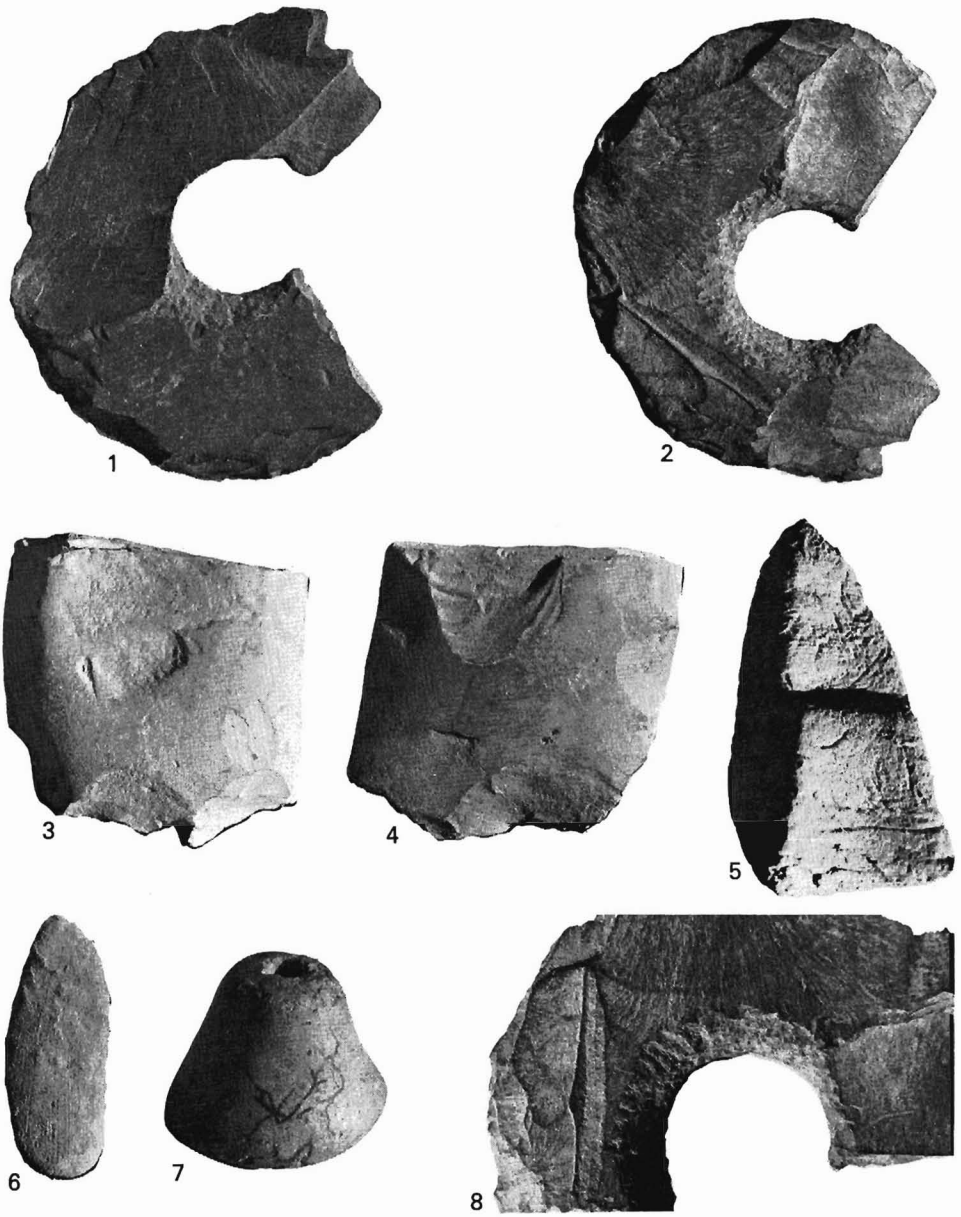
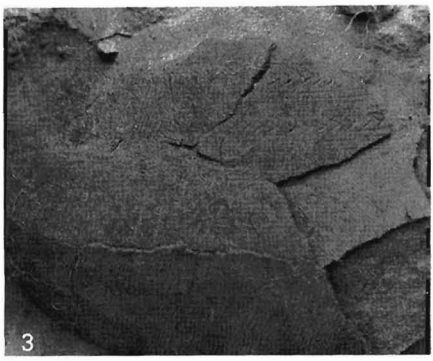
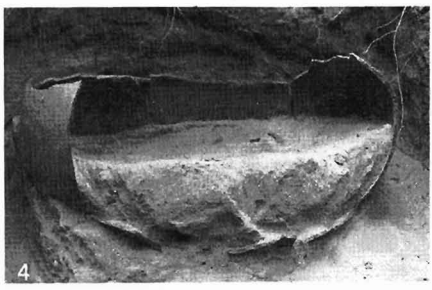
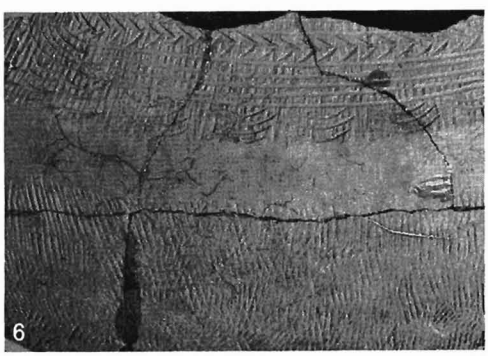


Plate VII *1-2,8,* fragment of slate ring seen from both sides (*1,2;* normal size), and enlargement showing details of side of central hole *(8); 3-4,* adze of polished stone, seen from both sides (normal size); *5-6,* pointed objects of marine mollusc shell (× 4/3); *7,* spindle-whorl found in the fertile layer (× 4/3).







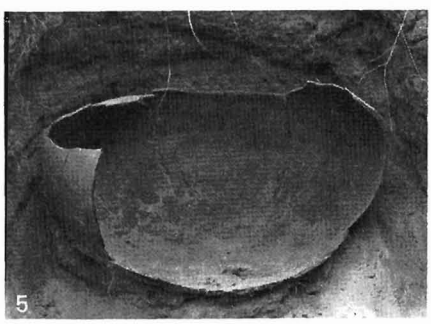


Plate VIII *1-2,* Jar 2, seen in the cliff face of the quarry, and a little exposed; *3,* Jar 2. Note the decoration above the belly. This decoration is more easily visible, though less complete, in *6,* which is a photo of the jar reassembled; *4,* Jar 2, partly emptied. Note the very rare sherds in the sand inside it; *5,* Jar 2, completely emptied; *6,* Jar 2, reassembled, though incompletely. Above the series of chevrons came a series of parallel lines, then a second series of chevrons, a new series of parallel lines, and finally a narrow series of oblique hatchings.

which is 23 mm high, and has a diameter of 31 mm at the base and 15 mm at the top. Pierced with a hole of 4 mm diameter and weighing 20 gm, its body is beige colored, including, on the surface, temper that was invisible to the naked eye.

6. A pointed object (Plate VII, *5*) 47 mm long and 25 mm wide at its largest, made from a thick marine mollusc shell.

7. Fragments of wood-carbon (cf. Fontaine 1972*a*).

In the disturbed sand at the foot of the quarry cliff were found numerous sherds bearing the features of those in the fertile layer from which almost all of them came. These sherds brought our attention to bear on certain other objects which accompanied them and which seem to belong to the same layer in the cliff face.

1. Two pieces of stone polishers, of decimetric or smaller size, with several flattened areas, probably made during use. The presence of a polisher in the fertile layer has already been mentioned.

2. A small sliver of white and beige flint, 2 cm long, with a pointed end (perhaps used for piercing?).

3. A piece of tectite, thin, circular in shape, cutting on one edge, easy to hold between the fingers and to use for scraping, or even for cutting. This piece of tectite and the sliver of flint were the only ones found at the Hoa Vinh site, but their presence poses no particular problems.

4. An adze of polished stone, trapezoid in section, with rounded edges (Plate VII, *3-4*), 15 mm thick at most, measuring 52 × 51 mm. Its cutting edge is spoiled by the beginnings of splinters resulting from blows. Another adze was found in the fertile layer. The finding of two adzes during such a limited excavation suggests that these tools are quite common. They do not show any trace of a haft (tenon), a fact also established for adzes and axes in a relatively young site like Rach Nui (Long An; Fig. 3)[8] (Fontaine 1972*a*, 2400 B.P.).

5. An elongated pebble (length 10 cm), elliptical in section, chipped at its extremities, and very easy to hold in the hand; it appears to have been used as a percussion tool.

6. A piece of long bone apparently prepared for use as a pick (?).

7. A piece of bronze bracelet, completely oxidized, undecorated, and with an internal diameter of 72 mm, a variation from the Phu Hoa examples (Fontaine with Than 1975:22, fig. 4). It is made of a plain rolled sheet, 4 mm wide and 2 mm thick, which is convex on the outside and flat on the inside. Although a similar object was not seen in the fertile layer, this piece is not likely to be of very recent human deposit.

8. A little piece of iron,[9] turned to rust. Its small size and lack of shape make it an enigmatic piece that could have been brought to the site by a quarry worker.

9. A truncated cone-shaped, convex-bottomed spindle-whorl (Plate IX, *6-7*), 26 mm high, with a diameter at the bottom of 33 mm and at the top of 17 mm. Pierced by a hole of 3–4 mm diameter, it weighs 26 gm, and has a red-brown body without any surface tempering apparent to the naked eye. It is just like the spindle-whorl that was excavated in the fertile layer (Plate VII, *7*).

10. An orange bead of fired-earth appearance, a type that seems common to Hoa Vinh; it is found in the fertile layer and in Jar 1.

The items described above and shown in the plates do not deserve further mention, except for the sherds, which are very varied.

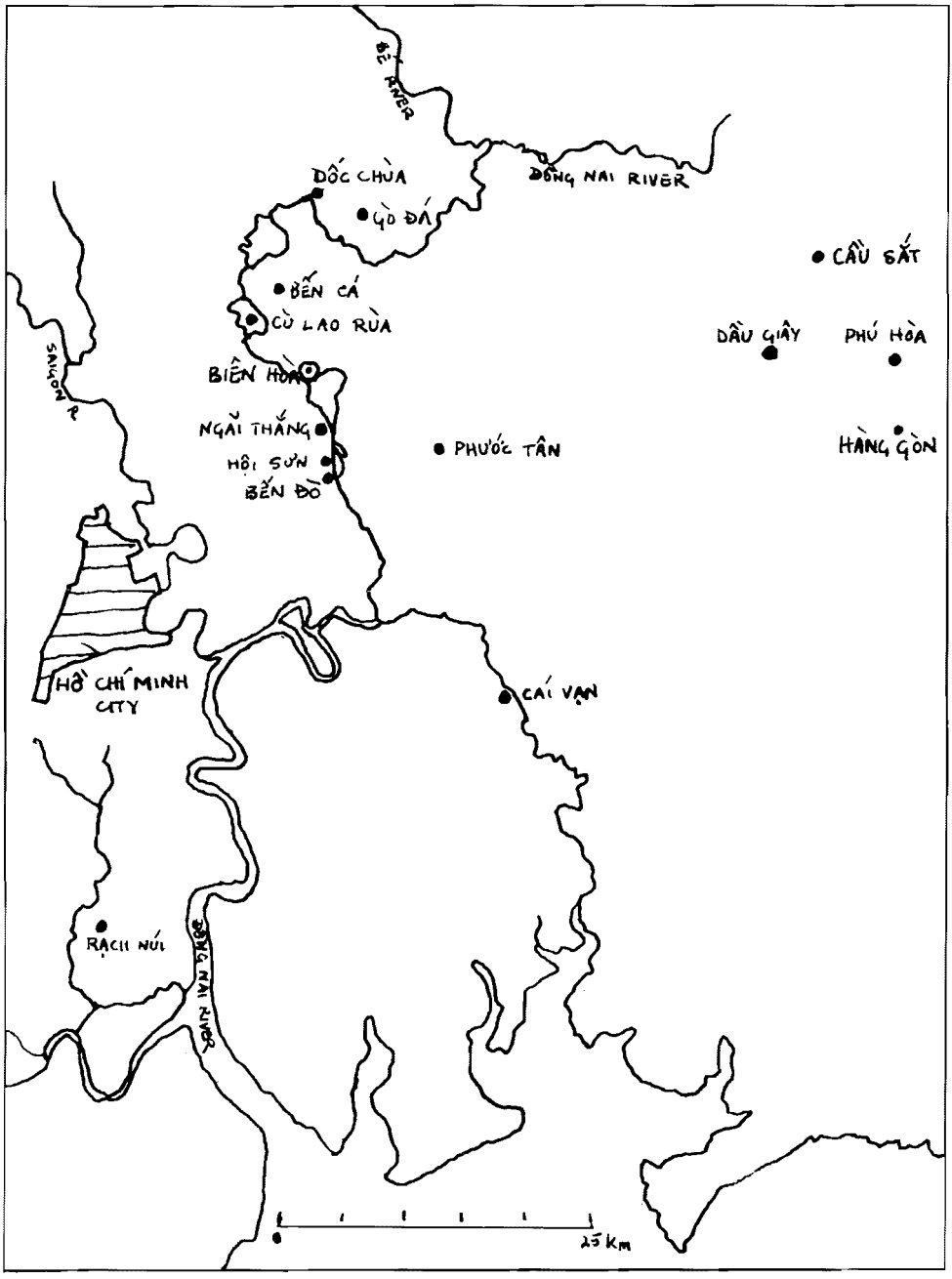


Fig. 3. Sites in the Dong Nai Basin (based on map, *KCH* 4 [1977])

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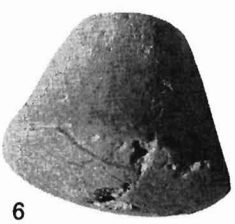

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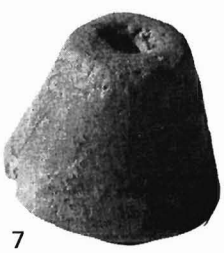

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Plate IX *1–3,* large orange-red vessel; *4,* sherd of jar, with very worn surface. The tempering is then visible; *5,* red sherd with chevron design (× 6/5). See esp. Pl. III, *3;* also Pl. V, *1,* Pl. IV, *5; 6–7,* spindle-whorl, found in the quarry (× 5/ 4).

POTTERY

The pots are often large, perhaps because some of them were used either to keep reserves of water for the dry season or to make pickles.[10] The large number of these big vessels and the enormous quantities of sherds they have produced make the little pots seem rare.

With the exception of a few flat-bottomed drinking cups of 11–14 cm diameter and a vase of only slightly larger size (18 cm), all the pots have rounded bottoms. Some are very plain; they have the shape of dishes without rims (or of lids?) (Plate III, *1–2;* Fig. 4), of bowls (Fig. 5), or of basins (Fig. 6). The plates so common at the jar-fields of Xuan Loc are missing at Hoa Vinh. Many of the vases are narrowed near the mouth and show a fairly wide variety of necks (Figs. 7–11).[11] One sherd shows a pair of suspension holes of 3 mm diameter, 15 mm apart and 17 mm from the edge of the vessel. No handles have been seen, but studs or bosses are present on several curved sherds. Differing little in shape, these are more or less stubby (ranging in size from 1 to 2.5 cm) and tall (1–2 cm). They end as though cut off, with a flat surface that sometimes shows traces of wear and probably correspond to the feet of certain sorts of pots. One stud was found at Hang Gon 3 (Saurin 1968:6, Pl. II.11), but, since it was on the side of the vessel, Saurin thought it to be a "grasping-nipple" ("mamelon de préhension"; a knob for use as handle, or to raise by strings?). Some rare pots, instead of having nipple-feet, must have had a ridge around their base and are comparable to the vessels described by Saurin (1963:Pl. XXIII.6–7). The sides of some vessels were decorated by the application of strings of clay, discontinuous or not, which must also have helped one to grasp them. The strings recall the flat ring-belt described on a Sa Huynh vase (Parmentier 1924:332, fig. 8*B*) or the pads on certain Hang Gon vessels (Saurin 1963:436, Pl. XXII.12).

The pots are red, brown, orange-brown, orange-red, or cigar-colored on their surfaces, and in the breaks they are brown, black-brown, or red. The body surface is generally rich in a more or less fine sandy tempering (Plate VI, *3;* Fig. 13), but this is often hardly visible to the naked eye. No pots are made with a wood-charcoal body; the inhabitants of Hoa Vinh, unlike those of the Xuan Loc region, were probably a long way away from good forests, which did not exist on the sand dunes and had probably already been destroyed by humans on the plain.

The decorated pots are the most numerous, with different patterns such as basket-weave, rope, and striated beater being frequent. Two kinds of imprint are sometimes used on the same pot (e.g. Plate X, *1–3*). By impressing broad bands or lines, or by incising, new patterns were sometimes superimposed: straight lines (Plate VI, *4–6*), wavy lines (Plates II, *4;* V, *6*), zigzag lines (Plate II, *7*), successive S curves (Plate VI, *2*), concentric rings (Plate VI, *3*), lozenges (Plates VI, *1;* II, *5*). Some basket-weave pots were re-covered by a clay slip which had later fallen off in parts (Plate II, *2–3*).

The design most characteristic of Hoa Vinh is made up of a series of chevrons—either single (Plate VI, *7*), double (Plates IX, *5;* III, *3;* V, *1;* IV, *5*), or triple (Plate IV, *3*)—on the top of the belly and the neck of vessels that are either smooth or covered with basket-weave impressions. These bands of chevrons are also found immediately above the carination of carinated pots. The bands are 1 to 2.5 cm wide, and made up of chevrons that are more or less close together (7 to 10 per 5 cm) and more or less clearly marked; they are sometimes accompanied by straight lines (Plate VI, *7*). These motifs were imprinted with a single blade that ended in a bevel and was turned between the fingers to mark the two

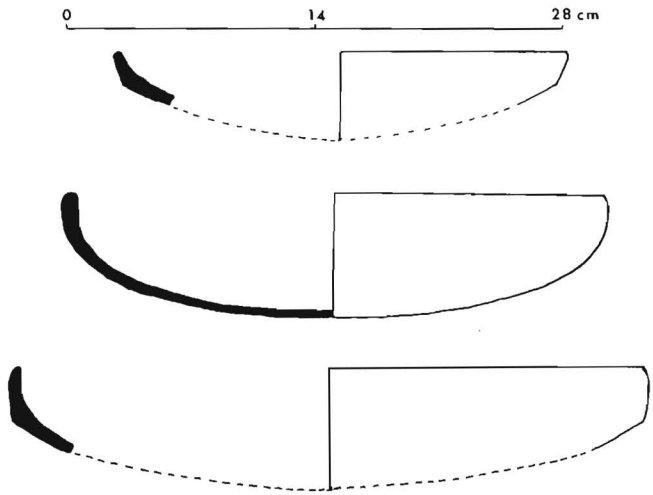

Fig. 4. Dishes without rims. [shallow bowls. Ed.]

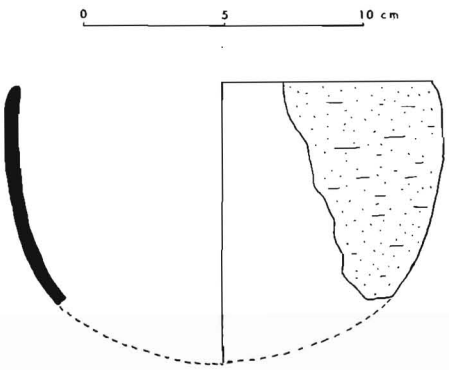

Fig. 5. Bowl.

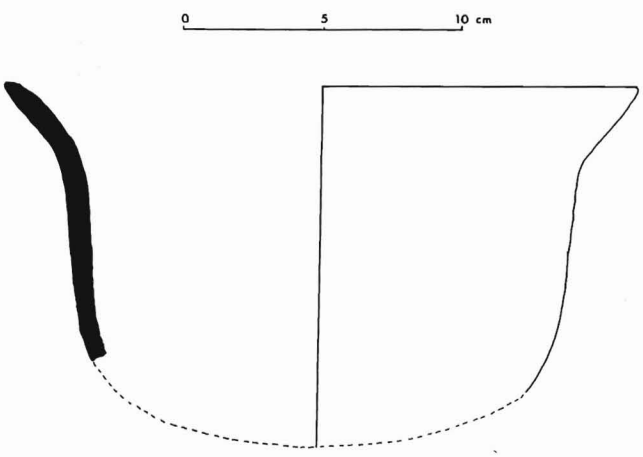

Fig. 6. Basin.

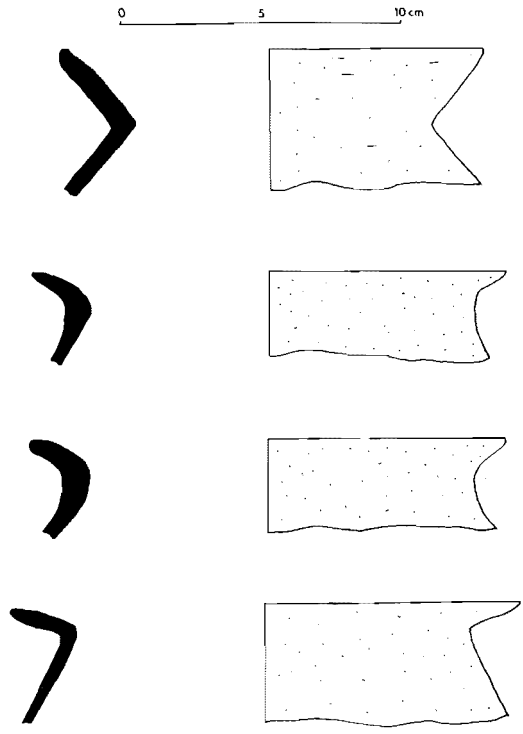

Fig. 7. Cross sections of rim sherds.

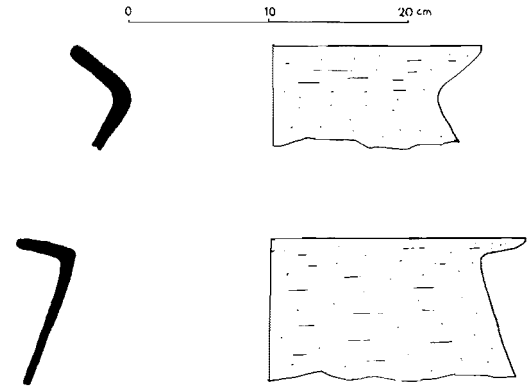

Fig. 8. Cross sections of rim sherds.

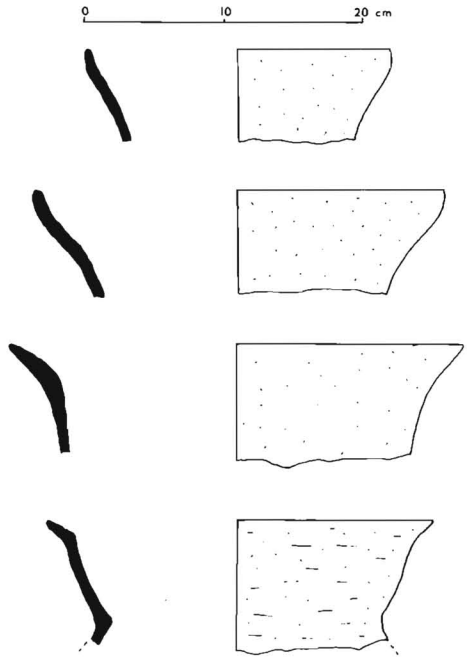

Fig. 9. Cross sections of rim sherds.

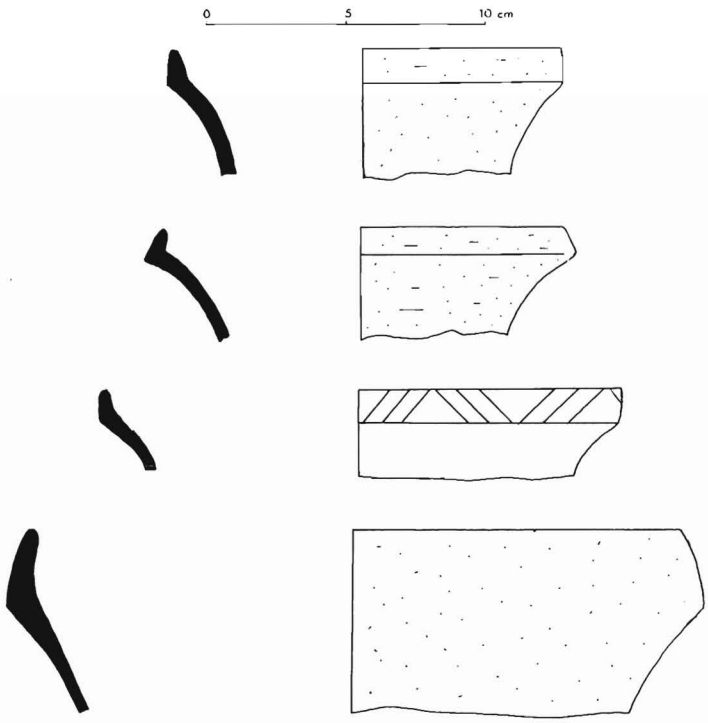

Fig. 10. Cross sections of rim sherds.

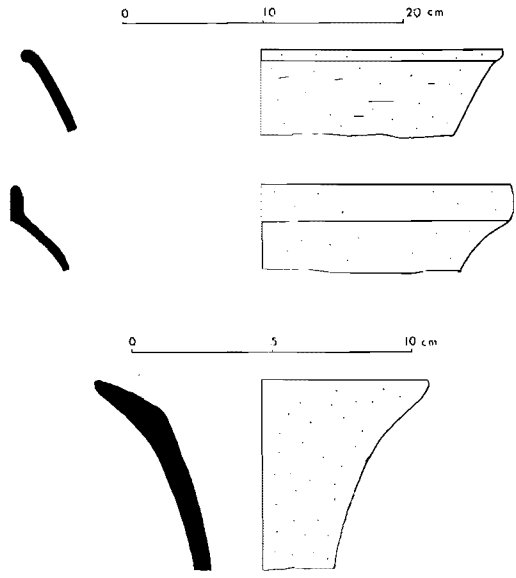

Fig. 11. Cross sections of rim sherds.

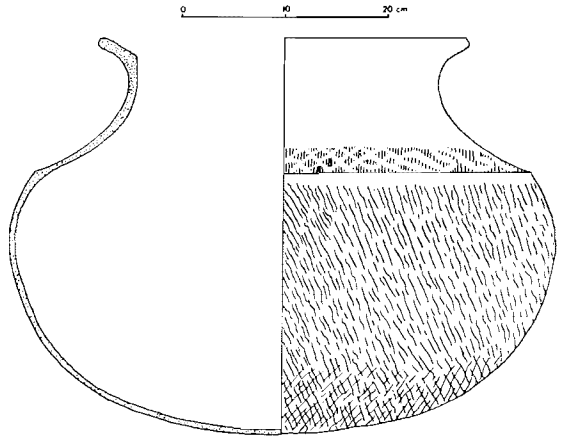

Fig. 12. Carinated jar with band of decoration above angle.

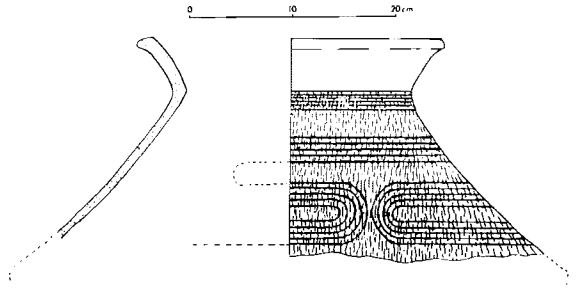

Fig. 13. Decorated jar with heavily sand-tempered clay body.

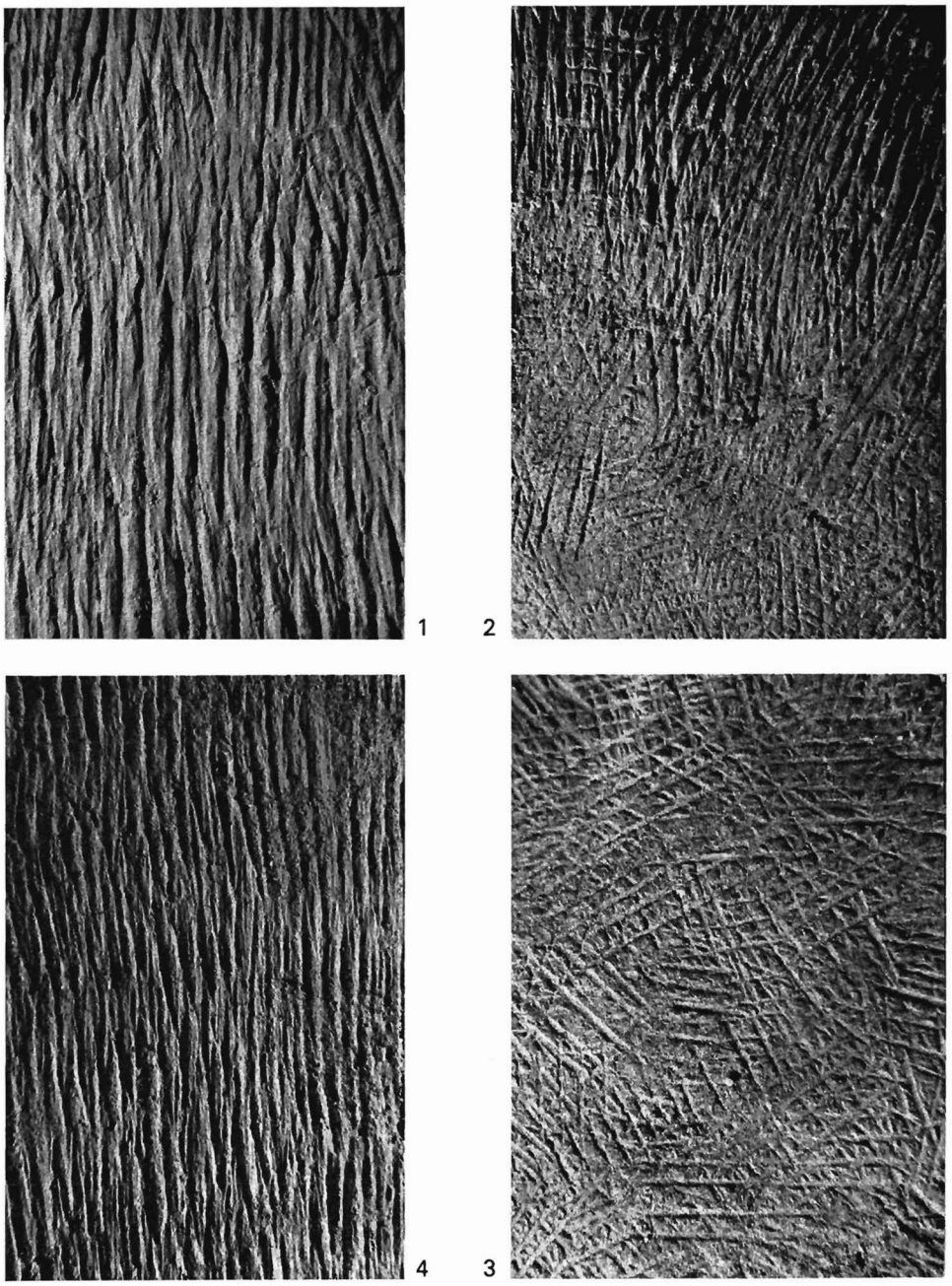

Plate X *1–3,* sherds of a large jar, stamped with basket-weave on the belly *(1)* and decorated in the middle by a striated beater *(3).* Pl. X, *2* shows the shift from the first design to the second; *4,* large jar whose surface is sometimes very worn. See also Pl. IX, *4.*

lines of the same chevron one after the other; this rotating movement has sometimes left traces of its action in the angle of the chevron on the vessel. Stippled decoration (Plates III, *4;* II, *6*) is found on only two sherds. Scallops, too, are rare (Plate VIII, *1, 3, 6*), as are series of oblique hatchings framed by straight lines (Plate I, *1-2*).

CONCLUSION

The site of Hoa Vinh includes some polished stone adzes but these cannot be particularly old as they are accompanied by glass beads. Many details recall the Sa Huynh Culture.[12] However, some, like the decoration of the pottery, are not characteristic of Sa Huynh; they existed in older periods and are nothing more than traditions that are being carried on. Comparison of the funeral jar-fields of Xuan Loc or those of Sa Huynh with the site of Hoa Vinh pinpoints many differences between them. Contrarily, the bronze age site of Hang Gon (Saurin 1963) shows a few more similarities: hemispherical bowls, flat-bottomed drinking cups, applied ridges on the bottoms or sides of vessels, decoration by infill of basket-weave imprints, carinated pots, slivers of rock; but the tools of Hang Gon (adzes and axes, etc.) have a haft (tenon).

Despite the lack of excavation, the Hoa Vinh site seems able to be classed as "Proto-Sa Huynh" or "Sa Huynh I";[13] that is, it is likely to belong to the period immediately preceding the expansion of Sa Huynh Culture. The carnelian beads cited in the area by Janse and the discovery of a bronze bracelet in the sand announce Sa Huynh, but the adzes and the stone ring indicate an older age. The site of Sa Huynh arouses great interest because of its hinge-like position between two epochs. But that mystery will only be explained by further excavations.

NOTES

[1]Of further interest is the jar-burial site of My Tuong, some 14 km northeast of Phan Rang, which appears to have two culture levels: one classed as proto-Sa Huynh (i.e., like Long Thanh I, ^{14}C dated Bln 1972: 3370 ± 40 B.P.), and the other early Sa Huynh (*Nhung phat hien 1979:*142–148).

[2]No carnelian or other types of stone beads were found at Hoa Vinh during our excavations, although such beads were found at Dau Giay (Fontaine 1973:619–620) and in abundance at Phu Hoa (Fontaine with Than 1975:24–27).

[3]Recent archaeological investigation along the coast of Central and Southern Vietnam has been considerable. Many sites (like Truong Xe and Go Loi near Qui Nhon) have been identified as connected with or belonging to the early stages of Sa Huynh Culture, like many other more advanced sites, such as those in the Quang Nam–Da Nang region: the jar-burial site at Bau Tram, Dai Lanh (see notes in *Nhung phat hien 1979:*150–154, 158–166), Tam My and Que Loc (Kinh 1978*b*:46–48) among them. As Fontaine has already pointed out elsewhere, Sa Huynh Culture also involved the Xuan Loc region (Kinh 1978*b*:49–51). Another link is the bicephalous zoomorphic drop-earring, which, encountered at Hang Gon (Saurin 1973:Pl. XXIV, 1*a-d*), Phu Hoa (Fontaine 1972*b*:Pls. IV, 10; IX, 18) *and* at the Dong Son Culture site of Xuan An (Tan and Duong 1977:64, fig. 4), is met again at Tam My (Can and Kinh 1977:53, fig. 10). The other earring with three protuberances is found there too (Can and Kinh 1977:53, fig. 10; also Fontaine 1972*b*:Pls. III, 12; IV, 6), and both turn up in the Philippines (Fox 1979:236–237, fig. 1), providing additional evidence for the extensiveness of the cultural links in the area. Yet, although the pottery tradition ensures that Sa Huynh–Xuan Loc body shapes are often common (e.g. Tan 1978:56, esp. figs. 2–3), decoration is frequently distinct (a factor that applies to Hoa Vinh pots as well).

[4]In relation to Hoa Vinh, the most important excavation recently reported (Son and Manh 1980:148–150) was at a site discovered by Sallet at con Bau Hoe, in a sand-dune quarry bordering National Highway 1, some 1691.5–1691.8 km south of Hanoi and some 14 km north of Phan Thiet. An investigatory dig was conducted

by Fontaine and Hoang thi Than in 1974, although no report was made (Son and Manh 1980:150, n.1); a small trial trench was later dug by Son and Manh. Bau Hoe is, in fact, Hoa Vinh. The account below summarizes Son and Manh's report (1980) of their follow-up excavation.

A large part of the dune bordering the highway had been destroyed because of the quarrying, and in all walls of the quarry no culture levels could be discovered. However, in the trial trench Son and Manh found what they call a *mo chum*, a jar-burial, at 0.60 m–0.90 m below the surface. The jar was resting at a slight angle facing southeast, its mouth flat and bell-shaped, about 25 cm in diameter, its neck slightly narrowed, its shoulders and belly swollen large, its bottom round (cf. Plate VIII). Its contents (there were no human remains) included:

(i) an iron sickle (Son and Manh 1980:149, fig. 11-1) of the sort common in Phu Hoa (see Fontaine 1972*b*:Pls. II, 12–13; VI, 13; VII, 8; X, 14);

(ii) an iron mattock (Son and Manh 1980:149, fig. 11-2) which differs hardly at all from the Phu Hoa forms (see Fontaine 1972*b*:433, fig. 26; Pls. IV, 9; V, 7; VII, 12);

(iii) three spindle-whorls (Son and Manh 1980:149, fig. 11-3), basically of truncated cone shape, either narrowed or not in the middle, flat-based and with a central hole.

On the surface were other goods—a basalt kidney-shaped pestle; three fragments of light grey sandstone polisher, of the flat class; and lots of sherds. Their bodies, which were black or grey-brown, were tempered by using lots of sand and mollusc shells; the surface, red- or grey-brown. The pots were fairly high-fired and hard (Son and Manh 1980:149). Types with bell-shaped (flat) mouths were the most common; curved lips were rare. Feet ("studs, bosses") were made separately. Pot shapes were few, decorations many, most commonly tooth-comb (probably striated beater, or basket-weave?); others included bands of curves (wavy lines) framing one another, short parallel lines, or fishbone (chevron?) patterns.

A tentative conclusion (Son and Manh 1980:150) is that Bau Hoe has many features in common with Phu Hoa, hence is early iron age, and in pottery forms has much in common with Sa Huynh. However, pottery decoration at Bau Hoe is quite different from the central Vietnamese sites of Sa Huynh, Long Thanh, Phu Khuong, and even more different from that of Binh Chau. Could Bau Hoe (Hoa Vinh) be a site that presents a Sa Huynh-like impression, in the chain from Quang Da, Nghia Binh to eastern Nam Bo (Son and Manh 1980)?

[5]Similar fired-earth beads are common at Phu Hoa (Fontaine 1972*b*:438ff.), and small, opaque orange, fired-earth beads were found at both Sa Huynh (Parmentier 1924:337) and at Oc Eo (Malleret 1962: III, 146).

[6]Dau Giay provided four blue glass beads (Fontaine 1973:619–620) and Phu Hoa yielded a considerable number of blue (Fontaine 1972*b*:439) as well as green, but not *olive-green*, glass beads (Fontaine with Than 1975:27–29). Such finds indicate new links between the Xuan Loc sites and others within the range of Sa Huynh cultural presence or influence.

[7]Those at Dau Giay (Fontaine 1971:Pls. III, 9; V, 7–12) are basically flat-bottomed and appear closer to the Bau Hoe find (Son and Manh 1980:149, fig. 11-3; see also Plate VII, 7 herein) than to the other Hoa Vinh one (Plate IX, *6–7*), but some spindle-whorls in Phu Hoa (Fontaine 1972*b*:Pl. II, 9–11; Fontaine with Than 1975:35, Pl. I, 7–8) were similar. Those found at Cu lao Rua (Fontaine 1975:101, Pl. III, 8, 12) are also flatter and differ from the spindle-whorls of the more recent culture of Sa Huynh. None of the numerous spindle-whorls (or, for that matter, pots) found at the bronze age site of Doc Chua corresponds to the Hoa Vinh–Bau Hoe forms, either from descriptions or drawings (Ty 1977:37ff., fig. 8).

[8]Rach Nui is a site characterized by square adzes and axes, for which it is tentatively awarded the eponymous representative culture site name, the Rach Nui Culture (Kinh 1978*a*:44–45); it has quite sophisticated pottery and is classed as bronze age (Son 1979:242–243).

Ben Do (Kinh 1977), whose ^{14}C potsherd analysis of 3040 ± 140 B.P. and 3000 ± 110 B.P. (Fontaine and Delibrias 1973:31) makes it at least roughly the early contemporary of Doc Chua, continues not to produce bronze objects from excavations (Son 1978:39) although it is said to have yielded them earlier (Fontaine 1975:94). Nevertheless, a comparison of the stage of development of its material culture with that of other Southeast Asian cultures suggests that it is probably early bronze age (cf. Davidson 1975:89, with reference to northern Vietnamese sites). Study and comparison of Ben Do material (Fontaine 1970:87ff.; 1975:75ff.) with that of some other southern sites has led to the provisional classification of these sites (by Son 1978) as the Ben Do Culture (Kinh 1978*a*:42–44), which includes Hoi Son, Phuoc Tan, Ngai Thang, and Cai Van. The group forms a developmental stage of the Dong Nai Culture (Son 1978:38–40, reproduced by Tan 1980:135–136) from:

Stage I the late neolithic Cau Sat (Chinh & Su 1977);
II the early bronze Ben Do Culture, including Ben Do, Phuoc Tan, Ngai Thang, Hoi Son, Cai Van (Fontaine 1975:82, believes that they have little similarity with Sa Huynh; more recent excavations support this);

III the somewhat later Cu lao Rua (^{14}C date 2230 ± 100 B.P., Fontaine 1975:95);
IV the developed bronze age culture of Doc Chua.

Doc Chua (Con 1977; Ty 1977) is a well-developed pre-Sa Huynh (Tan 1980:114–115, map, 153, fig. 10) bronze age site for which the following ^{14}C dates are available:

(i) ZK-422 (wood-carbon at 1.00 m): 3145 ± 130 B.P. (1195 ± 130 B.C.) (pre-adjusted = 2990 ± 150 B.P. (1040 ± 150 B.C.)) (KCH 4(1977), 67)
(ii) Bln 1973 (0.50 m):2495 ± 50 B.P. (545 ± 50 B.C.) (*KCH* 4(1980), 66).

It also has an intriguing link with Non Nok Tha. Doc Chua has a type of bronze axe, and mould (Con 1977:31, fig. 3; Tan 1980:153, fig. 10*e*), which Tan (1980:136) notes is similar to a type found in Non Nok Tha (Solheim 1968:Pl. III*a*; see also Ty 1977:35, fig. 5; 38, fig. 9b; Con 1977:31, fig. 3; Diem 1977:47, fig. 7; also cf.46, fig. 5; 47, fig. 6). This in turn suggests comparison with certain axes from the Au-lac Culture of the Red River Delta (see Davidson 1979*a*:114, Pl. I*b,f*).

[9]Cf. note 4. Iron objects have been found most profusely at Phu Hoa, dated 2590 ± 290 B.P. and 2400 ± 140 B.P. (Fontaine 1972*b*:441), which is convincingly associated by Fontaine with Sa Huynh.

[10]Jar-burial is, of course, a possibility (see note 4), although no human remains have been discovered.

[11]The variety of necks and rims is considerable at other southern sites like Go Da, near Doc Chua, but none of those shown by Manh (1977:23) coincides with the Hoa Vinh forms noted here.

[12]The polished stone adze of Phu Hoa (Fontaine with Than 1975:15), which is like that from Suoi Hang Gon (Saurin 1973:341, pl. XXIII.2) is one example; the several stone polishers that have turned up at Xuan Loc sites are another. The body shapes of the pottery generally approximate Sa Huynh patterns, resembling Sa Huynh–Phu Hoa forms which, it is now well established, have notable links (e.g. Davidson 1979*b*:218–220; Tan 1978:56, esp. figs. 2–3), just as Hang Gon and Dau Giay pottery traditions connect with Phu Hoa and echo Sa Huynh (Fontaine 1971:325ff.; 1972*b*:404,423,442; Davidson 1979*b*:219). However, although they are similar to such forms, Hoa Vinh body and lip shapes so far revealed do not appear identical with them (see Tam My vessels, Can and Kinh 1977:50–51, figs. 1–7), nor do any approximate pots from Ben Do (Kinh 1977:25, figs.; Hoa 1978:35, fig. 1), Go Da (Manh 1977:23), or Cai Van (Hoa 1978:36, fig. 3). There does not seem to be much, if any, connection in pottery body and lip shapes with northern Vietnamese pottery traditions (Sinh and Diem 1977:52,54, 57,60–61; Hoa 1977:57–67, + figs.; Viet 1978).

An analysis by emission spetroscopy of potsherds from most of the southern sites discussed in this paper is presented by Hoa (1978:33).

[13]This provisional class dating is Fontaine's. Davidson agrees with the culture classification in general but thinks that Hoa Vinh–Bau Hoe may be a local manifestation of the expanded culture known as Sa Huynh, with many elements of Dong Nai culture expressed as well. Certainly, pot bodies and some other features link Hoa Vinh with Sa Huynh, but the pot decoration, as Fontaine notes, is not at all similar; if anything, it is more easily related to the late Doc Chua forms. While this indicates the continuation of a local pottery tradition distinct from that of most of the Xuan Loc–Sa Huynh jar-field complex, it does not explain why there appears to be association with Dong Nai *and* Hang Gon pots. (Unless the Phu Hoa–Dau Giay–Hang Gon group forms a stage later in the development of the Dong Nai Culture as classed by Son (1978:39–40), and Hoa Vinh is an earlier site of this level?). The apparent similarities of ceramic form to Hang Gon need be neither confusing nor discounted because of a difference in lithic implements—square in Hoa Vinh, tenoned in Hang Gon. The tenonless axe-adze suggestion of the Hoa Vinh finds fits in with the predominantly tenonless axe-adze tradition found farther south in the Rach Nui Culture of Long An, which extends to, and melds with, the tenoned axes and adzes found in other sites as the tradition moves northward. Of particular relevance here is the fact that the cluster of sites (Binh Xuan, Doi Mit, Doi Xoai) in the Phu Hoa–Cau Sat area, although it incorporates shouldered axes and adzes, has a predominance of square ones (Nghiep 1980:134, n.1; linking *them* to the Rach Nui Culture?). The author-excavators believe that this group of sites may be younger than Cau Sat and older than Phu Hoa (Nghiep 1980:137), which may mean that a site like Hoa Vinh is an example of a local culture melding central and southern (Sa Huynh and Dong Nai/Rach Nui?) cultures at a transitional stage along the two-way cultural route. The bronze bracelet suggests a much more depleted bronze age level than encountered at Phu Hoa, while the adze and the stone ring could well point to an older period but need not, given the paralithic nature of Vietnamese sites. The association of glass beads and polished stone adzes implies that Hoa Vinh is not neolithic, yet the proposal that Hoa Vinh is "Proto-Sa Huynh" (cf. Long Thanh, note 1) or "Sa Huynh I" on the basis of the material found in 1975 is now difficult to accept in the light of many new site discoveries since then. In addition, the find at Bau Hoe–Hoa Vinh of an iron scythe and an iron mattock of virtually iden-

tical appearance to those of Phu Hoa (see note 4) discounts this provisional dating. Instead, while Hoa Vinh (Bau Hoe) is obviously not as sumptuous a site as Phu Hoa, it may actually be earlier than, or belong to an early stage of culture related to, Phu Hoa. Only further excavation will tell.

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